

# SPECIAL PROVISIONS

Village of Bensenville

County Line Road Watermain  
Replacement  
from Green Street to Jefferson Street  
Contract No.: PW-2012-12

Bid Documents  
July 27, 2012



100 S. Wacker Drive, Suite 700  
Chicago, Illinois 60606

**PROJECT SPECIFICATIONS  
COUNTY LINE ROAD WATERMAIN REPLACEMENT**

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**DIVISION 0**

**CONTRACT DOCUMENTS**

## SECTION 00030 - ADVERTISEMENT FOR BIDS

### PART 1 GENERAL

#### 1.1 Receipt of Bids

- A. Sealed proposals will be received by the Village of Bensenville for the project entitled "County Line Road Watermain Replacement – Green Street to Jefferson Street" until 11:00 am on Aug 10, 2012 at Village Hall 12 S. Center Street, Bensenville Illinois 60106. Sealed bids will be publicly read at the same. Sealed bids shall be addressed to the Village Hall 12 S. Center Street, Bensenville Illinois 60106 and shall be labeled "County Line Road Watermain Replacement – Green Street to Jefferson Street". The bids shall be attention to "Office of the Village Clerk."

#### 1.2 Work Description

The proposed improvement consists primarily of the following:

- A. Replacement of existing 10" DIWM with 12" PVC Watermain.
- B. Testing of all proposed improvements.
- C. Restoration of all disturbed areas.

#### 1.3 Document Inspection and Procurements

- A. The Contract Documents may be inspected at the following locations.

1. Village of Bensenville  
717 E. Jefferson Street (Public Works Building)  
Bensenville, Illinois 60106  
630-350-3435

- B. Copies of the Contract Documents may be purchased from:

1. Primera Engineers, LTD  
100 S. Wacker Drive, Suite 700  
Chicago, IL 60606  
312-242-6437

The payment is non-refundable and is payable to the Village of Bensenville in the form of certified check, cashier's check, or money order. No partial sets of specifications or drawings will be issued. The non-refundable cost for plans and specifications is \$50.00. Addenda will be issued only to plan holders. In the event that the project is postponed or delayed a refund will be given for complete sets of plans and specifications returned to the Village of Bensenville.

#### 1.4 Bonds

- A. The successful bidder will be required to furnish Performance and Payment Bonds on forms provided in the Specifications and Contract Documents, each in an amount equal to 100 percent of the contract price.

#### 1.5 Pre-Bid Conference (Mandatory)

- A. A mandatory Pre-Bid Conference will be held on August 3, 2012 @ 9:00 AM at Village Hall 12 S. Center Street, Bensenville Illinois 60106. **The Village will disqualify the bid of any company that fails to attend the pre-bid conference.**

#### 1.6 Wage Rates

- A. Prevailing Wage Rates as defined by the Illinois Department of Labor for Cook County shall apply to this contract.
- B. The contractor shall pay prevailing wages in accordance with the federal Davis-Bacon wage provisions (40 USC 276a through 276a-5)

#### 1.7 Sales Tax Exemption

- A. The Village of Bensenville is exempt from the Illinois State municipal or county Retailers Occupation Tax, Service Occupation Tax, Use Tax, and Service Use Tax as described in Illinois Revised Statute Chapter 120. Bid prices shall not include the cost of such taxes.

#### 1.8 Rejection of Bids

- A. The Owner expressly reserves the right to reject any or proposals or to accept the one which appears to be in the best interest of the Owner. The Owner expressly reserves the right to waive any informalities or technical irregularities in a bid if to do so is in the best interest of the Owner.

Dated this August 1, 2012

By order of the President and Board of  
The Village of Bensenville, Illinois

END 00030

**SECTION 00050 - BIDDER CERTIFICATION**

The following affidavit must be completed, notarized and submitted with the bid package in compliance with Article 33 E of the "Criminal Code of 1961".

I (*Name*) \_\_\_\_\_, do hereby certify that:

1. I am (*Position*) \_\_\_\_\_ of (*Firm Name and Address*) \_\_\_\_\_

and have authority to execute this certification on behalf of the firm;

2. The above referenced firm is not barred from bidding on this contract as a result of a violation of either Section 33E-3, Bid-Rigging, or Section 33E-4, Bid Rotating, as set forth in Article 33E of the "Criminal Code of 1961".

Signature \_\_\_\_\_

Date \_\_\_\_\_

Corporate Seal

(where appropriate)

**REQUIRED NOTARIZATION**

On this \_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me appeared (*Name*) \_\_\_\_\_  
\_\_\_\_\_ to \_\_\_\_\_ me  
personally known, who, being duly sworn, did execute the foregoing affidavit, and did state  
that he or she was properly authorized by (*Name of Firm*)  
\_\_\_\_\_ to execute the affidavit and did so at his or her free act and  
deed.

Signature of Notary Public \_\_\_\_\_

Commission Expires \_\_\_\_\_

Notary Seal

END 00050

## SECTION 00100 - INSTRUCTIONS TO BIDDERS

### 1. Defined Terms.

1.1 Terms used in these Instructions to BIDDERS which are defined in the Standard General Conditions of the Construction Contract, NSPE-ACEC Document 1910-8, CSI 56465 (1996 edition) have the meanings assigned to them in the General Conditions. The term "SUCCESSFUL BIDDER" means the lowest, qualified, responsible BIDDER to whom OWNER (on the basis of OWNER'S evaluation as hereinafter provided) makes an award.

1.2 Bid shall be defined as the information submitted as all or part of the require RFP documents.

### 2. Copies of Bidding Documents.

2.1 Complete sets of the Bidding Documents are available in the number and for the purchase price, stated in the Notice or Invitation to Bid.

2.2 Complete sets of Bidding Documents shall 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.

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

### 3. Qualification of BIDDERS.

3.1 To demonstrate qualifications to perform the WORK, each BIDDER must be prepared to submit within five days of OWNER'S request written evidence of the types set forth in the Supplementary Conditions, such as financial data, previous experience and evidence of authority to conduct business in the jurisdiction where the Project is located. Each BID must contain evidence of BIDDER'S qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract.

### 4. Examination of Contract Documents and Site.

4.1 Before submitting a BID, each BIDDER must (a) examine the Contract Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress of performance of the WORK, (c) familiarize himself with federal, state and local laws, ordinances, rules and regulations that may in any manner effect cost, progress or performance of the WORK; (d) study and carefully correlate



BIDDER'S observations with the Contract Documents and (e) notify the Engineer of all conflicts, errors, ambiguities or discrepancies which Bidder has discovered in or between the Contract Documents and such other related documents.

4.2 When requested, OWNER will provide each BIDDER access to the site to conduct such investigations and tests as each BIDDER deems necessary for submission of his BID.

4.3 The lands upon which the WORK is to be performed, rights-of-way for access thereto and other lands designated for use by CONTRACTOR in performing the WORK are identified in the Supplementary Conditions, General Requirements or Drawings.

4.4 The submission of a BID will constitute an incontrovertible representation by the BIDDER that he has complied with every requirement of this Article 4 and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the WORK.

## 5. Interpretations.

5.1 All questions about the meaning or intent of the Contract Documents shall be submitted to ENGINEER in writing. Replies will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

## 6. Bid Security- 5% of the total bid amount

## 7. Contract Time.

7.1 The number of days within which, or the date by which, the WORK is to be completed (Contract Time) is set forth in the Bid Form and will be included in the Agreement.

## 8. Liquidated Damages.

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

## 9. Substitute Material and Equipment.

9.1 The Contract, if awarded, will be on the basis of material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications 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 submittal of any such application by CONTRACTOR and consideration by ENGINEER is set forth in paragraphs 6.7,

6.7.1 and 6.7.2 of the General Conditions that may be supplemented in the General Requirements.

#### 10. Subcontractors, etc.

- 10.1 If the Supplementary Conditions require the identity of certain Subcontractors and other persons and organizations to be submitted to OWNER in advance of the Notice of Award, the apparent SUCCESSFUL BIDDER, and any other BIDDER so requested, will within seven days after the day of the BID opening submit to OWNER a list of all Subcontractors and other persons and organizations (including those who are to furnish the principal items of material and equipment) proposed for those portions of the WORK as to which such identification is so required. An experience statement shall accompany such list with pertinent information as to similar projects and other evidence of qualification for each such Subcontractor, person and organization if requested by OWNER. If OWNER or ENGINEER after due investigation has reasonable objections to any proposed Subcontractor, other person or organization, either may before giving the Notice of Award request the apparent SUCCESSFUL BIDDER to submit an acceptable substitute without an increase in BID price. If the apparent SUCCESSFUL BIDDER declines to make any such substitution, the contract shall not be awarded to such BIDDER, but his declining to make any such substitution will not constitute grounds for sacrificing his BID Security. Any Subcontractor, other person or organization so listed and to whom OWNER or ENGINEER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER.
- 10.2 In contracts where the Contract Price is on the basis of Cost-of-the-WORK plus a fee, the apparent SUCCESSFUL BIDDER, prior to the Notice of Award, shall identify in writing to OWNER those portions of the WORK that such BIDDER proposes to subcontract and after the Notice of Award may only subcontract other portions of the WORK with OWNER'S written consent.
- 10.3 No CONTRACTOR shall be required to employ any Subcontractor, other person or organization against whom he has reasonable objection.

#### 11. Bid Form.

- 11.1 All information included within the RFP Package shall be submitted.
- 11.2 The Bid Form is included as part of the Project Documents. Additional copies may be obtained from ENGINEER.
- 11.3 Bid Forms must be completed in ink or by typewriter. The BID price of each item on the form must be stated in words and numerals; in case of a conflict, words will take precedence.

- 11.4 BIDS by corporations must be executed in the corporate name by the president or a vice-president or other corporate officer (accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
  - 11.5 BIDS by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.
  - 11.6 All names must be typed or printed below the signature.
  - 11.7 The BID shall contain an acknowledgment of receipt of all addenda (the numbers of which shall be filled in on the Bid Form).
  - 11.8 The address to which communications regarding the BID is to be directed must be shown.
12. Submission of Bids.
    - 12.1 BIDS shall be submitted at the time and place indicated in the "Invitation to BID" and shall be included in an opaque sealed envelope, marked with the Project title and name and address of the BIDDER and accompanied by the BID Security and other required documents. If the BID is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face thereof.
13. Modification and Withdrawal of Bids.
    - 13.1 BIDS 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 at any time prior to the opening of BIDS.
    - 13.2 If, within twenty-four 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 his BID, that BIDDER may withdraw his BID and the BID Security will be returned. Thereafter, that BIDDER will be disqualified from further bidding on the WORK.
14. Opening of BIDS.
    - 14.1 BIDS will be read aloud at the time and location noted within the advertisement or posted at Village Hall.

15. BIDS to Remain Open.

- 15.1 All BIDS shall remain open for thirty days after the day of the BID opening, but OWNER may, in his sole discretion, release any BID and return the BID Security prior to that date.

16. Award of Contract.

- 16.1 OWNER reserves the right to reject any and all BIDS, to waive any and all informalities and to negotiate contract terms with the SUCCESSFUL BIDDER, and the right to disregard all nonconforming, non-responsive or conditional BIDS. Discrepancies between words and figures will be resolved in favor of words. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- 16.2 In evaluating BIDS, OWNER shall consider the qualifications of the BIDDERS, whether or not the BIDS comply with the prescribed requirements, and alternates and unit prices if requested in the Bid Forms. It is OWNER'S intent to accept alternates (if any are accepted) in the order in which they are listed in the Bid Form but OWNER may accept them in any order or combination.
- 16.3 OWNER may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment) proposed for those portions of the WORK as to which the identity of Subcontractors and other persons and organizations must be submitted as provided in the Supplementary Conditions. Operating costs, maintenance considerations, performance data and guarantee of materials and equipment may also be considered by OWNER.
- 16.4 OWNER may conduct such investigations as he deems necessary to assist in the evaluation of any BID and to establish the responsibility, qualifications and financial ability of the BIDDERS, proposed Subcontractors and other persons and organizations to do the WORK in accordance with the Contract Documents to OWNER'S satisfaction within the prescribed time.
- 16.5 OWNER reserves the right to reject the BID of any BIDDER who does not pass any such evaluation to OWNER'S satisfaction.
- 16.6 If the contract is to be awarded it will be awarded to the best qualified, responsive, responsible BIDDER whose evaluation by OWNER indicates that the award will be in the best interests of the Project.
- 16.7 If the contract is to be awarded, OWNER will give the SUCCESSFUL BIDDER a Notice of Award within ninety days after the day of the BID opening.

## 17. Performance and Payment Bonds.

- 17.1 Paragraph 5.1 of the General Conditions and the Supplementary Conditions set forth OWNER'S requirements as to Performance and Payment Bonds. When the SUCCESSFUL BIDDER delivers the executed Agreement to OWNER it shall be accompanied by the required Performance and Payment Bonds.

## 18. Signing of Agreement

- 18.1 When OWNER gives a Notice of Award to the SUCCESSFUL BIDDER, at least three unsigned counterparts of the Agreement and all other Contract Documents will accompany it. Within fifteen days thereafter CONTRACTOR shall sign and deliver at least three counterparts of the Agreement to OWNER with all other Contract Documents attached. Within ten days thereafter OWNER will delivery all fully signed counterparts to CONTRACTOR. ENGINEER will identify those portions of the Contract Documents not fully signed by OWNER and CONTRACTOR and such identification shall be binding on all parties.

END 00100

**SECTION 00300 - PROPOSAL**

To the Director of Village of Bensenville, Illinois:

1. Proposal of (*Name and Address of Bidder*) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ for the improvement designated below.

- A. The proposed improvement consists primarily but is not limited to the following:
1. Replacement of existing 10" DIWM with 12" PVC Watermain.
  2. Testing of all proposed improvements.
  3. Restoration of all disturbed areas.
2. The plans for the proposed improvement are those prepared by Primera Engineers, Ltd., 100 S. Wacker Drive, Suite 700, Chicago, IL 60606. Said plans are designated as Engineering Plans for "County Line Road Watermain Replacement – from Green Street to Jefferson Street" in Bensenville, Illinois and which cover the work described in Paragraph 1 above for the price of:

**Sum (in words)** \_\_\_\_\_ **Dollars and**  
 \_\_\_\_\_ **Cents**

**Sum (in figures) \$** \_\_\_\_\_

**The low bidder will be determined by either the Total for the Base Bid.**

**SCHEDULE OF PRICES**

	<b>ITEM DESCRIPTION</b>	<b>TOTAL</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>TOTAL COST</b>
<b>Watermain and Appurtenances</b>					
1	6" DIP WM (Class 52)	28	LF		
2	12" PVC WM (AWWA C-900)	1,200	LF		
3	Trench Backfill	250	CU YD		
4	Fire Hydrant and Aux Valve & Box Assembly Complete	3	EA		
5	Remove Fire Hydrant and Aux Valve & Box and Salvage	3	EA		
6	Water Service Line, 1-1/2"	234	LF		
7	Water Service Line, 1-1/2" (Bored)	400	LF		
8	1-1/2" Corporation Stop w/ Strap Saddle	9	EA		
9	12" Gate Valve and Vault (5' Dia)	3	EA		
10	6" Gate Valve and Vault (5' Dia)	2	EA		
11	Remove Existing B-Box and Cap Service	1	EA		
12	1-1/2" B-Box	9	EA		
13	Watermain Testing and Chlorination	1	LSUM		
14	Remove Existing Valve Vault & Frame and Lid	3	EA		
15	Remove Existing Valve Vault Frame and Lid	1	EA		
16	Remove Existing 10" Watermain	73	LF		
17	Remove Existing 12" Watermain	10	LF		
18	Abandon and Fill Existing 10" Watermain	34	CU YD		
<b>Bends, Fittings and Connections</b>					
19	12" 45° Bend (D.I.)	15	EA		
20	12" 22 1/2° Bend (D.I.)	6	EA		
21	12" 11 1/4° Bend (D.I.)	2	EA		
22	6" 11 1/4° Bend (D.I.)	1	EA		
23	Miscellaneous Fittings	1	LSUM		
24	12" Non-Pressure Connection	2	EA		
25	6" Non-Pressure Connection	2	EA		
26	12"x12"x12" Tee (D.I.)	1	EA		
27	12"x12"x6" Tee (D.I.)	5	EA		
28	10" Watermain Plug	6	EA		
29	Temporary Plug for Main Testing	2	EA		
<b>Watermain Protection</b>					
30	Watermain Quality Casing 16"	56	LF		
31	Watermain Quality Casing 10"	14	LF		
<b>Subtotal</b>					

July 27, 2012

00300

County Line Road  
Watermain Replacement

	ITEM DESCRIPTION	TOTAL	UNIT	UNIT PRICE	TOTAL COST
<b>Restoration</b>					
32	Furnish and Place Topsoil, 4"	1,830	SQ YD		
33	Salt Tolerant Sod	1,830	SQ YD		
34	Fertilizer	68	Pound		
35	Class B Patch, 12", Method I, (High Early Strength Concrete)	124	SQ YD		
36	Class D Patch, 12"	19	SQ YD		
37	Removal and Replacement of Concrete Driveway Pavement	184	SQ YD		
38	Removal and Replacement of Bituminous Driveway Pavement	131	SQ YD		
39	Driveway Pavement Removal	54	SQ YD		
40	Remove & Replace Concrete Curb and Gutter	75	LF		
41	Remove & Reset Street Signs	5	EA		
<b>Miscellaneous</b>					
42	Mobilization	1	LSUM		
43	Traffic Control	1	LSUM		
44	Changeable Message Sign	6	CAL MO		
45	Temporary Pavement Marking Tape, Type 3, 24"	43	LF		
46	Exploration Trenching	1	LSUM		
47	Inlet Filters	9	EA		
48	Additional Hauling Surcharge, Special Waste	5	LOAD		
<b>Subtotal</b>					
<b>Subtotal from Previous Page</b>					
<b>TOTAL</b>					



SSRBC      *Standard Specifications for Road and Bridge Construction in Illinois – Illinois Department of Transportation, Current Edition.*

SSWSMC    *Standard Specifications for Water and Sewer Main Construction in Illinois, Illinois Society of Professional Engineers, etal. Current Edition.*

3. In submitting this Proposal, the undersigned acknowledges receipt of the following addenda: \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , and \_\_\_\_\_ .
4. In submitting this Proposal, the undersigned declares that the only persons or parties interested in the Proposal as principals are those named herein and that the Proposal is made without collusion with any person, firm or corporation.
5. The undersigned further declares that he has carefully examined the Proposal, Plans, Specifications, Agreement and Contract Bond included in the Specifications and Special Provisions, and that he has inspected in detail the site of the proposed work, and that he has familiarized himself with all of the local conditions affecting the Contract and the detailed requirements of construction, and understands that in making this proposal, he waives all right to plead any misunderstanding regarding the same.
6. The undersigned further understands and agrees that, if this proposal is accepted, he is to furnish and provide all necessary machinery, tools, apparatus and other means of construction, and to do all of the work, and to furnish all of the materials specified in the contract, except such materials as are to be furnished by the Owner in the manner and at the time therein prescribed, and in accordance with the requirements therein set forth.
7. The undersigned further agrees to execute a contract for this work and present the same to the Owner within fifteen (15) days after the date of notice of the award of the contract to him.
8. The undersigned further agrees that he and his surety will execute and present within fifteen (15) days after the date of notice of the award of contract, a contract bond satisfactory to and in the form prescribed by the Owner, in the penal sum of the full amount of the contract, guaranteeing the faithful performance of the work in accordance with the terms of the contract.
9. The undersigned further agrees to begin work not later than ten (10) days after the execution and approval of the Contract and Contract Bond, and receipt of "Notice to Proceed" unless otherwise authorized or directed by the Owner and to prosecute the work in such manner and with sufficient materials, equipment, and labor as will insure its completion within the time limit specified herein, it being understood and agreed that the completion within the time limit is an essential part of the contract. **The undersigned agrees substantial completion of the work shall be attained within ninety (90) calendar days and final completion within one hundred twenty days (120) after the date of the "Notice to Proceed".** In case of failure to complete the work within the time named herein or within such extra time as may have been allowed by extensions, the undersigned agrees

that the Owner shall withhold, from such sums as may be due him under the terms of this contract, the costs set forth in the specifications, which costs shall be considered and treated not as a penalty, but as damages due the Owner from the undersigned by reason of inconvenience to the Owner. The added cost of Engineering and supervision, additional finance charges, and other items which have caused an expenditure of Owner's funds resulting from the failure of the undersigned to complete the work within the time specified in the contract can constitute such damages.

10. Provisions for Liquidated Damages are set forth in the Agreement.
11. If this proposal is accepted and the undersigned shall fail to execute a Contract and Contract Bond as required herein, it is hereby agreed that the amount of the bond, check or draft shall become the property of the Owner and shall be considered as payment of damages due to delay and other causes suffered by Owner because of the failure to execute said Contract and Contract Bond; otherwise said bond, check or draft shall be returned to the undersigned.
12. By submission of the Bid, each bidder certifies, and in the case of a joint bid each party thereto certifies as to his own organization, that in connection with the bid.
  - A. The prices in the bid have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor.
  - B. Unless otherwise required by law, the prices which have been quoted in the bid have not knowingly been disclosed by the bidder, prior to opening, directly or indirectly to any other bidder or to any competitor; and
  - C. No attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition.
13. Each person signing the bid shall certify that:
  - A. He is the person in the bidder's organization responsible for the decision as to the prices being bid and that he has not participated, and will not participate, in any action contrary to subsection (12) above; or
  - B. He is not the person in the bidder's organization responsible for the decision as to the prices being bid, but that he has been authorized to act as agent for the persons responsible for such decision in certifying that such persons have not participated, and will not participate, in any action contrary to subsection (12) above, and as their agent shall so certify. He shall also certify that he has not participated, and will not participate, in any action contrary to subsection (12) above.

(If an Individual) Signature of Bidder: \_\_\_\_\_ (SEAL)

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

(If a Co-partnership) Firm Name \_\_\_\_\_ (SEAL)

Signature of Bidder \_\_\_\_\_

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

(Insert Names and addresses of all members of the Firm)

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

(If a Corporation) Corporate Name \_\_\_\_\_ (SEAL)

Signature \_\_\_\_\_  
*President*

Attested by: \_\_\_\_\_  
*Secretary*

Business Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Insert Names of Officers) President \_\_\_\_\_

Secretary \_\_\_\_\_

Treasurer \_\_\_\_\_

**CERTIFICATE OF NON-DISQUALIFICATION  
UNDER IL. COMPILED STATUTES, CH. 720, SEC. 33E-11**

The undersigned, upon being first duly sworn, hereby certifies to the Village of Bensenville, DuPage County, Illinois, that

\_\_\_\_\_

*(Contractor)*

is not barred from contracting with any unit of State or local government, as a result of a violation of Ch. 720, Sec. 33E-4 of the Illinois Revised Statutes.

\_\_\_\_\_  
*Name of Contractor*

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Print/Type Name*

\_\_\_\_\_  
*Title*

Subscribed and sworn to before me this \_\_\_ day of \_\_\_\_\_, 2012.

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

\_\_\_\_\_  
*Commission Expires*

*Notary Seal*

NOTE TO BIDDER: Anyone who makes a false statement, material to this Certification, commits a Class 3 Felony under Ch. 720, Sec. 33E-11(b) of the Illinois Compiled Statutes.

July 27, 2012

00300

County Line Road  
Watermain Replacement

**CERTIFICATE OF COMPLIANCE OF  
ILLINOIS COMPILED STATUTES CH. 65, SEC 11-42.1**

The undersigned, upon being first duly sworn, hereby certifies to the Village of Bensenville, DuPage County, Illinois, that

\_\_\_\_\_  
*(Contractor)*

is not currently delinquent in the payment of any tax administered by or owed to the Illinois Department of Revenue, or otherwise in default upon any such tax as defined under Chapter 65, Section 11-42.1, Illinois Compiled Statutes.

\_\_\_\_\_  
*Name of Contractor*

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Print/Type Name*

\_\_\_\_\_  
*Title*

Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 2012.

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

\_\_\_\_\_  
*Commission Expires*

*Notary Seal*

July 27, 2012

00300

County Line Road  
Watermain Replacement

## CERTIFICATE OF COMPLIANCE WITH SAFETY STANDARDS

The undersigned, upon being first duly sworn, hereby certifies to the Village of Bensenville, DuPage County, Illinois, that

\_\_\_\_\_  
*(Contractor)*

shall comply with all local, state and federal safety standards.

\_\_\_\_\_  
*Name of Contractor*

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Print/Type Name*

\_\_\_\_\_  
*Title*

Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 2012.

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

\_\_\_\_\_  
*Commission Expires*

*Notary Seal*

July 27, 2012

00300

County Line Road  
Watermain Replacement

**CERTIFICATE OF COMPLIANCE WITH PUBLIC ACT 87-1257  
OF THE ILLINOIS HUMAN RIGHTS ACT**

The undersigned, upon being first duly sworn, hereby certifies to the Village of Bensenville, DuPage County, Illinois, that

\_\_\_\_\_  
*(Contractor)*

complies with the Illinois Human Rights Act as amended by Section 2 - 105, Public Act 87 - 1257 in relation to employment and human rights.

\_\_\_\_\_  
*Name of Contractor*

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Print/Type Name*

\_\_\_\_\_  
*Title*

Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 2012.

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

\_\_\_\_\_  
*Commission Expires*

*Notary Seal*

July 27, 2012

00300

County Line Road  
Watermain Replacement

**VILLAGE OF BENSENVILLE, ILLINOIS  
FAIR EMPLOYMENT PRACTICES AFFIDAVIT OF COMPLIANCE**

NOTE: THIS AFFIDAVIT MUST BE EXECUTED AND SUBMITTED WITH THE SIGNED BID FORM. NO BIDS WILL BE ACCEPTED BY THE BOARD OF TRUSTEES OF TRICOM DISPATCH CENTER UNLESS SAID AFFIDAVIT IS SUBMITTED CONCURRENTLY WITH THE BID.

\_\_\_\_\_  
being first duly sworn, deposes and says that he is the \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_  
(Title or Officer)

and that he has authority to make the following affidavit; that he has knowledge of the Village of Bensenville's standards relating to Fair Employment Practices and knows and understands the contents thereof;

that he certifies hereby that it is the policy of \_\_\_\_\_  
(Name of Company)

to recruit, hire, train, upgrade, promote and discipline its employees without regard to race, creed, color, religion, age, sex or physical or mental handicap; and that the company has and enforces policies which prohibit sexual harassment in the workplace.

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

SUBSCRIBED and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 2012

\_\_\_\_\_  
(Notary Public)

END 00300

July 27, 2012

00300

County Line Road  
Watermain Replacement



## SECTION 00500 - AGREEMENT

THIS AGREEMENT is dated as the \_\_\_ day of \_\_\_\_\_ XXXX \_\_\_\_\_ in the year 2012 by and between Village of Bensenville (hereinafter called OWNER) and \_\_\_\_\_ (hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

### Article 1. WORK

CONTRACTOR shall complete all WORK as specified or indicated in the Contract Documents. WORK is generally described as follows:

The proposed improvement consists primarily of the following:

1. Replacement of existing 10" DIWM with 12" PVC Watermain.
2. Testing of all proposed improvements.
3. Restoration of all disturbed areas.

### Article 2. ENGINEER

Primera Engineers, Ltd. of Chicago, Illinois (hereinafter called ENGINEER) will assume all duties and responsibilities and will have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the WORK in accordance with the Contract Documents.

### Article 3. CONTRACT TIME

All WORK shall be substantially complete within **The undersigned agrees substantial completion of the work shall be attained within ninety (90) calendar days and final completion within one hundred twenty days (120) after the date of the "Notice to Proceed"**. as provided in Paragraph 2.3 of the General Conditions. All WORK shall be at Final Completion and ready for final payment in accordance with Paragraph 14.13 of the General Conditions before the final completion date.

3.1 Liquidated Damages. OWNER and CONTRACTOR 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 time specified in Paragraph 3.1 above, plus any extensions thereof allowed in accordance with Article 12 of the General 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 dollars and zero cents (\$1,500.00) for each day that expires after the time specified in Paragraph 3 for Substantial Completion until the WORK is accepted by the OWNER.

- 3.2 The contract time may be changed only by a change order. For each change order, CONTRACTOR shall submit to the Engineer for review, sufficient reason for delay to enable the Engineer to ascertain the necessity and reasonableness of the delay, and the allow ability and eligibility of delay proposed.

#### Article 4. CONTRACT PRICE

4.1 OWNER shall pay CONTRACTOR for performance of the WORK in accordance with the Contract Documents in current funds as follows:

- a. Payment shall be made on the basis of the monthly estimates of partial completion, approved by the ENGINEER, except as otherwise provided in the detailed specifications for each class of WORK.

- 4.2 The contract price may be changed only by a change order. For each change order, CONTRACTOR shall submit to the Engineer for review, sufficient cost and pricing data to enable the Engineer to ascertain the necessity and reasonableness of costs and amounts proposed, and the allow ability and eligibility of costs proposed.

#### Article 5. PAYMENT PROCEDURES

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

5.1 Progress Payments. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as recommended by ENGINEER, on or about the second Wednesday of each month during construction as provided below. All progress payments will be on the basis of the progress of the WORK estimated by the ENGINEER.

5.1.1 Prior to Substantial Completion progress payments will be in an amount equal to 90% of the WORK completed, and 90% of materials and equipment not incorporated in the WORK but delivered and suitably stored, less in each case the aggregate of payments previously made.

5.1.2 Upon Substantial Completion and thereafter, OWNER shall pay an amount sufficient to increase total payments to CONTRACTOR to 95% of the Contract Price, less such amounts as ENGINEER shall determine in accordance with Paragraph 14.7 of the General Conditions.

5.2 Final Payment. Upon final completion and acceptance of the WORK in accordance with Paragraph 14.13 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said Paragraph 14.13.

## Article 6. CONTRACTOR'S REPRESENTATIONS

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

6.1 CONTRACTOR has familiarized himself with the nature and extent of the Contract Documents, WORK, locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the WORK.

6.2 CONTRACTOR has studied carefully all available reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the WORK which were relied upon by ENGINEER in the preparation of the Drawings and Specifications and which have been identified in the Supplementary Conditions.

6.3 CONTRACTOR has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to in Paragraph 6.2 as he deems necessary for the performance of the WORK at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

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

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

6.6 CONTRACTOR shall warrant that no person or selling agency has been employed or retained to solicit or secure the contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee. For breach or violation of this warranty, the OWNER shall have the right to annul the contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

6.7 CONTRACTOR shall submit a certification of compliance with Federal Executive Order 12549 regarding debarment, suspension and other responsibility.

6.8 The award or execution of all subcontracts by a prime CONTRACTOR and the procurement and negotiation procedures used by such prime CONTRACTOR in awarding or executing such subcontracts shall comply with:

6.8.1 All provisions of federal, State and local law,

- 6.8.2 All provisions of this Part with respect to fraud and other unlawful or corrupt practices;
- 6.8.3 All provisions of this Part with respect to access to facilities, records and audit or records; and
- 6.8.4 The provision requiring a certification of compliance with federal Executive Order 12549 regarding debarment, suspension and other responsibility matters.

## Article 7. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR are attached to this Agreement, made a part hereof and consist of the following:

- 7.1 This Agreement (Pages 1 to 6, inclusive).
- 7.2 Exhibits to this Agreement
- 7.3 Contract, Payment and Performance Bonds
- 7.4 Notice of Award.
- 7.5 Notice to Proceed.
- 7.6 General Conditions.
- 7.7 Supplementary Conditions.
- 7.8 Specifications bearing the title "County Line Road Watermain Replacement – Green Street to Jefferson Street".
- 7.9 Drawings, consisting of "County Line Road Watermain Replacement – Green Street to Jefferson Street" as prepared by Primera Engineers, Ltd., to , inclusive.
- 7.10 Addenda No's
- 7.11 CONTRACTOR's Proposal (Pages 1 to 12, inclusive).
- 7.12 Documentation submitted by CONTRACTOR prior to Notice of Award.
- 7.13 Any modification, including Change Orders, duly delivered after execution of Agreement.

There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be altered, amended or repealed by a Modification (as defined in Section 1 of the General Conditions).

Article 8. MISCELLANEOUS

- 8.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions shall have the meanings indicated in the General Conditions.
- 8.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.
- 8.3 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.
- 8.4 All claims, counter-claims, disputes and other matters in question between OWNER and the CONTRACTOR arising out of, or relating to this subagreement or the breach of it will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State of Illinois.

Article 9. OTHER PROVISIONS

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

This Agreement shall become effective on \_\_\_\_\_, 2012.

Village of Bensenville, Il

by \_\_\_\_\_  
Frank Soto, President

*(Corporate Seal)*

Attested

\_\_\_\_\_

*(Corporate Seal)*

Village of Bensenville  
717 E Jefferson Street  
Bensenville, Il 60106

by \_\_\_\_\_  
President

*(Corporate Seal)*

Attested

\_\_\_\_\_

*(Notary Seal)*

Address for Giving Notices

END 00500

**SECTION 00510 - NOTICE OF AWARD**

Date: \_\_\_\_\_, 2012

To: \_\_\_\_\_

Project: County Line Road Watermain Replacement

The OWNER has considered the BID submitted by you for the above described WORK in response to its Advertisement for Bids and Information for Bidders.

You are hereby notified that your bid has been accepted for items in the amount of \$\_\_\_\_\_. You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S PERFORMANCE BOND, PAYMENT BOND and CERTIFICATES OF INSURANCE within ten (10) calendar days from the date of this Notice of Award.

If you fail to execute said agreement and to furnish said BONDS within ten (10) days from the date of this Notice, OWNER will be entitled to consider all of your rights arising out of the OWNER'S acceptance of your BID as abandoned, and as a forfeiture of your BID BOND. The OWNER will be entitled to any other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2012.

\_\_\_\_\_  
Frank Soto, Village President  
Village of Bensenville, Illinois

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE OF AWARD is hereby acknowledged by \_\_\_\_\_  
this the \_\_\_\_\_ day of \_\_\_\_\_, 2012.

Name \_\_\_\_\_

Title \_\_\_\_\_

END 00510

**SECTION 00520 - NOTICE TO PROCEED**

Date: \_\_\_\_\_

To: \_\_\_\_\_

Project: County Line Road Watermain Replacement

Job Number:

Owner: Village of Bensenville

You are hereby notified that the contract time for the above referenced project commences to run on \_\_\_\_\_, 2012. On this date you are to start performing your obligations under the Contract Documents. In accordance with Article 3 of the Agreement the dates of Substantial Completion of the work shall be attained within ninety (90) calendar days and final completion within one hundred twenty days (120) after the date of the "Notice to Proceed".

You are required to return an acknowledged copy of this NOTICE TO PROCEED to the OWNER.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2012

\_\_\_\_\_  
Frank Soto, Village President  
Village of Bensenville, Illinois

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by \_\_\_\_\_ this the \_\_\_\_\_ day of \_\_\_\_\_, 2012.

Name \_\_\_\_\_

Title \_\_\_\_\_

END 00520

July 27, 2012

00520

County Line Road  
Watermain Replacement



**SECTION 00530 - CHANGE ORDER**

Change Order No: \_\_\_\_\_

Date: \_\_\_\_\_

Date of Agreement: \_\_\_\_\_

Project: County Line Road Watermain Replacement

Job Number:

Owner: Village of Bensenville  
717 E. Jefferson Street  
Bensenville, IL 60106

Contractor:

The following changes are hereby made to the CONTRACT DOCUMENTS:

Justification:

Original Contract Price	\$ _____
Amount of Previous Change Order(s)	_____
Current Contract Price adjusted by Previous Change Order(s)	_____
Change in Contract Price Due to this Change Order	_____
Contract Price Including this Change Order	_____

Change to Contract Time	_____	Calendar Days
The Contract Time will be adjusted by	_____	Calendar Days
The date for completion of all work will be	_____	Calendar Days

Approvals:

_____ <i>Contractor</i>	_____ Primera Engineers, Ltd.	_____ <i>Village of Bensenville</i>
----------------------------	----------------------------------	----------------------------------------

END 00530

**SECTION 00610 - PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS that

\_\_\_\_\_ (Name of Contractor)

\_\_\_\_\_ (Address of Contractor)

\_\_\_\_\_ hereinafter called Principal, and  
(Corporation Partnership or Individual)

\_\_\_\_\_ (Name of Surety)

\_\_\_\_\_ (Address of Surety)

hereinafter called Surety, are held and firmly bound unto \_\_\_\_\_

Village of Bensenville  
(Name of Owner)

717 East Jefferson Street Bensenville, IL 60106  
(Address of Owner)

hereinafter called OWNER, in the penal sum of \_\_\_\_\_

\_\_\_\_\_ Dollars, \$(\_\_\_\_\_).

in lawful money of the UNITED STATES OF AMERICA for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the \_\_\_\_ day of \_\_\_\_\_ 2012 a copy of which is hereto attached and made a part hereof for the construction of:

## County Line Road Watermain Replacement

## BENSENVILLE, ILLINOIS

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alternation or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_ counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of 2012.

ATTEST:

\_\_\_\_\_  
PRINCIPAL

\_\_\_\_\_  
PRINCIPAL SECRETARY

(SEAL)

\_\_\_\_\_  
WITNESS AS TO PRINCIPAL

\_\_\_\_\_  
ADDRESS OF WITNESS

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

\_\_\_\_\_  
SURETY:

\_\_\_\_\_  
ATTEST:

\_\_\_\_\_  
SURETY SECRETARY:

(SEAL)

\_\_\_\_\_  
WITNESS AS TO SURETY BY ATTORNEY IN FACT

\_\_\_\_\_  
ADDRESS OF WITNESS

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

NOTE: Date of BOND must not be prior to date of Contract.  
If CONTRACTOR is Partnership, all partners should execute BOND.

*IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.*

END 00610

**SECTION 00620 - PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS: that

---

hereinafter called Principal, and

---

(Address of Surety)

hereinafter called SURETY, are held and firmly bound unto the Village of Bensenville Illinois, hereinafter called the OWNER, in the penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain Contract with OWNER, dated the \_\_\_\_\_ day of \_\_\_\_\_, 2012, for the construction of:

**County Line Road Watermain Replacement  
Village of Bensenville, Illinois**

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such Contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used on connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said SURETY, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to work to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the WORK or to the specifications.

PROVIDED, FURTHER, that no final settlement between OWNER and CONTRACTOR shall bridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in four counterparts, each one of which shall be deemed an original, this \_\_\_\_\_ day of \_\_\_\_\_, 2012

July 27, 2012

00620

County Line Road  
Watermain Replacement

·  
ATTEST:

\_\_\_\_\_  
PRINCIPAL

\_\_\_\_\_  
PRINCIPAL SECRETARY

(SEAL)

\_\_\_\_\_  
WITNESS AS TO PRINCIPAL

\_\_\_\_\_  
ADDRESS OF WITNESS  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
SURETY:

\_\_\_\_\_  
ATTEST:

\_\_\_\_\_  
SURETY SECRETARY:

(SEAL)

---

OWNER'S ATTORNEY

---

ADDRESS OF ATTORNEY

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IMPORTANT: Surety companies executing bonds must hold certificates of authority as acceptable sureties and be authorized transact business in the State of Illinois.

END 00620



**SECTION 00630 - INSURANCE****CERTIFICATE OF INSURANCE**

COMPANY \_\_\_\_\_ DATE \_\_\_\_\_

THIS IS TO CERTIFY TO \_\_\_\_\_  
(Name of Certificate-Holder)OF \_\_\_\_\_  
(Address of Certificate-Holder)

that on the above date the following described insurance policies, issued by this Company, are in full force and effect:

Name of Insured \_\_\_\_\_

Address of Insured \_\_\_\_\_

TYPE OF INSURANCE		POLICY NUMBER	POLICY PERIOD	LIMITS OF LIABILITY	
				BODILY INJURY	PROPERTY DAMAGE
WORKMEN'S COMPENSATION				STATUTORY	NO COVERAGE
EMPLOYEE'S LIABILITY					NO COVERAGE
COMPREHENSIVE GENERAL LIABILITY				EACH OCCURRENCE AGGREGATE	EACH OCCURRENCE
COMPREHENSIVE AUTOMOBILE LIABILITY				EACH PERSON EACH OCCURRENCE	EACH OCCURRENCE
AUTO LIABILITY	OWNED AUTOS			EACH PERSON EACH OCCURRENCE	EACH OCCURRENCE
	HIRED AUTOS			EACH PERSON EACH OCCURRENCE	EACH OCCURRENCE
	OTHER NON-OWNED AUTOS			EACH PERSON EACH OCCURRENCE	EACH OCCURRENCE
OTHER					
DESCRIPTION AND LOCATION OF OPERATIONS					

ABOVE POLICIES INCLUDE THE FOLLOWING COVERAGES

- ♣ PREMISES OPERATIONS – ESCALATORS
- ♣ CONTRACTORS PROTECTIVE INDEPENDENT CONTRACTORS
- ♣ PRODUCTS – COMPLETED OPERATIONS
- ♣ PERSONAL INJURY (FALSE ARREST, LIBEL WRONGFUL EVICTION, ETC.)
- ♣ BROAD FORM P.D.
- ♣ XCU EXCLUSIONS DELETED WHERE APPLICABLE
- ♣ CONTRACTUAL LIABILITY WITH RESPECT TO HOLD HARMLESS AGREEMENT AS STATED IN THE CONTRACT DOCUMENTS

IN THE EVENT OF MATERIAL CHANGE OR CANCELLATION AT LEAST (30) DAYS ADVANCE NOTICE WILL BE GIVEN TO WRITING TO CERTIFICATE HOLDER BY REGISTERED MAIL.

NAME OF INSURANCE COMPANY	NAME OF AGENCY	ISSUED AT
ADDRESS	AUTHORIZED AGENT	DATE

**THE VILLAGE OF BENSENVILLE AND PRIMERA ENGINEERS, LTD. ALONG WITH ALL THEIR REPRESENTATIVES AND AGENTS SHALL BE INSURED AS PRIMARY AND NON-CONTRIBUTORY.**

END 00630

**SECTION 00700 - STANDARD GENERAL CONDITIONS**

## SECTION 00800 - SUPPLEMENTARY CONDITIONS

### PART 1 GENERAL

#### 1.1 Additions, Deletions and Revisions

The following supplements shall modify, change, delete from, and/or add to the "Standard General Conditions of the Construction Contract" NSPE-ACEC-ASCE Document 1910-8-A1/A2, (1996 editions). Where any article, paragraph, or subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such article, paragraph, or subparagraph shall remain in effect and the supplementary provisions shall be considered as added thereto. Where any article, paragraph, or subparagraph in the General Conditions is amended, voided, or superseded by any of the following paragraphs, the provisions of such article, paragraph, or subparagraph so amended, voided, or superseded shall remain in effect.

##### A. Article 1 – Definitions

1. Contract Time: Amend paragraph defining "Contract Time" to read as follows:

Contract time shall be the time period commencing on the date of issuance of "Notice to Proceed" and concluding after expiration of the number of days specified in the Contract Documents by the Contractor for the satisfactory completion of the work.

2. Owner: Amend paragraph defining "Owner" to read as follows:

Whenever the word "Owner" is used in the Contract Documents, it shall be understood to be the Village of Bensenville, Illinois, and duly authorized representatives thereof.

3. Engineer: Amend paragraph defining "Engineer" to read as follows:

Whenever the word "Engineer" is used in the Contract Documents, it shall be understood to be Primera Engineers, Ltd., and duly authorized representative thereof.

##### B. Article 2 - Preliminary Matters

###### SC 2.06 Pre-Construction Conference:

Add new paragraphs immediately after Paragraph 2.06 of the General Conditions which are to read as follows:

SC 2.06.1: A pre-construction conference shall be held as soon as possible after Award of Contract and before Work is started. The conference will be held at a location selected by Owner. The conference will be attended by:

- 1) Contractor's Office Representative.
- 2) Contractor's Resident Superintendent.
- 3) Any Subcontractor's or Supplier's representatives whom Contractor may desire to invite or Engineer may request.
- 4) Engineer's Representatives.
- 5) Owner's Representatives.
- 6) Local Utilities Representatives (if applicable).

SC 2.06.2: A suggested format would include, but not be limited to the following subjects:

- 1) Presentation of a proposed construction schedule by Contractor.
- 2) Check of required bonds and insurance certifications prior to notice to proceed.
- 3) Chain of command, direction of correspondence, and coordinating responsibility between Contractor.

#### C. Article 5 - Bonds and Insurance

1. SC 5.02: Add the following language at the end of Paragraph 5.02 of the General Conditions.

In addition, no further progress payments under the Agreement will be made by Owner until Contractor complies with the provisions of this Article.

2. SC.5.04: Contractor's Liability Insurance

The Contractor agrees that he will before the time of beginning work hereunder, take out and keep in force at all times for the duration of all work agreed to be done hereunder, policies of insurance with minimum limits as required under this Article with an insurer approved by Village of Bensenville. This insurance shall cover all operations under this Contract, whether such operations be by himself or by any subcontractor or material men or anyone directly employed by them.

SC-5.04 A: Limits of liability for insurance required by paragraph 5.04 of General Conditions shall provide coverage for not less than following amounts or greater where required by laws and regulations:

Workers' Compensation, etc. under Paragraphs 5.04, Article A, Items 1 and 2 of General Conditions:

1.) State:	Statutory
2.) Applicable Federal (Longshoreman's)	Statutory
3.) Employer's Liability:	
Each Accident	\$500,000.00
Disease (policy limit)	\$500,000.00
Disease (each employee)	\$500,000.00

CONTRACTOR's Commercial/General Liability Insurance under paragraphs 5.04 Article A, Items 3 through 5 of General Conditions (including Premises - Operations; Independent CONTRACTOR's Protection; Products and Completed Operations; Broad Form Property Damage).

General Aggregate (except products-completed operations)	\$2,000,000.00
Products (completed operations aggregate)	\$2,000,000.00
Personal/Advertising Injury (per person/organization)	\$1,000,000.00
Each Occurrence (Bodily Injury and Property Damage)	\$1,000,000.00
Fire Damage (Any One Fire)	\$50,000.00
Limit per Person Medical Expense (Any One Person)	\$5,000.00

Personal Injury Liability Coverage will include claims arising out of Employment, excluding wrongful termination.

Property Damage Liability Insurance will provide Coverage for Explosion, Collapse and Underground Damages.

Umbrella Liability (General Aggregate)	\$5,000,000.00
Umbrella Liability (Each Occurrence)	\$5,000,000.00

Comprehensive Motor Vehicle Liability under Paragraph 5.04, Article A, Item 6 of General Conditions (Combined Single Limit for Bodily Injury and Property Damage Liability, Each Accident)	\$1,000,000.00
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SC-5.04 B: Additional liability coverage for OWNER and ENGINEER will be provided as follows:

With respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6

inclusive, include as additional insureds the Village of Bensenville and Primera Engineers, Ltd.

The Contractual Liability coverage required by Paragraph 5.04 Article B, Item 4 of the General Conditions shall provide coverage for not less than the following amounts.

- |                                                         |                |
|---------------------------------------------------------|----------------|
| 1.) General Aggregate                                   | \$2,000,000.00 |
| 2.) Each Occurrence (Bodily Injury and Property Damage) | \$1,000,000.00 |

3. SC 5.04.1: The Contractor shall in all respects comply with any and all statutes and ordinances which impose any duty or obligation upon either the Contractor or Village of Bensenville with respect to the performance of any part of the work hereby undertaken by the Contractor and the Contractor agrees to do and perform any and all acts required by any statutes or ordinances to be performed by either the Contractor or Village of Bensenville with respect to such work. The Contractor hereby agrees to hold Village of Bensenville its employees, agents and Primera Engineers, Ltd. harmless and to indemnify them against and to reimburse them for any loss, damage, costs or expenses, together with reasonable attorney's fees, which they might or may incur by reason of failure of the Contractor to observe and comply with any and all such statutes and ordinances.
4. SC 5.04.2: The Contractor shall also indemnify and hold harmless the Village of Bensenville, its agents, Primera Engineers, Ltd., from and against any and all claims and demands whatsoever, including cost, litigation expenses, counsel fees and liabilities incurred in connection therewith, arising out of injury to, or death of, any person or persons whatsoever, or damage to property of any kind by whomsoever owned, caused in whole or in part by the acts or omissions of the Contractor any Subcontractor, the Contractor's material men, or any other person directly or indirectly employed by them, or any of them, while engaged in the performance of the work or any activity associated therewith or relative thereto.
5. Applicable to All Policies

All policies shall be written with insurance companies licensed to do business in the State of Illinois and having a rating of not less than A VI, according to the latest edition of the A.M. Best Co.

Certificate of insurance evidencing the required coverages shall be submitted to the Owner and Engineer prior to commencing work on the project.

To the extent of Contractor's indemnification liability herein, the Contractor shall include Village of Bensenville and Primera Engineers, Ltd., their partners, officers, agents and employees as insured to the extent of Contractor's

indemnification herein on both General Liability, Automotive Liability and Excess Liability insurance policies. The insurance coverage shall be written with insurance companies acceptable to Village of Bensenville. All insurance premium shall be paid without cost to Village of Bensenville. The Contractor shall furnish Village of Bensenville with a Certificate of Insurance attesting to the respective insurance coverage for the full contract term. The Contractor shall submit satisfactory proof of insurance simultaneously with the execution of this supplement.

Village of Bensenville shall receive written notice of cancellation or reduction in coverage of any insurance policy thirty (30) days prior to the effective date of cancellation or reduction.

Provided that the Contractor maintains a financial rating of 5A2, as issued by Dunn and Bradstreet, Inc., at all time during the term of the Supplement, the Contractor may utilize a plan of self-insurance certified by the Department of Insurance, State of Illinois and the Illinois Industrial Commission for the minimum coverage required under Section 2 above, provided that the Contractor maintains said limits at all times during the supplement period and retains a current and viable certificate of self-insurance from the State of Illinois and immediately provides a copy of said Certificate to Village of Bensenville.

All insurance provided to the Owner is primary and non-contributory with any insurance or self-insurance program maintained by the Owner.

6. SC.5.06: Property Insurance
  - a. Property insurance to the full insurable value of the work will be provided by the Contractor.
  - b. Such coverage shall be written on an "All Risk" Completed Value form.
  - c. The deductible under this policy shall be the responsibility of the Contractor.
  - d. The Named Insured shall include the Owner and Engineer.

#### D. Article 6 - Contractor's Responsibilities

1. SC 6.05.A.3: Substitutions: Comply with Section 01600 of the Specifications for specific methods of requesting approval of substitutions.
2. SC 6.06: Add a new subparagraph immediately after Subparagraph 6.06.G of the General Conditions which is to read as follows:

Contractor shall not award Work to Subcontractor(s) in excess of 10% of the Contract Price without prior written approval of Owner.

3. SC. 6.12: Add the following language at the end of paragraph 6.12 of the General Conditions:



The Contractor shall also be responsible for maintaining a marked set of drawings showing all deviations in line and grade, additions, and/or deletions to the scope of work. All items and dimensions shall be specifically marked. The ends of all services shall be referenced to the front lot corners. The Contractor shall furnish the Owner with complete set of Record Drawings upon completion of the work.

4. SC 6.17: Submittals: Comply with Section 01300 of the Specifications for detailed requirements for submitting Shop Drawings, Samples, Operator's Instructions, Service and Parts Manuals.
- E. Article 13 – Tests and Inspections; Correction, Removal or Acceptance of Defective Work
1. SC 13.07: Correction Period for repairing and/or replacing defective work shall commence upon Final Completion, not Substantial Completion.
- F. Article 14 - Payments to Contractor and Completion
1. Payments: Payments to the Contractor shall be made on the basis of monthly estimates equal to 90 percent of the value of the work completed and approved by the Engineer including materials and equipment delivered to the job, until the project is substantially complete. When the work is substantially complete, the retainage may be reduced to five percent of all the additional work satisfactorily completed, Provided that the Contractor is making satisfactory progress, and there is no specific cause for greater withholding.
  2. Forty five days after the presentation to the OWNER of the Applications for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.
  3. Pay Request Submittals Shall Include
    - a. Transmittal Form
    - b. Pay Request Form AIA G702, G703 or EJCDC 190-8-E
    - c. Schedule of Values
    - d. Material Tickets
    - e. An Updated Construction Schedule
    - f. Current Photographs of Construction Site
    - g. Current Payroll Certification
    - h. Current Waivers of Lien
    - i. Contractor's Affidavit
  4. Contractor is responsible for acquiring the blank pay request forms from AIA or EJCDC.

5. After Substantial Completion, including Start-up, the withheld amount may be further reduced, below five percent, to that amount necessary to assure completion.
6. Waivers of Lien: Provide the Owner with all waivers of lien prior to receipt of any payments for work completed.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END 00800

## **SECTION 00825 - FEDERAL WAGE RATES**

The Contractor shall pay prevailing wages in accordance with the Federal Davis-Beacon wage provisions (40 USC 276a through 276a-5) and the Village of Bensenville. The most recently published prevailing wage rates are listed on the following pages. Prior to submitting his bid, the Contractor must ensure that the wage rates used in arriving at his bid correspond to the month of the bid opening. The Engineer may or may not issue an addendum prior to the bid opening in order to update the wage rates.

The Illinois Department of Labor maintains an internet web page from which the most recent prevailing wage rate information may be obtained.

The internet address is [http://www.state.il.us/agency/idol/rates/EVENMO/DU\\_PAGE9.htm](http://www.state.il.us/agency/idol/rates/EVENMO/DU_PAGE9.htm)

## SECTION 00850 - INDEX OF PLAN SHEETS

The following sheets are included in the plan set and are considered part of the contract documents. Bidders are responsible for ensuring that each sheet listed are included in the plan set and that all subcontractors are provided with a complete plan set.

Final Engineering Plans  
for  
Village of Bensenville

County Line Road Watermain Replacement

Sheet	Title
G-1	Cover Sheet
G-2	General Notes and Legend
G-3	Summary of Quantities
MOT-1	Maintenance of Traffic (County Line Road/Green Street)
C-1	Plan and Profile (10+29 to 14+00)
C-2	Plan and Profile (14+00 to 19+00)
C-3	Plan and Profile (19+00 to 22+06)
D-1	Construction Details
D-2	Construction Details
D-3	Construction Details
D-4	Traffic Control Details
D-5	Traffic Control Details
D-6	Traffic Control Details

**DIVISION 1**

**GENERAL REQUIREMENTS**

## SECTION 01019 - CONTRACT CONSIDERATIONS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Application for payment.
- B. Change procedures.

#### 1.2 APPLICATIONS FOR PAYMENT

- A. Submit three copies of each application on EJCDC 1910-8-E.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment. Schedule of Values shall mirror the cost-loaded construction schedule line items.
- C. Payment Period: Monthly.
- D. Applications for Payment shall be submitted to the Engineer no later than the first Friday of each month.

#### 1.3 CHANGE PROCEDURES

- A. The Engineer may issue a Notice of Change which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor will prepare and submit an estimate within 10 days.
- B. The Contractor may propose changes by submitting a request for change to the Engineer, describing the proposed change and its full effect on the Work. Include a statement describing the reason for the change, and the effect on the Contract Sum/Price and Contract Time with full documentation.
- C. Stipulated Sum/Price Change Order: Based on Notice of Change or Contractor's request for a Change Order as approved by Engineer.
- D. Work Directive Change: Engineer may issue a directive, on EJCDC 1910-8-F Work Directive Change signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly-execute the change.

- E. Time and Material or Force Account Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract. Engineer will determine the change allowable in Contract Sum/Price and Contract Time as provided in the Contract Documents.
- F. Maintain detailed records of work done on Time and Material or Force Account basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.
- G. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- H. Change Order Forms: EJCDC 1910-8-B Change Order.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION Not

Used

END 01019

## SECTION 01039 - COORDINATION AND MEETINGS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Coordination.
- B. Field engineering.
- C. Preconstruction meeting.

#### 1.2 COORDINATION

- A. Coordinate scheduling, submittals, and Work of the various sections of the Project to assure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for occupancy by the public.
- D. The contractor shall include as part of their construction schedule a portion dedicated to "Major Procurement Items". It is the contractor's responsibility to assure all items are submitted and ordered in a manner the will not inhibit construction progress or otherwise result in a cause for delay.

#### 1.3 PRECONSTRUCTION MEETING

- A. Engineer will schedule a meeting after Notice of Award.
- B. Agenda: (may include all or any portion of the following)
  - 1. Execution of Owner Contractor Agreement.
  - 2. Submission of executed bonds and insurance certificates.
  - 3. Distribution of Contract Documents.



4. Submission of list of subcontractors, list of products, schedule of values, construction schedule and a two week look-ahead schedule.
5. Staging of materials.
6. Designation of personnel representing the parties in Contract and the Engineer.
7. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
8. Scheduling.

PART 2 PRODUCTS

Not Used.

PART 3

EXECUTION Not Used.

END 01039

## SECTION 01100 - SUMMARY OF PROJECT

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Contract description.
- B. Contractor's use of site and premises.
- C. Work sequence.

#### 1.2 CONTRACT DESCRIPTION

- A. Work includes but is not limited to:
  - 1. Replacement of existing 10" DIWM with 12" PVC Watermain.
  - 2. Testing of all proposed improvements.
  - 3. Restoration of all disturbed areas.
- B. Perform Work under single Unit Price Contract.
- C. Relations and responsibilities between Contractor and Subcontractors: Defined in Conditions of Contract.
  - 1. Assigned Sub-Contractors shall, additionally:
    - a. Furnish to Contractor bonds covering faithful performance of sub-contracted work and payment of all obligations thereunder when Contractor is required to furnish such bonds to Village of Bensenville.
    - b. Purchase and maintain liability insurance to protect Contractor from claims for not less than limits of liability that the Contractor is required to provide to Village of Bensenville.

#### 1.3 CONTRACTOR'S USE OF SITE

- A. Construction Operations: Limited to areas noted on Drawings.
- B. Time Restrictions for Performing Work: 9:00 AM to 4:00 PM and 6:00 PM to 7:00 PM only: Monday – Friday.
- C. Utility Outages and Shutdown: Requests to shut down any utility must be submitted to Village of Bensenville not less than 48 hours prior to the proposed utility shutdown. Permission must be granted prior to the shutdown.
- D. Contractor may stage materials on site at the locations approved by the Village of Bensenville. The Village of Bensenville will not be responsible for the coordinating and accepting delivery of materials. The Village of Bensenville will not be responsible for the care and safety of the materials stored at their site.

#### 1.4 WORK SEQUENCE

- A. Contractor is responsible for scheduling all work in an efficient and logical manner that will result in successfully meeting the Substantial Completion and Final Completion Dates.

#### 1.5 TRAFFIC CONTROL AND PROTECTION

- A. Cooperate with public in all construction operations to minimize conflict.
- B. Conduct Contractor's operations to ensure least inconvenience to general public.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END 01100

## SECTION 01190 - REFERENCE STANDARDS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Quality assurance.
- B. Schedule of references.

#### 1.2 RELATED SECTIONS

- A. Document 00700 – General Conditions: Reference Standards.

#### 1.3 QUALITY ASSURANCE

- A. For products or workmanship specified by association, trade, or Federal Standards, complies with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date for receiving bids.
- C. Obtain copies of standards when required by Contract Documents.
- D. Maintain copy at jobsite during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.
- F. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

#### 1.4 SCHEDULE OF REFERENCES

AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, N.W. Washington, DC 20001
ACI	American Concrete Institute Box 19150 Reford Station Detroit, Michigan 48219
AGC	Associated General Contractors of America 1957 E Street, N.W. Washington, DC 20006

AI	Asphalt Institute Asphalt Institute Building College Park, Maryland 20740	
AIA	American Institute of Architects 1735 New York Avenue, N.W. Washington, DC 20006	
AISC	American Institute of Steel Construction 400 North Michigan Avenue Eighth Floor Chicago, Illinois 60611	
ASIS	American Iron and Steel Institute 1000 16th Street, N.W. Washington, DC 20036	
ANSI	American National Standards Institute 1430 Broadway  New York, New York 10018	
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, New York 10017	
ASPA	American Sod Producers Association 4415 West Harrison Street Hillside, Illinois 60162	
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, Pennsylvania 19103	
AWS	American Welding Society 550 LeJeune Road, N.W. Michigan, Florida 33135	
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, Colorado 80235	
CISPI	Cast Iron Pipe Soil Institute	
CRSI	Concrete Reinforcing Steel Institute 933 Plum Grove Road Schaumburg, Illinois 60195	
July 27, 2012	01190	County Line Road Watermain Replacement

IMIAC	International Masonry Industry All-Weather Council International Masonry Institute 815 15th Street, N.W. Washington, DC 20005
MBMA	Metal Building Manufacturer's Association 1230 Keith Building Cleveland, Ohio 44115
NCMA	National Concrete Masonry Association P.O. Box 781 Herndon, Virginia 22070
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, Illinois 60077
PCI	Prestressed Concrete Institute 201 North Wells Street Chicago, Illinois 60606
PS	Product Standard U. S. Department of Commerce Washington, DC 20203
SSRBC	Standard Specifications for Road and Bridge Construction Illinois Department of Transportation Adopted July 1, 2012
UL	Underwriters' Laboratories, Inc. 333 Pfingston Road Northbrook, Illinois 60062

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END 01090

## SECTION 01200 - PRICE AND PAYMENT PROCEDURES

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Schedule of values.
- B. Applications for payment.
- C. Change procedures.
- D. Defect assessment.

#### 1.2 SCHEDULE OF VALUES

- A. Submit a printed Schedule of Values on AIA form(s) G702/703. A sample of the printout should be submitted as an attachment to the Owner-Contractor Agreement. The Schedule of Values must correspond to the activities provided on the contractor's cost-loaded construction schedule. That is to say, the items listed in the Scheduled of Values and the items on the construction schedule, should match line for line. More detail and information is beneficial.
- B. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.
- C. Include in each line item, the amount of Allowances specified in this section.
- D. Revise schedule to list approved Change Orders, with each Application for Payment.

#### 1.3 APPLICATIONS FOR PAYMENT

- A. Submit four (4) copies of each application on AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment. The Schedule of Values should mirror the items contained within the cost-loaded construction schedule, as listed in section 1.2.
- C. Submit an updated construction schedule with each Application for Payment. Failure to submit a revised construction schedule with Application for Payment may be cause for delaying the Application for Payment.

- D. Payment Period: Submit at intervals stipulated in the Agreement.
- E. Submit with transmittal letter as specified for Submittals in Section 01330.
- F. Submit four (4) copies of waivers of lien from all subcontractors and material suppliers.
- G. Submit four (4) Certified Payroll for all Contractors working during the payment period.
- H. Submit backup information for requests of Material payment. Backup information should include items such as delivery tickets, Purchase Orders, Invoices, etc. Backup information should include the project name printed from shipping entity on each document.
- I. All Liens of Waiver and Certified Payroll information shall be kept current for each Pay Application Period. Failure to do so may result in delaying the processing of the Pay Application.
- J. Substantiating Data: When Engineer requires substantiating information, submit data justifying dollar amounts in question. Include the following with the application:
  - 1. Partial release of liens from subcontractors and vendors.
  - 2. Record documents as specified in Section 01330, for review by the Engineer and/or Owner which will be returned to the Contractor.
  - 3. Affidavits attesting to off-site stored products.
  - 4. Construction progress schedules, revised and current as specified in Section 01330.

#### 1.4 CHANGE PROCEDURES

- A. Submittals: Within 15 days of Notice to Proceed, submit name of the individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.
- B. The Engineer will advise of minor changes in the Work not involving an adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions.
- C. The Engineer may issue a Notice of Change which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications. Contractor will prepare and submit an estimate within seven days of request.
- D. The Contractor may propose changes by submitting a request for change to the Engineer, describing the proposed change and its full effect on the Work. Include a statement describing the reason for the change, and the effect on the Contract



Sum/Price and Contract Time with full documentation. Document any requested substitutions in accordance with Section 01600.

- E. Stipulated Sum/Price Change Order: Based on Notice of Change and Contractor's fixed, estimated or maximum price quotation.
- F. Construction Change Directive: Engineer may issue a directive, signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time.
- G. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract. Engineer will determine the change allowable in Contract Sum/Price and Contract Time as provided in the Contract Documents. Work performed on a Time and Material Change Order basis must be signed by the Engineer at the end of each day, unless otherwise agreed to.
- H. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work. Work performed on a Time and Material basis shall be confirmed at the end of each workday.
- I. Document each quotation for a change in cost or time with sufficient data to allow evaluation of the quotation.
- J. Change Order Forms: See Section 00530 – Change Order.
- K. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- L. Correlation Of Contractor Submittals:
  - 1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum/Price.
  - 2. Promptly revise the construction schedules to reflect any change(s) in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
  - 3. Promptly enter changes in Project Record Documents.

#### 1.5 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.

- B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct an appropriate remedy or adjust payment.
- C. The defective Work may remain, but the unit sum/price will be adjusted to a new sum/price at the discretion of the Engineer and/or Owner.
- D. The individual specification sections may modify these options or may identify a specific formula or percentage sum/price reduction.
- E. The authority of the Engineer to assess the defect and identify payment adjustment, is final.
- F. Non-Payment For Rejected Products: Payment will not be made for rejected products for any of the following:
  - 1. Products wasted or disposed of in a manner that is not acceptable.
  - 2. Products determined as unacceptable before or after placement.
  - 3. Products not completely unloaded from the transporting vehicle.
  - 4. Products placed beyond the lines and levels of the required Work.
  - 5. Products remaining on hand after completion of the Work.
  - 6. Loading, hauling, and disposing of rejected products.

PART 2 PRODUCTS – NOT USED

PART 3 PRODUCTS – NOT USED

END 01200

## SECTION 01300 - ADMINISTRATIVE REQUIREMENTS

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
1. Coordination and project conditions.
  2. Field engineering.
  3. Preconstruction meeting.
  4. Site mobilization meeting.
  5. Progress meetings.
  6. Pre-installation meetings.
  7. Cutting and patching.
  8. Special procedures.

#### 1.2 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and Work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements, supports, and installation of mechanical and electrical Work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- E. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion.
- F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

### 1.3 FIELD ENGINEERING

- A. The Engineer shall provide all surveying and control points as received from a survey provided by Sanchez & Associates, PC, dated May 15<sup>th</sup>, 2012.
- B. Contractor shall locate and protect survey control and reference points. Promptly notify Engineer of any discrepancies discovered.
- C. Control datum for survey is that established by Owner provided survey and is shown on Drawings.
- C. Verify set-backs and easements; confirm drawing dimensions and elevations.
- E. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.
- F. Maintain a complete and accurate log of control and survey work as it progresses.
- G. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- H. Promptly report to the Engineer the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- I. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Engineer.

### 1.4 PRECONSTRUCTION MEETING

- A. Engineer will schedule a meeting after Notice of Award.
- B. Attendance Required: Owner, Engineer and Contractor.
- C. Agenda:
  - 1. Execution of Owner–Contractor Agreement.
  - 2. Submission of executed bonds and insurance certificates.
  - 3. Distribution of Contract Documents.
  - 4. Submission of list of Subcontractors, list of products, schedule of values, and progress schedule.
  - 5. Designation of personnel representing the parties in Contract, the Engineer.
  - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  - 7. Scheduling.

- D. Engineer shall record minutes and distribute copies within one week after meeting to all attendees.

#### 1.5 SITE MOBILIZATION MEETING

- A. Engineer will schedule a meeting at the Project site prior to Contractor occupancy.
- B. Attendance Required: Owner, Engineer, Contractor, Contractor's Superintendent and major Subcontractors.
- C. Agenda:
  - 1. Use of premises by Owner and Contractor.
  - 2. Owner's requirements and partial occupancy.
  - 3. Construction facilities and controls provided by Owner.
  - 4. Temporary utilities provided by Owner.
  - 5. Survey and building layout.
  - 6. Security and housekeeping procedures.
  - 7. Schedules.
  - 8. Application for payment procedures.
  - 9. Procedures for testing.
  - 10. Procedures for maintaining record documents.
  - 11. Requirements for start-up of equipment.
  - 12. Inspection and acceptance of equipment put into service during construction period.
- D. Engineer shall record minutes and distribute copies within one week after meeting to all attendees.

#### 1.6 PROGRESS MEETINGS

- A. Engineer shall schedule and administer weekly construction meetings throughout progress of the Work.
- B. Engineer will make arrangements for meetings, prepare agenda with copies for participants and preside at meetings.
- C. Attendance Required: Job superintendent, major subcontractors and suppliers, Owner, Engineer, Engineer and others as appropriate to agenda topics for each meeting.
- D. Agenda:
  - 1. Review minutes of previous meetings.
  - 2. Review of Work progress.
  - 3. Field observations, problems, and decisions.
  - 4. Identification of problems that impede planned progress.

5. Review of submittals schedule and status of submittals.
  6. Review of off-site fabrication and delivery schedules.
  7. Maintenance of progress schedule.
  8. Corrective measures to regain projected schedules.
  9. Planned progress during succeeding work period.
  10. Coordination of projected progress.
  11. Maintenance of quality and work standards.
  12. Effect of proposed changes on progress schedule and coordination.
  13. Other business relating to Work.
- E. Engineer shall record minutes and distribute copies within one week after meeting to all attendees.

#### 1.7 PREINSTALLATION MEETING

- A. When required in individual specification sections, convene a pre-installation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, Work of the specific section.
- C. Notify Engineer four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
  1. Review conditions of installation, preparation and installation procedures.
  2. Review coordination with related work.
- E. Engineer shall record minutes and distribute copies within one week after meeting to all attendees.

#### PART 2 PRODUCTS – Not Used

#### PART 3 EXECUTION

##### 3.1 CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements which affect:
  1. Structural integrity of element.
  2. Integrity of weather-exposed or moisture-resistant elements.
  3. Efficiency, maintenance or safety of element.
  4. Visual qualities of sight exposed elements.

- C. Execute cutting, fitting, and patching (including excavation and fill), to complete Work, and to:
  - 1. Fit the several parts together, to integrate with other Work.
  - 2. Uncover Work to install or correct ill-timed Work.
  - 3. Remove and replace defective and non-conforming Work.
  - 4. Remove samples of installed Work for testing.
  - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- D. Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- E. Cut masonry and concrete materials using masonry saw or core drill.
- F. Restore Work with new products in accordance with requirements of Contract Documents.
- G. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material to full thickness of the penetrated element.
- J. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection. For an assembly, refinish entire unit.
- K. Identify hazardous substances or conditions exposed during the Work to the Engineer or Construction Manager for decision or remedy.

### 3.2 SPECIAL PROCEDURES

- A. Materials: As specified in product sections; match existing with new products and salvaged products for patching and extending work.
- B. Employ skilled and experienced installer to perform alteration work.
- C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- D. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

- E. Remove debris and abandoned items from area and from concealed spaces.
- F. Prepare surface and remove surface finishes to provide for proper installation of new work and finishes.
- G. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- H. Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring products and finishes to original or specified condition.
- I. Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.
- J. Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- K. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Engineer for review.
- L. Where a change of plane of ¼" or more occurs, submit recommendation for providing a smooth transition to Engineer for review.
- M. Patch or replace portions of existing surfaces that are damaged, lifted, discolored, or showing other imperfections.

END 01300



## SECTION 01330 - SUBMITTAL PROCEDURES

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. This section expands administrative and procedural requirements for submittals for review, information, or for project closeout; each described to permit direct reference from individual specification sections. The requirements include:
1. Submittal procedures.
  2. Construction progress schedules.
  3. Proposed products list.
  4. Product data.
  5. Shop drawings.
  6. Samples.
  7. Design data.
  8. Test reports.
  9. Certificates.
  10. Manufacturer's instructions.
  11. Manufacturer's field reports.

#### 1.2 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Engineer accepted form.
- B. Submittals should not be marked up with a highlighter. Instead, use arrows to denote specific selections throughout the submittal.
- C. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- D. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, as appropriate. Each individual item being submitted shall be accompanied by its own submittal cover sheet.
- E. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- F. Schedule submittals to expedite the Project, and deliver to Engineer at business address. Coordinate submission of related items.

- G. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
- H. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of the completed Work.
- I. Provide space on the transmittal form for Contractor and Engineer review stamps. Engineer's stamp is approximately 3"x 5" in size.
- J. When revised for resubmission, identify all changes made since previous submission.
- K. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- L. Submittals not requested will not be recognized or processed. At Engineer's option submittals may be stamps as "For Information Only (FIO)".

### 1.3 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit a Draft Construction Schedule within 10 days after Notice to Proceed for coordination with Owner's requirements. After review and comment by the Engineer, submit a revised construction schedule within 15 days, modified to accommodate revisions recommended by Engineer.
- B. Submit a revised Construction Schedule with each Application for Payment. Applications for payment may be held or delayed if an updated Construction Schedule is not submitted.
- C. Distribute copies of reviewed schedules to Project site file, subcontractors, suppliers, and other concerned parties.
- D. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.
- E. The Construction Schedule shall include the following at a minimum.
  - 1. Show complete sequence of construction by activity.
  - 2. Show project activity duration(s).
  - 3. Identify Work of separate stages and other logically grouped activities.
  - 4. Indicate the early and late start, early and late finish.
  - 5. Show float duration for each activity.
  - 6. Show the Critical Path.
  - 7. Show Predecessors and Successors.
  - 8. Show dollar amount for each activity. This should match the Schedule of Values.

9. Indicate estimated percentage of completion for each item of Work at each submission.
  10. Other items the Contractor would like to include, not listed above.
- F. Provide a schedule of submittal items. This may either be a separate schedule or included at the beginning of the Construction Schedule. The submittal schedule shall include the following at a minimum.
1. Shop drawing(s) description.
  2. Date for shop drawing(s) submission.
  3. Date for material order.
  4. Date for anticipated material delivery.
  5. Date shop drawing(s) was returned, with corresponding action.
  6. Other items the Contractor would like to include, not listed above.
- G. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
- H. Provide narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect including the effect of changes on schedules of separate contractors.
- I. Prepare and submit every week, at the Weekly Construction Meeting a "Two Week Look Ahead schedule". This schedule will include all items listed in specification section 01300, paragraph 1.4 (b).

#### 1.4 PROPOSED PRODUCTS LIST

- A. Within 10 days after date of Notice to Proceed, submit a list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

#### 1.5 PRODUCT DATA

- A. Product Data: Submit to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents. Provide copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 01700.
- B. Submit the number of copies which the Contractor requires, plus three copies which will be retained by the Engineer.

- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. After review distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01700.

## 1.6 SHOP DRAWINGS

- A. Shop Drawings: Submit to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 01700.
- B. Submit the number of opaque reproductions which Contractor requires, plus three copies which will be retained by Engineer.
- C. Apply Contractor's stamp, signed or initialed to each copy, certifying his review.
- D. Submit at a minimum the items indicated below:
  - 1. Name of Testing Agency
  - 2. Earth Retention System Design
  - 3. Concrete Design Mix to include; laboratory Analysis, backup compressive strength test results
  - 4. Rebar Design Drawings
  - 5. Aggregate (Course and Fine Aggregates)
  - 6. Concrete Sealers
  - 7. Seed Design Mix
  - 8. Landscaping Material
  - 9. Erosion Control Measure and items (silt fence, excelsior blankets, sediment logs, etc.)
  - 10. Pipe, Fittings, Couplings, Connections, Hardware including buoyancy calculations.
  - 11. Warranties
  - 12. Backflow Preventors
  - 13. Granular Backfill
  - 14. Manholes and other Concrete Structures

## 1.7 SAMPLES

- A. Samples: Submit to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section

01700.

- B. Samples For Selection as Specified in Product Sections:
  - 1. Submit to Engineer for aesthetic, color, or finish selection.
  - 2. Submit samples of finishes from the full range of manufacturers' standard colors, in custom colors selected, textures, and patterns for Engineer selection.
  - 3. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 01700.
- C. Include identification on each sample, with full Project information.
- D. Submit the number of samples specified in individual specification sections; one of which will be retained by Engineer.
- E. Reviewed samples which may be used in the Work are indicated in individual specification sections.
- F. Samples will not be used for testing purposes unless specifically stated in the specification section.

#### 1.8 DESIGN DATA

- A. Submit for the Engineer's knowledge as contract administrator or for the Owner.
- B. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the Contract Documents.

#### 1.9 TEST REPORTS

- A. Submit for the Engineer's knowledge and records
- B. Submit test reports for the limited purpose of assessing conformance with information given and the design concept expressed in and throughout the Contract Documents.

#### 1.10 CERTIFICATES

- A. When specified in individual specification sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor to Engineer, in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits and certifications as appropriate.

- C. Certificates may be recent or previous test results on material or product, but must be acceptable to Engineer.

#### 1.11 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting and finishing to Engineer for delivery to Owner in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

#### 1.12 MANUFACTURER'S FIELD REPORTS

- A. Submit reports for the Engineer's benefit as contract administrator or for the Owner. B. Submit report in duplicate within 30 days of observation to Engineer for information. C. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the Contract Documents.

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

END 01330

## SECTION 01340 - SUBMITTALS

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Submittal procedures.
  - 2. Engineer and/or Construction Manager's Review Action
  - 3. Construction progress schedules.
  - 4. Proposed products list.
  - 5. Product data.
  - 6. Shop drawings.
  - 7. Samples.
  - 8. Design data.
  - 9. Test reports.
  - 10. Certificates.
  - 11. Manufacturer's instructions.
  - 12. Manufacturer's field reports.
  - 13. Erection drawings.
  
- B. Related Sections include but are not necessarily limited to:
  - 1. Division 1 – General Requirements.
  - 2. Various Sections identifying required submittals.

#### 1.2 DEFINITIONS

- A. Shop Drawings:
  - 1. See General Conditions.
  - 2. Product data and samples are Shop Drawing information.
  
- B. Miscellaneous Submittals:
  - 1. Submittals other than Shop Drawings:
  - 2. Representative types of miscellaneous submittal items include but are not limited to:
    - a. Construction schedule.
    - b. Concrete, soil compaction, and pressure test reports.
    - c. HVAC test and balance reports.
    - d. Installed equipment and systems performance test reports.
    - e. Manufacturer's installation certification letters.
    - f. Instrumentation and control commissioning reports.
    - g. Warranties.
    - h. Service agreements.
    - i. Construction photographs.

- j. Survey data.
- k. Cost breakdown (Schedule of Values).
- l. Health and safety plans.

### 1.3 SUBMITTAL PROCEDURES

#### A. Shop Drawings and Miscellaneous Submittals:

1. Transmit all submittals to Engineer's main office.
2. All transmittals must be from Contractor and bear his approval stamp. Transmittals will not be received from or returned to subcontractors.
  - a. Shop drawing shall be stamped, or the transmittal sheets shall read "(Contractor's Name) has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval as stipulated under General Conditions Paragraph 6.17D".
3. Provide legible submittal information defining specific equipment or materials utilized on the project. Generalized product information not clearly defining specific equipment or materials to be provided will be rejected.
  - a. Original fax copies are acceptable providing all information is legible.
  - b. Second generation fax copies are not acceptable.
4. Calculations required in individual specification sections will be received for information purposes only and will be stamped and returned to acknowledge receipt.
5. Engineer shall provide a Submittal Log for Contractor's use.
  - a. Schedule of shop drawings:
    - 1.) Submitted and approved within 20 days of receipt of Notice to Proceed.
    - 2.) Account for multiple transmittals under any specification section where partial submittals will be transmitted.
  - b. Shop drawings:
    - 1.) Submittal and approval prior to 50 percent completion.
  - c. Submit seven (7) copies for acceptance.
    - 1.) Submittals may be sent in electronic (pdf) format via email or on a CD.

#### B. Miscellaneous Submittals:

1. Transmit under Contractor's standard letter of transmittal or letterhead.
2. Submit in triplicate or as specified in individual specification section.
3. Transmit to Construction Manager's onsite office.

#### C. Preparation of Submittals

1. Shop Drawings:
  - a. Scope of any letter of transmittal:
    - 1.) If more than one specification section is included in the submittal, reference should be made to all sections on the transmittal. Multi-section submittals are only acceptable when the scope of work is related.
    - 2.) Do not submit under any specification section entitled (in part) "Basic Requirements".
  - b. Numbering letter of transmittal:
    - 1.) Include as prefix the specification section number followed by "-xx" beginning with "01".
    - 2.) If more than one submittal is made under any specification section, number transmittals consecutively.



- c. Describing transmittal contents:
  - 1.) Provide listing of each component or item in submittal capable of receiving an independent review action.
  - 2.) Identify for each item:
    - a.) Manufacturer and Manufacturer's drawing or data number.
    - b.) Contract Document tag number(s).
    - c.) Contract Drawing Section or detail number if appropriate.
    - d.) Specification Article/Paragraph number if appropriate.
- d. Resubmittals:
  - 1.) Number with original root number and a suffix letter starting with "A" on a (new) duplicate transmittal form.
  - 2.) Do not increase the scope of any prior transmittal.
  - 3.) Account for all components of prior transmittal.
    - a.) If items in prior transmittal received "A" or "B" Action code, list them and indicate "A" or "B" as appropriate. Do not include submittal information for items with prior "A" or "B" Action in transmittal.
    - b.) Indicate "Outstanding-To Be Resubmitted At a Later Date" for any prior "C" or "D" Action item not included in resubmittal. Obtain Engineer's prior approval to exclude items.
- e. For 8-1/2"x 11" size sheets, provide two (2) copies of each page for Engineer and/or Construction Manager, plus the number required by the Contractor. The number of copies required by the Contractor will be defined at the Preconstruction Conference, but shall not exceed a total of six (6).
- f. Provide clear space (4" SQ) for Engineer stamping of each component defined in 1.4-A.4.
- g. Contractor shall not use red color for marks on transmittals. Duplicate all marks on all copies transmitted, and ensure marks are photocopy reproducible. Outline Contractor marks and shall be "clouded" or indicated with a rectangular box.
- h. Transmittal contents:
  - 1.) Coordinate and identify shop drawing contents so that all items can be easily verified by the Engineer.
  - 2.) Identify equipment or material use, tag number, drawing detail reference, weight, and other project specific information.
  - 3.) Provide sufficient information together with technical cuts and technical data to allow an evaluation to be made to determine that the item submitted is in compliance with the Contract Documents.
  - 4.) Submit items like equipment brochures, cuts of fixtures, product data sheets or catalog sheets on 8-1/2"x 11" pages. Indicate exact item or model and all options proposed.
  - 5.) Include legible scale details, sizes, dimensions, performance characteristics, capacities, test data, anchoring details, installation instructions, storage and handling instructions, color charts, layout drawings, parts catalogs, rough-in diagrams, wiring diagrams, controls, weights and other pertinent data. Arrange data and performance information in format similar to that provided in Contract Documents. Provide, at minimum, the detail provided in the Contract Documents.
  - 6.) If proposed equipment or materials deviate from the Contract Drawings or Specifications in any way, clearly note the deviation and justify the said deviation in detail on the transmittal sheet, entitled "Exceptions".

## 1.4 ENGINEER'S REVIEW ACTION

- A. Shop Drawings, Samples and Miscellaneous Submittals:
1. Items within transmittals will be reviewed for overall design intent and will receive one of the following actions:
    - a. A – NO EXCEPTIONS NOTED.
    - b. B – EXCEPTIONS NOTED.
    - c. C – REVISE AND RESUBMIT.
    - d. D – REJECTED.
    - e. E – REVIEW NOT REQUIRED.
  2. Transmittals received will be initially reviewed to ascertain inclusion of Contractor's approval stamp or review statement. Drawings not stamped by the Contractor or with a submitted under a transmittal not containing language other than that specified in Paragraph 1.3–A.2.a, may not be reviewed for technical content and will be returned without any action.
  3. Transmittals returned with Action "A" or "B" are considered ready for fabrication and installation. If for any reason a transmittal that has an "A" or "B" Action is resubmitted, it must be accompanied by a letter defining the changes that have been made and the reason for the resubmittal. Destroy or conspicuously mark "SUPERSEDED" all documents having previously received "A" or "B" Action that are superseded by a resubmittal.
  4. Transmittals with Action "A" or "B" combined with Action "C" (Revise and Resubmit) or "D" (Rejected) will be individually analyzed giving consideration as follows:
    - a. The portion of the transmittal given "C" or "D" will not be distributed (unless previously agreed to otherwise at the Preconstruction Conference). One copy or the one transparency of the "C" or "D" drawings will be marked up and returned to the Contractor. Correct and resubmit items so marked.
    - b. Items marked "A" or "B" will be fully distributed.
    - c. If a portion of the items or system proposed are acceptable, however, the major part of the individual drawings or documents are incomplete or require revision, the entire submittal may be given "C" or "D" Action. This is at the sole discretion of the Engineer. In this case, some drawings may contain relatively few or no comments or the statement, "Resubmit to maintain a complete package." Distribution to the Owner and field will not be made (unless previously agreed to otherwise).
  5. Failure to include any specific information specified under the submittal paragraphs of the specifications may result in the transmittal being returned to the Contractor with "C" or "D" Action.
  6. Transmittals such as submittals which the Engineer considers as "Not Required," submittal information which is supplemental to but not essential to prior submitted information, or items of information in a transmittal which have been reviewed and received "A" or "B" Action in a prior transmittal, will be returned with Action "E. Engineer's Review Not Required."
  7. Samples may be retained for comparison purposes. Remove samples when directed. Include in bid all costs of furnishing and removing samples.
  8. Approved samples submitted or constructed, constitute criteria for judging completed work. Finished work or items not equal to samples will be rejected.
  9. Excessive review time due to a failure by the Contractor, subcontractor, manufacturer and/or supplier to properly revise submittal(s) will be billed to the

Contractor by the appropriate person performing the review at a rate of one hundred fifty dollars (\$15.00) per hour, minimum two hours.

#### 1.5 CONSTRUCTION PROGRESS SCHEDULES

- A. Contractor shall utilize a computer generated Critical Path Method (CPM) Schedule that meets with the approval of the Engineer and Owner.
  - 1. Contractors will be required to provide the Engineer with a list of all work activities and the duration of time prior to the issuance of the Notice to Proceed.
- B. Submit initial schedules within fifteen (15) days after date of Owner–Contractor Agreement. After review, resubmit required revised data within ten (10) days.
- C. Submit revised Progress Schedules with each Application for Payment.
- D. Distribute copies of reviewed schedules to Project site file, subcontractors, suppliers and other concerned parties.
- E. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

#### 1.6 PROPOSED PRODUCTS LIST

- A. Within fifteen (15) days after date of Owner–Contractor Agreement, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation and reference standards.

#### 1.7 PRODUCT DATA

- A. Product Data: Submit to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents. Provide copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 01700.
- B. Submit seven (7) copies of each submittal. Two (2) copies will be returned to the contractor after review. If contractor requires more than two (2) copies be returned, additional copies in excess of the seven (7) required should be submitted.
- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

- E. After review distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01700.

#### 1.8 SHOP DRAWINGS

- A. Shop Drawings: Submit for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 01700.
- B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

#### 1.9 SAMPLES

- A. Samples: Submit to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 01700.
- B. Samples For Selection as Specified in Product Sections:
  - 1. Submit to Engineer for aesthetic, color, or finish selection.
  - 2. Submit samples of finishes from the full range of manufacturers' colors, textures and patterns for Engineer selection.
  - 3. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 01700.
- C. Include identification on each sample, with full Project information.
- D. Submit the number of samples specified in individual specification sections; one of which will be retained by Engineer.
- E. Reviewed samples that may be used in the Work are indicated in individual specification sections.
- F. Samples will not be used for testing purposes unless specifically stated in the specification section.

#### 1.10 DESIGN DATA

- A. Submit for the Engineer's and/or Construction Manager's knowledge as contract administrator or for the Owner.
- B. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the Contract Documents.

### 1.11 TEST REPORTS

- A. Upon receipt, Contractor shall forward all Test Reports to the Engineer for his records.
- B. Submit test reports for information for the limited purpose of assessing conformance with information given and the design concept expressed in the Contract Documents.

### 1.12 CERTIFICATES

- A. When specified in individual specification sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor to Engineer in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or product, but must be acceptable to Engineer.

### 1.13 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting and finishing to Engineer for delivery to Owner in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

### 1.14 MANUFACTURER'S FIELD REPORTS

- A. Submit reports for the Engineer's benefit as contract administrator or for the Owner.
- B. Submit report in duplicate within thirty (30) days of observation to Engineer for information.
- C. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the Contract Documents.

### 1.15 ERECTION DRAWINGS

- A. Submit drawings for the Engineer's benefit as contract administrator or for the Owner.
- B. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the Contract Documents.

C. Data indicating inappropriate or unacceptable Work may be subject to action by the Engineer, Construction Manager or Owner.

PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION – Not Used.

END 01340

## SECTION 01400 - QUALITY REQUIREMENTS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Quality assurance submittals.
- B. Sequencing and scheduling of the work with testing and inspections.
- C. Mock-ups.
- D. Control of installation.
- E. Tolerances.
- F. Testing and inspection services.
- G. Manufacturers' field services.

#### 1.2 RELATED SECTIONS

- A. Section 01190 – Reference Standards
- B. Section 01340 – Submittals
- C. Section 01600 – Product Requirements

#### 1.3 SUBMITTALS

- A. Testing Agency Qualifications:
  - 1. Prior to start of Work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
- B. Design Data: Submit for Engineer's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.
- C. Test Reports: After each test/inspection, promptly submit two copies of report to Engineer and to Contractor.
  - 1. Include:
    - a. Date issued.
    - b. Project title and number.
    - c. Name of inspector.
    - d. Date and time of sampling or inspection.
    - e. Identification of product and specifications section.
    - f. Location in the Project.
    - g. Type of test/inspection.
    - h. Date of test/inspection.
    - i. Results of test/inspection.
    - j. Conformance with Contract Documents.
    - k. When requested by Engineer, provide interpretation of results.
- D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Engineer, in quantities specified for Product Data.

1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- E. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- F. Manufacturer's Field Reports: Submit reports for Engineer's benefit as contract administrator or for Owner.
  1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

#### 1.4 TESTING AND INSPECTION AGENCIES

- A. Owner will employ and pay for services of an independent testing agency to perform specified testing and inspection, except where specifically indicated otherwise in the Schedule of Tests and Inspections.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

#### 1.5 SEQUENCING AND SCHEDULING

- A. Soils Testing: As each portion of the Work is completed, notify testing laboratory to perform compaction and moisture density tests.
  1. Test compaction of existing and placed materials no more than seven (7) days prior to placement of the next portion of the Work, and only when no rain is expected between the time of the test and the placement of the next portion of the Work.
  2. Proceed promptly with additional portions of the Work only after satisfactory results have been verified in writing.

### PART 2 PRODUCTS - NOT USED

### PART 3 EXECUTION

#### 3.1 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.



- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

### 3.2 MOCK-UPS

- A. Tests will be performed under provisions identified in this section and identified in the respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be a comparison standard for the remaining Work.
- D. Where mock-up has been accepted by Engineer and is specified in product specification sections to be removed, remove mock-up and clear area when directed to do so.

### 3.3 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

### 3.4 TESTING AND INSPECTION

- A. Testing Agency Duties:
  - 1. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.
  - 2. Perform specified sampling and testing of products in accordance with specified standards.
  - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  - 4. Promptly notify Engineer and Contractor of observed irregularities or non-conformance of Work or products.
  - 5. Perform additional tests and inspections required by Engineer.
  - 6. Submit reports of all tests/inspections specified.
- B. Limits on Testing/Inspection Agency Authority:
  - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
  - 2. Agency may not approve or accept any portion of the Work.
  - 3. Agency may not assume any duties of Contractor.
  - 4. Agency has no authority to stop the Work.
- C. Contractor Responsibilities:
  - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.

2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
  3. Provide incidental labor and facilities:
    - a. To provide access to Work to be tested/inspected.
    - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
    - c. To facilitate tests/inspections.
    - d. To provide storage and curing of test samples.
  4. Notify Engineer and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
  5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
  6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- D. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Engineer.
- E. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.

### 3.5 SCHEDULE OF TESTS AND INSPECTIONS:

- A. Soils Testing: Owner's Testing Service.
1. Section 02315 - Excavation; Section 02316 - Fill and Backfill:
    - a. Test and inspect subgrades and each fill or backfill layer.
    - b. Perform subgrade testing in accordance with project soils report.
    - c. Test compaction of soils ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937 as applicable.
- B. Concrete Testing and Inspection: Owner's Testing Service.
1. Section 03200 - Concrete Reinforcement:
    - a. Inspect reinforcement for bar size, quantity, cover and support prior to casting concrete.
  2. Section 03300 - Cast-in-Place Concrete:
    - a. Compressive strength tests: ASTM C172 and ASTM C39.
      - 1) Samples for each day's pour greater than 5 cubic yards. Sample every 50 cubic yards.
      - 2) Sample shall consist of 4 specimens. Break schedule: 1 at 7 days, 2 at 28 days and final held for possible future break if directed by Engineer.
      - 3) Slump: ASTM C 143; one for each set of test cylinders.
      - 4) Air Content: ASTM C 231.
      - 5) Concrete Temperature: ASTM C 1064.
      - 6) Unit Weight: ASTM C 567.
      - 7) Take one additional cylinder during cold weather, cured on site under same conditions as the concrete it represents.

### 3.6 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

### 3.7 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Engineer, it is not practical to remove and replace the Work, Engineer will direct an appropriate remedy or adjust payment.

END 01400

## SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Construction Facilities:
  - 1. Vehicular access.
  - 2. Parking.
  - 3. Progress cleaning and waste removal.
  - 4. Project identification.
  - 5. Traffic regulation.
  
- B. Temporary Controls:
  - 1. Barriers.
  - 2. Protection of the Work.
  - 3. Security.
  - 4. Water control.
  - 5. Dust control.
  - 6. Erosion and sediment control.
  - 7. Noise control.
  - 8. Pollution control.
  
- C. Removal of utilities, facilities, and controls.

#### 1.2 VEHICULAR ACCESS

- A. Provide unimpeded access for emergency vehicles. Maintain 20 foot width driveways with turning space between and around combustible materials.
  
- B. Provide and maintain access to fire hydrants and control valves free of obstructions.
  
- C. Provide means of removing mud from vehicle wheels before entering streets.
  
- D. Existing on-site roads may be used for construction traffic provided they are cleaned at the end of each day.

#### 1.3 PARKING

- A. Use of designated existing on-site streets and driveways used for construction traffic is permitted. Tracked vehicles shall not be allowed on paved areas under any circumstances.

- B. Do not allow heavy vehicles or construction equipment in parking areas.
- C. Permanent Pavements and Parking Facilities:
  1. Prior to Substantial Completion the base for permanent roads and parking areas may be used for construction traffic.
  2. Avoid traffic loading beyond paving design capacity. Tracked vehicles not allowed.
- D. Maintenance:
  1. Maintain traffic and parking areas in a sound condition free of excavated material, construction equipment, products, mud, snow and ice.
  2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original or specified condition.
- E. Removal, Repair:
  1. Remove temporary materials and construction before Substantial Completion.
  2. Remove underground work and compacted materials to a depth of two (2) feet. Fill and grade site as specified.
  3. Repair facilities damaged by use, to original and/or specified condition.
- F. Mud From Site Vehicles: Construction Manager shall be responsible for providing a means of removing mud from vehicle wheels before entering streets.

#### 1.9 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.

#### 1.10 TRAFFIC REGULATION

- A. Signs, Signals, And Devices:
  1. Post Mounted and Wall Mounted Traffic Control and Informational Signs: As approved by local jurisdictions.
  2. Traffic Control Signals: As approved by local jurisdictions.
  3. Traffic Cones and Drums, Flares and Lights: As approved by local jurisdictions.
  4. Flag person Equipment: As required by local jurisdictions.
- B. Flag Persons: Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

- C. Flares And Lights: Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.
- D. Haul Routes:
  1. Consult with authority having jurisdiction, establish public thoroughfares to be used for haul routes and site access.
  2. Confine construction traffic to designated haul routes.
  3. Provide traffic control at critical areas of haul routes to regulate traffic, to minimize interference with public traffic.
- E. Traffic Signs and Signals:
  1. At approaches to site and on site, install at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.
  2. Install and operate traffic control signals to direct and maintain orderly flow of traffic in areas under Contractor's control, and areas affected by Contractor's operations. The Contractor shall higher a Traffic Signal Sub-Contractor approved by the Illinois Department of Transportation and Cook County Highway Department. The Contractor shall assume maintenance of signals upon start of Maintenance of Traffic (MOT) work requiring lane closers & flashing red sequence of operations for the signal.
  3. Relocate as Work progresses, to maintain effective traffic control.
- F. Removal:
  1. Remove equipment and devices when no longer required.
  2. Repair damage caused by installation.
  3. Remove post settings to a depth of two (2) feet below finished grade.

#### 1.11 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to allow for Owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access.
- C. Provide protection for plants designated to remain. Replace damaged plants.
- D. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

#### 1.12 SECURITY

- A. Security Program:
  1. Protect Work, existing premises and Owner's operations from theft, vandalism and unauthorized entry.

### 1.13 WATER CONTROL

- A. Contractor is responsible for providing all equipment and manpower necessary to control groundwater conditions as to not cause damage to any and all existing facilities.
- B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

### 1.14 DUST CONTROL

- A. Execute Work by methods to minimize raising dust from Contractor's construction operations.
- B. Provide positive means to prevent air-borne dust from dispersing into atmosphere and existing electrical equipment.

### 1.15 EROSION AND SEDIMENT CONTROL

- A. Erosion control practices are to be constructed and maintained in accordance with the Illinois Urban Manual, latest edition and with any and all DuPage County Storm Water Ordinances.
- B. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- C. Minimize amount of bare soil exposed at one time.
- D. Provide temporary measures such as berms, dikes and drains to prevent water flow.
- E. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
- F. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- G. Install inlet filter baskets at all existing open-grated stormwater structures within the area of construction work.

#### 1.16 NOISE CONTROL

- A. Provide methods, means, and facilities to minimize noise from construction operations as deemed acceptable by the owner.

#### 1.17 POLLUTION CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances and pollutants produced by construction operations.
- B. Comply with pollution and State of Illinois environmental control requirements.

#### 1.18 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Final Application for Payment.
- B. Remove underground installations to a minimum depth of 2 feet below finished grade. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END 01500



## SECTION 01600 - PRODUCT REQUIREMENTS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Products.
- B. Product delivery requirements.
- C. Product storage and handling requirements.
- D. Product options.
- E. Product substitution procedures.

#### 1.2 PRODUCTS

- A. Provide products of qualified manufacturers suitable for intended use. Provide products of each type by a single manufacturer unless specified otherwise.

#### 1.3 PRODUCT DELIVERY REQUIREMENTS

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct and products are undamaged. Immediately reconcile with manufacturer discrepancies with quantities or condition of materials received.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement or damage.

#### 1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

- A. Store and protect products in accordance with manufacturers' instructions.
- B. Store with seals and labels intact and legible.
- C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to the product.
- D. For exterior storage of fabricated products, place on sloped supports above ground.

- E. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- F. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- G. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement or damage.
- H. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

### 1.5 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: products of one manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article.

### 1.6 PRODUCT SUBSTITUTION PROCEDURES

- A. Engineer will consider requests for Substitutions only within 15 days after date of Owner-Contractor Agreement.
- B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that the Contractor:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
  - 2. Will provide the same warranty for the Substitution as for the specified product.
  - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
  - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
  - 5. Will reimburse Owner and Engineer for review or redesign services associated with re-approval by authorities.
  - 6. Will pay Owner the amount of any cost savings that may exist due to the product substitution.

- E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
  - 1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
  - 2. Submit Shop Drawings, Product Data, and certified test results attesting to the proposed product equivalence. Burden of proof is on the proposer.
  - 3. Engineer will notify Contractor in writing of decision to accept or reject request.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTIONS – NOT USED

END 01600

## SECTION 01700 - EXECUTION REQUIREMENTS

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
1. Closeout procedures.
  2. Final cleaning.
  3. Starting of systems.
  4. Demonstration and instructions.
  5. Protecting installed construction.
  6. Project record documents.
  7. Operation and maintenance data.
  8. Manual for materials and finishes.
  9. Manual for equipment and systems.
  10. Spare parts and maintenance products.
  11. Product warranties and product bonds.
  12. Maintenance service.

#### 1.2 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected and that Work is complete in accordance with Contract Documents and ready for Engineer's review.
- B. Provide submittals to Engineer and Owner that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments and sum remaining due.
- D. Owner will occupy portions of the project as specified in Section 01100.

#### 1.3 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Clean debris from roadway, gutters and drainage systems.
- C. Clean site. Sweep paved areas, rake clean landscaped surfaces.
- D. Remove waste and surplus materials, rubbish and construction facilities from the site.

#### 1.4 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- C. Prohibit traffic from landscaped areas.

#### 1.5 PROJECT RECORD DOCUMENTS

- A. It is the contractor's responsibility to maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed Shop Drawings, Product Data, and Samples.
  - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - 1. Manufacturer's name and product model and number.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured depths of foundations in relation to main datum.
  - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  - 4. Field changes of dimension and detail.
  - 5. Details not on original Contract drawings.
- G. Submit documents to Engineer with claim for final Application for Payment.
  - 1. Contractor is responsible for making sure that all work performed by subcontractor's is recorded and provided to the Owner at the end of the project.

2. Failure to provide accurate record drawings will result in the Contractor being back charged for engineering services required to correct at the applicable billing rate of the person responsible for performing the work.
3. Payment for time necessary to create record drawings will be charged directly to the Contractor.

## 1.6 PRODUCT WARRANTIES AND PRODUCT BONDS

**A. Unless otherwise extended elsewhere in an individual specification, all equipment shall be warranted for no less than twelve months from date on which the item is placed into service, whichever is later, that all equipment be free from defects in design, materials and workmanship.**

1. Contractor shall furnish replacement parts at no cost for any component proven defective, whether of his or manufacturer during the guarantee period. The labor and freight to replace or repair associated items, such as pipe, repairs to pipes, valves and/or fittings shall also be furnished without charge.
  2. Should the equipment be placed into service more than one month following the manufacturer's approved startup, the Contractor responsible for the installation shall provide documentation stating such to the Engineer, Construction Manager and Owner within two weeks of the equipment being placed in service.
- B. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers and manufacturers within ten days after completion of the applicable item of work and submit to Engineer or Construction Manager.
- C. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.
- D. Verify that documents are in proper form, contain full information and are notarized.
- E. Co-execute submittals when required.
- F. Provide Table of Contents and assemble in three D side ring binder with durable plastic cover.
- G. Submit prior to final Application for Payment.
- H. Time Of Submittals:
1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
  2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
  3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty or bond period.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END 01700

## SECTION 01740 - WARRANTIES AND BONDS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Preparation and submittal.
- B. Time and schedule of submittals.

#### 1.2 RELATED SECTIONS

- A. Section 00100 -Instructions to Bidders: Bid Bonds.
- B. General Conditions: Performance Bond and Labor and Material Payment Bonds, Warranty, and Correction of Work.
- C. Section 01700 - Contract Closeout: Contract closeout procedures.
- D. Section 01730 - Operation and Maintenance Data.
- E. Individual Specifications Sections: Warranties required for specific products or Work.

#### 1.3 FORM OF SUBMITTALS

- A. Bind in commercial quality, 8-1/2 x 11 inch (216 x 279 mm) three-ring side binders with hardback, cleanable, plastic covers.
- B. Label cover of each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible principal.
- C. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification Section in which specified, and the name of the product or work item.
- D. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.



#### 1.4 PREPARATION OF SUBMITTALS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item or work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

#### 1.5 TIME OF SUBMITTALS

- A. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
- B. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
- C. For items of Work when acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

#### 1.6 WARRANTIES

- A. Contractor shall provide to Owner a one-year non-conditional warranty on all work to begin upon final acceptance.

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

Not Used

END 01740

**DIVISION 2**

**SITE WORK**

## SECTION 02055 - FURNISH AND PLACE TOPSOIL

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section includes subsoil materials and topsoil materials.
- B. Related Sections:
  - 1. Section 02924- Seeding and Soil Supplements
  - 2. Section 02936- Restoration and Erosion Control.

#### 1.2 UNIT PRICES - MEASUREMENT AND PAYMENT

- A. Furnish and Place Topsoil, 4":
  - 1. Method of Measurement: By the square yard.
  - 2. Method of Payment: Includes furnishing, excavating and placing topsoil, special types of topsoil or compost/topsoil blend.

#### UNIT PRICE:

- A. Method of Measurement:
  - 1. Furnish and Place Topsoil, 4" will be measured in Square Yards
- B. Basis of Payment:
  - 1. Furnish Topsoil, 4" Payment will be made at the Contract unit price per square yard. The price shall include all labor, tools, equipment, and incidentals to complete the Work as specified.

Payment will be made under the following items:

**Description**

Furnish and Place Topsoil, 4"

#### 1.3 REFERENCES

- A. Standard Specification for Road and Bridge Construction (SSRBC), Current Edition, Illinois Department of Transportation.

- B. AASHTO T180 (American Association of State Highway and Transportation Officials) - Moisture-Density Relations of Soils Using a 10 lb. Rammer and an 18" Drop.
- C. ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb. Rammer and 12" Drop.
- D. ASTM D1556 - Test Method for Density of Soil in Place by the Sand-Cone Method.
- E. ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. Rammer and 18" Drop.
- F. ASTM D2167 - Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
- G. ASTM D2487 - Classification of Soils for Engineering Purposes.
- H. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- I. ASTM D3017 - Test Method for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

#### 1.4 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Samples: Submit, in airtight containers, 10 lb. sample of each type of fill to Engineer.
- C. Materials Source: Submit name of imported materials source.

#### 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with Illinois Department of Transportation standards.
- B. Maintain one copy of SSRBC on site.

### PART 2 PRODUCTS

#### 2.1 TOPSOIL MATERIALS

- A. Topsoil: As defined under SSRBC Section 1081.
- B. Topsoil shall be a loamy soil from the "A" horizon of soil profiles of local soils. It must have an organic content between 1% and 10%. It shall be relatively free from large roots, sticks, weeds, brush or stones larger than 1" in diameter or other litter and waste products.

- C. At least 90 percent must pass the No. 10 sieve and the pH must be between 5.0 and 8.0.
- D. Topsoil to be restored to depth indicated on plans.

## 2.2 SOURCE QUALITY CONTROL

- A. Testing and Analysis of Subsoil Material: Perform in accordance with ASTM D698.
- B. Testing and Analysis of Topsoil Material: Perform in accordance with ASTM D698.
- C. If tests indicate materials do not meet specified requirements, change material and retest.
- D. Provide materials of each type from same source throughout the Work.

## PART 3 EXECUTION

### 3.1 SOIL REMOVAL

- A. Excavate subsoil and topsoil from areas designated. Strip topsoil to whatever depth it may occur in designated areas.
- B. Remove lumped soil, boulders, and rock.
- C. Stockpile excavated material in area designated on site and remove excess material not being used, from site.

### 3.2 STOCKPILING

- A. Stockpiling and all associated work shall be considered incidental to the contract and only completed if deemed necessary by the contractor due to scheduling.
- B. Stockpile materials on site at locations designated by Engineer.
- C. Stockpile in sufficient quantities to meet Project schedule and requirements.
- D. Separate differing materials with dividers or stockpile apart to prevent mixing.
- E. Prevent intermixing of soil types or contamination.
- F. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
- G. Material shall be stockpiled on impervious material and covered over with same material, until disposal.

### 3.3 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in a clean and neat condition. Grade site surface to prevent free standing surface water.

END 02055

## SECTION 02060 - AGGREGATE

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Coarse aggregate materials.
  - 2. Fine aggregate materials.
  
- B. Related Sections:
  - 1. Section 02055 – Soils.
  - 2. Section 02311 – Rough Grading.
  - 3. Section 02222 – Excavation.
  - 4. Section 02324 – Trenching.
  - 5. Section 02512 – Water Distribution
  - 6. Section 02539 - Sanitary Sewer Systems
  - 7. Section 02936 – Restoration and Erosion Control.

#### 1.2 REFERENCES

- A. Standard Specifications for Road and Bridge Construction (SSRBC), Current Edition (Illinois Department of Transportation).
  
- B. American Association of State Highway and Transportation Officials (AASHTO):
  - 1. AASHTO M147 – Materials for Aggregate and Soil–Aggregate.
  - 2. AASHTO T180 – Moisture–Density Relations of Soils Using a 10 lb. Rammer and an 18” Drop.
  
- C. ASTM International:
  - 1. ASTM C136 – Method for Sieve Analysis of Fine and Coarse Aggregates.
  - 2. ASTM D698 – Test Methods for Moisture–Density Relations of Soils and Soil–Aggregate Mixtures, Using 5.5 lb. Rammer and 12” Drop.
  - 3. ASTM D1557 – Test Methods for Moisture–Density Relations of Soils and Soil–Aggregate Mixtures Using 10 lb. Rammer and 18” Drop.
  - 4. ASTM D2167 – Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
  - 5. ASTM D2487 – Classification of Soils for Engineering Purposes.
  - 6. ASTM D2922 – Test Methods for Density of Soil and Soil–Aggregate in Place by Nuclear Methods (Shallow Depth).
  - 7. ASTM D3017 – Test Method for Moisture Content of Soil and Soil–Aggregate in Place by Nuclear Methods (Shallow Depth).
  - 8. ASTM D4318 – Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

### 1.3 SUBMITTALS

- A. Section 01330 – Submittal Procedures: Requirements for submittals.
- B. Samples: Submit, in air-tight containers, 10 lb. sample of each type of fill to testing laboratory.
- C. Materials Source: Submit name of imported materials suppliers.

### 1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with Standard Specifications for Road and Bridge Construction in Illinois, Current Edition, Illinois Department of Transportation.
- B. Maintain one copy of standards on site.

## PART 2 PRODUCTS

### 2.1 COARSE AGGREGATE MATERIALS

- A. As indicated on plans and as defined under Article 1004 of Standard Specifications for Road and Bridge Construction, Current Edition (Illinois Department of Transportation).
- B. **No recycled materials will be permitted, without written approval of the Engineer or Owner. Including but not limited to screenings, and recycled crushed concrete will be permitted. All CA material shall be crushed limestone.**

### 2.2 FINE AGGREGATE MATERIALS

- A. As indicated on plans and as defined under Section 1003 of Standard Specifications for Road and Bridge Construction, Current Edition (Illinois Department of Transportation).

### 2.3 SOURCE QUALITY CONTROL

- A. Section 01400 – Quality Requirements: Testing and inspection services.
- B. Coarse Aggregate Materials – Testing and Analysis: Perform in accordance with ASTM D698 / AASHTO T180.
- C. **Any material designated with CA shall be made from Limestone and approved by the Owner. Any alternate material may not be used unless written permission is granted by the Owner.**
- D. Fine Aggregate Material – Testing and Analysis: Perform in accordance with ASTM D698 / AASHTO T180.



- E. If tests indicate materials do not meet specified requirements, change material or material source and retest.
- F. Provide materials of each type from same source throughout the work.

### PART 3 EXECUTION

#### 3.1 STOCKPILING

- A. Stockpile materials on site at locations designated by Engineer.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Direct surface water away from stockpile site so as to prevent erosion or deterioration of materials.

#### 3.2 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in a clean and neat condition. Grade site surface to prevent free-standing surface water.
- B. If a borrow area is indicated, leave area in a clean and neat condition. Grade site surface to prevent free-standing surface water.

END 02060

## SECTION 02100 - SITE PREPARATION

### PART 1 GENERAL

#### 1.1 Job Conditions

- A. Notify "J.U.L.I.E." 811 at least 72 hours (not including Saturdays, Sundays, and legal holidays) prior to commencement of operations. Notify respective owners of utilities encountered during excavation operations. Cease operations or proceed with due caution as appropriate to provide Utility ample time to examine utility encountered and determine repair, replacement, abandonment, and relocation procedures as appropriate.
- B. Cap or remove utilities in accordance with instructions by owners of utilities. Protect, support, and maintain remaining utilities.
- C. Contractor shall be responsible for videotaping the entire project limit. This video shall be received and approved by the Owner prior to the start of work.

#### 1.2 Site Protection

- A. Contractor shall protect existing utility infrastructure and adjacent property owners. The cost of this shall be incidental to the project.

### PART 2 PRODUCTS

Not Used

### PART 3 EXECUTION

#### 3.1 Clearing and Grubbing

- A. Clear grub area within limits of improvement, where grade is to be raised, of shrubs, trees, stumps, vegetation, rubbish, and other perishable or objectionable matter. Grub stumps. **No trees shall be removed without prior written authorization from the OWNER. Tree protection shall be considered incidental to the contract.**
- B. Remove cleared material from site or as directed by OWNER.
- C. Wherever possible, existing trees to be preserved.
- D. No holes to be left open in pavement or parkway over holiday, weekend or after 5:00 p.m., on day preceding holiday or weekend.

END 02100

## SECTION 02222 - EXCAVATION

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Excavation for Watermain Installation and Location
- B. Excavation for Service Installation and Location
- C. Excavation for Exploratory Trenches

#### 1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control.
- B. Section 02100 – Site Preparation
- C. Section 02223 - Backfilling.

#### 1.3 FIELD MEASUREMENTS

- A. Verify that survey benchmark and intended elevations for the Work are as indicated.

#### 1.4 UNIT PRICES

- A. Method of Measurement:
  - 1. Excavation for Utilities, and corresponding services.
- B. Basis of Payment:
  - 1. Excavation for Watermain, Water Valve Vaults, Manholes, and corresponding services or other related appurtenances shall be considered incidental to the cost of the relative improvements..
- C. Method of Measurement:
- D. Basis of Payment:
  - 1. Exploratory Excavation shall include all labor, equipment and materials for the contractor to excavate locate and backfill any existing utilities as deemed necessary by the contractor.

- E. Method of Measurement:
  - 1. Dewatering
- F. Basis of Payment:
  - 1. Any dewatering and related items required to complete the project shall be considered incidental to the contract.

## PART 2 PRODUCTS

Not Used.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Identify known underground, above ground, and aerial utilities. Stake and flag locations.
- C. Notify utility company to remove and relocate utilities.
- D. Protect above and below grade utilities which are to remain.
- E. Protect plant life, lawns, and other features remaining as a portion of final landscaping.
- F. Protect bench marks, existing structures, fences and paving from excavation equipment and vehicular traffic.

### 3.2 EXCAVATION

- A. Underpin adjacent structures which may be damaged by excavation work, including utilities and pipe chases.
- B. For Exploratory Trenches excavate first 1 foot of depth mechanically taking special care. Hand excavate below 1 foot until utilities are exposed.
- C. Excavate subsoil required to accommodate proposed utilities, and site structures.
- D. Machine slope banks to angle of repose or less, until shored.
- E. Excavation cut not to interfere with normal 45 degree bearing splay of foundation.
- F. Grade top perimeter of excavation to prevent surface water from draining into excavation.

- G. Hand trim excavation. Remove loose matter.
- H. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd (0.25 cu m) measured by volume.
- I. Notify Engineer of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- J. Correct unauthorized excavation at no extra cost to owner.
- K. Correct areas over-excavated by error.
- L. Remove excavated material from site.
- M. Excavate subsoil to locate utilities which may be in conflict with work.

### 3.3 FIELD QUALITY CONTROL

- A. Field inspection will be performed under provisions of Section 01400.
- B. Provide for visual inspection of bearing surfaces.

### 3.4 PROTECTION

- A. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation, from freezing.

END 02222

## SECTION 02311 - ROUGH GRADING

### PART 1 GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Removal of topsoil and subsoil; and cutting, grading, filling, rough contouring and compacting the site for site utilities & site structures, grading and rough contour of the site to match existing conditions.

##### B. Related Sections:

1. Section 02055 – Soils.
2. Section 02060 – Aggregate.
3. Section 02100 – Site Preparation
4. Section 02222– Excavation and Fill.
5. Section 02316 – Rock Removal.
6. Section 02320 – Backfill.
7. Section 02324 – Trenching.
8. Section 02936 – Restoration and Erosion Control.

#### 1.2 REFERENCES

- A. Illinois Department of Transportation, Division of Highways, Standard Specifications for Road and Bridge Construction in Illinois (SSRBC), Current Edition.
- B. Illinois Department of Transportation, Supplemental Specifications and Recurring Special Provisions, Current Edition.
- C. American Association of State Highway and Transportation Officials (AASHTO):
  1. AASHTO T99 – Moisture Density Relations of Soils Using a 5.5 lb. (2.5–kg) Rammer 12” (305–mm) Drop.
  2. AASHTO T180 – Moisture–Density Relations of Soils Using a 10 lb. (4.54 kg) Rammer and an 18” (457 mm) Drop.
  3. AASHTO T194 – Determination of Organic Matter in Soils by Wet Combustion.
- D. ASTM International:
  1. ASTM C136 – Method For Sieve Analysis of Fine and Coarse Aggregates.
  2. ASTM D698 – Test Methods for Moisture–Density Relations of Soils and Soil–Aggregate Mixtures, Using 5.5 lb. (2.49 Kg) Rammer and a 12” (304.8 mm) Drop.
  3. ASTM D1556 – Test Method for Density of Soil in Place by the Sand Cone Method.
  4. ASTM D1557 – Test Methods for Moisture–Density Relations of Soils and Soil–Aggregate Mixtures Using 10 lb. (4.54 Kg) Rammer and an 18” (457 mm) Drop.

5. ASTM D2167 – Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
6. ASTM D2419 – Test Method For Sand Equivalent Value of Soils and Fine Aggregate.
7. ASTM D2434 – Test Method For Permeability of Granular Soils (Constant Head).
8. ASTM D2922 – Test Methods for Density of Soil and Soil–Aggregate in Place by Nuclear Methods (Shallow Depth).
9. ASTM D3017 – Test Methods for Moisture Content of Soil and Soil–Aggregate Mixtures.

### 1.3 SUBMITTALS

- A. Section 01330 – Submittal Procedures: Requirements for submittals.
- B. Samples: Submit, in air-tight containers, 10 lb samples of each type of fill to testing laboratory or Engineer.
- C. Materials source: Submit name of imported materials suppliers.

### 1.4 CLOSEOUT SUBMITTALS

- A. Section 01700 – Execution Requirements: Closeout procedures.
- B. Project Record Documents: Accurately record locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

### 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with Standard Specifications for Road and Bridge Construction in Illinois, Current Edition (Illinois Department of Transportation).
- B. Maintain one copy on site.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Topsoils: Type as specified in Section 02055 – Soils.
- B. Subsoil Fill: Type as specified in Section 02055 – Soils.
- C. Structural Fill: As shown on plans or as specified in Section 02060.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 – Administrative Requirements: Coordination and project conditions.
- B. Verify site conditions under provisions of Section 01400.
- C. Verify that survey benchmark and intended elevations for the Work are as indicated.

### 3.2 PROTECTION

- A. Protect trees, shrubs, lawns and other features remaining as portion of final landscaping.
- B. Protect all crops or agricultural areas outside the limits of disturbance.
- C. Protect benchmarks, existing structures, fences, sidewalks, curbs, roads and paving from excavating equipment and vehicular traffic.
- D. Protect above or below ground utilities which are to remain.
- E. Repair damage.

### 3.3 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Stake and flag locations of known utilities.
- C. Locate, identify and protect utilities that remain from damage.
- D. Notify utility company to remove and relocate utilities, if necessary.
- E. Upon discovery of unknown utility or concealed conditions, discontinue affected work; notify Engineer.

### 3.4 SUBSOIL EXCAVATION

- A. Excavate subsoil from areas to be further excavated, re-landscaped, or re-graded.
- B. Do not excavate wet subsoil or excavate and process wet material to obtain optimum moisture content.
- C. When excavating through roots, perform Work by hand and cut roots with sharp axe.



- D. Stockpile in area designated on site to depth not exceeding eight feet (8') and protect from erosion. Remove subsoil not being reused from site.
- E. Benching Slopes: Horizontally bench existing slopes greater than 1:4 to key placed fill material to slope to provide firm bearing.
- F. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.

### 3.5 FILLING

- A. Install Work in accordance with Standard Specification for Road and Bridge Construction, Current Edition (Illinois Department of Transportation).
- B. Fill areas to contours and elevations with unfrozen materials.
- C. Place fill material on continuous layers and compact.
- D. Maintain optimum moisture content of fill materials to attain required compaction density.
- E. Slope grade away from building minimum two inches (2") in 10 ft. unless noted otherwise.
- F. Make grade changes gradual. Blend slope into level areas.
- G. Remove surplus fill materials from site.

### 3.6 TOLERANCES

- A. Section 01400 – Quality Requirements: Tolerances.
- B. Top Surface of Subgrade: Plus or minus one-tenth (1/10) of a foot from required elevation.

### 3.7 FIELD QUALITY CONTROL

- A. Section 01700 – Execution Requirements: Testing, adjusting and balancing.
- B. Testing: In accordance with AASHTO T180.
- C. If tests indicate Work does not meet specified requirements, remove, replace & retest.
- D. Frequency of Tests: As determined by Engineer.

END 02311

July 27, 2012

02311

County Line  
Watermain Replacement

## SECTION 02316 – GENERAL CONSTRUCTION & DEMOLITION DEBRIS DISPOSAL

### PART 1 GENERAL

#### 1.1 DESCRIPTION

- A. If construction activities will result in removal and disposal of excavation spoils, per Illinois Public Act 96-1416 and the Illinois Environmental Protection Agency, soil sampling and analysis, along with certification from a licensed professional engineer that the soil is uncontaminated, will be required prior to clean construction and demolition debris (CCDD) landfill acceptance. However, if the subject property has never been used for industrial or commercial purposes, then the site owner or operator may certify that the soil is uncontaminated by use of IEPA form LPC-662.

To facilitate meeting the above requirements, the Village will supply a signed Source Site Certification by Owner or Operator Form LPC-662 for this project location.

B. Related Section:

1. Section 02311 – Rough Grading
2. Section 02222 – Excavation
3. Section 02317 – Rock Removal

### PART 2 EXECUTION

#### 2.1 CONTRACTOR REQUIREMENTS

- A. The Contractor shall be responsible for satisfactory removal and disposal of all waste material, asphalt, concrete, stone, and uncontaminated or contaminated dirt or debris generated or discovered in the course of the work. Removal and disposal of excavation items being disposed of at a landfill or clean construction and demolition debris (CCDD) fill site shall meet the requirements of Public Act 96-1416.
- B. The temporary storing of excavated materials on the parkways or right of way, and re-handling them later for disposal will not be allowed due to additional damage caused to tree root systems, parkways, existing equipment, and conditions. It shall be the contractor's responsibility to find an approved dumpsite for debris and any excavated materials. The Village will not provide for one.
- C. The Contractor shall have the option of employing a licensed testing firm, as approved by ENGINEER, to screen each truck-load of material on-site, using a PID or FID field screen or other acceptable method. If said screen indicates VOC levels that will be unacceptable for disposal at a CCDD facility, the Engineer shall be notified immediately. The contractor shall be responsible for properly disposing of the material at an acceptable landfill, and providing the Engineer and Village with all of the proper paperwork to document the material disposal with the IEPA.

- D. This work shall be paid for as specified below. If, however, a truck-load is rejected by a CCDD facility after leaving the project site, and said truck-load was not identified on-site as having VOC levels above the allowable limits, the contractor shall still be required to properly dispose of the material and provide the Engineer and Village with the necessary documentation, but shall not be additionally compensated.

## PART 3 PAYMENT

### 3.1 MEASUREMENT AND PAYMENT

- A. All additional work to satisfy these requirements shall be the responsibility of the contractor. All costs associated with meeting these requirements shall be paid for as specified herein. These costs shall include but are not limited to all required testing, lab analysis and certification by a licensed professional engineer, if required, in addition to the cost of additional hauling, dump fees, etc. Payment for this work shall be incidental to the watermain pay items. No adjustment to the contract unit price will be allowed due to changes to quantities based on actual field conditions.
- B. Basis of Payment:  
This work shall be paid for at the contract unit price per **LOAD** for **ADDITIONAL HAULING SURCHARGE, SPECIAL WASTE**, which price shall be payment in full for the work as specified herein. **LOAD** is assumed to equal 16 Cubic Yards.

END 02316

## SECTION 02317 - ROCK REMOVAL

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section includes removal of identified and discovered rock during excavation and expansive tools to assist rock removal.
- B. Related Section:
  - 1. Section 02311 – Rough Grading.
  - 2. Section 02222 – Excavation and Fill.
  - 3. Section 02320 – Backfill.
  - 4. Section 02324 – Trenching.

#### 1.2 MEASUREMENT AND PAYMENT

- A. Rock Removal will not be measured for payment and will be considered incidental to excavation and trenching.

#### 1.3 REFERENCES

- A. Standard Specifications for Road and Bridge Construction, Current Edition (Illinois Department of Transportation).

#### 1.4 DEFINITIONS

- A. Rock: Solid mineral material of a size that cannot be removed with a 3/4 cy capacity excavator.

### PART 2 PRODUCTS – NOT USED

### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Section 01300 – Administrative Requirements: Coordination and project conditions.
- B. Verify site conditions and note subsurface irregularities affecting Work of this Section.

### 3.2 PREPARATION

- A. Identify required lines, levels, contours and datum.

### 3.3 ROCK REMOVAL BY A MECHANICAL METHOD

- A. Contractor shall be responsible for contacting Engineer upon exposure of rock.
- B. Blasting is not permitted.
- C. Excavate and remove rock by the mechanical method.
  - 1. Drill holes and use expansive tools, wedges or mechanical disintegration compound to fracture rock.
- D. Cut away rock at bottom of excavation to form level bearing.
- E. Remove shaled layers to provide sound and un-shattered base for foundations.
- F. In utility trenches, excavate to 6" below invert elevation of pipe and 24" wider than pipe diameter.
- G. Remove excavated materials and reuse for site landscaping unless directed by Engineer to remove materials from site.
- H. Correct unauthorized rock removal as directed by Engineer.

### 3.4 FIELD QUALITY CONTROL

- A. Provide for visual inspection of bearing surfaces and cavities formed by removed rock.

END 02317

## SECTION 02320 - BACKFILL

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section includes site structure backfilling to subgrade elevations; site filling and backfilling; fill under paving; around utilities and fill for over-excavation and consolidation and compaction as scheduled.
- B. Related Sections:
  - 1. Section 02055 – Soils.
  - 2. Section 02060 – Aggregate.
  - 3. Section 02222 – Excavation and Fill.
  - 4. Section 02311 – Rough Grading.
  - 5. Section 02324 – Trenching.
  - 6. Section 02936 – Restoration and Erosion Control.

#### 1.2 MEASUREMENT AND PAYMENT

- A. Trench Backfill:
  - 1. Unit of Measure: Cubic Yard.
  - 2. Method of Measurement: By cubic yard, compacted in place, based on final backfill quantity measured from one foot (1') above the top of the pipe to the bottom of the pavement per foot for respective pipe size shown on Standard Drawing No. 1 of the Standard Specifications for Water and Sewer Main Construction in Illinois.
  - 3. Basis of Payment: Paid for at the Contract Unit Price per cubic yard for TRENCH BACKFILL only on areas identified on the plans. All other areas shall be considered incidental to the associated improvement.
  - 4. Includes Costs of:
    - a. Backfill material.
      - 1) **No recycled materials will be permitted. Backfill shall be FA-6.**
    - b. Placement and compaction of material.
    - c. Clean up and disposal of excess material.
    - d. Any material or compaction testing that Engineer deems necessary in the event that compaction is not being completed to the satisfaction of the Owner.

#### 1.3 REFERENCES

- A. Illinois Department of Transportation (IDOT):
  - 1. Standard Specifications for Road and Bridge Construction, Current Edition.
  - 2. Supplemental Specifications and Recurring Special Provisions, Current Edition.
- B. American Association of State Highways and Transportation Officials (AASHTO):
  - 1. AASHTO T180 – Moisture Density Relations of Soils Using a 10 lb. Rammer and an 18" Drop.

- C. ASTM International:
1. ASTM C33, Standard Specification for Concrete Aggregates.
  2. ASTM D698 – Test Methods for Moisture–Density Relations of Soils and Soil–Aggregate Mixtures, Using 5.5 lb. Rammer and a 12” Drop.
  3. ASTM D1556 – Test Method for Density of Soil in Place by the Sand–Cone Method.
  4. ASTM D1557 – Test Methods for Moisture–Density Relations of Soils and Soil–Aggregate Mixtures Using 10 lb. Rammer and an 18” Drop.
  5. ASTM D2049 – Relative Density of Cohesionless Soils.
  6. ASTM D2167 – Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
  7. ASTM D2922 – Test Methods for Density of Soil and Soil–Aggregate in Place by Nuclear Methods (Shallow Depth).
  8. ASTM D3017 – Test Methods for Moisture Content of Soil and Soil–Aggregate Mixtures.
  9. ASTM D4253 –Standard Test Methods for Maximum Index Density of Soils Using a Vibratory Table.
  10. ASTM D4254 –Test Methods for Minimum Index Density of Soils and Calculation of Relative Density.

#### 1.4 SUBMITTALS

- A. Section 01330 – Submittal Procedures: Requirements for submittals.
- B. Test Reports: Field Density Test Reports. Submit Gradation Tests for all furnished material
- C. Samples: Provide samples of materials as required by the Engineer that will be used from furnished material.

### PART 2 PRODUCTS

#### 2.1 FILL MATERIALS

- A. Subsoil Fill: As specified in Section 02055 and as indicated on plans.
- B. Granular Fill: As specified in Section 02060 and as indicated on plans. Trench backfill shall be FA-6.
- C. Concrete: Lean concrete with a compressive strength of 3500 psi.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Section 01300 – Administrative Requirements: Coordination and project conditions.
- B. Verify subdrainage, dampproofing or waterproofing installation has been inspected.

- C. Verify underground structures are anchored to their own foundations to avoid flotation after backfilling.
- D. Verify structural ability of unsupported walls to support loads imposed by the fill.

### 3.2 PREPARATION

- A. Compact subgrade to density requirements for subsequent backfill materials.
- B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with granular fill and compact to density equal to or greater than requirements for subsequent fill material.
- C. Scarify subgrade surface to a depth of six inches (6") to identify soft spots; fill and compact to density equal to or greater than requirements for subsequent fill material.

### 3.3 BACKFILLING

- A. Backfill areas to contours and elevations with unfrozen materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- C. Granular Fill Type FA-6: 0 Place and compact materials in equal continuous layers not exceeding 12 inches, compacted depth.
- D. Soil Fill Type S1: Place and compact material in equal continuous layers not exceeding 12 inches, compacted depth.
- F. Place fill material in continuous layers and compact.
- G. Employ a placement method that does not disturb or damage other work.
- H. Maintain optimum moisture content of backfill materials to attain required compaction density.
- I. Backfill against supported foundation walls. Do not backfill against unsupported walls.
- J. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.
- K. Slope grade away from building minimum two inches (2") in ten feet (10'), unless noted otherwise.
- L. Make gradual grade changes. Blend slope into level areas.
- M. Remove surplus backfill materials from site.



N. Leave fill material stockpile areas free of excess fill materials.

### 3.4 COMPACTION

#### A. General:

1. Select the material and equipment required to attain the required density. Obtain approval for proposed methods of compaction. Should the methods of compaction prove unsatisfactory, take remedial measures and obtain approval for the required changes.
2. Control soil compaction during construction for compliance with density specified for each area classification. No segregation of large or fine particles permitted.
3. Compacting of materials by jetting is permitted upon approval by Engineer.

#### B. Compaction Equipment:

1. Provide compaction equipment of suitable size and number, and in satisfactory working condition to complete the Work.

#### C. Percentage Maximum Density Requirements:

1. Provide not less than the following density of the same soil material compacted at optimum moisture content, for the actual density of each layer of soil material-in-place.
  - a. Sitework:
    - 1) Under Paved Areas, Sidewalks and Piping:
      - a) Compaction Density for Cohesive Soils: 95% per ASTM D698.
      - b) Compaction Density for Cohesionless Soils: 75% relative density per ASTM D4253 and D4254.
    - 2) Under Unpaved Areas:
      - a) Compaction Density for Cohesive Soils: 90% per ASTM D698.
      - b) Compaction Density for Cohesionless Soils: 60% relative density per ASTM D4253 and D4254.
  - b. Specific Areas:
    - 1) Trenches Under and Adjacent to Pavement (within two feet):
      - a) Compact each layer of backfill material to 95% Modified Proctor Density in accordance with ASTM D1557 or AASHTO T180.
    - 2) Trenches in Open Areas (Agricultural):
      - a) Compact each layer of material to 90% Modified Proctor Density in accordance with ASTM D1557 or AASHTO T180.
    - 3) Lawn and Plant Areas:
      - a) Compact to 4" of subgrade and each layer of backfill or fill material to minimum 90% Modified Proctor Density in accordance with ASTM D1557 or AASHTO T180.
    - 4) If open-graded gravel fill is utilized for which field density tests cannot be performed, the material shall be compacted until firm and dense. As a minimum, roll with 8-ton vibratory roller at least 2 passes in both directions.

#### D. Moisture Content:

1. On and off-site borrow should be placed when within 2% of optimum moisture content based on ASTM D1557 or AASHTO T180.
2. All aggregate shall be placed with a moisture content according to the Standard Specifications for Road and Bridge Construction in Illinois.

### 3.5 TOLERANCES

- A. Section 01400 – Quality Requirements: Tolerances.
- B. Top Surface of General Backfilling: Plus or minus one inch (1”) from required elevations.

### 3.6 FIELD QUALITY CONTROL

- A. Section 01700 – Execution Requirements: Testing, adjusting, and balancing.
- B. Compaction testing shall be performed in accordance with ASTM D1557, ASTM D698 or AASHTO T180.
- C. If tests indicate Work does not meet specified requirements, remove Work, replace and retest.
- D. Frequency of Tests: As directed by Engineer.
- E. Proof roll compacted fill surfaces under all paved surfaces.

### 3.7 PROTECTION OF FINISHED WORK

- A. Section 01700 – Execution Requirements: Protecting finished work.
- B. Reshape and recompact fills subjected to vehicular traffic.

END 02320

## SECTION 02324 -TRENCHING

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section includes excavating trenches for utilities, compacted fill from top of utility bedding to subgrade elevations, backfilling and compaction.
- B. Related Sections:
  - 1. General Conditions, Supplementary Conditions and Division 1.
  - 2. Section 02055 – Topsoil.
  - 3. Section 02100 – Site Preparation.
  - 4. Section 02223 – Excavation and Backfill
  - 5. Section 02511 – Paving
  - 6. Section 02936 – Restoration and Erosion Control.

#### 1.2 MEASUREMENT AND PAYMENT

- A. **Trenching:** Trenching will not be measured for payment at the Contract Price for Each and is considered incidental to utility installation.
- B. **Exploratory Trenching** will be paid at a Lump Sum for Exploratory Trenching.: Exploratory trenching to locate any and all existing underground utilities, structures and ground conditions shall include excavating, dewatering, field measurements, surface restoration, and disposal of all excess material.

Payment will be made under the following items.

Exploratory Excavation: Paid for per lump sum

#### 1.3 REFERENCES

- A. Standard Specifications for Road and Bridge Construction in Illinois – Current Edition, Illinois Department of Transportation.
- B. Standard Specifications for Water and Sewer Main Construction in Illinois – Current Edition, Illinois Society of Professional Engineers, etal.
- C. American Association of State Highway and Transportation Officials (AASHTO):
  - 1. AASHTO T180 – Moisture-Density Relations of Soils Using a 10 lb. Rammer and an 18” Drop.

D. ASTM International:

1. ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.
2. ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using a 5.5 lb. Rammer and a 12" Drop.
3. ASTM D1556 - Test Method for Density of Soil in Place by the Sand-Cone Method.
4. ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using a 10 lb. Rammer and an 18" Drop.
5. ASTM D2167 - Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
6. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
7. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.

1.4 DEFINITIONS

- A. Utility: Any buried pipe, duct, conduit, or cable.

1.5 SUBMITTALS

- A. Section 01330 – Submittal Procedures: Requirements for submittals.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance Standard Specification for Water and Sewer Main Construction in Illinois – Current Edition, Illinois Society of Professional Engineers, et. al.

- B. Maintain one copy on site.

1.7 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.8 COORDINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.

- B. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.

PART 2 PRODUCTS

2.1 FILL MATERIALS

- A. Subsoil Fill: As specified in Section 02055.

- B. Granular Fill: As specified in Section 02060.

## PART 3 EXECUTION

### 3.1 LINES AND GRADES

- A. Pipes shall be laid true to the lines and grades indicated on Drawings.
  - 1. Use laser-beam instrument with qualified operator to establish lines and grades.
- B. The Engineer reserves the right to make changes in lines, grades and depths of utilities and manholes when changes are required for project conditions.

### 3.2 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Protect plant life, lawns, rock outcropping and other features remaining as a portion of final landscaping.
- C. Protect bench marks, existing structures, fences, sidewalks, paving and curbs from excavating equipment and vehicular traffic.
- D. Maintain and protect above and below grade utilities that are to remain.
- E. Establish temporary traffic control when trenching is performed in public right-of-way. Relocate controls as required during progress of Work.

### 3.3 GENERAL

- A. Excavate subsoil required for utilities.
- B. Remove lumped subsoil, boulders, and rock up to 1/3 CY, measured by volume. Larger material will be removed under Section 02316.
- C. Cut trenches as indicated on drawings or as specified in SSWSMC sufficiently wide to enable installation and allow inspection. Remove water or materials that interfere with Work.
- D. Do not interfere with 45 degree bearing splay of foundations.
- E. Hand trim for trim for bell and spigot pipe joints. Remove loose matter.
- F. When subsurface materials at bottom of trench are loose or soft, excavate to a greater depth as directed by Engineer until suitable material is encountered. Notify Engineer promptly upon discovery.
- G. Cut out soft areas of subgrade not capable of compaction in place. Backfill with fill and compact to density equal to or greater than requirements for subsequent backfill material.

- H. Correct areas over excavated areas with granular backfill and compact replacement as specified for authorized excavation or replace with fill concrete as directed.
- I. Stockpile excavated material in area designated on site and remove excess material not being used from site.

### 3.4 TRENCHING

#### A. Excavation:

1. Excavation shall be dug so that the pipe can be laid and jointed properly. The trench shall be made so that the pipe can be laid to the alignment and depth as shown on the Drawings, and it shall be excavated only so far in advance of pipe laying as permitted by the Owner. The excavation shall not be more than two feet wider at the bottom than the outside diameter of the pipe or structure. If there is no interference with construction, or adjacent property, and if soil permits, the Contractor at his own expense shall be permitted to slope the side walls of the excavation starting at a point 2 feet above the top of pipe.
2. The trench shall be excavated to the depth required so as to provide a uniform and continuous bearing and support for the pipe on bedding material at every point between joints, except where pipe slings or other lifting tackle are withdrawn.

#### B. Excavation Below Grade:

1. Where excavation indicates that the subsurface materials at the bottom of the trench are in a loose or soft state, the Contractor shall be advised to excavate to a depth where suitable material is encountered, as directed by the Engineer.
2. Where the bottom of the trench has been excavated by mistake to a greater depth than required, the Contractor shall refill this area using approved material. No additional compensation shall be given to the Contractor. Refilling with earth to bring the bottom of the trench to the proper grade will not be permitted.
3. Excavation within 24" of existing utilities shall be governed by specifications of the Owner of the respective utility. The Contractor shall obtain these specifications and follow the same at no extra cost.
4. Trenching in Advance of Pipe Laying: The trench for the pipe lines shall not be opened for a distance of more than 200 feet at any one time, unless authorized by the Engineer. At no time will the Contractor be permitted to leave more than 50 of trench open at the end of a working day. Adequate protection of open trench shall be provided by the Contractor and reviewed by the Engineer or Owner.

### 3.5 SHEETING AND BRACING

#### A. General:

1. Sheeting and bracing of all excavations shall conform to the latest statutes of the State of Illinois governing safety of workers in the construction industry. When necessary, in the opinion of the Engineer or Contractor, adequate sheeting and bracing shall be installed to prevent ground movement that may cause damage or settlement to adjacent structures, pipelines and utilities. Any damage

due to settlement because of failure to use sheeting or because of inadequate bracing, or through negligence or fault of the Contractor in any other manner, shall be repaired at the Contractor's expense.

2. Sides of trenches in unsuitable, loose or soft material, five feet or more in depth, shall be shored, sheeted, braced, sloped, or otherwise supported by means of sufficient strength to protect employees working within them.
- B. Sheeting Requirements:
1. Where excavations are made with vertical sides which require supporting, the sheeting and bracing shall be of sufficient strength to sustain the sides of the excavations and to prevent movement which could in any way injure the Work, or adjacent structures, or diminish the working space sufficiently to delay the Work. Special precautions shall be taken where there is additional pressure due to the presence of other structures.
  2. It shall be the Contractor's responsibility to select sheeting and bracing of sufficient dimensions and strength to adequately support the sides of trenches and excavations. The Contractor shall submit details of the sheeting and bracing he proposes to use to the Engineer for review.
  3. Timber sheeting shall conform in quality to select structural Douglas Fir lumber and shall be sound, live timber, free from sap, large checks, shakes, loose or decayed knots, worm holes, and other imperfections which may impair its strength or durability.
  4. In wet excavation, grooved sheeting shall be used to prevent passage of soil. Any voids between sheeting and face of excavation shall be filled with suitable material rammed in place.
  5. Sheeting and bracing shall be removed before the completion of the Work, unless otherwise directed in writing by the Engineer. Sheeting which is left in place shall be cut off 18" below the original ground surface or as directed by the Engineer. Untreated wood will not be allowed to be left in place.

### 3.6 BACKFILLING

- A. Backfill trenches to contours and elevations with unfrozen fill materials.
- B. Systematically backfill in accordance with Article 550.07 of the SSRBS to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- C. Compact backfill in accordance with Section 02320.
- D. Place fill material in continuous layers and compact.
- E. Employ a placement method that does not disturb or damage foundation perimeter drainage and/or utilities in trench.
- F. Maintain optimum moisture content of fill materials to attain required compaction density.
- G. Remove surplus fill materials from site.

H. Leave fill material stockpile areas completely free of excess fill materials.

### 3.7 TOLERANCES

A. Section 01400 – Quality Requirements: Tolerances.

B. Top Surface of Backfilling Under Paved Areas: Plus or minus 1” from required elevations.

C. Top Surface of General Backfilling: Plus or minus 1” from required elevations.

### 3.8 FIELD QUALITY CONTROL

A. Section 01700 - Execution Requirements: Testing, adjusting, and balancing.

B. Compaction testing shall be performed in accordance with ASTM D1557, ASTM D698 or AASHTO T180.

C. If tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.

D. Frequency of Tests: As directed by Engineer.

### 3.9 PROTECTION OF FINISHED WORK

A. Section 01700 - Execution Requirements: Protecting finished work.

B. Reshape and re-compact fills subjected to vehicular traffic during construction.

END 02324



## SECTION 02511 – PAVING

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Pavement Removal and Replacement Full Depth, 4" Min.
- B. Driveway Pavement Removal and Replacement (Full Depth)

#### 1.2 RELATED SECTIONS

- A. Section 02060 – Aggregate.
- B. Section 02324 – Trenching.

#### 1.3 REFERENCES

- A. Standard Specifications for Road and Bridge Construction in Illinois (SSRBC), Current Edition, Illinois Department of Transportation.
- B. SSRBC Section 106. Control of Materials.
- C. SSRBC Section 311. Granular Subbase.
- D. SSRBC Section 355. Bituminous Base Course.
- E. SSRBC Section 406. Bituminous Concrete Binder and Surface Course, Class I.
- F. SSRBC Section 440. Removal of Existing Pavement and Appurtenances.
- G. SSRBC Section 604. Frames and Lids to be Adjusted.
- H. SSRBC Section 780. Pavement Striping.
- I. SSRBC Section 783. Pavement Marking and Marker Removal.

#### 1.4 REMOVAL AND REPLACEMENT OF BITUMINOUS DRIVEWAY PAVEMENT

- A. Measurement and Payment:
  - 1. Unit of Measure: Square Yard
  - 2. Method of Measurement: Shall be measured for payment in place and the area computed in square yards in accordance with SSRBC, Article 440.07.
  - 3. Paid for at the contract unit price per square yard for REMOVAL AND REPLACEMENT OF BITUMINOUS DRIVEWAY PAVEMENT as dictated by the Engineer. The contractor shall not exceed the placement of pavement replacement of 4" unless directed by the Owner.

- B. Includes Costs of:
  1. Mobilization
  2. Traffic Control and Protection
  3. Full Depth Saw Cutting of specified Pavement
  4. Full Depth Bituminous Pavement Removal and disposal
  5. Placement of Full Depth Binder
  6. Prime coating.
  7. Clean up and disposal of excess material

## 1.5 QUALITY ASSURANCE

- A. Source Quality Control
  1. Comply with SSRBC Section 1062.
  2. Obtain bituminous mixtures and from SSRBC approved plants.

## PART 2 PRODUCTS

### 2.1 PRIME COAT

- A. Bituminous Materials (Prime Coat) for aggregate surfaces: Comply with SSRBC Article 406.02, Grade MC-30.
- B. Bituminous Materials (Prime Coat) for bituminous surfaces: Comply with SSRBC Article 406.02.
- C. Aggregate (Prime Coat): Comply with IDOT Article 1003.03(c).

### 2.2 BITUMINOUS MIXTURES

- A. Bituminous Base Course: Comply with SSRBC Section 355.
- B. Bituminous Concrete Binder Course:
  1. **Comply with SSRBC Articles 406.10 and 406.13, Type 2, Mixture B.**
  2. No RAP materials shall be used in this mixture.
- C. Bituminous Concrete Surface Course, Superpave N50 Mix B
  1. **Comply with SSRBC Articles 406.10 and 406.1**

## PART 3 EXECUTION

### 3.1 GENERAL

- A. **Contractor shall pave with binder course (pavement removal and replacement) within 7 calendar day of completion of underground improvements.**
- B. **Contractor shall place surface course within 7 calendar days of completion of successful testing of sanitary sewer and water mains and installation of services.**

- C. Any patching or pavement removal necessary to complete repairs or retesting shall be considered incidental to the cost of the contract.
- D. Comply with applicable provisions of SSRBC Sections 311, 355 and 406 and details and cross-section shown on plans.
- E. Construct finished surfaces to match existing.
- F. In the event that the OWNER feels that the contractor is not completing work per the IDOT specifications, the OWNER may require the contractor to furnish nuclear density testing at the expense of the Contractor. The Owner will determine the limits and frequency of this testing.

### 3.2 EXAMINATION

- A. Verify that bituminous base course has been prepared in accordance with SSRBC Section 355 and is ready to support paving and imposed loads.
- B. Verify that previously placed base course or binder course conforms to alignment, grade and cross-section shown on drawings.

### 3.3 PREPARATION

- A. Priming
  1. Apply bituminous material for prime coat in accordance with SSRBC Articles 403.07 and 403.09.
  2. Rate of application for bituminous courses placed on aggregate courses: 0.50 gal/sy.
  3. Rate of application for bituminous courses placed on previous bituminous courses: 0.10 gal/sy.
  4. Apply aggregate at a uniform rate of 4 lbs/sy yard immediately after application of bituminous materials if road will be open to traffic.
  5. Allow prime coat on bituminous concrete courses to cure for 12 hours. Allow prime coat on other course to cure for at least 24 hours.

### 3.4 GRANULAR SUBBASE

- A. Comply with requirements of SSRBC Section 311 for placing and compacting granular sub-base. Additional material (CA-6), required to meet existing grade for temporary access shall be provided & removed at no additional cost to the Village (incidental).

### 3.5 PLACEMENT AND COMPACTION OF BITUMINOUS MIXTURES

- A. Comply with requirements of SSRBC Section 355 for placement and compaction of Bituminous Base Course.

- B. Comply with requirements of SSRBC Section 406 for placement and compaction of Leveling Binder, Bituminous Concrete Binder Course and Bituminous Concrete Surface Course, Class I.

### 3.6 FIELD QUALITY CONTROL

- A. Testing of in-place bituminous base course will be performed according to provisions of SSRBC Article 355.09.
- B. Testing of in-place bituminous surface or pavement will be performed by Testing Laboratory in conformance with requirements of SSRBC Section 406.
- C. Density of finished binder and surface courses will be determined by nuclear test methods or from cores obtained at locations determined by Engineer. Density shall meet the following requirements for class and type of mixture:
  - 1. Bituminous Concrete Binder and Surface Course SSRBC Article 406.16(b).
- D. Repair or remove and replace unacceptable surface or pavement as directed by Engineer.

END 02511

## SECTION 02512 – WATER DISTRIBUTION

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section includes pipe, joints and fittings for water main including domestic water service lines, valves, fittings and hydrants, connections to existing mains and all material, equipment and labor necessary for testing of the proposed improvements. Section also includes filling applicable abandoned watermain pipe with controlled low strength material, the removal of existing hydrants as well as the removal of existing water service & main piping and valving, where necessary.
- B. All work shall be completed in accordance with the Standard Specifications for Water and Sewer Main Construction in Illinois (latest edition) unless specified otherwise within these specifications.
- C. **WATER SHUTOFFS WILL BE AT THE DISCRETION OF THE VILLAGE. THIS MAY BE DURING THE WEEKEND OR AFTER NORMAL BUSINESS HOURS AT NO ADDITIONAL COST TO THE VILLAGE.**
- D. The contractor shall be liable for any costs due to repairing a water main break that may occur within 10 feet of the valve vault for a period of one (1) year after installation.
- E. Related Sections:
  - 1. Section 02060 – Aggregate.
  - 2. Section 02315 – Excavation and Fill.
  - 3. Section 02320 – Backfill.
  - 4. Section 02324 – Trenching.
  - 5. Section 02633 – Valve Vaults, Frames and Covers.

#### 1.2 UNIT PRICE – MEASUREMENT AND PAYMENT

- A. PVC Watermain (AWWA C-900), of the diameter specified.
  - 1. Basis of Measurement: By the linear foot.
  - 2. Basis of Payment: Includes hand trimming, excavation, pipe, joints, bedding, tracer wires and access box, and connection of any building service piping and connection to the municipal utility water source unless indicated separately on the plans.
  - 3. This also includes the cost of bracing or shoring all adjacent utilities.
- B. Water Main Protection, of the diameter of the watermain specified.
  - 1. Basis of Measurement: By the linear foot.
  - 2. Basis of Payment: Includes hand trimming, locating and verification of existing utilities, excavation, watermain quality pipe to protect the diameter of the pipe specified, joints, bedding, casing pipe spacers and end sealing of the case pipe as shown on the plans and within details.

3. This also includes the cost of bracing or shoring all adjacent utilities.
- C. Water Service Protection, of the diameter of the water service specified.
1. Basis of Measurement: By the linear foot.
  2. Basis of Payment: Includes hand trimming, locating and verification of existing utilities, excavation, watermain quality pipe to protect the diameter of the pipe specified, joints, bedding, casing pipe spacers and end sealing of the case pipe as shown on the plans and within details.
  3. This also includes the cost of bracing or shoring all adjacent utilities.
- D. Watermain Fittings both Temporary and Permanent (Bends, Tees, Reducers, Plugs, Crosses, Cutting-In Sleeves) of type, diameter and angle or denotation. All fittings shall be Ductile Iron.
1. Basis of Measurement: As identified within the price proposal. Any fittings not identified or any thrust blocks & any additional restraints required shall be considered incidental.
  2. Basis of Payment: Includes all labor, tools, equipment, polyethylene encasement around fittings and incidentals to complete the Work as specified. This also includes the cost of bracing or shoring all adjacent utilities.
- E. Resilient Wedge Gate Valves, of the size specified
1. Basis of Measurement: By the unit.
  2. Basis of Payment: Includes all labor, tools, equipment and incidentals to complete the Work as specified. Includes valve box. Valve vaults are identified separately.
  3. This also includes the cost of bracing or shoring all adjacent utilities.
- F. Fire Hydrant Assembly and Auxiliary Valve Box.
1. Basis of Measurement: By the unit.
  2. Basis of Payment: Includes connection piping, hand trimming excavation, gravel sump, hydrant, auxiliary valve, connection, accessories, concrete thrust block, painting and hydrant adjustment both (+/-). This also includes the cost of bracing or shoring all adjacent utilities.
- G. Remove Existing Hydrant
1. Basis of Measurement: By the unit.
  2. Basis of Payment: Includes connection piping, hand trimming excavation, gravel sump, hydrant and auxiliary valve removal and disposal, water tight mechanical plug to the existing main, backfill and disposal of the hydrant, valve, boxes and all other appurtenances.
  3. This also includes the cost of bracing or shoring all adjacent utilities.
  4. The existing hydrant and valve assembly shall be salvaged and returned to the Village Water Division.
- H. Water Service Reconnection, Size as noted on the plans (Includes Tapping Saddle, Corporation & Curb Stop, Copper water service and Box)
1. Basis of Measurement: By the unit either Long or Short

2. Basis of Payment: Includes hand trimming excavation, pipe, bedding and connection to the municipal utility water source. All adjustment to place the water service at the proposed grade shall be considered incidental to the cost of the water service.
  3. This also includes the cost of bracing or shoring all adjacent utilities.
  4. All services shall be considered short, unless they cross the center line of the right of way.
  5. Connection to the house side of the service including all fittings shall be considered incidental to the cost of the service. House side services are anticipated to be  $\frac{3}{4}$ " or 1".
- I. Connection to Existing Main identified as Diameter Non- Pressure Connection.
1. Basis of Measurement: By the unit.
  2. Basis of Payment: Includes, excavation connection piping, hand trimming excavation, connection, accessories, required thrust restraint other than concrete thrust blocks, fittings and cutting of existing pipes. This will be completed on areas where it is not a pressurized connection.
  3. This also includes the cost of bracing or shoring all adjacent utilities.
- J. Watermain Testing /Chlorination
1. Basis of Measurement: By the unit.
  2. Basis of Payment: Includes all required labor, material, equipment, both permanent and temporary to completed testing and any required retesting of the watermain improvements.
  3. All work required under AWWA Standard C651 for Disinfecting Water mains.
- K. Abandonment of Existing Main
1. Basis of Measurement: By the unit.
  2. Basis of Payment: Includes connection piping to link existing, hand trimming excavation, connection, accessories, concrete thrust block, fittings and cutting of existing pipes, capping of main to be abandoned, filling pipe with controlled low strength material (CLSM) and all temporary bracing of utilities. The contractor may install risers at the beginning & end of the watermain construction and at the various locations of existing hydrant removals as the means to pump CLSM into the existing 10" watermain to be abandoned. Applicable stations for these risers are approximately sta. 10+29, 12+55, 15+75, 18+75, and 21+75. The contractor shall be paid for calculated volume of pipe filled and is responsible for such. **The contractor is obligated to ensure the entire volume of existing pipe shown on the plans is filled with CLSM.** CLSM shall meet requirements of Section 1019 of SSRBC.
  3. This also includes the cost of bracing or shoring all adjacent utilities.
- L. Removal of Existing Item, As described
1. Basis of Measurement: By the unit.
  2. Basis of Payment: Include all labor, equipment and material including excavation, dewatering and removal of existing item in its entirety. Any iron material or parts shall be delivered to the Village of Bensenville Public Works.

All other materials shall be removed and disposed by the contractor at an offsite location.

3. This also includes the cost of bracing or shoring all adjacent utilities, excavation, transportation and disposal fees.

### 1.3 ADDITIONAL INCIDENTALS

- A. Abandonment of all existing mains and services not indicated as an individual pay item shall be considered incidental to the contract.
- B. All testing of the water main and appurtenances and all labor, material and equipment necessary to complete work shall be considered incidental to the cost of the water main or the corresponding appurtenances. This includes all material, labor and equipment necessary to complete these tests including but not limited to any temporary flushing devices such whips and hydrants.
- C. All hydrant adjustment or special fittings necessary to install a hydrant at grade shall be considered incidental to the Fire Hydrant Assembly. This includes necessary in graded caused by the following, which include but are not limited to, utility conflicts, abrupt deviations in grade, landscaping, or signage.
- D. Location of all existing utilities shall be considered incidental the cost of the water main, water service, fire hydrant assembly, resilient wedge valve or corresponding water appurtenance.

### 1.4 REFERENCES

- A. Standard Specifications for Water Main and Sewer Construction in Illinois (SSWSMC), Current Edition, Illinois Society of Professional Engineers, etal.
- B. AASHTO T180 (American Association State Highway and Transportation Officials) – Moisture Density Relations of Soils Using a 10 lb. rammer and an 18 in. drop.
- C. ASME B16.18 (American Society of Mechanical Engineers) – Cast Copper Alloy Solder Joint Pressure Fittings.
- D. ASME B16.22 (American Society of Mechanical Engineers) – Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.
- E. ASTM B88 – Seamless Copper Water Tube.
- F. ASTM F477- 10 Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- G. ASTM D698 – Test Methods for Moisture–Density Relations of Soils and Soil–Aggregate Mixtures, Using 5.5 lb. rammer and 12 inch drop.



- H. ASTM D1557 – Test Methods for Moisture–Density Relations of Soils and Soil–Aggregate Mixtures Using 5.5 lb. rammer and 18 inch drop.
- I. ASTM D2922 – Test Methods for Density of Soil and Soil–Aggregate in Place by Nuclear Methods (Shallow Depth).
- J. ASTM D3017 – Test Methods for Moisture Content of Soil and Soil–Aggregate Mixtures.
- K. ASTM D3139 - 98(2011) Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
- L. AWS A5.8 (American Welding Society) – Brazing Filler Metal.
- M. AWWA C104 (American Water Works Association) – Cement–Mortar Lining for Ductile–Iron Pipe and Fittings for Water.
- N. AWWA C105(American Water Works Association) – Polyethylene Encasement for Ductile Iron Piping for Water and Other liquids.
- O. AWWA C111 (American Water Works Association) – Rubber– Gasket Joints for Ductile Iron and Grey–Iron Pressure Pipe and Fittings.
- P. AWWA C151 (American Water Works Association) – Ductile–Iron Pipe, Centrifugally Cast in Metal Molds or Sand–Lined Molds, for Water or Other Liquids.
- Q. AWWA C500 (American Water Works Association) – Gate Valves, 3 through 48 in NPS, for Water and Sewage Systems.
- R. AWWA C502 (American Water Works Association) – Dry Barrel Fire Hydrants.
- S. AWWA C509 (American Water Works Association) – Resilient Seated Gate Valves 3 in through 12 in NPS, for Water and Sewage Systems.
- T. AWWA C600 (American Water Works Association) – Installation of Ductile–Iron Water Mains and Appurtenances.
- U. AWWA C900-07 (American Water Works Association) (PVC) Pressure Pipe and Fabricated fittings
- V. DIPRA TRD/6-01 – Thrust Restraint Design for Ductile Iron Pipe, Current Edition, Ductile Iron Pipe Research Association.
- W. DIPRA PEIG/6-01 - Polyethylene Encasement Installation Guide, Current Edition, Ductile Iron Pipe Research Association.
- X. UL 246 (Underwriters Laboratories, Inc.) – Hydrants for Fire – Protection Service.

## 1.5 SUBMITTALS

- A. Section 01330 – Submittal Procedures: Submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves and accessories.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

## 1.6 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of piping mains, valves, connections, and invert elevations.

## 1.7 QUALITY ASSURANCE

- A. Perform Work in accordance with Standard Specifications for Water Main and Sewer Construction in Illinois, Current Edition.
- B. Valves: Manufacturer's name and pressure rating marked on valve body.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 – Product Requirements: Product storage and handling requirements.
- B. Deliver and store valves in shipping containers with labeling in place.

## PART 2 PRODUCTS

### 2.1 WATER PIPE

- A. Manufacturers:
  - 1. Ductile Iron Pipe
    - A. American Cast Iron Pipe Company – Birmingham, Alabama.
    - B. Clow Water Systems Corporation – Coshocton, Ohio.
    - C. Griffin Pipe Products Company – Downers Grove, Illinois.
    - D. McWane Cast Iron Pipe Company – Birmingham, Alabama.
    - E. United States Pipe and Foundry Company – Birmingham, Alabama.
    - F. Substitutions: Section 01600 – Product Requirements.
  - 2. PVC Pipe
    - A. Freedom Plastics- Janesville Wisconsin
    - B. Diamond Plastics Corporation- Muncie Indiana
    - B. JM Eagle- Los Angeles California
    - C. North American Pipe- Houston Texas

- B. Ductile Iron Pipe Materials:

1. Ductile Iron Pipe:
2. Conforming to AWWA C151, ANSI A21.51 standard thickness 52 per ANSI A21.50, AWWA C-150
3. Fittings: Mega-Lug Series 1100, Ductile iron, conforming to ANSI A21.10 (AWWA C-110)
4. Bituminous Seal Coated and Cement Lines per ANSI a21.4 (AWWA C0104)
5. Joints: Mechanical or Rubber Gasket push on joints "Bell-Tite" or approved equal per ANSI a21.11 (AWWA C111 and AWWA C600)
6. Jackets: AWWA C105 polyethylene jacket. Double layer, half lapped, .0008 inch (8 mil) polyethylene tape.
7. Polyethylene Encasement:
  - a. All Ductile Iron Pipe as shown on the plans shall be polyethylene encased.
  - b. Polyethylene shall be manufactured of virgin polyethylene materials conforming to the requirements of ANSI/ASTM D1248. Tube width shall be in accordance with Installation Guide for Ductile Iron Pipe as published by the Ductile Iron Pipe Research Association (DIPRA).
  - c. Encasement shall be by tubing per ANSI/AWWA C105/A21.5, minimum thickness of .0008 inch, 8 mil. Flat polyethylene sheets are not permitted. All joints in encasement shall be overlapped by a minimum of 1' and be secured with a polyethylene tape.
  - d. Polyethylene Flat Tube Shall conform to the following minimum requirements for the corresponding Nominal Pipe Diameter

Nominal Pipe Diameter	Minimum Polyethylene Width for Flat Tube
4"	16"
6"	20"
8"	24"
10"	27"
12"	30"

- C. PVC Pipe:
1. Conforming to AWWA C-900-7
  2. Pipe Gaskets meeting ASTM F477 and Joints with ASTM D3139.
  3. Mechanical joints "Bell-Tite" or approved equal per ANSI a21.11 (AWWA C111 and AWWA C600)
  4. DR of 14 or 18 where permitted. DR25 is not permitted.
  5. All fitting shall be restrained
  6. Polyethylene Encasement for Fittings:
    - a. All Ductile Iron Pipe Fittings as shown on the plans shall be polyethylene encased.
    - b. Polyethylene shall be manufactured of virgin polyethylene materials conforming to the requirements of ANSI/ASTM D1248. Tube width shall be in accordance with Installation Guide for Ductile Iron Pipe as published by the Ductile Iron Pipe Research Association (DIPRA).
    - c. Encasement shall be by tubing per ANSI/AWWA C105/A21.5, minimum thickness of .0008 inch, 8 mil. Flat polyethylene sheets are not permitted. All

joints in encasement shall be overlapped by a minimum of 1' and be secured with a polyethylene tape.

D. Copper Tubing Materials:

1. Copper Tubing: ASTM B88, Type K, annealed
2. Fittings: ASME B16.18, cast copper, or ASME B16.22, wrought copper.
3. Joints: Compression connection or AWS A5.8, BCuP silver braze.

## 2.2 RESTRAINED JOINTS.

A. Manufacturers

1. American Cast Iron Pipe Company – Birmingham, Alabama
  - a. Lok-Ring or Flex Ring Joints.
2. Clow Water Systems Co. - Coshocton, Ohio
  - a. Thrust-Lock Gaskets.
3. Griffin Pipe Products, Co. – Council Bluffs, Iowa
  - a. Field Lok 350 Gaskets.
4. U.S. Pipe Company – Birmingham, Alabama
  - a. TR-Flex Joints.

## 2.3 PVC JOINT RESTRAINT.

A. Manufacturers

1. EBBA Iron Sales, Inc. – Eastland, Texas
  - a. MEGALUG Restraint System or approved equal
    1. Series 3800 for Ductile Iron to PVC
    2. Meets or AWWA C219, ASTM A536, ANSI/AWWA C111/ A21.11 and ASTM D2000
    3. Includes Megabond Coating
2. EBBA Iron Sales, Inc. – Eastland, Texas
  - a. Series 2000 PV or approved equal restrained joint system.
    1. Mechanical Joint to PVC Pipe Restraint
    2. Meets or ASTM A536, AWWA 600 and ASTM D2774
    3. Includes Megabond Coating
3. EBBA Iron Sales, Inc. – Eastland, Texas
  1. Series 2500 or approved equal restrained joint system.
  2. Inline PVC Restraint
  3. Includes Megabond Coating
4. EBBA Iron Sales, Inc. – Eastland, Texas
  1. Series 1100 or approved equal restrained joint system.
  2. Cast Iron to PVC restraint
  3. Includes Megabond Coating

## 2.4 GATE VALVES.

- A. Manufacturers:
  1. Clow Valve Co. – Oskaloosa, Iowa.
  2. Mueller Co. – Decatur, Illinois.
  3. Waterous Valve Co. – St. Paul, Minnesota.
  4. Substitutions: Not permitted.
  
- B. AWWA C509, Iron body, bronze trim, non–rising stem with square nut, single wedge, resilient seat, control rod, post indicator, extension box and valve key. Valves used immediately downstream of tapping sleeves shall have one flanged face and one mechanical joint end. Valves not associated with tapping sleeves shall have mechanical joint ends. All gate valves shall be furnished with mechanical joints with mega-lug restraints or flanged joints conforming to ANSI A21.11 (AWWA C-111). All valves shall be equipped with stainless steel bolts.
  
- C. The operating nut shall be 2" square and shall turn left or counter clockwise to open the valve. The nut shall have the word OPEN in ½" tall letters with an arrow indicating the direction of operation. The flange of the operating nut shall have a 2" long (minimum) arrow indicating the operating direction to open the valve.
  
- D. Valves shall be rated to withstand a cold water working pressure of a minimum of 150 psi and a hydrostatic test pressure of 300 psi.

## 2.5 TAPPING SLEEVES AND VALVES AND PRESSURE CONNECTIONS

- A. Manufacturers:
  1. Rockwell 655
  2. Substitutions: Approved Equals.
  
- B. General:
  1. Tapping Sleeves shall be of a stainless steel full circle sleeve type capable of containing pressure within the full volume of the sleeve. The tapping sleeve shall be equipped with stainless steel nuts and bolts and wrapped in polyethylene encasement.
  
- C. Rating:
  1. Sleeve shall be rated at 200 psi water working pressure through 12" size and 150 psi for sleeves 14" through 24".
  
- D. Branch Configuration
  1. Flanged throat section of mechanical joint sleeves through 24" size shall conform to MSS-SP60 Standard.
  
- E. Design
  1. **No part of the tapping sleeve shall be reduced unless approved by the Village of Bensenville**

2. Tapping Sleeves shall be capable of withstanding their rated working pressure without leakage past the side gaskets and end gaskets of the sleeve.
  3. Sleeves shall be supplied with split end gaskets and one piece glands. Side flange rubber gaskets shall butt against the rubber end gaskets affecting a totally water tight seal.
  4. Side and end bolts shall be of a T-Head design.
  5. The throat flange shall be so designed as to afford centering of the tapping valve to the sleeve.
  6. Tapping sleeve shall be equipped with a test plug.
  7. Tapping sleeves shall be placed a minimum of 2' from any other bends, tees or fittings.
- F. Painting
1. Inside and outside of all tapping sleeves shall be coated in accordance with AWWA standards.
- G. Marking
1. Sleeves shall be marked with name of manufacturer and size (run x branch).

## 2.6 WATER MAIN PROTECTION

### A. Protection Materials

1. Watermain protection should be PVC pipe of sufficient size to conforming to ASTM D-2241 with watermain quality joints conforming to ASTM D-3139.

## 2.7 HYDRANTS

### A. Manufacturers:

1. Mueller Super Centurion 250 or Clow Eddy F-2640
  2. Inlet Connection Size 6"
  3. Main valve opening size: 5 ¼"
  4. Hose Nozzles, number and size two (2) 2 ½" inches
  5. Pumper Nozzle, number and size one (1) 4 ½" inches
  6. Auxiliary gate valve size: 6 inches
  7. Thread Pattern: National Standard
  8. All below grade factory installed bolts must be Stainless Steel Grade 304.
  9. Hydrfinder Hydrant Locator
- B. Nozzles shall be fitted with Cast Iron caps securely connected to the fire hydrant with a chain of no less than 1/8". The operating nut shall have the same design and dimensions as the fire hydrant stem nut. Caps shall be threaded to fit the corresponding nozzles and shall be fitted with suitable gaskets for positive water tightness under test pressures. Prior to acceptance all nozzle threads shall be greased.
- C. Auxiliary Valve: The valve shall be 6" in diameter and directly connected to the water main. The resilient wedge gate valve shall be designed for a minimum

- water pressure of 175 psi. Mechanical joints shall be equipped with Mega Lugs when adjoining the valve to other pipes and to the hydrant.
- D. When the assembly cannot be connected with a locking hydrant tee, mechanical joints and Megalugs shall be used. This will be at the discretion of the Village of Bensenville.
  - E. Valve Box and Stabilizer: EJIW – Model No. 98725.
  - F. Hydrant Extensions: Fabricate in multiples of six (6) inches with rod and coupling to increase barrel length. All extensions or modification to the hydrant to insure that it has been shall be considered incidental to the cost of the hydrant.
  - G. Valve Box Extenders may be required per the discretion of the Village of Bensenville. The type shall be approved by the Village of Bensenville prior to installation. These shall be considered incidental to the cost of valve.
  - H. Bracing of Hydrants: Hydrants shall be braced in accordance with the details within the Engineering Plans including but not limited to the use of Concrete Thrust Blocks. The Village of Bensenville shall have the right to refuse the methods or materials use by the contractor for the bracing of hydrants. Wood shims or other wood materials will not be permitted.
  - I. Hose and Streamer Connection: Match sizes and type of thread with utility company and fire department, two hose nozzles, one pumper nozzle.
  - J. Finish: Primer and two coats of red Pennsbury Hydrant Hide 9060 or Imron 7440.
  - K. Valve Box Stabilizer: EJIW No. 98725.

## 2.8 WATER SERVICE AND TAPS

- A. All residential water services shall be 1-1/2" Copper water tube, type K, soft temper, for underground services, conforming to ASTM B-88 and B-251. All copper connections shall be made with flared joints. For water services having and inside diameter larger than 2" cement lined ductile iron pipe shall be used, and shall comply with all specifications for the installation of water mains.
- B. When a water service is installed beneath an existing road, sidewalk, or driveway, the service pipe shall be installed by pushing or augering a hole beneath the road, sidewalk, or driveway and installing the service pipe through the hole. The size of the opening in the road to connect the water service to the water man shall be kept at minimum
- C. All service connections to PVC Watermain shall be completed with the use of a double stud stainless steel saddle. This saddle shall be a Smith Blair 317 or approved equal.

- D. Corporation stops shall in accordance with the details.
- E. All piping shall have a minimum cover of 5'-6" on all parts of the service.
- F. Curb Stops and Curb Boxes shall be round of way type and shall be in accordance with the detail.
- G. The Curb Box, Buffalo Type, with an arch type saddle, Tyler (or approved equal) in accordance with the details.

## 2.9 BEDDING AND COVER MATERIALS

- A. Bedding: IDOT CA-6. – Non- Recycled Crushed Limestone
- B. Cover: IDOT CA-6. – Non- Recycled Crushed Limestone

## 2.10 ACCESSORIES

- A. Frames and Covers: As indicated on plans.
- B. Water Service Boxes, Curb Boxes, Roundways, Curb Stops: As indicated on plans.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 – Administrative Requirements: Coordination and project conditions.
- B. Verify that building service connection and municipal utility water main size, location, and invert are as indicated.

### 3.2 PREPARATION

- A. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare pipe connections to equipment with flanges or unions.

### 3.3 BEDDING

- A. Excavate pipe trench in accordance with Standard Specifications for Water Main and Sewer Construction in Illinois, Current Edition.



- B. Place bedding material at trench bottom, level fill materials in one continuous layer not exceeding six (6) inches compacted depth; compact to 95 percent modified proctor.
- C. Backfill around sides and to top of pipe with cover fill, tamp in place and compact to 95 percent.
- D. Maintain optimum moisture content of fill material to attain required compaction density.

### 3.4 INSTALLATION – PIPE

- A. All pipes within casings or watermain protection shall be equipped with field locking gaskets.
- B. Maintain separation of water main from sewer piping in accordance with Standard Specifications for Water Main and Sewer Construction in Illinois, Current Edition.
- C. Install pipe to indicated elevation to within tolerance of 0.05 feet or as directed by the engineer.
- D. Pipe shall not be picked up or lifted by forks being inserted into the ends of the pipe.
- E. Contractor shall be responsible for keeping the pipe clean during storage and installation.
- F. Route pipe in straight line. Bend at Joints or deflecting the pipe will not be permitted.
- G. Install pipe to allow for expansion and contraction without stressing pipe or joints.
- H. Install access fittings to permit disinfection of water system per Owner's testing requirements.
- I. Establish elevations of buried piping to ensure not less than 5.50' feet of cover.
- J. Backfill trench in accordance with Standard Specifications for Water and Sewer Main Construction in Illinois, Current Edition.
- K. Identification tape shall be manufactured of polyethylene with a minimum thickness of 4- mils and shall have a 1-mil thick metallic foil core. The tape shall be highly resistant to alkalis, acid and other destructive agents found in soil. Tape width shall be a minimum of 3 inches and a maximum of 6 inches and shall have the background color specified below, imprinted with black letters. Imprint shall be as specified below and shall repeat itself a minimum of once every 2 feet for entire length of the tape. Tape shall be placed 1' above the top of pipe.

1. Tape background colors and imprints shall be as follows:

<u>Imprint</u>	<u>Background Color</u>
“CAUTION CAUTION - WATER LINE BURIED BELOW”	Blue

2. Identification tape shall be “Terra Tape” as manufactured by Reef Industries, Inc., Houston, TX, or approved equal.

- L. Two tracer wires shall be attached to existing main.
  1. Location wire shall be a direct burial #12 AWG Solid (.0808” diameter), 21% conductivity annealed copper-clad high carbon steel strength tracer wire, 380# average tensile break load, 30 mil. High molecular weight-high density blue polyethylene jacket complying with ASTM D1248, 30 volt rating.
  2. The wire shall be attached to the main at two locations with the use of tape or ties.
  3. Valvco Wire Access Box or approved equal shall be prov
  4. The wire shall be contiguous except at test stations, valve boxes, and where splicing is required. All splices shall be encased with a 3M-Gel Pack Model No. 054007-09053.

### 3.5 INSTALLATION – WATERMAIN ENCASEMENT

- A. Watermain encasement shall be installed where indicated and as required by SSWSMC.
- B. PVC encasement pipe shall be manufactured in accordance with ASTM B1784 and AWWA C905 AWWA DR25.
- C. Fittings for use with PVC pipe shall be ductile iron and produced with 780-50-05 grad of iron in accordance with ANSI/AWWA C-110 and shall be mechanical joint type.
- D. Joint for polyvinylchloride pipe shall be compression type similar and equal to J-m Big Brute Tite Locked in Join, or equal, and shall be in accordance with AWWA C905.
- E. The casing of all pipes shall be completed with the use of Cascade spacers with polythlene feet. Wood blocks and steel bands are not permitted.
- F. The casing pipe shall be clean and aligned to permit the removal of the encased pipe.  
Deflected or pipes including bends are not permitted.
- G. Casing pipe shall be capped using with non-shrink grout. Grout should extend into casing pipe no less than two feet from the end of the pipe.

### 3.6 INSTALLATION – VALVES AND HYDRANTS

- A. Set valves on solid bearing.
- B. Center and plumb valve box over valve. Set box cover flush with finished grade. The contractor shall insure that the hydrant is level prior to during and after backfill
- C. Set hydrants plumb; locate pumper nozzle perpendicular to and facing roadway.
- D. Locate control valve a minimum of four (4) inches away from hydrant.
- E. Paint hydrants in accordance with Owner's standards, School Bus Yellow or as directed.
- F. All work under this Section shall be executed in accordance with Standard Specifications for Water Main and Sewer Construction in Illinois, Current Edition and Village of Bensenville.
- G. The hydrant shall be set on a 12"x 12" x 8" concrete block that has been placed on a firm base.
- H. Concrete blocks shall be placed in back of the hydrant and abut against firm undisturbed soil. These shall not block the weep holes of the hydrant.
- I. 1 CY of washed stone in conformance with CA-11 (NO RECYCLED) of the SSRBC shall be placed over the base of the hydrant to provide drainage. A layer of filter fabric shall be placed over the entire gravel drain area prior to backfill.
- J. Hydrants shall be placed no closer than 2' from the back of curb or pavement edge and no further than 4' unless directed by the Village of Bensenville or as indicated on the plans. The steamer port shall be 14" to 28" above the proposed surface of the ground, per State Bill 1291; passed on 1/1/88, and shall face the street.

### 3.7 CONNECTION TO EXISTING MAIN

- A. The existing main shall be uncovered and exposed to allow for confirmation of the existing pipe in size in advance of making the connection.
- B. A representative from the Village of Bensenville Water Department shall inspect all fittings and the point of connection prior to the start of installation.
- C. Any cutting of the existing main shall be completed with the use of an appropriate cutting machine. The contractor shall be responsible for additional cuts or labor required to complete a smooth even cut of the existing main.
- D. The contractor shall swab all fittings with liquid bleach with a new mop.

- E. The contractor shall be liable for any costs incurred in repairing any water main break that may occur within 10 feet of the connection for a period of (1) year after installation.

### 3.8 WATER SERVICE AND TAPS

- A. Service taps shall be made with a flanged fitting corporation stop and not be placed within 2' of any other water main appurtenance of joint. All service taps shall be made in the presence of the Village of Bensenville.
- B. Taps shall be made at an angle of 45 degrees from the top of the main with the t handle place on top. Taps made on the top of the water main will not be permitted.
- C. Approximately one foot of slack shall be left on the service line.
- D. Unions between the corporation and curb stop will not be completed. All segments of the water service between the corporation and curb stop shall be one segment of piping.
- E. Water Piping shall meet the vertical and spacing requirements from sewers in accordance with the Standard Specifications for Water and Sewer Main Construction in Illinois (latest edition).
- F. All piping shall have a minimum cover of 5'-6".
- G. Curb Boxes shall not be permitted to be placed in drives or sidewalks.
- H. Curb boxes shall not be placed at a depth greater than 7.0'.
- I. Provide water service line 1 1/2" Type K copper, or as indicated on the plans, and valving in accordance with Village of Bensenville Water Department requirements. Services shall be out of service for no more than two hours at any one time. Contractor shall notify Owner a minimum of seventy-two (72) hours prior to working on water services so that homeowners can be contacted.
- J. Compression couplings will not be permitted.
- K. Tapping saddles shall be Type 317 Stainless Steel double stud 1 1/2" as manufactured by Smith Blair or approved equal.

### 3.9 PRESSURE TEST

- A. Pressure test water main in accordance with the requirements of the Village of Bensenville. Contact the Village of Bensenville Water Department for required documents and a description of procedures.

- B. The contractor shall furnish all equipment, labor and materials necessary to completed testing. Testing is incidental to the cost of the related item such as water main and hydrants.
- C. Flush and disinfect system in accordance with the requirements of the Village of Bensenville. This consists of the minimum steps:
1. Notify the Engineering Department and Public Works Department a minimum of 48 hours.
  2. The Village of Bensenville shall be solely responsible for operating any existing valves or appurtenances.
  3. Each section of pipe shall be slowly filled with water to release air from the system.
  4. The main and appurtenances shall be brought to the minimum testing pressure through the use of a pump connected to the main. All auxiliary valves shall remain open.
  5. The main shall be tested in accordance with the Standard Specifications for Water and Sewer Construction in Illinois (latest Edition) with the exception that the main shall be tested for a minimum of 2 hours. **The maximum allowable pressure loss over two hours is 5 psi.**
  6. After a period of two hours the leakage shall be determined. The amount of leakage shall be the amount of water required to be pumped back into the system to bring the system back to the original test pressure. A successful test will be identified by a loss of no more than 5psi over two hours and a volume loss less than the maximum allowable pressure loss as defined by the SSWSCI.
  7. The Village of Bensenville will determine if results are acceptable. If the main falls to meet the specified test requirements for any reason, it shall be the responsibility and cost of the contractor to identify and correct the necessary materials and workmanship necessary for the improvements to successfully complete the testing requirements.

### 3.10 DISINFECTION AND TESTING OF DOMESTIC WATER PIPING SYSTEM

- A. Flush and disinfect system in accordance with the requirements of the Village of Bensenville. This consists of the minimum steps:
1. Notify the Engineering Department and Public Works Department a minimum of 48 hours.
  2. The Village of Bensenville shall be solely responsible for operating any existing valves or appurtenances.
  3. All sections of new pipe shall be flushed to remove any solids or contaminated material.
  4. Hydrants and valves shall be swabbed with chlorine bleach and new mop prior to installation.
  5. The Contractor shall be responsible for installing a temporary flushing hydrant to provide a flushing velocity of 2.5 fps. (A 12" main normally requires a 2 ½" hydrant opening.) Whips or taps may only be used if the contractor is able to identify that the minimum velocity can be achieved.

6. The new main and appurtenances shall be disinfected with an initial chlorine residual shall be not less than 50 ppm. The residual chlorine residual shall not be less than 25 ppm after a period of 24 hours. The contractor shall notify the Village of Bensenville Water Department at least 24 hours in advance of chlorination and sampling.
  7. Chlorine shall be applied on a chlorine gas-water mixture by a solution feed chlorinating device. The dry gas may be fed directly through the proper devices for regulating the rate of flow and providing effective diffusion of the gas into the water within the pipe being treated. Chlorinating devices for feeding solutions of the chlorine gas or the gas itself must provide means for preventing the backflow of water into the chlorine.
  8. Valves shall be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water. Check valves may be used if desired.
  9. The Village of Bensenville will determine if results are acceptable. If the main fails to meet the specified test requirements for any reason, it shall be the responsibility and cost of the contractor to identify and correct the necessary materials and workmanship necessary for the improvements to successfully complete the testing requirements.
- B. Contact the Village of Bensenville Water Department for required documents and a description of procedures in addition to those already listed.

### 3.11 FINAL FLUSHING

- A. After the main has successfully completed the disinfection and pressure tests, all treated water shall be flushed from the newly installed pipe. In the event that chlorine is normally used in the source of the supply, then the tests shall show a residual not in excess of that carried in the system.
- B. After flushing, water samples collected on two (2) successive days from the treated piping system, as directed by the Director of Public Works, shall show satisfactorily bacteriological results. Bacteriological analyses must be performed by a laboratory approved by the Director of the Illinois Department of Public Health and the Director of Public Works.
- C. The system shall not be put into use until a report of successful testing has been provided to and approved by the Director of Public Works or authorized agent.

### 3.12 ABANDONMENT OF EXISTING WATER MAINS

- A. Existing water main to be abandoned shall be so done using a mechanical plug.
- B. Contolled Low Strength Material (CLSM) shall be injected into existing watermain per the requirements of Section 1019 of SSRBC.

3.13 FIELD QUALITY CONTROL

- A. Section 01700 – Execution Requirements: Testing, adjusting, and balancing.
- B. Compaction testing will be performed in accordance with AASHTO T180.
- C. If tests indicate Work does not meet specified requirements, remove Work, replace, and retest.
- D. Frequency of Tests: As determined by Engineer.

END 02512

## SECTION 02527 - CONCRETE

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. This Section includes the removal and installation of Portland Concrete Pavement, Sidewalks, Curbs and Gutters.

#### 1.2 REFERENCES

- A. ACI 304 (American Concrete Institute) - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
- B. ASTM A615 - Deformed and Plain Billet-Steel for Concrete Reinforcement.
- C. ASTM C33 - Concrete Aggregates. G. ASTM C94 - Ready Mix Concrete. H. ASTM C150 - Portland Cement
- D. ASTM C260 - Air-Entraining Admixtures for Concrete.
- E. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete. K. ASTM C494 - Chemical Admixtures for Concrete.
- F. ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction.
- G. Standard Specifications for Road and Bridge Construction in Illinois (SSRBC), Current Edition – Illinois Department of Transportation.
  - 1. SSRBC Section 106 – Control of Materials
  - 2. SSRBC Section 311 – Granular Subbase
  - 3. SSRBC Section 420 – Portland Cement Concrete Pavement
  - 4. SSRBC Section 440 – Removal of Existing Pavement and Appurtenances
  - 5. SSRBC Section 442 – Pavement Patching
  - 6. SSRBC Section 606 – Concrete Gutter, Curb, Median, and Paved Ditch
  - 7. SSRBC Section 1020 – Portland Cement Concrete
  - 8. SSRBC Section 1023 – Protective Coat



### 1.3 REMOVAL AND REPLACEMENT OF CONCRETE CURB AND GUTTER, TYPE B6.-24

#### A. Measurement and Payment:

1. Unit of Measure: Lineal Foot.
2. Method of Measurement: Measure Linear Foot in place as dictated by the contract drawings and in accordance with SSRBC, Article 440.
3. Basis of Payment: Paid for at the CONTRACT UNIT PRICE per Linear Foot for REMOVE & REPLACE CONC. CURB & GUTTER. CONCRETE CURB AND GUTTER NOT IDENTIFIED FOR REMOVAL AND REPLACEMENT ON THE PLANS IS NOT ELIGIBLE FOR PAYMENT. CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO PROTECT THE EXISTING CURB.

#### B. Includes costs of:

1. Mobilization
2. Saw Cutting
3. Removal and Disposal of Curb and Gutter
4. Traffic Control and Protection
5. Preparation of base course
6. All Portland Cement Concrete
7. Delivery of concrete
8. Placement and consolidation
9. Dowels
10. Expansion Joints
11. Protective Coat
12. Clean up and disposal of excess material
13. Pavement Markings
14. Protection of fresh concrete

### 1.4 REMOVAL AND REPLACEMENT OF CONCRETE PAVEMENT

#### A. Measurement and Payment:

1. Unit of Measure: Square Yard
2. Method of Measurement: Measure in place as dictated by the contract drawings and in accordance with SSRBC, Article 442.
3. Basis of Payment: Paid for at the CONTRACT UNIT PRICE per Square Yard for Class "B" Patch, 12".

#### B. Includes costs of:

1. Mobilization
2. Saw Cutting
3. Removal and Disposal of Pavement
4. Traffic Control and Protection for roadways
5. Preparation of base course
6. All Portland Cement Concrete
7. Delivery of concrete
8. Placement and consolidation
9. Dowels
10. Expansion Joints
11. Protective Coat

12. Clean up and disposal of excess material
13. Pavement Markings.

#### 1.5 REMOVAL AND REPLACEMENT OF CONCRETE DRIVEWAY PAVEMENT

##### A. Measurement and Payment:

1. Unit of Measure: Square Yard
2. Method of Measurement: Measure Linear Foot in place as dictated by the contract drawings and in accordance with SSRBC, Article 423.
3. Basis of Payment: Paid for at the CONTRACT UNIT PRICE per Square Yard for Removal and Replacement of Concrete Driveway Pavement

##### B. Includes costs of:

1. Mobilization
2. Saw Cutting
3. Removal and Disposal of Pavement
4. Traffic Control and Protection for roadways
5. Preparation of base course
6. All Portland Cement Concrete
7. Delivery of concrete
8. Placement and consolidation
9. Dowels
10. Expansion Joints
11. Protective Coat

#### 1.6 DRIVEWAY PAVEMENT REMOVAL

##### A. Measurement and Payment:

1. Unit of Measure: Square Yard
2. Method of Measurement: Measure Linear Foot in place as dictated by the contract drawings and in accordance with SSRBC, Article 440.
3. Basis of Payment: Paid for at the CONTRACT UNIT PRICE per Square Yard for DRIVEWAY PAVEMENT REMOVAL

##### B. Includes costs of:

1. Mobilization
2. Saw Cutting
3. Removal and Disposal of Pavement
4. Traffic Control and Protection for roadways
5. Preparation of base course
6. All Portland Cement Concrete
7. Delivery of concrete
8. Placement and consolidation
9. Dowels
10. Expansion Joints
11. Protective Coat
12. Clean up and disposal of excess material
12. Clean up and disposal of excess material

## 1.7 QUALITY ASSURANCE

- A. Comply with SSRBC Section 106.
  1. Obtain Portland Cement Concrete from IDOT approved plants.
  2. Provide the Engineer or Owner with copies of all material tickets.

## PART 2 PRODUCTS

### 2.1 GRANULAR SUBBASE FOR PCC COMBINATION CURB AND GUTTER AND SIDEWALK

- A. SSRBC Article 311.05, Subbase Granular Material, Type A: Conform to SSRBC Article 1004.04 Gradation CA-6.
- B. Sub-base shall be placed in accordance with the details found with the approved engineering plans and the Village of Bensenville Municipal Code. In the event of a discrepancy the more conservative of the two takes precedence.

### 2.2 PROTECTIVE COAT

- A. Comply with SSRBC, Section 1023.

### 2.3 PORTLAND CEMENT CONCRETE

- A. Conform to SSRBC, Section 420.
- B. Portland cement shall conform to Type 1 of the standard specifications and tests for portland cement, (serial designation: C150-44) for concrete curb & gutter and driveways. It shall conform to type III of the standard specifications for high-early strength portland cement for pavement within County Line Road.
  1. Fine and coarse aggregate shall be proportioned by volume by suitable containers approved by the engineer. Portland cement in standard unopened cloth or paper sacks as packed by the manufacturer may be considered as equaling one cubic foot.
  2. Water shall be measured by an approved device capable of accurate measurement to one pint, plus or minus, of the total amount of water required per batch.
  3. All concrete shall be volume proportioned on the basis of one part of portland cement, two parts of fine aggregate, and three and one-half parts of coarse aggregate with only enough water added to make a workable mix.
- C. Fine Aggregate
  1. Passing through No. 4 Sieve, not less than 95%.
  2. By passing through No. 100 Sieve, about 5%.
- D. Coarse aggregate.
  1. Passing through No. 4 Sieve, not less than 95%.
  2. Passing through No. 4 Sieve not more than 5%

3. Coarse aggregate shall be obtained from a source know to be in current use on concrete construction
- E. Concrete Mixing Water
1. Mixing water shall be clean and shall be free from oil, acid and injurious amounts of organic matter, alkalies, or other salts.
- F. Metal Reinforcement
1. Metal reinforcement shall conform to the requirements of the standard specifications for billet-steel bar concrete reinforcement of intermediate grade (deformed bars) (serial designation: A-15-39) of the American Society for Testing Materials.
  2. Wire for concrete reinforcement shall conform to the requirements of the standard specifications for cold-drawn steel wire for concrete reinforcement (serial designation: A-82-34), or of the standard specifications for welded steel wire fabric for concrete reinforcement (serial designation: A-185-37) of the American Society for Testing Materials.
- G. Reinforcement Replacement
1. Metal reinforcement before being placed shall be thoroughly cleaned of mill and rust scale and of coatings that will destroy or reduce the bond. Reinforcement appreciably reduced in section will be rejected.
  2. Metal reinforcement shall be accurately positioned and secured against displacement by using annealed wire of not less than No. 16 gauge or suitable clamps at intersections and shall be supported in a manner that will keep all metal away from the exposed surfaces of the wall. Nails shall not be driven into the outside forms to support reinforcement, nor the outside form on wall exposed to view after the structure is completed.
  3. Wherever it is necessary to splice reinforcement otherwise than as shown on the plans, the character of the splice shall be provided by the engineer on the basis of allowable bond stress and the stress in the reinforcement at the splice. Splicing shall not be made at points of maximum stress nor shall adjacent bars be spliced at the same point. Bar splices shall be staggered
  4. All bars shall be lapped at least forty diameters at all corners and at abrupt changes in direction of walls or wherever splicing of bars is necessary

## PART 3 EXECUTION

### 3.1 GENERAL

- A. Comply with applicable provisions of SSRBC Sections 311, 420, 440 and 606 and details and cross-section shown on plans.
- B. Construct finished surfaces to match existing.

### 3.2 REMOVAL OF EXISTING PAVEMENT AND APPURTENANCES

- A. Remove existing pavement and sidewalk as shown on plans in conformance with provisions of SSRBC, Section 440.

- B. Remove combination curb and gutter in conformance with provisions of SSRBC, Section 440.

### 3.3 GRANULAR SUBBASE

- A. Place Sub-base Granular Material, Type A to thickness, lines and grades shown on drawings and in accordance with SSRBC Section 311. Additional material (CA-6), required to meet existing grade for temporary access shall be provided & removed at no additional cost to the Village (incidental).

### 3.4 PLACEMENT OF PORTLAND CEMENT CONCRETE

- A. Comply with requirements of SSRBC Section 420 for placement of Portland Cement Concrete Pavement.
- B. Comply with requirement of SSRBC Section 606 for placement of Portland Cement Concrete Curb and Gutter.
- C. Prior to placement of any concrete, the Contractor shall contact the Engineer and Owner a minimum of 48 hours prior to the placement. The contractor must receive approval of the Engineer. Any concrete placed over an unapproved base is subject removal at the discretion to of the engineer.
- D. Drill and epoxy one eighteen-inch (18") long No. 6 deformed bar at 30 inch intervals between existing and new pavement section. Embed at least 9 inches into existing side.
- E. Drill and epoxy two eighteen-inch (18") long, No. 5 deformed bars at 30 inch intervals between existing and new curb and gutter section. Embed at least 9 inches into existing side.
- F. Depositing Concrete
  - 1. Concrete shall be vibrated to thoroughly embed all reinforcement and fixtures. When forms are removed, surfaces shall be even and dense, free from aggregate pockets or honeycomb. Special care shall be taken to secure dense concrete around all inserts.
- G. Construct expansion joints with 3/4 inch preformed non-extruding joint fillers and two 3/4 inch smooth epoxy coated steel dowels at 100 foot maximum intervals, at five feet on either side of drainage structures, at beginning and ending of radii, at abutments with sidewalk and as directed by Engineer.
- H. Protecting and Curing
  - 1. All exposed surfaces of concrete shall be protected against wash by rain. All concrete shall be kept set for a period of five days after placing, except that two days' curing shall be considered sufficient if high-early strength portland cement or concrete is used.
  - 2. When placing concrete at or below a temperature of forty degrees Fahrenheit or whenever, in the opinion of the engineer, atmospheric temperatures will

probably fall below this limit within the next twenty-four-hour period after placing concrete, the mixing water and aggregates shall be heated and the freshly placed concrete protected by adequate housing or covering and heating.

3. Concrete when placed in the forms shall have a temperature of not less than seventy degrees Fahrenheit nor more than one hundred degrees Fahrenheit. Freshly placed concrete shall be maintained at a temperature of fifty to eighty degrees Fahrenheit or greater for a period of not less than four days after placing. The methods of protection and curing shall be such as to prevent evaporation of moisture from the concrete and injury to the surface.
  - I. Removal of Forms: Forms shall remain undisturbed until the concrete has attained sufficient strength to sustain its own weight in addition to any temporary or permanent load that may be placed upon it during the building of the structure. Beam sides, column forms, or forms for walls may be removed as soon as the concrete has attained sufficient strength to sustain its own weight; provided, that such action does not endanger any part of the structure, but in no case less than four days when standard cement is used, nor less than two days when high-early strength cement is used.
  - J. Any concrete work that is not formed as shown on the plans or for any reason is out of alignment or level or shows a defective surface shall be considered as not conforming with the intent of these specifications and shall be removed from the job by the contractor at his expense unless the engineer grants permission to patch the defective area which shall be done in accordance with the best practice. Permission to patch any such area shall not be considered a waiver of the engineer's right to require complete removal of the defective work if the patching does not, in his opinion, satisfactorily restore the quality of the concrete and appearance of the surface.
  - K. Saw contraction joints to two inches minimum depth at 10-foot intervals or as directed by Engineer. Saw joints no earlier than 6 or later than 24 hours after placement of concrete.
  - L. Apply protective coat in conformance with SSRBC Article 420.18.

### 3.5 PAVEMENT MARKINGS

- A. All markings shall be in accordance with Section 780 of the SSRBC.
- B. Any pavement markings removed shall be replaced in kind cost incidental.**

### 3.6 FIELD QUALITY CONTROL

- A. Testing: Make two concrete test cylinders for every 50 CY of concrete placed. Make a minimum of two test cylinders each day concrete curb and gutter is placed.
- B. Repair or remove and replace unacceptable surface or pavement as directed by Engineer.

END 02527

## SECTION 02539 - SANITARY SEWERAGE SYSTEMS

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section includes sanitary sewerage drainage piping, fittings, accessories, bedding and the connection of building sanitary drainage systems to municipal sewers. Section also includes appurtenant items to facilitate sanitary sewer installation.

#### 1.2 RELATED SECTIONS

- A. General Conditions, Supplementary Conditions, and Division 1 sections apply to the work of this section.
- B. Section 01330 – Submittal Procedures
- C. Section 01600 – Product Requirements
- D. Section 02315 – Excavation
- E. Section 02320 – Backfill
- F. Section 02324 – Trenching
- G. Section 02540 – Manhole Frame Seals
- H. Section 02633 – Manholes, Frames, and Covers
- I. Section 02955 – Manhole Encapsulation System

#### 1.3 SANITARY SEWER, 8"-15" DIAMETER

- A. Measurement and Payment:
  - 1. Unit of Measure: Lineal Foot.
  - 2. Method of Measurement: Length measured in place along pipe centerline from beginning to end of repair.
  - 3. Paid for at the contract unit price per lineal foot for REMOVE AND REPLACE SANITARY SEWERS of type and diameter specified.
- B. Includes Costs of:
  - 1. Mobilization
  - 2. Product data for pipe specialties
  - 3. All excavation and trenching
  - 4. Removal of existing sanitary sewer and lining.
  - 5. By pass pumping.
  - 6. Materials for pipe laying and jointing including non-shear mission couplings at pipe to pipe connections
  - 7. Material for bedding and haunching and backfill for 1' over the top of the pipe as specified in contract

8. Base Stabilization Material that may become necessary due to the removal of unsuitable material
9. All dewatering
10. Temporary shoring, sheeting and bracing of trench and utilities.
11. Replacement of utilities disturbed during excavation
12. Installation
13. Pipe
14. Fittings
15. Backfill and compaction, excluding trench backfill
16. Clean up and disposal of excess materials
17. Televising tests and internal inspection

#### 1.4 REMOVAL EXISTING SANITARY SEWER, Diameter Specified

##### A. Measurement and Payment:

1. Unit of Measure: Lineal Foot
2. Method of Measurement: Length measured in place along pipe centerline from beginning to end of installation. No payment for sanitary sewer removal will be made through structures where the structures are paid for separately.
3. Basis of Payment: Paid for at the contract unit price per lineal foot for REMOVAL EXISTING SANITARY SEWER of diameter specified.

##### B. Includes Costs of:

1. Mobilization
2. Product data for pipe specialties
3. All excavation and trenching. Removal of existing sanitary sewer and lining.
4. All dewatering
5. Temporary shoring, sheeting and bracing
6. By pass pumping.
7. Clean up and disposal of excess materials

#### 1.5 REFERENCES

- A. Standard Specifications for Water and Sewer Main Construction in Illinois, Current Edition, Illinois Society of Professional Engineers, etal.
- B. AASHTO T180 (American Association of State Highway and Transportation Officials) - Moisture-Density Relations of Soils using a 10-lb Rammer and an 18-inch Drop.
- C. ANSI/ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb. Rammer and 12 inch Drop.
- D. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. Rammer and 18 inch Drop.



- E. ANSI/ASTM D2321 - Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe.
- F. ASTM A746-99 – Standard Specification for Ductile Iron Gravity Sewer Pipe.
- G. ASTM D2922 - Test Methods for Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).

#### 1.6 DEFINITIONS

- A. Bedding: Fill placed under, beside and directly over pipe, prior to subsequent backfill operations.

#### 1.7 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data indicating pipe, joints and pipe accessories.
- C. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

#### 1.8 CLOSEOUT SUBMITTALS

- A. Section 01700 - Execution Requirements: Closeout procedures.
- B. Project Record Documents: Record location of pipe runs, connections, cleanouts, and invert elevations.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

#### 1.9 FIELD MEASUREMENTS

- A. Verify that field measurements and elevations are as indicated.

#### 1.10 COORDINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.

- B. Coordinate the Work with termination of sanitary sewer connection outside building, connection to municipal sewer utility service and trenching.

## PART 2 PRODUCTS

### 2.1 SEWER PIPE MATERIALS

- A. Polyvinyl Chloride (PVC) Pipe:
  - 1. Pipe Material (4" to 15"): Heavy wall sewer pipe SDR 26 made of compounds conforming to ASTM D1784 manufactured in accordance with ASTM D3034.
  - 2. Joints: Shall meet the requirements of ASTM D3212. Elastomeric seals (gaskets) used for push-on joints shall comply with ASTM F477.
- B. Polyvinyl Chloride (PVC) Pipe (Watermain Quality):
  - 1. Pipe Material: In accordance with AWWA C-900/905. Pipe shall be rated at 160 psi or greater at 73.4 degree Fahrenheit.
  - 2. Joints: Shall be pressure slip jointed meeting the requirements of ASTM D3139. Elastomeric seals (gaskets) used for push-on joints shall comply with ASTM F477.

### 2.2 PIPE ACCESSORIES

- A. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.
- B. Adapter Couplings: Make connections to existing sewers or services with adapter couplings.
  - 1. Manufacturers, Adapters:
    - a. Mission Rubber Co.
  - 2. Include following:
    - a. Stainless steel shear-ring.
- C. Saddles: Connect existing sewer services to existing main with sewer pipe saddle when indicated on the drawings.
  - 1. Manufacturers, Saddles:
    - a. The General Engineering Company – Sealtite Sewer Pipe Saddle.

### 2.3 BEDDING MATERIALS

- A. Bedding: Classes IA, IB, II or III as described in ASTM D-2321. Contractor is responsible of determining which of the recommendations and/or restrictions govern once subsurface conditions have been examined. Material shall be homogenous for 6" below and 12" above the pipe.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. All work under this Section shall be executed in accordance with Standard Specifications for Water and Sewer Main Construction in Illinois, Current Edition and the Village of Bensenville.

#### **B. DEFLECTING SANITARY SEWER JOINTS WILL NOT BE ACCEPTED.**

### 3.2 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify that trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on drawings.

### 3.3 PREPARATION

- A. Correct over excavation with coarse aggregate.
- B. Remove large stones or other hard matter that could damage pipe or impede consistent backfilling or compaction.

### 3.4 BEDDING

- A. Excavate pipe trench in accordance with Section 02324 for Work of this section. Hand trim excavation for accurate placement of pipe to elevations indicated.
- B. Place bedding material at trench bottom, level materials in continuous layer not exceeding 6 inches compacted depth, compact to 95 percent.
- C. Maintain optimum moisture content of bedding material to attain required compaction density.

### 3.5 PIPE INSTALLATION – OPEN TRENCH

- A. Install pipe, fittings, and accessories in accordance with SSWSMC. Seal joints watertight.
- B. Lay pipe to slope gradients noted on drawings; with maximum variation from true slope of 1/8 inch in 10 feet.
- C. Horizontal or vertical bends/deflection in sanitary sewer will not be permitted. All pipe shall be laid in a straight line and pitch from manhole to manhole.

- D. Install bedding per trench detail shown on drawings. Bedding for flexible pipe must be in accordance with ASTM D2321.
- E. Refer to Section 02324 for trenching requirements. Do not displace or damage pipe when compacting.
- F. Refer to Section 02633 for manhole requirements.

### 3.6 FIELD QUALITY CONTROL

- A. Section 01700 - Execution Requirements: Testing, adjusting, and balancing.
- B. Request inspection prior to and immediately after placing bedding.
- C. Compaction testing will be performed in accordance with ANSI/ASTM D1557.
- D. Deflection Test: Deflection testing shall be performed at Contractor's cost in accordance with SSWSMC, Division III, Section 31-1.11.
- E. Pressure Test: Pressure testing shall be performed at Contractor's cost in accordance with SSWSMC, Division III, and Section 31-1.11.
- F. The Contractor shall televise all new sanitary sewers. Prior to televising the contractor must completely fill all line segments with water from a hydrant. Filling the sanitary sewer with upstream effluent is not acceptable. The contractor shall furnish one copy of the videotape to the Engineer for review.
- G. Frequency of Tests: As directed by Engineer.
- H. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.

### 3.7 PROTECTION OF FINISHED INSTALLATION

- A. Section 01700 - Execution Requirements: Protecting finished installation.
- B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

END 02539

## SECTION 02633 - VAULTS, FRAMES AND COVERS

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. Section includes modular precast concrete manhole sections with tongue-and-groove joints with masonry transition to cover frame, covers, anchorage, and accessories.
- B. Related Sections:
  - 1. Section 02315 – Excavation and Fill.
  - 2. Section 02512 – Water Distribution

#### 1.2 WATER VALVE VAULT, TYPE A, DIAMETER SPECIFIED W/ TYPE 1 FRAME & CL LID

- A. Measurement and Payment:
  - 1. Unit of Measure: Each
  - 2. Method of Measurement: Each, as shown on plans or as directed by the Engineer.
  - 3. Basis of Payment: Paid for at the contract unit price for WATER VALVE VAULT, TYPE A, DIAMETER SPECIFIED W/ TYPE 1 FRAME & CL LID. Includes shop drawings, manufacturer and transportation, excavation, temporary shoring, sheeting and bracing, materials, including precast concrete sections with required manhole encapsulation system, rubber boots at all incoming pipes, adjusting rings, mortar, bitumastic, steps, frames and lids, placement and compaction, **including select granular backfill**, adjustments, clean up and disposal of excess and waste material and final inspection.

#### 1.3 REFERENCES

- A. Standard Specifications for Water and Sewer Main Construction in Illinois (SSWSMC), Current Edition, Illinois Society of Professional Engineers, etal.
- B. Standard Specifications for Road and Bridge Construction (SSRBC), Current Edition, Illinois Department of Transportation.
- C. ACI (American Concrete Institute) 318 – Building Code Requirements for Reinforced Concrete.
- D. ACI (American Concrete Institute) 530 – Building Code Requirements for Masonry Structures.

- E. ASTM A48 – Gray Iron Castings.
- F. ASTM A536 – Ductile Iron Castings.
- G. ASTM C39 – Test Method for Compressive Strength of cylindrical Concrete Specimens.
- H. ASTM C478 – Pre-cast Reinforced Concrete Manhole Sections.
- I. ASTM C497 – Test Method for Concrete Pipe, Manhole Sections, or Tile.
- J. ASTM C913 – Pre-cast Concrete Water and Wastewater Structures.
- K. ASTM C923 – Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipes.

#### 1.4 DESIGN REQUIREMENTS

- A. Equivalent strength shall be based on structural design of reinforced concrete as outlined in ACI 318.
- B. Design of lifting devices for Pre-cast structures shall conform to ASTM C 913.
- C. Design of joints for Pre-cast structures shall conform to ASTM C 913. Joints shall be designed for leakage not to exceed 0.025 gallons per hour per foot of joint at 3 feet of head.

#### 1.5 SUBMITTALS

- A. Section 01330 – Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate manhole locations, elevations, piping, and all sizes and elevations of penetrations.
- C. Product Data: Submit manhole covers, component construction, features, configuration and dimensions.

#### 1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with Standard Specifications for Water and Sewer Main Construction in Illinois (SSWSMC), Current Edition (Illinois Society of Professional Engineers, etal).
- B. Maintain one copy of SSWSMC on site at all times.

## 1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum ten years documented experience.

## 1.8 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 – Product Requirements: Product storage and handling requirements.
- B. Comply with Pre-cast concrete manufacturer's instructions for unloading, storing and moving Pre-cast manholes and drainage structures.
- C. Store Pre-cast concrete vaults to prevent damage to the Owner's property or other public or private property, and any property so damaged shall be repaired at the Contractor's expense.
- D. Clearly mark each Pre-cast structure by indentation or waterproof paint to indicate the date of manufacture, manufacturer and identifying symbols and/or numbers shown on the Contract Drawings to indicate its intended use.

## 1.9 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 – Product Requirements.
- B. Maintain materials and surrounding air temperature to minimum 50° F prior to, during, and 48 hours after completion of masonry work.
- C. When applicable, comply with all conditions of Cold Weather Requirements: ACI 530.

## PART 2 PRODUCTS

### 2.1 MANHOLES, FRAMES, AND COVERS

- A. Vault Sections: Reinforced Pre-cast concrete in accordance with ASTM C478 with gaskets in accordance with ASTM C923.
- B. Mortar and Grout: As specified in Section 04065, Type S.
- C. Reinforcement: Formed steel wire, gage as shown on plans, galvanized finish.

## 2.2 COMPONENTS

- A. Lid and Frame: ASTM A48, Class 30B Cast iron construction, machined flat bearing surface, removable lid, lockable or boltable as shown on plans, lid design as shown on plans; lid molded with identifying type of service.
- B. Embossed lids, identifying the appropriate type of utility to be per detail shown in plans.
- C. Base Pad: Pre-case or Cast-in-place concrete of type specified in Section 03300, leveled top surface.
- D. Additional Valve Vault Items
  - 1. The word water shall be imprinted on the lid.
  - 2. No steps shall be included within valve vaults.

## 2.3 CONFIGURATION

- A. Shape: As shown on plans.
- B. Clear Inside Dimensions: As shown on plans.
- C. Design Depth: As shown on plans.
- D. Clear Lid Opening: As shown on plans.
- E. Pipe and Conduit Entry: Provide openings as indicated.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 – Administrative Requirements: Coordination and Project Conditions.
- B. Verify items provided by other sections of Work are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into Work.
- D. Verify excavation that vault is correct.

### 3.2 PREPARATION

- A. Coordinate placement of inlet and outlet pipe or duct sleeves required by other sections.



- B. Do not install structures under site conditions known to result in loads heavier than that for which the structure was designed.
- C. Inspect pre-cast concrete structures immediately prior to placement in the excavation to verify that they are internally clean and free from damage. Remove damaged units from the construction site and replaced, at no additional cost to the Owner.

### 3.3 INSTALLATION

- A. Excavation and Backfill:
  - 1. Excavate for vaults in accordance with Section 02315 in the location and to depth shown. Provide clearance around the sidewalls of the structure as required for construction.
  - 2. If groundwater is encountered, prevent accumulation of water in excavations. Place manholes or drainage structures in a dry trench.
  - 3. Where the possibility exists of a watertight structure becoming buoyant in a flooded excavation, take necessary steps to avoid flotation of the structure.
  - 4. Place base pad, trowel top surface level.
  - 5. Place vault sections plumb and level, trim to correct elevations, anchor to base pad. Backfill excavations for manholes and drainage structures in accordance with Section 02320.
  - 6. Form and place vault cylinder plumb and level, to correct dimensions and elevations.
  - 7. Cut and fit for pipe/conduit.
  - 8. Grout base of shaft sections to achieve slope to exit piping. Trowel smooth. Contour as required.
  - 9. Set cover frames and covers level without tipping, to correct elevations.
  - 10. Vaults shall be sealed with two rows of bituminous mastic.
  - 11. Adjustment shall be made by no more than two adjustment rings totaling 12" in height.
  - 12. Coordinate with other sections of Work to provide correct size, shape, and location.

### 3.4 PRE-CAST CONCRETE MANHOLE INSTALLATION

- A. To ensure safety, lift pre-cast structures at the lifting points designated by the manufacturer.
- B. When lowering vaults into the excavations and joining pipe to the units, take precautions to ensure that the interior of the pipeline and structure remains clean.
- C. Set pre-cast structures so that they firmly and fully bear on crushed stone bedding, compacted in accordance with the provisions of Section 02320 or on other support system shown on the Contract Drawings.

- D. Assemble multi-section structures by lowering each section into the excavation. Lower, set level, and firmly position the base section before placing additional sections.
- E. Two rings of bituminous mastic shall be used to seal all joints.
- F. Ensure joint integrity by removing all foreign materials from joint surfaces and verifying that sealing materials are placed properly. Avoid misalignment by using guide devices affixed to the lower section.
- G. Verify that vaults installed satisfy required alignment and grade.
- H. Remove knockouts or cut structure to receive piping so as not to create openings more than that required to receive pipe. Fill annular space with mortar.
- I. Cut pipe to finish flush with interior of structure.

### 3.5 CASTINGS INSTALLATION

- A. Set frames using mortar and adjusting rings as required.
- B. Two rings of bituminous mastic shall be used to seal all joints.
- C. Set frame and cover 2 inches above finished grade for manholes and other structures with covers located within unpaved areas to allow the area to be graded away from the cover beginning 1 inch below the top surface of the frame.

### 3.6 FIELD QUALITY CONTROL

- A. Section 01400 – Quality Requirements: Testing and inspection services.
- B. Vertical Adjustment of Existing Manholes, Vaults, and Drainage Structures:
  - 1. Where required, adjust the top elevation of existing manholes, Vaults, and drainage structures to suit finished grades shown on the Contract Drawings.
  - 2. Reset existing frames, grates and covers, carefully removed, cleaned of all mortar fragments, to the required elevation in accordance with the requirements specified for installation of castings.
  - 3. Remove the concrete so as not to damage the existing vertical reinforcing bars when removal of an existing concrete wall is required. The vertical bars shall be cleaned of all concrete and bent into the new concrete top slab or spliced to required vertical reinforcement, as shown on the Contract Drawings.
  - 4. Clean and apply sand-cement bonding compound on all existing concrete surfaces to receive cast-in-place concrete. Sand-cement bonding compound and its application shall be in accordance with Section 03300.

END 02633

## SECTION 02936 - RESTORATION AND EROSION CONTROL

### PART 1 GENERAL

#### 1.1 WORK INCLUDED

- A. Restoration
- B. Removal and replacement of miscellaneous items.

#### 1.2 REFERENCES

- A. SSRBC Section 211, Topsoil.

#### 1.3 RELATED SECTIONS

- A. Section 02055 – Furnish Topsoil

#### 1.4 UNIT PRICE:

- A. Tree Removal shall be paid for at the diameter of the tree specified.
  - 1. Unit of Measure: Each
  - 2. Method of Measurement: Diameter Inch, as shown on the Final Engineering Plans or as directed by Engineer.
  - 3. Basis of Payment: Paid for at the Contract Unit Price per Tree Removal diameter as specified on plans.
  - 4. Includes Costs of.
    - a. Mobilization.
    - b. Temporary shoring, sheeting, bracing and protection of adjacent, utilities, structures, pavement, concrete, and other miscellaneous items.
    - c. Root or limb pruning necessary to protect items identified in item b.
    - d. Exploratory excavations.
    - e. Removal and disposal of tree and all debris to a depth of 6" below the adjacent curb line or ground whichever is lowest.
    - f. All work identified within Article 201 or the SSRBC.
    - g. Clean up and disposal of excess and waste material.
    - h. Final Inspection.
- B. Tree Protection shall be paid for on a unit price each basis.
  - 1. Unit of Measure: Each
  - 2. Method of Measurement: Each for all trees identified by the contractor and Owner or as shown on the Final Engineering Plans.
  - 3. Basis of Payment: Paid for at the Contract Unit Price per Tree Protection as specified on plans.

4. Includes Costs of.
  - a. Mobilization.
  - b. Temporary bracing and protection of adjacent trees.
  - c. Replacement of any trees damaged or destroyed not identified by tree removal and not approved for removal by the Owner.
  - d. Root or limb pruning necessary to protect items identified in item b.
  - e. Exploratory excavations.
  - f. All work identified within Article 201 or the SSRBC.
  - g. Clean up and disposal of excess and waste material.
  - h. Final Inspection.
  
- C. Remove and Reset Landscape Timbers and Wood Fence:
  1. Unit of Measure: Linear foot as measured along the ground
  2. Method of Measurement: All material labor and equipment for the removal, resetting or replacement of all landscape timber and wood fence and related appurtenances as shown on the Final Engineering Plans.
  3. Basis of Payment: Measure per linear foot
  4. Includes Costs of.
    - a. Mobilization.
    - b. Removal, resetting, or replacement of landscape timbers and Wood fence
    - c. Any labor, equipment and material necessary to replace them in a pre-existing condition as determined by the Owner.
    - d. Exploratory excavations.
    - e. Clean up and disposal of excess and waste material.
    - f. Final Inspection.
  
- D. Remove and Reinstall Block Planter wall:
  1. Unit of Measure: Linear foot as measured along the ground
  2. Method of Measurement: Cost for the removal, resetting or replacement of all Landscape Block Planter wall and related appurtenances as shown on the Final Engineering Plans.
  3. Basis of Payment: Incidental to the Contract.
  4. Includes Costs of.
    - a. Mobilization.
    - b. Removal, resetting, or replacement of block planter wall
    - c. Any labor, equipment and material necessary to replace them in a pre-existing condition as determined by the Owner.
    - d. Clean up and disposal of excess and waste material.
    - e. Final Inspection.
  
- E. Remove and Reset Street Sign
  1. Unit of Measure: Each as identified on plans
  2. Method of Measurement: All material labor and equipment for the removal, resetting of street signs as shown on the Final Engineering Plans.
  3. Basis of Payment: Measure per each

4. Includes Costs of.
    - a. Mobilization.
    - b. Removal, resetting, or replacement of street signs
    - c. Any labor, equipment and material necessary to replace them in a pre-existing condition as determined by the Owner.
    - d. Exploratory excavations.
    - e. Clean up and disposal of excess and waste material.
    - f. Final Inspection.
- 1.5 RESTORATION
- A. The contractor shall take all necessary steps to prevent the damage or disruption of the use of existing improvements.
  - B. Contractor will be limited to the areas as determined by the engineer.
  - C. All areas disturbed by the contractor shall restore to their original condition and approved by the engineer. **Restoration is intended to restore areas both paved and unpaved included but not limited to areas disrupted during excavation, transportation of excavated material, installation of , water main, services and all areas disturbed through the stockpiling or storage of materials and equipment.**
  - D. **Areas outside the limits of the plans shall be considered incidental unless approved by the owner.**
  - E. The contractor will be responsible for any additional maintenance of the rehabilitated items until the item has been restored to its original condition as deemed by the engineer.

## PART 2 PRODUCTS

## PART 3 EXECUTION

END 02936

## SECTION 02985 SALT TOLERANT SOD

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes lawn work as indicated and as specified.

#### 1.2 QUALITY ASSURANCE

##### A. Sod:

1. For sod, comply with State and Federal laws with respect to inspection for plant diseases and insect infestation.
2. Sod installation shall be performed by personnel experienced in lawn installation procedures.
3. Provide on-site, full-time qualified foreman representing Contractor during sod installations.

##### B. Ability to Deliver:

1. Investigate sources of supply and confirm they can supply materials in quantity, variety, and quality noted and specified before submitting bid.
2. Failure to take this precaution will not relieve responsibility for furnishing and installing these materials in accordance with Contract documents without additional expense to Owner.

##### C. Inspection:

1. Engineer may inspect sod at source before cutting. Such inspection shall be in addition to inspection at job site.

#### 1.3 SUBMITTALS

##### A. Samples and Analyses:

1. Submit samples and certified analyses by approved laboratory for fertilizer, and limestone before delivery to project.
2. Manufacturer's analysis for standard products will be acceptable.
3. Approval of samples will not be construed as final acceptance. Engineer may have samples taken of materials delivered to site of work and analyzed for compliance with specifications.

- B. Prior to end of maintenance period, furnish two copies of written maintenance instructions and care of installed lawn areas.

#### 1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Protect materials against weather-related damage or other injuries occurring during transit and job storage in such manner that their effectiveness will not be impaired.

- B. Deliver fertilizer to site in unopened, original containers, each bearing name and address of manufacturer, name brand, or trademark, and manufacturer's guaranteed analysis. Do not use fertilizer which becomes caked or otherwise damaged. Do not expose fertilizer to weather prior to delivery on site and after delivery until used. Protect fertilizer and do not store in direct contact with ground.
- C. Sod:
  - 1. Protect and maintain during transit or storage onsite as necessary to ensure vigorous growth after placement.
  - 2. Inform Engineer 24 hours in advance of delivery of sod. Each shipment shall be accompanied by an invoice from vendor giving quantity and certifying that sod received meets requirements as contained in these specifications, together with analysis of seed from which sod was grown. Provide copy of invoice to Engineer upon delivery of sod.
  - 3. Remove from site and dispose of, in legal manner, sod remaining on site unplaced after 48 hours, without extra cost to Owner. Remove from site and dispose of in legal manner any yellowing or otherwise discolored sod without extra cost to Owner.

#### 1.5 PROTECTION

- A. Protect existing property and improvements within this site and adjacent property.
- B. Repair damage created by operations or those of subcontractors.

#### 1.6 JOB CONDITIONS

- A. Wherever landscape work is executed in conjunction with construction of other work, coordinate schedule that will permit execution of landscape work.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Topsoil: Refer to Section 02055.
- B. Fertilizer:
  - 1. Commercial fertilizer uniform in composition, free flowing, and suitable for application with distribution equipment.
  - 2. Contain minimum basis percentage by weight of:
    - a. Prior to Sodding (1-1-1):
 

Nitrogen	33%
Phosphorous	33%
Potash	33%

## b. After Sodding (1-1-1):

Nitrogen	33%
Phosphorous	33%
Potash	33%

- c. One-quarter of nitrogen shall be in form of nitrates, one-quarter in form of ammonia salts, and one-half in form of organic nitrogen.
- d. Available phosphoric acid shall be derived from super-phosphate having minimum guaranteed analysis of 20% available phosphate or bone meal.
- e. Potash shall be in form of sulphate of potash.
- f. Make up balance of fertilizer of nonharmful materials normally present in such product and free from dust, sticks, sand, stone or other harmful debris.

## C. Limestone

1. ASTM C 602, class T agricultural limestone containing a minimum 80% total carbonates, by weight. Limestone shall be graded within following limits:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
No. 8	99
No. 60	75

## D. Aluminum Sulfate:

1. Commercial grade, unadulterated and delivered in containers with material and manufacturer, names and weight of contents.

## E. Sod:

1. Fresh cut, live, nursery grown sod having well matted roots.
2. Root zone shall be of good, fertile, natural mineral soil free from stones and debris.
3. Peat sod will not be acceptable.
4. Sod shall be nursery grown sod consisting of a blend of 100% improved Kentucky Blue Grass species and be a minimum of two years growth. Sod shall show evidence of dense well-rooted growth and be practically free from weeds and non-Blue Grass species. Grass height of sod shall be approximately 2 inches. Sod shall be raked free of undesirable debris. Sod shall be as specified as follows:
  - a. 30% Buffalo Grass-Buchloe dactyloides, 20% Inferno Tall Fescue, 15% Audubon Red Fescue, 15% Rescue 911 Hard Fescue, 5% Rugby Kentucky Bluegrass, and 15% Fults Pucinnellia Distans.



5. Sod Sections: Standard in size (18 in. wide by 6 ft in length) not less than 1-1/2 in. thick, strong enough to support its own weight and retain its size and shape when suspended vertically from firm grasp on upper 10% of section.
6. Mowed at least twice with final mowing not more than 7 days before being cut and lifted.
7. Obtain sod from nurseries having growing conditions similar to job site.
8. Schedule sod cutting and delivery so that sod may be placed within 48 hours of cutting.

F. Water:

1. Sod shall be thoroughly watered immediately after installation.
2. The sod shall be watered as often as necessary to ensure sufficient water shall be applied to wet the sod bed at least 2-inches deep.
3. Watering shall be done in a manner that will avoid erosion due to application of excessive quantities, and the water equipment shall be of a type that will prevent damage to the finished surfaces.
4. Water will be supplied by the Contractor for watering purposes where available. If water is not available on site, the Contractor shall supply water from his own source. The Contractor shall furnish the hose and proper equipment for watering purposes.

G. Wood Stakes:

1. Wood lath or similar material, minimum of 10-1/2 in. long, pointed at one end.

## **PART 3 - EXECUTION**

### **3.1 INSPECTION**

- A. Examine areas and conditions under which lawn work is to be performed and notify Engineer in writing of conditions detrimental to proper and timely completion of work.
- B. Do not begin site preparation until boulders, debris, and similar materials have been removed; depressions and ruts filled; and entire area has been shaped, trimmed and finished uniformly to lines, grades, and cross-sections shown on drawings.
- C. Do not proceed with work until unsatisfactory conditions have been corrected.
- D. Verify location of underground utilities with appropriate sources. Contact J.U.L.I.E. at least 48 hours before commencing with construction. Repair damaged utilities.

### **3.2 SITE PREPARATION**

- A. Place topsoil to a depth of 4 inches beneath lawn areas. Compact topsoil to the extent necessary to prevent settlement.
- B. Finish Grading:
  1. Provide smooth continual grades without dips and pockets where water may stand.
  2. Correct surface irregularities produced by preceding operations or by any other cause.
  3. Finish grades and earth mounds shall be approved by Engineer prior to lawn construction.

C. Tilling:

1. Prepare areas to depth of approximately 3 in. by disking, harrowing or other approved means.
2. Areas shown on drawings which are too small to make these operations practicable shall receive special scarification prior to final tilling.
3. Continue tilling until soil condition is suitable for lawn construction.

D. Cleanup:

1. After completion of tilling operations, clear surface of stones, stumps, roots, brush, wire, grade stakes, construction materials, and other objects which hinder planting, installation, and maintenance operations.
2. Keep adjacent paved areas clean.
3. Remove and dispose of soil or other materials in accordance with Division 31 Section 31 23 18.11 "Clean Construction or Demolition Debris and Uncontaminated Soil"

E. Fertilizer Spreading:

1. Use mechanical spreader wherever practicable.
2. 20 lbs of active ingredients per 1,000 sq. ft.
3. Spread uniformly in two passes at right angles to each other.
4. Incorporate fertilizer into soil to depth of 2 in. by disking, harrowing or other methods which produce similar results.

### 3.3 SODDING

A. Planting Season for Sod Installation:

1. March 15 to June 15.
2. August 15 to November 15.
3. Weather conditions within season shall govern actual planting periods.
4. Seasons may be extended upon approval by Engineer, however, such time extensions shall not change Contractor's responsibility for establishing healthy appearing and vigorous growing turf.

B. Site Conditions:

1. Scarify and cultivate ground until surface is smooth, friable and of uniformly fine texture immediately before laying of sod.
2. Surface on which sod is to be laid shall be firm and free from depressions, to allow for positive drainage.
3. During periods of high temperature, lightly moisten soil immediately prior to laying sod.

C. Laying Sod:

1. Handle and lay sod by hand.
2. Lay first row of sod in straight line. Place subsequent rows parallel to and tightly against each other.
3. Stagger lateral joints.
4. Do not stretch or pull to distort length as cut in field.

5. Butt joints together tightly in order to prevent voids which would cause air drying of sod roots, and weed growth.
6. On sloping areas (3:1 or greater), lay sod parallel to slope contours, stagger lateral joints, and secure sod with wood stakes at minimum of four stakes per sq yd and at least one per piece of sod.
  - a. Drive stakes with flat side against slope and 10 in. into ground leaving approximately 1/2 in. above grade.
  - b. Begin sod laying on sloping areas at toe of slope.
7. Water sod immediately after installation to prevent excessive drying during progress of work.
8. Rework disturbed joints or depressions to conform to proper grade.

D. Required Maintenance:

1. Maintain sodded areas for 60 days after all sodding work under this contract has been completed and accepted by the Owner.
2. Mowing:
  - a. Mow after grass has reached an average height of 3 in.
  - b. Mow to maintain grass at height of 2 to 2-1/2 in.
  - c. Do not remove more than 1/3 of leaf blade by moving.
3. Fertilizer Spreading:
  - a. Fertilize after completion of second mowing.
  - b. 15 lbs of active ingredients per 1,000 sq ft (650 lbs/acre).
  - c. Use mechanical spreader where practicable.
  - d. Spread uniformly in two passes at right angles to each other.
4. Reworking:
  - a. Resod grass which are dead, or in unhealthy, unsightly or badly impaired condition using same type and source of sod, and installed in accordance with procedures herein specified without extra cost to Owner.
  - b. Repeat as necessary until areas display acceptable stand of grass.

E. Acceptance:

1. Final acceptance will be granted upon conformance with following:
  - a. Turf shall be reasonably free from weeds, diseases, or other visible imperfections.
  - b. Turf shall display uniform color, quality, and coverage.
  - c. Performed two mowings.
  - d. Performed fertilizing operation after mowing.

END 02985