

Engineering Plans
for
City of Berwyn

Windsor Avenue & Gunderson Avenue Watermain Improvements

Located in Section 31, Township 39 North, Range 13 East
City of Berwyn, Cook County, Illinois

NOT FOR CONSTRUCTION

TROTTER AND ASSOCIATES, INC.
40W 201 WASCO ROAD, SUITE D
ST. CHARLES, ILLINOIS 60175
(P) 630.587.0470 - (F) 630.587.0475

ENGINEERING PLAN SUBMITTAL

The following engineering plans and supporting documentation are issued for the following purpose only.

- PRELIMINARY REVIEW
- FINAL REVIEW
- PERMIT APPLICATION
- BIDDING
- CONSTRUCTION

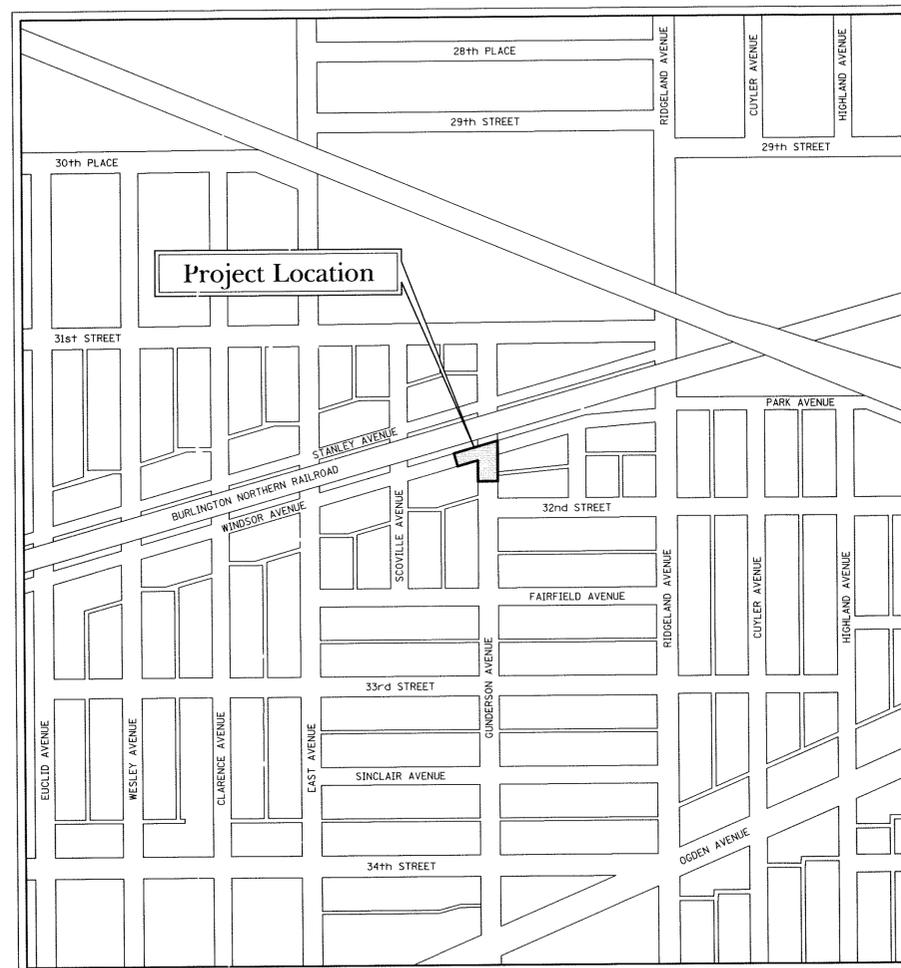
By MJD Date 7/6/15

Client

City of Berwyn
6700 26th Street
Berwyn, IL 60402

City Officials

Mayor - Robert J. Lovero
City Clerk - Thomas J. Pavlik
Alderman
Nona N. Chapman
Jeffrey G. Boyajian
Margaret Paul
Robert W. Fejt
Cesar A. Santoy
Theodore J. Polashek
Rafael Avila
Nora Laureto



Location Map

N.T.S.

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- C.2 Plan and Profile
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- C.5 Erosion Control Details
- C.6 Paving Details
- C.7 Traffic Control Details
- C.8 Traffic Control Details

ALL EXISTING CONDITIONS, RIGHT OF WAY AND ALIGNMENTS
WERE PROVIDED BY THE CITY OF BERWYN.

FOR ADDITIONAL INFORMATION REFER TO
PLANS PREPARED FOR THE CITY OF BERWYN TITLED:

FAP ROUTE 2275 OAK PARK AVENUE, OGDEN AVENUE TO 30TH STREET
FAU ROUTE 1035 STANLEY AVENUE AND
FAU ROUTE 1036 WINDSOR AVENUE, HARLEM AVENUE TO RIDGELAND AVENUE



NOTE:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR
DISTRIBUTING COMPLETE SETS OF THESE
PLANS AND PROJECT SPECIFICATIONS TO ALL
SUB CONTRACTORS INVOLVED IN THIS PROJECT.
A COMPLETE COPY OF THESE PLANS AND PROJECT
SPECIFICATIONS SHALL BE IN THE POSSESSION OF
THE CONTRACTOR AND ALL SUB CONTRACTORS
ON THE PROJECT AT ALL TIMES.

PLANS PREPARED BY:

TROTTER
and
ASSOCIATES, INC.
ENGINEERS AND SURVEYORS
40W201 Wasco Road, Suite D
St. Charles, IL 60175
Ph.: 630-587-0470 Fax: 630-587-0475

Issued for Bidding: July 8, 2015
Issued for City Review: June 3, 2015
Date: May 22, 2015

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY DIRECT SUPERVISION.
DATED AT ST. CHARLES, ILLINOIS, THIS 8th DAY OF July, 2015

Corey T. Mase
COREY T. MASE, P.E., TROTTER AND ASSOCIATES, INC.
ILLINOIS REGISTERED PROFESSIONAL ENGINEER No. 062-060872 / EXPIRATION DATE 11-30-2015
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION FIRM NUMBER 184-002148



**BIDDING REQUIREMENTS, CONTRACT FORMS,
CONTRACT CONDITIONS AND SPECIFICATIONS**

for

CITY OF BERWYN

WINDSOR AVENUE AND GUNDERSON AVENUE WATERMAIN IMPROVEMENTS

2015

City Officials

**Robert J. Lovero
Mayor**

Aldermen

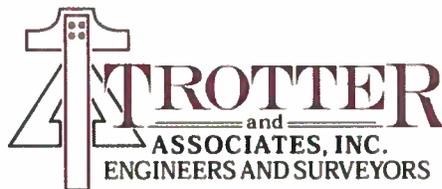
**Nona N. Chapman
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**Jeffrey G. Boyajian
Robert W. Fejt
Theodore J. Polashek
Nora Laureto**

City Clerk

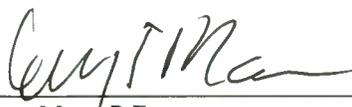
Thomas J. Pavlik

**TROTTER AND ASSOCIATES, INC.
40W201 WASCO ROAD SUITE D
ST. CHARLES, ILLINOIS 60175
PHONE 630.587.0470
FAX 630.587.0475**



**TROTTER AND ASSOCIATES, INC.
38 W. GRAND AVENUE SUITE 300
FOX LAKE, IL 60020
PHONE 224.225.1300**

I hereby certify that these documents were prepared under my direct supervision.

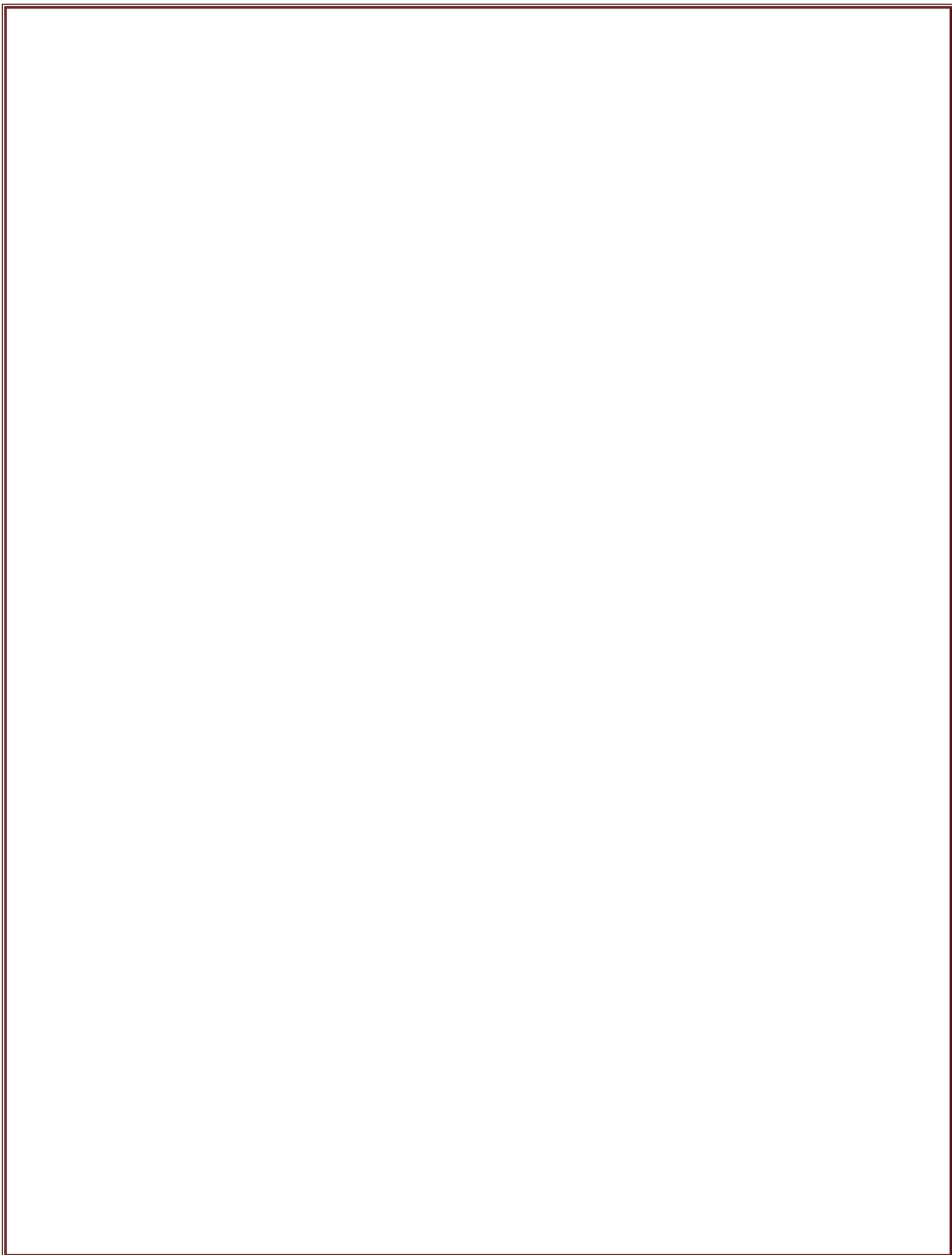


Corey Mase, P.E.
Illinois Registered Professional Engineer
No. 062-055172
Expires: November 30, 2015



7-8-15
Date

Project No. BER-001



**PROJECT SPECIFICATIONS
CITY OF BERWYN – WINDSOR AVENUE AND GUNDERSON AVENUE WATERMAIN
IMPROVEMENTS**

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DIVISION 0

CONTRACT DOCUMENTS

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SECTION 00030

ADVERTISEMENT FOR BIDS

PART 1 GENERAL

1.1 Receipt of Bids

- A. Sealed proposals will be received by the City of Berwyn for the project entitled – Windsor Avenue and Gunderson Avenue Watermain Improvements until 10:00 a.m. on August 18, 2015 at the Office of the City Clerk, located at 6700 26th Street, Berwyn, Illinois 60402. The sealed bids will be publicly opened and read aloud immediately afterwards at the City Hall, located at 6700 26th Street, Berwyn, Illinois 60402, on the same date. Sealed bids shall be addressed to the City of Berwyn and shall be labeled “Bid for – Windsor Avenue and Gunderson Avenue Watermain Improvements”

1.2 Work Description

- A. The proposed improvements consist primarily of the following:
1. Replacement of existing watermain with DIP CL52 watermain along Windsor Avenue and Gunderson Avenue.
 2. Testing of all improvements
 3. Restoration of all disturbed areas.

1.3 Document Inspection and Procurements

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

1. City of Berwyn Clerk's Office
6700 W 26th Street
Berwyn, IL 60402
708-788-2660

No partial sets of specifications or drawings will be issued. Addenda will be issued only to plan holders.

1.4 Bonds

- A. Each bid shall be accompanied by a bid bond, bank draft, cashier's check or certified check payable to the order of the City of Berwyn, Illinois, in an amount not less than five (5) percent of the amount of the bid, as a guaranty that the bidder will execute the contract, if it is awarded, in conformity with the bid form.

- B. 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 Non-Mandatory Pre-Bid Conference

- A. A Non-Mandatory Pre-Bid Conference will be held on July 22, 2015 at 1:30 p.m. at the City Hall, located at 6700 26th Street, Berwyn, Illinois 60402.

1.6 Wage Rates

- A. The contractor shall pay prevailing wages in accordance with Local Ordinance and the Illinois Department of Labor Prevailing Wages for Cook County.
- B. Rates can be obtained online at www.state.il.us/Agency/idol/.

1.7 Rejection of Bids

- A. The Owner expressly reserves the right to reject any or all bids 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.

City of Berwyn, 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

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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.

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 (5) 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 affect 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 Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

4.3 A **NON-MANDATORY PRE-BID MEETING** shall be held at the time, date, and location as specified in **SECTION 00030 – ADVERTISEMENT FOR BIDS**. A BIDDER'S REPRESENTATIVE shall attend in order to be eligible to BID. Should BIDDER require additional visits to the site, subsequent to the **NON-MANDATORY PRE-BID MEETING**, BIDDER shall make arrangements with OWNER for access to the site to conduct such investigations and tests, as each BIDDER deems necessary for submission of his BID.

4.4 BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID Schedule by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or the nature of the WORK to be done.

4.5 The OWNER shall provide BIDDERS prior to BIDDING, all information that is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

4.6 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 and/or Drawings.

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

4.8 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 and 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. Clarifications requested by BIDDERS must be in writing not less than seven (7) days prior to the date set for receipt of Bids.

6. Bid Security.

6.1 A Bid Bond payable to the OWNER must accompany each BID for **five percent (5%)** of the total amount of the BID. As soon as the BID prices have been compared, the OWNER will return the BONDS of all except the three lowest responsible BIDDERS. When the Agreement is executed the bonds of the two remaining unsuccessful BIDDERS will be returned. The BID BOND of the successful BIDDER will be retained until the payment BOND and performance BOND have been executed and approved, after which it will be returned. **A certified check may be used in lieu of a BID BOND.**

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

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 **SECTION 00300 - PROPOSAL** and will be included in **SECTION 00500 - AGREEMENT**.

8. Liquidated Damages.

8.1 Provisions for liquidated damages, if any, are set forth in **SECTION 00500 - 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 **article 6.05** of **SECTION 00700 – STANDARD GENERAL CONDITIONS (1996 edition)** that may be supplemented in the General Requirements.

10. Subcontractors, etc.

- 10.1 All BIDDERS shall be required to complete SECTION 00430 – SUBCONTRACTOR LIST and submit the Section as a part of the BID package. If this Section is not completed the BIDDER may be considered non-responsive. 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 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 The award or execution of all subcontracts by a prime contractor and the procurement and negotiation procedures used by such prime contractor shall comply with all applicable provisions of Federal, State and local law
- 10.4 No CONTRACTOR shall be required to employ any Subcontractor, other person or organization against which he has reasonable objection.

11. Bid Form.

- 11.1 All BIDS must be made on the attached BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. Only one copy of the BID form is required. The BID Form is attached hereto. Additional copies may be obtained from ENGINEER.
- 11.2 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.

- 11.3 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 attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
- 11.4 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.
- 11.5 All names must be typed or printed below the signature.
- 11.6 The BID shall contain an acknowledgment of receipt of all addenda (the numbers of which shall be filled in on the Bid Form).
- 11.7 The address to which communications regarding the BID is to be directed must be shown.

12. Submission of Bids.

- 12.1 Sealed proposals will be received in accordance with [SECTION 00030 – ADVERTISEMENTS FOR BIDS](#).
- 12.2 By submission of the BID, each BIDDER and, in the case of a joint bid, each party thereto certifies as to his or her 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 other competitor;
 - B. Unless otherwise required by law, the prices 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.
- 12.3 Each person signing the BID shall certify that:
 - A. He or she is the person in the BIDDER'S organization responsible within that organization for the decision as to the prices being BID and that he or she has not participated, and will not participate, in any action contrary to 13.2(A) through 13.2(C) above; or
 - B. He or she is not the person in the BIDDER'S organization responsible within that organization for the decision as to the prices being BID, but that he or she has been authorized to act as agent certifying that the persons determining the prices have not participated, and will not participate, in any action contrary to 13.2(A)

through 13.2(C) above, and as their agent shall so certify; and shall also certify that he or she has not participated, and will not participate, in any action contrary to 13.2(A) through 13.2(C) above.

- 12.4 All BID packages shall consist of Division 0 – Documents completed in their entirety. Failure to submit a complete package of documents may result in the BID being deemed incomplete.
- 12.5 The 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.
- 12.6 BIDDER shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The CONTRACTOR shall carry out applicable requirement of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the CONTRACTOR to carry out these requirements is a material breach of this CONTRACT which may result in the termination of this CONTRACT or other legally available remedies.

13. Modification and Withdrawal of Bids.

- 13.1 Any BID may be modified or withdrawn prior to the time indicated in the Advertisement for BIDS for the opening of bids or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within sixty (60) days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the OWNER and the BIDDER.
- 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 opened publicly. When BIDS are opened publicly they will be read aloud, and an abstract of the amounts of the Base BIDS and major alternates (if any) will be made available after the opening of BIDS.

15. BIDS to Remain Open.

- 15.1 All BIDS shall remain open for sixty 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 The OWNER may make such investigations as he deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and complete the WORK contemplated therein.
- 16.5 A conditional or qualified BID will not be accepted.
- 16.6 If the contract is to be awarded it will be awarded to the low, 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 sixty days after the day of the BID opening.

17. Performance and Payment Bonds.

17.1 A performance BOND in the amount of one hundred percent (100%) and a payment BOND in the amount of one hundred percent (100%) of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

18. Signing of Agreement

18.1 The party to whom the contract is awarded will be required to execute the Agreement and obtain the performance BOND and payment BOND within ten (10) calendar days from the date when the NOTICE OF AWARD is delivered to the BIDDER. The necessary Agreement and BOND forms shall accompany the NOTICE OF AWARD. In case of failure of the BIDDER to execute the Agreement, the OWNER may at his option consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

18.2 The OWNER within ten (10) days of receipt of acceptable performance BOND, payment BOND and Agreement signed by the party to whom the Agreement was awarded shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

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

18.4 All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

END 00100

SECTION 00300

PROPOSAL

To Mayor of the City of Berwyn, Illinois:

1. Proposal of (*Name and Address of Bidder*) _____
_____ for the improvements designated in Paragraph A below for including:

- A. The proposed improvements consist primarily of the following:
1. Replacement of existing watermain with DIP CL52 watermain along Windsor Avenue and Gunderson Avenue.
 2. Testing of all improvements
 3. Restoration of all disturbed areas.

The plans for the proposed improvement are those prepared Trotter and Associates, Inc., 40W201 Wasco Road, Suite D, St. Charles, Illinois 60175. Said plans are designated as Engineering Plans for “Windsor Avenue and Gunderson Avenue Watermain Improvements” and which cover the work described in Paragraph 1 above for the lump sum price of:

Lump Sum Price (in words) _____
_____ Dollars and _____ Cents.

Lump Sum Price (in figures) \$ _____

	Item Description	Total	Unit	Unit Price	Cost
1	Watermain DIP (CL 52), 8” w/ Polyethylene Encasement	50	LF		
2	Watermain DIP (CL 52), 12” w/ Polyethylene Encasement	142	LF		
3	Water Service Connection, 1 ½” Type K Copper with Curb Stop, Short	1	EA		
4	Hydrant Assembly with Auxiliary Valve	1	EA		
5	8” Gate Valve in 4’ Dia Vault	1	EA		
6	12” Gate Valve in 5’ Dia Vault	2	EA		
7	Connection to Existing Watermain, 6” (Non-Pressure)	2	EA		
8	Connection to Existing Watermain, 8” (Non-Pressure)	1	EA		
9	Cut and Cap Existing Watermain, 6”	2	EA		
10	Cut and Cap Existing Watermain, 8”	1	EA		
11	Line Stop, 6”	2	EA		

12	Line Stop, 8"	1	EA		
13	Trench Backfill	209	CY		
14	Abandon Existing Watermain and Structures	1	LS		
15	Watermain Testing	1	LS		
16	Parkway Restoration	148	SY		
17	Curb Replacement	91	LF		
18	Pavement Patching	316	SY		
19	Sidewalk Replacement	27	SF		
20	Tree Protection	2	EA		
21	Traffic Control	1	LS		
22	Testing of Rejected Soils - Allowance Six Tests	1	EA		
23	Removal and Disposal of Non-Hazardous Special Waste or Certified Non-Special Waste	10	Tons		
Total					

2. In submitting this Proposal, the undersigned acknowledges receipt of Addendum No.'s _____ through _____ (inclusive).
3. 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.
4. 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.
5. 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.
6. The undersigned further agrees to execute a contract for this work and present the same to the OWNER within ten (10) days after the date of notice of the award of the contract to him.

7. The undersigned further agrees that he and his surety will execute and present within ten (10) 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.
8. 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 to substantial completion of the work by September 19, 2015 and to final completion of the work by October 2, 2015.** 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 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.
9. Provisions for Liquidated Damages are set forth in the Agreement.
10. 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.
11. By submission of the Bid, each bidder certifies, and in the case of a joint bid each party thereto certifies as to his or her 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.

12. Each person signing the bid shall certify that:

- A. He or she is the person in the bidder's organization responsible within that organization for the decision as to the prices being bid and that he or she has not participated, and will not participate, in any action contrary to paragraph 12.A through 12.C above; or
- B. He or she is not the person in the bidder's organization responsible within that organization for the decision as to the prices being bid but that he or she 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 paragraph 12.A through 12.C above, and as their agent shall so certify. He or she shall also certify that he or she has not participated, and will not participate, in any action contrary to paragraph 12.A through 12.C above.

13. By submission of the Bid, each bidder certifies, and in the case of a joint bid each party thereto certifies as to his or her own organization, that wages paid in connection with the Project shall be paid at prevailing rates. Bidder further certifies that the provisions contained in SECTION 00825 – WAGE RATES will be exercised in the performance of any contract resulting from this Bid.

BID SECURITY

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

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.

(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 [City of Berwyn](#), Cook 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-3 or 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 _____, [2015](#).

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.

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

The undersigned, upon being first duly sworn, hereby certifies to the [City of Berwyn](#), Cook 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 _____, [2015](#).

Notary Public

Commission Expires

Notary Seal

CERTIFICATE OF COMPLIANCE WITH SAFETY STANDARDS

The undersigned, upon being first duly sworn, hereby certifies to the [City of Berwyn](#), Cook 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 _____, [2015](#).

Notary Public

Commission Expires

Notary Seal

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 [City of Berwyn](#), Cook 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 _____, [2015](#).

Notary Public

Commission Expires

Notary Seal

END 00300

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SECTION 00430

SUBCONTRACTOR LIST

The following information gives the name business address, and portion of work (description of work) for each subcontractor listed below that will be used in the work if the bidder is awarded the Contract. Each listed discipline must be completed prior to the time of the bid opening. Failure to complete this section may result in the Bid being declared non-responsive.

(Additional supporting data may be attached to this page. Each page shall be sequentially numbered, e.g., 00430-2, and headed "Subcontractor List" and shall be signed.)

Name	Business Address	Description of Work
_____	_____	Excavation
_____	_____	Mechanical
_____	_____	Electrical
_____	_____	Concrete
_____	_____	Masonry
_____	_____	HVAC
_____	_____	Plumbing
_____	_____	Controls
_____	_____	Paving
_____	_____	Landscaping
_____	_____	Painting
_____	_____	_____
_____	_____	_____
_____	_____	_____

Signature of Bidder

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SECTION 00500

AGREEMENT

THIS AGREEMENT is dated as the ____ day of _____ in the year **2015** by and between the **City of Berwyn, Illinois** (hereinafter called OWNER) and _____ (hereinafter called CONTRACTOR).

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

Article 1. WORK

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

A. **The proposed improvements consist primarily of the following:**

1. **Replacement of existing watermain with DIP CL52 watermain along Windsor Avenue and Gunderson Avenue.**
2. **Testing of all improvements**
3. **Restoration of all disturbed areas.**

Article 2. ENGINEER

Trotter and Associates, Inc. of St. Charles, 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 **on or prior to September 18, 2015**, unless additional time shall be granted by the Owner in accordance with the provisions of the specifications. All work shall be at Final Completion and ready for Final Payment in accordance with Paragraph 14.7 of the General Conditions **on or prior to October 2, 2015**, unless additional time shall be granted by the Owner in accordance with the provisions of the specifications.

- 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 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 (\$1,000.00)** for each day that expires after the time specified in Paragraph 3 for Substantial Completion until the work is fully operational and tested. The CONTRACTOR shall pay the OWNER an additional **one thousand dollars and zero cents (\$1,000.00)** for each day that expires after the time specified in Article 3 for final completion until the work is accepted by the OWNER. These liquidated damages shall be applied separately to each the substantial and final completion dates as listed in Article 3.

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 allowability and eligibility of delay proposed.

Article 4. CONTRACT PRICE

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

4.1 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 allowability 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 processed by the 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. 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 14.07 of the General Conditions.

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

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 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 subcontracts shall comply with:

6.7.1 All provisions of federal, State and local law,

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 IEPA Guidelines
- 7.4 Payment and Performance Bonds
- 7.5 Notice of Intent to Award
- 7.6 Notice of Award
- 7.7 Notice to Proceed
- 7.8 General Conditions
- 7.9 Supplementary Conditions
- 7.10 Section 00825 - Wage Rates
- 7.11 Specifications bearing the title "**Windsor Avenue and Gunderson Avenue Watermain Improvements**" as prepared by Trotter and Associates, Inc.
- 7.12 Drawings, consisting of a cover sheet and all sheets as designated in SECTION 00860 – SCHEDULE OF DRAWINGS with each sheet bearing the title "**Windsor Avenue and Gunderson Avenue Watermain Improvements** " as prepared by Trotter and Associates, Inc.
- 7.13 Addenda No's __ to __, inclusive.
- 7.14 CONTRACTOR's Proposal (Pages 1 to 10, inclusive).
- 7.15 Documentation submitted by CONTRACTOR prior to Notice of Award.
- 7.16 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 pursuant to Section 3.04 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 the OWNER and the CONTRACTOR arising out of, or relating to this Agreement 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 executed 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.

This Agreement becomes effective as of _____, 2015.

OWNER
CITY OF BERWYN, ILLINOIS

CONTRACTOR

by _____
Robert J. Lovero, Mayor

by _____

(Corporate Seal)

(Corporate Seal)

Attested

Attested

by _____
Thomas J. Pavlik, City Clerk

by _____

(Notary Seal)

Address for Giving Notices

Address for Giving Notices

City of Berwyn
6700 26th Street
Berwyn, Illinois 60402

END 00500

SECTION 00505

NOTICE OF INTENT TO AWARD

Date:

To:

Project: [City of Berwyn – Windsor Avenue and Gunderson Avenue Watermain Improvements](#)

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 will be 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.

Dated this ____ day of _____, 2015.

[Robert J. Lovero, Mayor](#)
[City of Berwyn, Illinois](#)

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SECTION 00510

NOTICE OF AWARD

Date: _____, 2015

To:

Project: **City of Berwyn – Windsor Avenue and Gunderson Avenue Watermain Improvements**

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 [_____] **Dollars and zero cents (\$_____)**.

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 indicated above.

If you fail to execute said agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all 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 such 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 _____, **2015**.

Robert J. Lovero, Mayor
City of Berwyn, Illinois

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____ this ____ day of _____, 2015.

Name: _____
Title: _____

END 00510

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SECTION 00520

NOTICE TO PROCEED

Date: _____, 2015

To:

Project: **City of Berwyn – Windsor Avenue and Gunderson Avenue Watermain Improvements**

Job Number: **BER-001**

Owner: **City of Berwyn, IL**

You are hereby notified that the contract time for the above referenced project commences to run on _____. 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 shall be _____ and Final Completion shall be _____.

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

Dated this ____ day of _____, **2015**

Robert J. Lovero, Mayor
City of Berwyn, Illinois

ACCEPTANCE OF NOTICE TO PROCEED

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____ this the ____ day of _____, 2015.

Name: _____
Title: _____

END 00520

June 30, 2015

00520-1

Trotter and Associates, Inc.
BER-001

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SECTION 00530

CHANGE ORDER

Date: _____, 2015

Date of Agreement: _____, 2015

Project: City of Berwyn – Windsor Avenue and Gunderson Avenue Watermain Improvements

Job Number: BER-001

Owner: City of Berwyn
6700 26th Street
Berwyn, Illinois 60402

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	\$

Original Contract Time	Calendar Days
Previous Changes to Contract Time	Calendar Days
Current Contract Time adjusted by Previous Change Order(s)	Calendar Days
Change to Contract Time Due to this Change Order	Calendar Days
Contract Time Including this Change Order	Calendar Days

Approvals:

CONTRACTOR

TROTTER AND ASSOCIATES, INC.

CITY OF BERWYN

(Name)_____
(Title)_____

(Name)_____
(Title)_____

(Name)_____
(Title)_____

END 00530

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SECTION 00610

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal, and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

City of Berwyn, Illinois

(Name of Owner)

6700 26th Street, Berwyn, Illinois 60402

(Address of Owner)

hereinafter called the OWNER, in the penal sum of _____ Dollars, (\$_____),

in lawful money of the United States, for the payment of which sum of money 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 _____, 2015, for the construction of:

CITY OF BERWYN, ILLINOIS

WINDSOR AVENUE AND GUNDERSON AVENUE WATERMAIN IMPROVEMENTS

NOW THE CONDITIONS OF THIS OBLIGATION ARE SUCH that if the said Principal shall in all respects well and truly keep and perform the said Contract, and shall pay all sums of money due or to become due, for any labor, materials, apparatus, fixtures or equipment furnished for the purpose of constructing the work provided in said Contract, and shall remove and replace any defects in workmanship or materials which may be apparent or may develop within a period of one (1) year from the date of final acceptance, then this obligation shall be null and void; otherwise it

shall remain in full force and effect.

And the said Surety, for value received one hundred percent (100%) of the contract value, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the 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.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 2015

Principal

Witness:

(If Individual or Firm)

Attest:

(If Corporation)

Attest:

(Surety)

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 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

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal, and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called SURETY, are held and firmly bound unto

City of Berwyn
(Name of Owner)

6700 26th Street, Berwyn, Illinois 60402
(Address of Owner)

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 _____, 2015, for the
construction of:

CITY OF BERWYN, ILLINOIS
WINDSOR AVENUE AND GUNDERSON AVENUE WATERMAIN IMPROVEMENTS

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 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 _____ day of _____, 2015.

ATTEST:

PRINCIPAL

PRINCIPAL SECRETARY

(SEAL)

WITNESS AS TO PRINCIPAL

ADDRESS OF WITNESS

SURETY:

ATTEST:

SURETY SECRETARY:

(SEAL)

OWNER'S ATTORNEY

ADDRESS OF ATTORNEY

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 and be authorized to transact business in the state where the PROJECT is located.

END 00620

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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

SECTION 00700

STANDARD GENERAL CONDITIONS

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

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and



AMERICAN CONSULTING
ENGINEERS COUNCIL

Issued and Published Jointly By



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AMERICAN CONSULTING ENGINEERS COUNCIL

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This document has been approved and endorsed by

The Associated General



Contractors of America

Construction Specifications Institute



These General Conditions have been prepared for use with the Owner-Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2) (1996 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJDC User's Guide (No. 1910-50). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. 1910-17) (1996 Edition).

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

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

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

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

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

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

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

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

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

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

6. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

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

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

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

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

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

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

12. *Contract Documents*--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

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

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

15. *CONTRACTOR*--The individual or entity with whom OWNER has entered into the Agreement.

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

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

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

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

20. *ENGINEER's Consultant*--An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

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

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

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

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

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

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

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

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

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

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

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

32. *PCBs*--Polychlorinated biphenyls.

33. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

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

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

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

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

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

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

40. *Site*--Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of CONTRACTOR.

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

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

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

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

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

46. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases,

steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

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

48. *Work*--The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

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

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

1.02 Terminology

A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms "as allowed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The

use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.

B. Day

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

C. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

D. Furnish, Install, Perform, Provide

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

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

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

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

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

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Delivery of Bonds

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

2.02 Copies of Documents

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed

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

2.04 Starting the Work

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

2.05 Before Starting Construction

A. *CONTRACTOR's Review of Contract Documents:* Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. *Preliminary Schedules:* Within ten days after the Effective Date of the Agreement (unless otherwise specified

in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and
3. a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

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

2.06 *Preconstruction Conference*

A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.

2. CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

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

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

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

3.02 *Reference Standards*

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

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

except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

B. Resolving Discrepancies

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

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 Amending and Supplementing Contract Documents

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification.

3.05 Reuse of Documents

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.01 Availability of Lands

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

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

C. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

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

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

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

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

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

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

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

4.03 *Differing Subsurface or Physical Conditions*

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

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

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

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

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

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

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

C. *Possible Price and Times Adjustments*

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

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

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

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

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

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

c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

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

4.04 *Underground Facilities*

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

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

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

a. reviewing and checking all such information and data,

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

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

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

B. *Not Shown or Indicated*

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

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

4.05 *Reference Points*

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property

monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 Hazardous Environmental Condition at Site

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

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

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

D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous

Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

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

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

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

in this paragraph 4.06.E shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.F shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

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

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

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

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

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements

of paragraph 5.01.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

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

5.03 *Certificates of Insurance*

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

5.04 *CONTRACTOR's Liability Insurance*

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

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

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

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

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

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

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.07, 6.11, and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be

correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

5.05 *OWNER's Liability Insurance*

A. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;

5. allow for partial utilization of the Work by OWNER;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.07.

D. OWNER shall not be responsible for purchasing and maintaining any property insurance specified in this paragraph 5.06 to protect the interests of CONTRACTOR, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by CONTRACTOR, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraph 5.06, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work

at the Site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.07 Waiver of Rights

A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of, or resulting from fire or other peril whether or not insured by OWNER; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.05, after Substantial Completion

pursuant to paragraph 14.04, or after final payment pursuant to paragraph 14.07.

C. Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against CONTRACTOR, Subcontractors, ENGINEER, or ENGINEER's Consultants and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.

5.08 Receipt and Application of Insurance Proceeds

A. Any insured loss under the policies of insurance required by paragraph 5.06 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.08.B. OWNER shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

B. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

5.09 Acceptance of Bonds and Insurance; Option to Replace

A. If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required

of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 Partial Utilization, Acknowledgment of Property Insurer

A. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 Supervision and Superintendence

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

6.02 Labor; Working Hours

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER's written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

6.03 Services, Materials, and Equipment

A. Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 Progress Schedule

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with

any provisions of the General Requirements applicable thereto.

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

6.05 Substitutes and "Or-Equals"

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

1. "Or-Equal" Items: If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

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

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under

paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly

required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

C. *Engineer's Evaluation:* ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." ENGINEER will advise CONTRACTOR in writing of any negative determination.

D. *Special Guarantee:* OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

E. *ENGINEER's Cost Reimbursement:* ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute.

F. *CONTRACTOR's Expense:* CONTRACTOR shall provide all data in support of any proposed substitute or "or-equal" at CONTRACTOR's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or

entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor

or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

6.07 *Patent Fees and Royalties*

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits

and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

6.09 *Laws and Regulations*

A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in paragraph 10.05.

6.10 *Taxes*

A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not

unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work

Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

6.13 *Safety and Protection*

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR's duties and

responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample

submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

D. *Submittal Procedures*

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

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

b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

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

Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

E. *ENGINEER's Review*

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

F. *Resubmittal Procedures*

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.18 *Continuing the Work*

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except

as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.19 *CONTRACTOR's General Warranty and Guarantee*

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or
2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;
2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;
3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;
4. use or occupancy of the Work or any part thereof by OWNER;
5. any acceptance by OWNER or any failure to do so;
6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;
7. any inspection, test, or approval by others; or
8. any correction of defective Work by OWNER.

6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from

and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and

2. is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

B. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the liability of ENGINEER and ENGINEER's Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

ARTICLE 7 - OTHER WORK

7.01 *Related Work at Site*

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, or let other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other work; and
2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in paragraph 10.05.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If OWNER intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized; and
3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility for such coordination.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 *Replacement of ENGINEER*

A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer to whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.03 *Furnish Data*

A. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

8.04 *Pay Promptly When Due*

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations

and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

8.06 Insurance

A. OWNER's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 Change Orders

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

8.08 Inspections, Tests, and Approvals

A. OWNER's responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

8.09 Limitations on OWNER's Responsibilities

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

8.10 Undisclosed Hazardous Environmental Condition

A. OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.06.

8.11 Evidence of Financial Arrangements

A. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 OWNER'S Representative

A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and will not be changed without written consent of OWNER and ENGINEER.

9.02 Visits to Site

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER's visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

9.03 Project Representative

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another

representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Clarifications and Interpretations*

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

9.05 *Authorized Variations in Work*

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

9.06 *Rejecting Defective Work*

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.07 *Shop Drawings, Change Orders and Payments*

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

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

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

9.08 *Determinations for Unit Price Work*

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

9.09 *Decisions on Requirements of Contract Documents and Acceptability of Work*

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

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

9.10 *Limitations on ENGINEER's Authority and Responsibilities*

A. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority

or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change

Directive, a Claim may be made therefor as provided in paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.01.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER's correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

10.05 *Claims and Disputes*

A. *Notice:* Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

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

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

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

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

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

ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

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3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable,

and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.

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

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be

considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.

3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

C. *CONTRACTOR's Fee:* When all the Work is performed on the basis of cost-plus, CONTRACTOR's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.02 *Cash Allowances*

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

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

ances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

B. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

C. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE;
CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in paragraph 11.01) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 12.01.C).

C. *CONTRACTOR's Fee:* The CONTRACTOR's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR's fee shall be 15 percent;

b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no

fixed fee is agreed upon, the intent of paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

12.03 *Delays Beyond CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by

Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

12.04 *Delays Within CONTRACTOR's Control*

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

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

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

12.06 *Delay Damages*

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

1. delays caused by or within the control of CONTRACTOR; or
2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

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

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given

to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B; and
3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection or approval.

D. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

F. Uncovering Work as provided in paragraph 13.03.E shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.04 Uncovering Work

A. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

13.05 OWNER May Stop the Work

A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop

the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 Correction or Removal of Defective Work

A. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.07 Correction Period

A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.A is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that

item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

C. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

D. CONTRACTOR's obligations under this paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment, ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and OWNER shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

13.09 *OWNER May Correct Defective Work*

A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In

connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors, and ENGINEER and ENGINEER's Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.09 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The schedule of values established as provided in paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments*

1. At least 20 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect OWNER's interest therein, all of which must be satisfactory to OWNER.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied on account to discharge CONTRACTOR's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

2. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's observations on the Site of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

3. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

5. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.02.B.2. ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests,

revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Written Amendment or Change Orders;

c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or

d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A.

C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.

D. *Reduction in Payment*

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

a. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;

c. there are other items entitling OWNER to a set-off against the amount recommended; or

d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

2. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld.

OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

3. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.02.C.1.

14.03 *CONTRACTOR's Warranty of Title*

A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibility.

ties pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

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

14.05 Partial Utilization

A. Use by OWNER at OWNER's option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of paragraph 5.10 regarding property insurance.

14.06 Final Inspection

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 Final Payment

A. Application for Payment

1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in paragraph 14.07.A.2 and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

B. Review of Application and Acceptance

1. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.09. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

1. Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

14.08 Final Completion Delayed

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 Waiver of Claims

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 OWNER May Suspend Work

A. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefor as provided in paragraph 10.05.

15.02 OWNER May Terminate for Cause

A. The occurrence of any one or more of the following events will justify termination for cause:

1. CONTRACTOR's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.07 as adjusted from time to time pursuant to paragraph 6.04);

2. CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;

3. CONTRACTOR's disregard of the authority of ENGINEER; or

4. CONTRACTOR's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate

the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

C. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.03 OWNER May Terminate For Convenience

A. Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of

engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. for reasonable expenses directly attributable to termination.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 CONTRACTOR May Stop Work or Terminate

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 Methods and Procedures

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Agreement.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

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. To the extent of a conflict, the provisions of the Supplementary Conditions control.

A. ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01.A.14: Contract Times

Replace Paragraph 1.01.A.14 in its entirety with the following:

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.

1.01.A.19: ENGINEER

Replace Paragraph 1.01.A.20 in its entirety with the following:

Whenever the word “ENGINEER” is used in the Contract Documents, it shall be understood to be Trotter and Associates, Inc., and duly authorized representative thereof.

1.01.A.30: OWNER

Add the following at the end of Paragraph 1.01.A.30 – “OWNER”:

Whenever the word “OWNER” is used in the Contract Documents, it shall be understood to be the [City of Berwyn](#), and duly authorized representatives thereof.

B. ARTICLE 2 – PRELIMINARY MATTERS

2.02 Copies of Documents

Delete the following words “up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.”

Add the following words “up to one hard copy and up to one electronic copy of the Contract Documents. Additional copies will be furnished to Contractor by Engineer at cost plus fifteen percent (15%).”

2.06: Preconstruction Conference

Add the following new Paragraphs 2.06.A.1 and 2.06.A.2:

2.06.A.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 shall be attended by:

- a. Contractor’s Office Representative.
- b. Contractor’s Resident Superintendent.
- c. Any Subcontractor’s or Supplier’s representatives whom Contractor may desire to invite or Engineer may request.
- d. Engineer’s Representatives.
- e. Owner’s Representatives.
- f. Local Utilities Representatives (if applicable).

2.06.A.2: A suggested format would include, but not be limited to the following subjects:

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

C. ARTICLE 5 – BONDS AND INSURANCE

5.02: Licensed Sureties and Insurers

Add the following at the end of Paragraph 5.02.A:

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

5.04: CONTRACTOR’S Liability Insurance

Add the following at the end of Paragraph 5.04.A:

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 the [City of Berwyn](#). This insurance shall cover all operations under this Contract, whether such operations be by himself or by any subcontractor or materialmen or anyone directly employed by them.

Add the following new Paragraphs at the end of Paragraph 5.04.A:

7. 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 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

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

Add the following new Paragraphs at the end of Paragraph 5.04.B:

8. Additional liability coverage for OWNER and ENGINEER shall 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 [City of Berwyn](#) and Trotter and Associates, Inc.

9. The commercial general liability shall be endorsed as primary and non contributory in favor of the additional insureds. A waiver of subrogation shall apply in favor of the above listed additional insureds on the general liability and worker's compensation policies for this project.

10. 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

Add the following new Paragraph 5.04.C:

5.04.C: 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 the [City of Berwyn](#) 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 the [City of Berwyn](#) with respect to such work. The Contractor hereby agrees to hold the [City of Berwyn](#) its employees, agents, and Trotter and Associates, Inc. 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.

Add the following new Paragraph 5.04.D:

5.04.D: The CONTRACTOR shall also indemnify and hold harmless the [City of Berwyn](#), its agents and Trotter and Associates, Inc. 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 materialmen, 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.

Add the following new Paragraph 5.04.E:

5.04.E: Applicable to All Policies

1. 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.
2. Certificate of insurance evidencing the required coverages shall be submitted to the OWNER and ENGINEER prior to commencing work on the project.
3. To the extent of CONTRACTOR's indemnification liability herein, the CONTRACTOR shall include the [City of Berwyn, Trotter and Associates, Inc.](#), 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 the [City of Berwyn](#). All insurance premium shall be paid without cost to the [City of Berwyn](#). The CONTRACTOR shall furnish the [City of Berwyn](#) 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.
4. The [City of Berwyn](#) 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.
5. 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 Paragraph 5.04.A.7 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 the [City of Berwyn](#). All insurance provided to the OWNER is primary and non-contributory with any insurance or self-insurance program maintained by the OWNER.

5.06: Property Insurance

Delete the words “and will contain waiver provisions in accordance with paragraph 5.07.” in the eighth line of Paragraph 5.06.C:

Add the following new Paragraph 5.06.F:

5.06.F: Property Insurance

1. Property insurance to the full insurable value of the work will be provided by the CONTRACTOR.
2. Such coverage shall be written on an “All Risk” Completed Value form.
3. The deductible under this policy shall be the responsibility of the CONTRACTOR.
4. The Named Insured shall include the Owner and Engineer.

5.07: Waiver of Rights

Delete Paragraph 5.07 in its entirety.

5.09: Acceptance of Bonds and Insurance; Option to Replace

Delete Paragraph 5.09 in its entirety.

D. ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

6.05: Substitutes and “Or-Equals”

Add the following new Paragraph 6.05.A.3:

6.05.A.3: Substitutions: Comply with SECTION - 01600 of the Specifications for specific methods of requesting approval of substitutions.

6.06: Concerning Subcontractors, Suppliers, and Others

Delete the word “reasonable” in the fifth line of Paragraph 6.06.A.

Add the following new Paragraph 6.06.H:

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

6.12: Record Documents

Add the following at the end of Paragraph 6.12.A:

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.

6.17: Shop Drawings and Samples

Add the following new Paragraph 6.17.D.4:

6.17.D.4: CONTRACTOR shall comply with [SECTION 01340](#) of the Specifications for detailed requirements for submitting Shop Drawings, Samples, Operator's Instructions, Service and Parts Manuals.

E. ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.02: Replacement of ENGINEER:

Delete the words "to whom CONTRACTOR makes no reasonable objection" in the second line of Paragraph 8.02.A.

F. ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.07: Correction Period:

Correction Period for repairing and/or replacing defective work shall commence upon Final Completion, not Substantial Completion.

G. ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.02: Progress Payments:

Add the following new Paragraphs at the end of Paragraph 14.02.A:

4. Payments to the CONTRACTOR shall be made on the basis of monthly estimates equal to ninety percent (90%) 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.

5. Payment Applications 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

6. CONTRACTOR shall be responsible for acquiring the blank pay request forms from AIA or EJCDC.

7. Waivers of Lien: Provide the OWNER with all waivers of lien prior to receipt of any payments for work completed.

8. After Substantial Completion, including Start-up, the withheld amount may be further reduced, below five percent (5%), to that amount necessary to assure completion.

Replace Paragraph 14.02.C.1 in its entirety with the following:

1. 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.

14.09: Waiver of Claims

Delete Paragraph 14.09 in its entirety.

H. ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.02: OWNER May Terminate for Cause

Delete the word “persistent” from the first line of Paragraph 15.02.A.1.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END 00800

SECTION 00825

FEDERAL WAGE RATES

The Contractor shall pay wage rates not less than those prevailing wages established by the State of Illinois Prevailing Wage Act (*820 ILCS 130/0.01 et seq.*) and Local Ordinance. The provisions contained in the following clauses shall be exercised in the performance of this Contract and are made part of the CONTRACT DOCUMENTS.

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

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SECTION 00860

INDEX OF PLAN SHEETS

Sht. No.	Title	By
	Cover Sheet	TAI
G.1	General Notes	TAI
C.1	Alignment & Ties	TAI
C.2	Plan and Profile	TAI
C.3	Paving and Restoration	TAI
C.4	Watermain Details	TAI
C.5	Erosion Control Details	TAI
C.6	Paving Details	TAI
C.7	Traffic Control Details	TAI
C.8	Traffic Control Details	TAI

END 00860

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DIVISION 1

GENERAL REQUIREMENTS

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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.

1.4 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. Owner Occupancy.

1.2 CONTRACT DESCRIPTION

- A. The proposed improvements consist primarily of the following:
 - 1. Replacement of existing watermain with DIP CL52 watermain along Windsor Avenue and Gunderson Avenue.
 - 2. Testing of all improvements
 - 3. Restoration of all disturbed areas.
- B. Perform Work of Contract under a single Lump Sum Contract with the Owner in accordance with the Conditions of Contract.

1.3 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Limit use of site and premises to allow:
 - 1. Owner occupancy.
 - 2. Work by Others and Work by Owner.
- B. Maintain Emergency Building Exits During Construction.
- C. Construction Operations: Limited to areas noted on Drawings.
- D. Time Restrictions for Performing Work: 7:00 AM to 5:00 PM without 48 hours advance notice to Owner.
- E. Utility Outages and Shutdowns must be coordinated with the Owner at least 48 hours in advance.

1.4 OWNER OCCUPANCY

- A. The Owner will occupy the site during the entire period of construction.

B. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations.

C. Schedule the Work to accommodate Owner occupancy.

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. SECTION - 00700 – Standard General Conditions: Reference Standards.

1.3 QUALITY ASSURANCE

- A. For products or workmanship specified by association, trade, or Federal Standards, comply 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 Architect/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

AA	Aluminum Association 818 Connecticut Avenue, N.W. Washington, DC 20006
AABC	Associated Air Balance Council 1000 Vermont Avenue, N.W. Washington, DC 20005

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

ADC Air Diffusion Council
230 North Michigan Avenue
Chicago, Illinois 60601

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

AISI American Iron and Steel Institute
1000 16th Street, N.W.
Washington, DC 20036

AITC American Institute of Timber Construction
333 W. Hampden Avenue
Englewood, Colorado 80110

AMCA Air Movement and Control Association
30 West University Drive
Arlington Heights, Illinois 60004

ANSI American National Standards Institute
1430 Broadway, New York, New York 10018

APA American Plywood Association
Box 11700
Tacoma, Washington 98411

ARI Air-Conditioning and Refrigeration Institute
1501 Wilson Boulevard
Arlington, Virginia 22209

ASHRAE American Society of Heating, Refrigerating and
Air Conditioning Engineers
1791 Tullie Circle, N.E.
Atlanta, Georgia 30329

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

AWI Architectural Woodwork Institute
2310 South Walter Reed Drive
Arlington, Virginia 22206

AWPA American Wood-Preservers' Association
7735 Old Georgetown Road
Bethesda, Maryland 20014

AWS American Welding Society
550 LeJeune Road, N.W.
Michigan, Florida 33135

AWWA American Water Works Association
6666 West Quincy Avenue
Denver, Colorado 80235

BIA Brick Institute of America
11490 Commerce Park Drive
Reston, Virginia 22091

CDA Copper Development Association
57th Floor, Chrysler Building
405 Lexington Avenue
New York, New York 10174

CLFMI Chain Link Fence Manufacturers Institute
1101 Connecticut Avenue, N.W.
Washington, DC 20036

CISPI Cast Iron Pipe Soil Institute

CRSI Concrete Reinforcing Steel Institute
933 Plum Grove Road
Schaumburg, Illinois 60195

DHI Door and Hardware Institute
7711 Old Springhouse Road
McLean, Virginia 22102

EJCDC Engineers' Joint Contract Documents Committee
American Consulting Engineers Council
1015 15th Street, N.W.
Washington, DC 20005

EJMA Expansion Joint Manufacturers Association
25 North Broadway
Tarrytown, New York 10591

FGMA Flat Glass Marketing Association
3310 Harrison
White Lakes Professional Building
Topeka, Kansas 66611

FM Factory Mutual System
1151 Boston-Providence Turnpike
P.O. Box 688
Norwood, Massachusetts 02062

FS Federal Specification
General Services Administration
Specifications and Consumer Information
Distribution Section (WFSIS)
Washington Navy Yard, Bldg. 197
Washington, DC 20407

GA	Gypsum Association 1603 Orrington Avenue Evanston, Illinois 60201
ICBO	International Conference of Building Officials 5360 S. Workman Mill Road Whittier, California 90601
IEEE	Institute of Electrical and Electronics Engineers 345 East 47th Street New York, New York 10017
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
MFMA	Maple Flooring Manufacturers Association 60 River Drive Northbrook, Illinois 60062
MIL	Military Specification Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, Pennsylvania 19120
ML/SFA	Metal Lath/Steel Framing Association 221 North LaSalle Street Chicago, Illinois 60601
NAAMM	National Association of Architectural Metal Manufacturers 221 North LaSalle Street Chicago, Illinois 60601
NCMA	National Concrete Masonry Association P.O. Box 781 Herndon, Virginia 22070
NEBB	National Environmental Balancing Bureau 8224 Old Courthouse Road Vienna, Virginia 22180

NEMA	National Electrical Manufacturers' Association 2101 'L' Street, N.W. Washington, DC 20037
NFPA	National Fire Protection Association Battery March Park Quincy, Massachusetts 02269
NFPA	National Forest Products Association 1619 Massachusetts Avenue, N.W. Washington, DC 20036
NSWMA	National Solid Wastes Management Association 1730 Rhode Island Ave., N.W. Washington, DC 20036
NTMA	National Terrazzo and Mosaic Association 3166 Des Plaines Avenue Des Plaines, Illinois 60018
NWMA	National Woodwork Manufacturers Association 205 W. Touhy Avenue Park Ridge, Illinois 60068
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
RIS	Redwood Inspection Service One Lombard Street San Francisco, California 94111
RCSHSB	Red Cedar Shingle and Handsplit Shake Bureau 515 116th Avenue Bellevue, Washington 98004

SDI Steel Deck Institute
P.O. Box 9506
Canton, Ohio 44711

SDI Steel Door Institute
712 Lakewood Center North
14600 Detroit Avenue
Cleveland, Ohio 44107

SIGMA Sealed Insulating Glass Manufacturers Association
111 East Wacker Drive
Chicago, Illinois 60601

SJI Steel Joist Institute
1205 48th Avenue North
Suite A
Myrtle Beach, South Carolina 29577

SMACNA Sheet Metal and Air Conditioning Contractors'
National Association
8224 Old Court House Road
Vienna, Virginia 22180

SSPC Steel Structures Painting Council
4400 Fifth Avenue
Pittsburgh, Pennsylvania 15213

SSRBC Standard Specifications for Road and Bridge Construction
Illinois Department of Transportation
Adopted July 1, 1994

TCA Tile Council of America, Inc.
Box 326
Princeton, New Jersey 08540

UL Underwriters' Laboratories, Inc.
333 Pfingston Road
Northbrook, Illinois 60062

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END 01190

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SECTION 01200

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Drawings and Contract Documents for Contractor Use.
- B. Cash Allowances.
- C. Schedule of Values.
- D. Applications for Payment.
- E. Change Procedures.
- F. Defect Assessment.

1.2 DRAWINGS AND CONTRACT DOCUMENTS FOR CONTRACTOR USE

- A. Refer to General Conditions.
- B. Contractor shall pick up all “no charge” documents within 10 days from date of Notice to Proceed.
- C. Additional documents requested after the “no charge” documents have been distributed will be furnished to Contractor by Engineer at cost plus fifteen percent (15%).

1.3 CASH ALLOWANCES

- A. Cost included in Cash Allowances: Cost of product to Contractor or Subcontractor, less applicable trade discounts; delivery to site and applicable taxes.
- B. Costs Not Included in Cash Allowances but Included in the Contract Sum/Price:
 - 1. Product delivery to site and handling at the site, including unloading, uncrating, and storage; protection of products from elements and from damage; and labor for installation and finishing.
- C. Engineer Responsibilities:
 - 1. Consult with Contractor for consideration and selection of products, suppliers and installers.
 - 2. Select products in consultation with Owner and transmit decision to Contractor.
 - 3. Prepare Change Order.

D. Contractor Responsibilities:

1. Assist Engineer in selection of products, suppliers and installers.
2. Obtain proposals from suppliers and installers and offer recommendations.
3. On notification of selection by Engineer, execute purchase agreement with designated supplier and installer.
4. Arrange for and process shop drawings, product data and samples. Arrange for delivery.
5. Promptly inspect products upon delivery for completeness, damage and defects. Submit claims for transportation damage.

E. Engineer shall review and approve all expenditures for allowances prior to commencing associated work. All costs shall be presented in accordance with Section 01200.

F. Allowances Schedule:

1. Unforeseen Piping Conflicts: Two Thousand Dollars (\$2,000.00)
2. Unforeseen Electrical Conflicts: One Thousand Dollars (\$1,000.00)

G. Differences in costs will be adjusted by Change Order.

1.4 SCHEDULE OF VALUES

A. Submit printed schedule of AIA Form G703 – Application and Certificate for Payment Continuation Sheet or EJCDC 1910-8-E. Contractor’s standard form or electronic media printout will be considered.

B. Submit Schedule of Values in duplicate within 15 days after Owner-Contractor Agreement.

C. Format: Utilize Table of Contents of the Project Specifications. Identify each line item with number and title of major specification Section.

D. Include in each line item the amount of Allowances specified in this section. For unit cost Allowances identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.

E. Include within each line item, a direct proportional amount of Contractor’s overhead and profit.

F. Revise schedule to list approved Change Orders, with each Application for Payment.

1.5 APPLICATIONS FOR PAYMENT

A. Submit three (3) copies of each application on AIA Form G702 – Application and Certificate for Payment and AIA G703 – Continuation Sheet. Contractor’s electronic

- media driven form may be acceptable provided that it contains similar detail to AIA Form G702 and if approved by Owner.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
 - C. Submit updated construction schedule with each Application for Payment.
 - D. Payment Period: Submit at intervals stipulated in the Agreement.
 - E. Submit with transmittal letter as specified for Submittals in Section 01340 – Submittals.
 - F. Submit signed copies of current waivers of lien.
 - G. Submit one (1) signed and three (3) copies of Certified Payroll reports for all contractors working during the payment period.
 - H. Submit backup information for request 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 Waivers of Lien and Certified Payroll information shall be kept current for each Payment Application Period. Failure to do so may result in delaying the processing of the Payment 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 major subcontractors and vendors.
 - 2. Record documents as specified in Section 01340, for review by the Owner which will be returned to the Contractor.
 - 3. Affidavits attesting to off-site stored products.
 - 4. Construction progress schedules, revised and current.

1.6 CHANGE PROCEDURES

- A. Submittals: 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 Price or Contract Time by issuing supplemental instructions in writing.
- C. The Engineer may issue a Contract Modification Request (CMR) including a detailed description of a proposed change with supplementary or revised Drawings and

specifications. Contractor shall complete the request form indicating any change in Contract Price and changes in Contract Time for executing the change. Contractor will prepare and submit an estimate within fourteen (14) days.

- 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 and a statement describing the effect on Work by separate or other Contractors. Document any requested substitutions in accordance with Section 01600.
- E. Stipulated Sum/Price Change Order: Based on Contract Modification Request (CMR) and Contractor's fixed price quotation or Contractor's request for Change Order as approved by Engineer.
- F. Unit Price Change Order: For pre-determined unit prices, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under Work Directive Change. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.
- G. Work Directive Change: Engineer may issue a Contract Modification Request (CMR) signed by the Owner, instructing Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in Work, and designate method for determining any change in Contract Sum/Price or Contract Time. Promptly execute change.
- H. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of Contract. Engineer will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.
- I. 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.
- J. Document each quotation for change in cost or time with sufficient data to allow evaluation of quotation.
- K. Change Order Forms: See Section 00530 – Change Order.
- L. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.
- M. Correlation of Contractor Submittals:

1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
2. Promptly revise progress schedules to reflect change 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.

1.7 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the Engineer and/or Owner, 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 unit sum/price will be adjusted to a new sum/price at the discretion of the Owner.
- D. The defective Work will be partially repaired to instructions of the Owner, and unit sum/price will be adjusted to a new sum/price at the discretion of the Owner.
- E. Individual specification sections may modify these options or may identify specific formula or percentage sum/price reduction.
- F. The authority of the Engineer and Owner to assess defects and identify payment adjustments is final.
- G. 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, or not approved in accordance with Section 01600, before or after placement.
 3. Products not completely unloaded from transporting vehicle.
 4. Products placed beyond lines and levels of 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 EXECUTION – NOT USED

END 01200

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SECTION 01300

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Coordination and Project Conditions.
- B. Field Engineering.
- C. Preconstruction Meeting.
- D. Site Mobilization Meeting.
- E. Progress Meetings.
- F. Pre-Installation Meetings.
- G. Cutting and Patching.
- H. Special Procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals and Work of the various sections of the Project Documents to ensure efficient and orderly sequence of installation and interdependent construction elements. Delays caused by the Contractor by failure to properly order, schedule, coordinate, execute or otherwise reconcile, which result in project delays, shall be the sole burden of the Contractor. Any associated cost shall be absorbed by the Contractor and not passed on to the Owner
- 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 operating 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 and for portions of Work designated for occupancy by the public.
- 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. Engineer will:

1. Provide construction layout services during construction.
2. Engineer will provide one set of stakes for line and grade for all proposed utilities, pavement, grading and miscellaneous site improvements.
3. Engineer will provide one set of stakes with offsets for proposed structures.
4. Any re-staking required shall be paid for as additional work at the Engineer's hourly rate at the Contractor's expense.

B. Contractor shall:

1. Locate and protect survey control and reference points. Promptly notify Engineer of any discrepancies discovered.
2. Verify set-backs and easements; confirm drawing dimensions and elevations.
3. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.
4. Maintain a complete and accurate log of control and survey work as it progresses.
5. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
6. Promptly report to Engineer the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
7. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Engineer.

1.2 PRECONSTRUCTION MEETING

- A. Engineer will schedule a preconstruction meeting after Notice of Award.
- B. The conference will be held at a location selected by OWNER. The conference shall 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).
- 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. Staging of materials.
 - 6. Designation of personnel representing the parties involved.
 - 7. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal requests, Change Orders, and Contract closeout procedures.
 - 8. Scheduling.
- D. Engineer will record minutes and distribute copies after meeting to the participants.

1.3 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at intervals requested by the Owner or Engineer.
- 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 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 which may impede planned progress.

5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrications 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 schedules and coordination.
13. Other business relating to Work.

E. Engineer will record minutes and distribute copies after meeting to the participants.

1.4 PRE-INSTALLATION MEETING

- A. When required in individual specification sections or requested by Engineer or Owner, 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. Contractor shall prepare agenda and preside at meeting:
 1. Review conditions of installation, preparation and installation procedures.
 2. Review coordination with related work.

E. Contractor will record minutes and distribute copies after meeting to the participants.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.2 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.
 5. Work of Owner or separate contractor.
- 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 or 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 to 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 Engineer for decision or remedy.

3.3 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. Trim existing doors as necessary to clear new floor finish. Refinish trim as required.
- N. Patch or replace portions of existing surfaces that are damaged, lifted, discolored, or showing other imperfections.

END 01300

SECTION 01340

SUBMITTALS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal procedures.
2. Engineer'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/start-up reports.
13. Erection drawings.

B. Related Sections include but are not necessarily limited to:

1. Division 0 – Bidding Requirements, Contract Forms, and Conditions of the Contract.
2. Division 1 – General Requirements.
3. 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:
 3. Construction schedule.
 4. Concrete, soil compaction, and pressure test reports.
 5. HVAC test and balance reports.
 6. Installed equipment and systems performance test reports.
 7. Manufacturer's installation certification letters.
 8. Instrumentation and control commissioning reports.
 9. Warranties.

10. Service agreements.
11. Construction photographs.
12. Survey data.
13. Cost breakdown (Schedule of Values).

1.3 SUBMITTAL PROCEDURES

A. Shop Drawings and Miscellaneous Submittals:

1. All shop drawings and miscellaneous submittals shall be submitted to the Engineer electronically as a .PDF file.
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 transmittal stamp 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”. Transmittals will not be received from or returned to subcontractors.
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. Submittal schedule:
 - 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.

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 Engineer's main office.
4. Provide copy of letter of transmittal to Resident Project Representative.
 - a. Exception for concrete, soils compaction and pressure test reports.
 - 1.) Transmit one copy to Resident Project Engineer.
 - 2.) Transmit one copy to location and individual indicated above for other miscellaneous submittals.

C. Preparation of Submittals

1. Shop Drawings:
 - a. Scope of any letter of transmittal:

- 1.) Limited to one Specification Section.
 - 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 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, 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 on reproducible transparencies 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 in a separate letter immediately following transmittal sheet.

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 (BY ENGINEER).
 - c. C – REVISE AND RESUBMIT.
 - d. D – REJECTED.
 - e. E – ENGINEER'S REVIEW NOT REQUIRED.
2. Transmittals received will be initially reviewed to ascertain inclusion of Contractor's approval stamp. Drawings not stamped by the Contractor or stamped with a stamp containing language other than that specified in Paragraph 1.3–A.2.a., will 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 will 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 Engineer at a rate of one hundred dollars (\$100.00) per hour, minimum two hours.
 - a. Payment for excessive review time will be charged to the Contractor directly.
 - b. Excessive time is defined as more than two reviews of any shop drawing submitted.

1.5 CONSTRUCTION PROGRESS SCHEDULES

- A. Within ten (10) days after date of Owner–Contractor Agreement, submit proposed preliminary network diagram defining planned operations for the first sixty (60) days of Work, with a general outline for remainder of Work.
- B. Submit revised Construction Schedules 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. Submit a computer generated network analysis diagram.
 1. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates and duration.

2. Indicate estimated percentage of completion for each item of Work at each submission.
3. Provide separate schedule of submittal dates for shop drawings, product data, and samples, including products identified under Allowances and dates reviewed submittals will be required from Engineer. Indicate decision dates for selection of finishes.
4. Indicate delivery dates for products identified under Allowances.
5. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
6. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
7. 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.

1.6 PROPOSED PRODUCTS LIST

- A. Within ten (10) 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 the number of copies that the Contractor requires, plus two (2) copies that 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. 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 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. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Submit the number of opaque reproductions which the Contractor requires, plus two copies that will be retained by Engineer.

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 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. Submit for the Engineer's knowledge as contract administrator or for the Owner.
- 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/START-UP REPORTS

- A. Submit reports for the Engineer's benefit as contract administrator or for the Owner.
- B. Submit report in duplicate within fifteen (15) 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 or Owner.

PART 2 PRODUCTS – NOT USED.

PART 3 EXECUTION – NOT USED.

END 01340

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SECTION 01400
QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality control and control of installation.
- B. Tolerances.
- C. References.
- D. Mock-up requirements.
- E. Testing and inspection services.
- F. Manufacturer's field services.
- G. Examination.
- H. Preparation

1.2 QUALITY CONTROL AND 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 manufacturer's 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. Perform Work 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/or disfigurement.

1.3 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.

1.4 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply 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 of Contract Documents, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. Should specified reference standards conflict with Contract Documents, request clarification from the Engineer before proceeding.
- E. The contractual relationships, duties, or responsibilities of the parties in Contract or those of the Engineer shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.5 MOCK-UP REQUIREMENTS

- 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 by Engineer.

1.6 TESTING AND INSPECTION SERVICES

- A. Contractor shall employ and pay for services of an independent testing agency or laboratory acceptable to Engineer to perform specified testing.
 - 1. Prior to start of Work, submit testing laboratory name, address, telephone number, and names of full time and responsible officer.
 - 2. Submit a copy of the report of laboratory facilities most recent inspection with memorandum of remedies of deficiencies reported by inspection.

- B. The independent firm will perform tests, inspections and other services specified in individual specification sections and as required by Engineer.
 - 1. Laboratory: Authorized to operate in the State of Illinois.
 - 2. Laboratory Staff: Maintain full time registered engineer or specialist on staff to review services.
 - 3. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.

- C. Reports shall be submitted by independent firm to Engineer and Contractor, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
 - 1. Submit final report indicating correction of Work previously reported as non-compliant.

- D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - 1. Notify Engineer and independent firm 24 hours prior to expected time for operations requiring services.
 - 2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.

- E. Testing and employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

- F. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Engineer. Payment for re-testing or re-inspection will be charged to the Contractor at no additional compensation.

- G. Agency Responsibilities:
 - 1. Test samples of mixes submitted by Contractor.
 - 2. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.
 - 3. Perform specified sampling and testing of products in accordance with specified standards.
 - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.

5. Promptly notify Engineer and Contractor of observed irregularities or non-conformance of Work or products.
 6. Perform additional tests required by Engineer.
- H. Agency Reports: After each test, promptly submit two copies of report to Engineer and to Contractor. When requested by Engineer, provide interpretation of test results. Include the following:
1. Date issued.
 2. Project title and number.
 3. Name of inspector.
 4. Date and time of sampling or inspection.
 5. Identification of product and specifications section.
 6. Location in the Project.
 7. Type of inspection of test.
 8. Date of test.
 9. Results of test.
 10. Conformance with Contract Documents.
- I. Limits on Testing Authority:
1. Agency or laboratory may not release, revoke, alter or enlarge on requirements of Contract Documents.
 2. Agency or laboratory may not approve or accept any portion of Work.
 3. Agency or laboratory may not assume any duties of Contractor.
 4. Agency or laboratory has no authority to stop the Work.

1.7 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, testing, adjustment and balancing of equipment as applicable and to initiate instructions when necessary.
- B. Submit qualifications of observer to Engineer fifteen (15) days in advance of required observations. Observer subject to approval of Engineer.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. Refer to SECTION 01340 – Submittals.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify that utility services are available, of the correct characteristics, and in the correct locations.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

END 01400

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SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary Utilities:
 - 1. Temporary sanitary facilities.

- B. Construction Facilities:
 - 1. Vehicular access.
 - 2. Parking.
 - 3. Progress cleaning and waste removal.
 - 4. Traffic regulation.

- C. Temporary Controls:
 - 1. Barriers.
 - 2. Water control.
 - 3. Dust control.
 - 4. Erosion and sediment control.
 - 5. Noise control.
 - 6. Pollution control.

- D. Removal of utilities, facilities and controls.

1.2 TEMPORARY SANITARY FACILITIES

- A. On site sanitary facilities are not available. Provide and maintain required facilities and enclosures as necessary. Provide facilities at time of project mobilization.

1.3 VEHICULAR ACCESS

- A. Construct temporary bridges and culverts to span low areas and allow unimpeded drainage.

- B. Extend and relocate vehicular access as Work progress requires, provide detours as necessary for unimpeded traffic flow.

- C. Provide unimpeded access for emergency vehicles. Maintain 20-foot wide driveways with turning space between and around combustible materials.

- D. Provide and maintain access to fire hydrants and control valves free of obstructions.

- E. Provide and maintain access to driveways.

- F. Provide means of removing mud from vehicle wheels before entering streets.
- G. Designated existing on-site roads may be used for construction traffic provided they are cleaned at the end of each work day.
- H. Damage to any paved areas as a result of any project related activities shall be repaired by the Contractor at his expense, to the satisfaction of the Engineer.
- I. Tracked vehicles shall not be allowed on paved areas under any circumstances.

1.4 PARKING

- A. Arrange for temporary parking areas to accommodate construction personnel.
- B. Locate as approved by Owner or Engineer.
- C. When site space is not adequate, provide additional off-site parking.
- D. Use of existing on-site streets and driveways for construction personnel is permitted. Tracked vehicles not allowed on paved areas.
- E. Do not allow heavy vehicles or construction equipment in parking areas.
- F. 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.
 - 3. Use of permanent parking structures permitted.\
- G. 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.
- H. Removal, Repair:
 - 1. Remove temporary materials and construction before Substantial Completion.
 - 2. Remove underground work and compacted materials to a depth of 2 feet. Fill and grade site as specified.
 - 3. Repair exiting facilities damaged by use, to original condition and/or specified condition.

- I. Mud From Site Vehicles: Provide means of removing mud from vehicle wheels before entering streets.

1.5 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Collect and remove waste materials, debris, and rubbish from site periodically and dispose off-site.

1.6 TRAFFIC REGULATION

- A. Signs, Signals, and Devices:
 - 1. Post Mounted and Wall Mounted Traffic Control and Informational Signs: As approved by local jurisdictions.
 - 2. Automatic Traffic Control Signals: As approved by local jurisdictions.
 - 3. Traffic Cones and Drums, Flares and Lights: As approved by local jurisdictions.
 - 4. Flagperson 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.
 - 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.

1.7 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Provide barricades and covered walkways required by authorities having jurisdiction for public rights-of-way and 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.

1.8 WATER CONTROL

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

1.9 DUST CONTROL

- A. Execute Work by methods to minimize raising dust from construction operations.
- B. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

1.10 EROSION AND SEDIMENT CONTROL

- A. Erosion control practices are to be constructed and maintained in accordance with the Illinois Urban Manual, latest edition.
- 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.

1.11 NOISE CONTROL

- A. Provide methods, means, and facilities to minimize noise from construction operations.

1.12 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

1.13 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing 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

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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 DEFINITIONS

- A. Product: Manufactured material or equipment.

1.3 PRODUCTS

- A. Provide products of qualified manufacturers suitable for intended use. Provide products of each type by a single manufacturer unless specified otherwise.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

1.4 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.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.5 PRODUCT STORAGE AND HANDLING REQUIREMENTS

- A. Store and protect products in accordance with manufacturer's instructions.
- B. Store with seals and labels intact and legible.

- C. Store sensitive products (finished painted, motorized, or items with electronics), in weather tight, climate controlled, enclosures in an environment favorable to product. If on site storage is not available, contractor shall be responsible for supplying offsite storage for these products.
- 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.

1.6 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 of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article.

1.7 PRODUCT SUBSTITUTION PROCEDURES

- A. Engineer will consider requests for Substitutions only within 30 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 that may be required for the Work to be complete with no additional cost to Owner.
 4. Waives claims for additional costs or time extension that may subsequently become apparent.
 5. Will reimburse Owner and Engineer for review or redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
 2. Submittal shall include, at a minimum:
 - a. Manufacturer's name, representative's contact information, and specification section and/or drawing reference of originally specified product in submittal.
 - b. Shop Drawings, Product Data, and certified test results attesting to the proposed product equivalence. Burden of proof is on the party submitting the proposal.
 - c. Data relating to changes in electrical, mechanical or structural requirements.
 - d. Data relating to changes in construction schedule.
 - e. Data reliant to changes in cost.
 3. The Engineer will notify Contractor in writing of decision to accept or reject request.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END 01600

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SECTION 01700

EXECUTION REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Restoration
- C. Final cleaning.
- D. Starting of systems.
- E. Demonstration and instructions.
- F. Protecting installed construction.
- G. Project record documents.
- H. Operation and maintenance data.
- I. Manual for materials and finishes.
- J. Manual for equipment and systems.
- K. Spare parts and maintenance products.
- L. Product warranties and product bonds
- M. 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 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.

1.3 RESTORATION

- A. The Contractor shall take all necessary steps to prevent the damage or disruption of the use of existing improvements.
- B. All areas disturbed by the contractor shall be restored 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 construction in addition to those areas indicated as paved, sodded, mulched, and paved.
- C. 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.

1.4 FINAL CLEANING

- A. Execute final cleaning to the satisfaction to the OWNER, prior to final project assessment including but not limited to the following:
 - 1. Clean all exposed surfaces, clean interior and exterior glass; remove stains, foreign substances, temporary labels, and polish all glossy surfaces.
 - 2. Clean equipment and fixtures with cleaning materials appropriate to the surface and material being cleaned.
 - 3. Replace filters of operating equipment.
 - 4. Clean debris from roofs, gutters, downspouts and sanitary and storm drainage systems.
 - 5. Clean site; sweep and wash paved areas, rake clean landscaped surfaces.
 - 6. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.5 STARTING OF SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Engineer seven (7) days prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence and for conditions that may cause damage
- D. Verify tests, meter readings and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of applicable manufacturer's representative and Contractors' personnel in accordance with manufacturers' instructions.

- G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up and to supervise placing equipment or system in operation.
- H. Submit a written report in accordance with SECTION 01300 that equipment or system has been properly installed and is functioning correctly.

1.6 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Owner's personnel prior to Substantial Completion.
- B. Demonstrate Project equipment and instruct in a classroom environment and instructed by a manufacturer's representative who is knowledgeable about the Project.
- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six (6) months.
- D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- E. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at equipment location.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- G. The minimum amount of time required for instruction on each item of equipment and system is that specified in individual sections.

1.7 PROTECTING INSTALLED CONSTRUCTION

- A. Protect all 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. Provide protective coverings at walls, projections, jambs, sills and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

1.8 PROJECT RECORD DOCUMENTS

- A. Contractor shall maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Engineering Plans.
 - 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. Measure depths of foundations in relation to project 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 prior to claim for final Application for Payment.
 - 1. Contractor is responsible for making sure that all work performed by subcontractors 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 backcharged 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.

1.9 OPERATION AND MAINTENANCE DATA

- A. Submit the following with delivery of equipment:
 1. Data in .PDF format on a CD.
 2. Data bound in 8 ½" x 11" (A4) text pages, three D side ring binders with durable plastic covers.
- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
- C. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- D. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- E. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
 1. Part 1: Directory, listing names, addresses, and telephone numbers of Engineer, Contractor, Subcontractors, and major equipment suppliers.
 2. Part 2: Operation and maintenance instructions, arranged by process flow and subdivided by specification sections. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. Lists of equipment.
 - c. Parts list for each component.
 - d. Operation instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
 3. Part 3: Project documents and certificates, including the following:
 - a. Shop drawings and product data.
 - b. Air and water balance reports.
 - c. Certificates.
 - d. Originals of warranties and bonds.
- F. Submit draft copy of completed volumes thirty (30) days prior to equipment start-up. This copy will be reviewed and returned with Engineer comments. Revise content of all document sets as required prior to final submission.

- G. Submit five (5) sets of revised and compiled final volumes within fifteen (15) days after equipment start-up. Start up report shall be incorporated into final operations and maintenance manual with appropriate sign offs.

1.10 MANUAL FOR MATERIALS AND FINISHES

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Engineer will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by OWNER, submit documents within ten (10) days after acceptance.
- C. Submit one copy of completed volumes 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Engineer comments. Revise content of all document sets as required prior to final submission.
- D. Submit two sets of revised final volumes in final form within 10 days after final inspection.
- E. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Provide information for re-ordering custom manufactured products.
- F. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- G. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- H. Additional Requirements: As specified in individual product specification sections.
- I. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.11 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Engineer will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.\

- C. Submit one copy of completed volumes 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Engineer comments. Revise content of all document sets as required prior to final submission.
- D. Submit five (5) sets of revised final volumes in final form within 10 days after final inspection.
- E. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
- F. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; by label machine.
- G. Include color coded wiring diagrams as installed.
- H. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- I. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- J. Provide servicing and lubrication schedule, and list of lubricants required.
- K. Include manufacturer's printed operation and maintenance instructions.
- L. Include sequence of operation by controls manufacturer.
- M. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- N. Provide control diagrams by controls manufacturer as installed.
- O. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- P. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- Q. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

- R. Include test and balancing reports as specified in SECTION 01400.
- S. Additional Requirements: As specified in individual product specification sections.
- T. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

1.12 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Provide spare parts, maintenance, and extra products in quantities specified in individual specification sections.
- B. Deliver to Project site and place in location as directed; obtain receipt prior to final payment.

1.13 PRODUCT WARRANTIES AND PRODUCT BONDS

- A. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work.
- B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers and manufacturers.
- C. Verify that documents are in proper form, contain full information and are notarized.
- D. Co-execute submittals when required.
- E. Submit prior to final Application for Payment.
- F. Timing 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
- G. Contractor shall provide the Owner with a 1-year warrantee on all work, to commence upon final acceptance.

1.14 MAINTENANCE SERVICE

- A. Furnish service and maintenance of components indicated in specification sections.

- B. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

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SECTION 01730

OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Format and Content of Manuals.
- B. Instruction of Owner's Personnel.
- C. Schedule of Submittals.

1.2 RELATED SECTIONS

- A. Section 01300 – Administrative Requirements.
- B. Section 01330 – Submittal Procedures.
- C. Section 01340 – Submittals.
- D. Section 01400 - Quality Requirements.
- E. Section 01600 – Product Requirements.
- F. Section 01700 – Execution Requirements.
- G. Section 01730 – Operation and Maintenance Data.
- G. Section 01740 - Warranties and Bonds.
- H. Individual Specifications Sections: Specific requirements for operation and maintenance data.

1.3 QUALITY ASSURANCE

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.4 FORMAT

- A. Prepare data in the form of an instructional manual.

- B. Binders: Commercial quality, 8 ½" x 11" (219 x 279 mm) three-ring binders with hardback, cleanable, plastic covers. When multiple binders are used, correlate data into related consistent groupings.
- C. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; list title of Project.
- D. Arrange content by process flow under section numbers and sequence of Table of Contents of this Project Manual.
- E. Provide tabbed flyleaf for each separate product and system, with typed description of product and major component parts of equipment.
- F. Text: Manufacturer's printed data, or typewritten data on 30 pound paper.
- G. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.5 CONTENTS, EACH VOLUME

- A. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect/Engineer, subconsultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
- B. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- C. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. (Do not use Project Record Documents as maintenance drawings.)
- E. Type Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01400.
- F. Warranties and Bonds: As specified in Section 01740.

1.6 MANUAL FOR MATERIALS AND FINISHES

- A. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Provide information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional Requirements: As specified in individual product specification Sections.
- E. Provide a listing in Table of Contents for design data, with tabbed flysheet and space for insertion of data.

1.7 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- B. Panelboard Circuit Directories: Provide electrical service characteristics, controls and communications.
- C. Include color-coded wiring diagrams as installed.
- D. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and any special operating instructions.
- E. Maintenance Requirements: Include routine procedures and guide for troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- F. Provide servicing and lubrication schedule, and list of lubricants required.
- G. Include manufacturer's printed operation and maintenance instructions.
- H. Include sequence of operation by controls manufacturer.

- I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- J. Provide control diagrams by controls manufacturer as installed.
- K. Provide Contractor's coordination drawings, with color-coded piping diagrams as installed.
- L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- N. Include test and balancing reports as specified in Section 01400.
- O. Additional Requirements: As specified in individual product specification Sections.
- P. Provide a listing in Table of Contents for design data, with tabbed flysheet and space for insertion of data.

1.8 INSTRUCTION OF OWNER PERSONNEL

- A. Before final inspection, instruct Owner's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times.
- B. Use operation and maintenance manuals as basis for instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
- C. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.

1.9 SUBMITTALS

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect/Engineer will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.
- C. Submit one copy of completed volumes in final form 15 days prior to final inspection. Copy will be returned after final inspection, with Architect/Engineer comments. Revise content of documents as required prior to final submittal.

D. Submit 4 copies of revised volumes of data in final form within ten days after final inspection.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END 01730

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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

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SECTION 02055

SOILS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes:

1. Subsoil materials and topsoil materials.

B. Related Sections:

1. Section 02060 – Aggregate.
2. Section 02311 – Rough Grading.
3. Section 02320 – Backfill.
4. Section 02324 – Trenching.
5. Section 02923 – Landscape Grading.
6. Section 02924 – Seeding and Soil Supplements.

1.2 UNIT PRICES - MEASUREMENT AND PAYMENT

A. Furnish and Place Topsoil, 4”:

1. Unit of Measurement: Square Yard.
2. Method of Payment: Includes furnishing, excavating and placing topsoil, special types of topsoil or compost/topsoil blend.
3. Paid for at the contract unit price per square yard for FURNISH AND PLACE TOPSOIL, 4” as dictated by the Engineer.
4. The price shall include all labor, tools, equipment, and incidentals to complete the Work as specified.

1.3 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 T180 – Moisture–Density Relations of Soils Using a 10 lb. Rammer and an 18” Drop.
- C. ASTM International:
1. ASTM D698 – Test Methods for Moisture–Density Relations of Soils and Soil–Aggregate Mixtures, Using 5.5 lb. Rammer and 12” Drop.
 2. ASTM D1556 – Test Method for Density of Soil in Place by the Sand–Cone Method.
 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).

1.4 SUBMITTALS

- A. Section 01340 – Submittals: Requirements for submittals.
- B. Samples: Submit in airtight containers, 10 lb. sample of each type of fill to testing laboratory and Engineer.
- C. Materials Source: Submit name of imported materials source.

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 of IDOT Construction Manual and SSRBC on site.

PART 2 PRODUCTS

2.1 SUBSOIL MATERIALS

- A. Subsoil Types: As indicated on the plans and/or as defined under Section 204 of the Standard Specifications for Road and Bridge Construction in Illinois, Current Edition (Illinois Department of Transportation).
- B. Subsoil Fill: Material excavated from site shall have a Standard Dry Density of not less than 90 lb/cf when tested according to AASHTO T 99 (Method C) and shall not possess an organic content greater than ten percent (10%) when tested according to AASHTO T 194.
- C. Excavated and reused material:
 1. Graded.
 2. Free of lumps larger than 3", rocks larger than 2" and debris.
 3. Conforming to ASTM D2487.

2.2 TOPSOIL MATERIALS

- A. Topsoil: As defined under Section 211 of Standard Specifications for Road and Bridge Construction, Current Edition (Illinois Department of Transportation).

- 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 (2.00 mm) sieve and the pH must be between 5.0 and 8.0.
- D. Topsoil to be restored to original depth.

2.3 SOURCE QUALITY CONTROL

- A. Section 01400 – Quality Requirements: Testing and Inspection Services: Testing and analysis of soil material.
 - 1. Testing and Analysis of Subsoil Material: Perform in accordance with ASTM D698.
 - 2. Testing and Analysis of Topsoil Material: Perform in accordance with ASTM D698.
- B. If tests indicate materials do not meet specified requirements, change material and retest.
- C. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.1 EXCAVATION

- A. Excavate subsoil and topsoil from areas designated. Strip topsoil to full depth of topsoil in designated areas.
- B. Stockpile excavated material meeting requirements for subsoil materials.
- C. Remove excess excavated materials not intended for reuse, from site.
- D. Remove excavated materials not meeting requirements for subsoil materials from site.
- E. Remove lumped soil, boulders, and rock [in accordance with SECTION 02316](#).

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. Stockpile unsuitable materials on impervious material and cover to prevent erosion and leaching, until disposal.
- H. Stockpile shall be stabilized in accordance with City and County standards. This includes but is not limited silt fence, seeding and stabilization such as mulch and hay.

3.3 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.
- C. Seed stockpiled area and borrow areas with specified seed mix and provide any additional reseeding, fertilization and/or watering necessary to establish germinated grass seed.

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 02315 – Excavation.](#)
2. [Section 02320 – Backfill.](#)
3. [Section 02324 – Trenching.](#)
4. [Section 02512 – Site Water Distribution.](#)
5. [Section 02633 – Manholes, Frames and Covers.](#)
6. [Section 02721 – Aggregate Base Course.](#)
7. [Section 02923 – Landscape Grading.](#)

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 01340 – Submittals: 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 AASHTO T180.
- C. Any material designated with CA shall be crushed limestone. 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 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

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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.**
- 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

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SECTION 02140

DEWATERING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. Performance of dewatering required to lower and control groundwater table levels and hydrostatic pressures to permit excavation, backfill and construction to be performed in the dry.
2. Control of surface water shall be considered as part of the work under this specification.
3. Surface water included in this work shall include water that appears on the surface as rainfall or snowmelt runoff, or groundwater conditions below grade that appear at the surface in the form of weeps or springs.
4. Dewatering of surface water from flowing streams, brooks, lakes, ponds or rivers identified on USGS topographic maps, or shown on the plans as flowing, shall not be included in this specification section.

1.2 REQUIREMENTS

- A. Dewatering system shall be of sufficient size and capacity necessary to lower and maintain groundwater table to an elevation below lowest foundation subgrade or bottom of pipe trench and to allow material to be excavated in a reasonably dry condition.
 1. Materials to be removed shall be sufficiently dry to permit excavation to grades shown and to stabilize excavation slopes where sheeting is not required.
- B. Operate dewatering system continuously until backfill work has been completed.
- C. Reduce hydrostatic head below any excavation to extent that water level in the construction area is below prevailing excavation surface.
- D. Prevent loss of fines, seepage, boils, quick conditions or softening of foundation strata.
- E. Maintain stability of sides and bottom of excavation.
- F. Construction operations are performed in the dry.
 1. Control of surface and subsurface water are part of dewatering requirements. Maintain adequate control so that the stability of excavated and constructed slopes are not adversely affected by saturated soil including water entering prepared subbase and subgrades where underlying materials are not free draining or are

subject to swelling or freeze-thaw action, that erosion is controlled and that flooding of excavations or damage to structures does not occur.

2. Drain surface water away from excavations. Protect excavations from becoming wet from surface water, or insure excavations are dry before additional work is undertaken.

1.3 SUBMITTALS

A. Submit in accordance with Section 01340 – Submittals.

B. Drawings and Design Data:

1. Submit drawings and data showing the method to be employed in dewatering excavated areas no later than ten (10) days prior to the commencement of excavation.
2. Submittal shall include location, depth and size of wellpoints, headers, sumps, ditches, size and location of discharge lines, capacities of pumps and standby units, and detailed description of dewatering methods to be employed to convey the water from site to adequate disposal.
3. Materials submitted shall be in a format acceptable for inclusion in required permit applications to any and all regulatory agencies for which permits for discharge water from the dewatering system are.

1.4 MEASUREMENT AND PAYMENT

A. DEWATERING

1. Unit of Measure: Incidental to Contract.

B. Includes costs of:

1. Mobilization
2. Material, labor, tools, equipment,
3. Fuel or energy costs and incidentals to complete the Work as specified.
4. This also includes the installation, maintenance, removal any documentation of any and all temporary and permanent soil and erosion control items.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install a dewatering system to lower and control groundwater in order to permit excavation, placement of under drain system pipe, placement of backfill materials, and placement of concrete floor slab, to be performed under dry conditions. Make the dewatering system adequate to pre-drain the water-bearing strata above and below the bottom of structure foundations, utilities and other excavations.

- B. In addition, reduce hydrostatic pressure head in water-bearing strata below structure foundations, utility lines, and other excavations, to extent that water levels in construction area are a minimum of twelve-inches (12”) below prevailing excavation surface at all times.

3.2 OPERATION

- A. Prior to any excavation below the groundwater table, place system into operation to lower water table as required and then operate it continuously 24 hours a day, 7 days a week, until all utilities and structures have been satisfactorily constructed including placement of backfill materials and dewatering is no longer required.
- B. Place an adequate weight of backfill material to prevent buoyancy prior to discontinuing operation of the system.

3.3 WATER DISPOSAL

- A. Dispose of water removed from trenches and excavations in such a manner as will not endanger portions of work under construction or completed or downstream areas. Dispose of water in such a manner that complies with the stipulations of any and all required permits for disposal of water and in accordance with all required Federal, State and local laws, regulations, rules and ordinances.

3.4 STANDBY EQUIPMENT

- A. Provide complete standby equipment, installed and available, for immediate operation as may be required, to adequately maintain de-watering on a continuous basis and in the event that all or any part of the system may become inadequate or fail.

3.5 CORRECTIVE ACTION

- A. If dewatering requirements are not satisfied due to inadequacy or failure of the dewatering system (loosening of the foundation strata, instability of slopes or damage to foundations and/or structures), perform work necessary for reinstatement of foundation soil, at no additional cost to the owner.

3.6 REMOVAL

- A. Ensure compliance with all conditions of regulating permits and provide such information to the Engineer and Construction Manager. Obtain written approval from Engineer and Construction Manager before discontinuing operation of dewatering system.

END 02140

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SECTION 02230

SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes removal of surface debris; removal of paving and curbs; removal of trees, shrubs and other plant life; removal of abandoned utilities and topsoil excavation.
- B. Related Section:
 - 1. Section 02311 – Rough Grading.
 - 2. Section 02316 – Rock Removal.
 - 3. Section 02324 – Trenching.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Herbicide: Glyphosate, triclopyr or dicamba.

PART 3 EXECUTION

3.1 PREPARATION

- A. Section 01300 – Administrative Requirements: Coordination and project conditions.
- B. Verify that existing plant life designated to remain is tagged or identified.
- C. Identify a waste area for placing removed materials.

3.2 PROTECTION

- A. Location, identify and protect utilities that remain from damage. Any utilities removed or damaged in addition to those indicated on the plans or within the specifications without prior approval of the Engineer or Owner will not be subject for payment.
- B. In case of damage, notify Engineer at once so required protective measures can be taken.
- C. Omission or inclusion of utility items from plans does not constitute non–existence or definite location. Secure and examine local utility records for location data.

- D. Cap or remove utilities in accordance with instructions by owners of utilities.
- E. Protect trees, plant growth and features designated to remain as final landscaping.
- F. Protect and maintain bench marks, monuments or other established reference points and property corners, survey stakes and control points. If disturbed or destroyed, replace at own expense to full satisfaction of Owner and controlling agency.
- G. Maintain free of damage, existing sidewalks, structures, and pavement, not indicated to be removed.
- H. Any pavements or concrete improvements including but not limited to curbs, pavement and sidewalk that are not indicated as removed or removed and replaced and are deemed damaged by the Engineer shall be replaced by the Contractor in a manner approved by the Engineer. No additional compensation will be granted unless approved in writing by the Owner.
- I. Provide barricades, coverings, or other types of protection necessary to prevent damage to existing items indicated to remain in place.
- J. Provide full access to public and private premises, fire hydrants, street crossings, sidewalks and other points as designated by Owner to prevent serious interruption of travel.
- K. Avoid surcharge or excavation procedures that may result in heaving, caving, or slides.
- L. Salvageable Items: Carefully remove items to be salvaged, and store on Owner's premises unless otherwise directed.
- M. Dispose of waste materials, legally, off site. Burning, as a means of waste disposal, is not permitted.

3.3 CLEARING

- A. Clear areas required for access to site and execution of Work.
- B. Remove trees and shrubs indicated. Remove stumps and surface rock. Stumps shall be removed to a depth of 6" below the surface.
- C. Clear undergrowth and deadwood without disturbing subsoil.
- D. Apply herbicide to remaining stumps to inhibit growth.
- E. Wherever possible, existing trees to be preserved.

3.4 REMOVAL

- A. Remove debris, rock and extracted plant life from site.
- B. Remove paving and curb as indicated. Neatly saw cut edges at right angle to surface.
- C. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.
- D. Do not burn or bury materials on site. Leave site in a clean condition.

3.5 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, re-landscaped, or re-graded without mixing with foreign materials for use in finish grading.
- B. Do not excavate wet topsoil.
- C. Maintain stockpiles and excavations in such a manner to prevent inconvenience or damage to structures on-site or on adjoining property.
- D. Stockpile in area designated on site to depth not exceeding eight feet (8') and protect from erosion. Material shall be stockpiled on impervious material.
- E. Remove excess topsoil not intended for reuse, from site.

END 02230

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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 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 02230 – Site Clearing.
4. Section 02315 – Excavation and Fill.
5. Section 02316 – Rock Removal.
6. Section 02320 – Backfill.
7. Section 02324 – Trenching.
8. Section 02923 – Landscape Grading.

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. Provide Engineer with detailed report of results.
- 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. Topsoil: 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 benchmarks, existing structures, fences, sidewalks, curbs, roads and paving from excavating equipment and vehicular traffic.
- C. Protect above or below ground utilities which are to remain.
- D. 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, relandscaped, or regraded.
- 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 and retest.
- D. Frequency of Tests: As determined by Engineer.

SECTION 02315

EXCAVATION AND FILL

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes excavating for foundations, roads, parking areas and site grading; excavating for paving, landscaping and excavating for site structures.
- B. Related Section:
 - 1. Section 00200 – Geotechnical Data.
 - 2. Section 02055 – Soils.
 - 3. Section 02060 – Aggregate.
 - 4. Section 02311 – Rough Grading.
 - 5. Section 02316 – Rock Removal.
 - 6. Section 02320 – Backfill.
 - 7. Section 02324 – Trenching.
 - 8. Section 02633 – Manholes, Vaults, Frames and Covers.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM D698 – Moisture Density Relations of Soils and Soil Aggregate Mixtures, Using a 5.5 lb. Rammer and a 12” Drop.
 - 2. ASTM D1556 – Density of Soil In-Place by the Sand-Cone Method.
 - 3. ASTM D2049 – Relative Density of Cohesionless Soils.
 - 4. ASTM D2167 – Density of Soil in Place by the Rubber-Balloon Method.
 - 5. ASTM D2922 – Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).
- B. Local utility standards when working within 24 inches of the respective utility lines.

1.3 REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL

- A. General: This work shall include all material, labor and equipment required to remove, transport, and dispose of all unsuitable soils. It shall include all fees or charges associated with the disposal including any additional testing of non-special waste.
- B. Measurement and Payment:
 - 1. Unit of Measure: Incidental to contract
- C. Includes costs of:

1. Excavation
2. Transportation and Disposal
3. Testing, documentation and fees
4. All work included in Article 202 of the SSRBC.

1.4 EARTH EXCAVATION

- A. General: This work shall include all material, labor and equipment required to remove, transport, and dispose of all material and areas defined as EARTH EXCAVATION. It shall include all fees or charges associated with the disposal including any additional testing of non-special waste material.
- B. Measurement and Payment:
 1. Unit of Measure: Incidental to contract.
- C. Includes costs of:
 1. Excavation
 2. Transportation and Disposal
 3. All work included in Article 202 of the SSRBC

1.5 TESTING OF REJECTED SOILS - ALLOWANCE

- A. General: In the event that soils are rejected by the CCDD facility chosen by the contractor, material must be tested. This work shall include all material, labor and equipment required to remove, transport, and test the rejected material defined as TESTING OF REJECTED SOILS.
- B. Measurement and Payment:
 1. Allowance for six tests at \$2,000 per test: TESTING OF REJECTED SOILS, as verified by the Field Engineer and approved by the Owner.
- C. Includes costs of:
 1. Testing completed by third party firm in accordance with Summary of Maximum Allowable Concentrations of Chemical Constituents In Uncontaminated Soil Used as Fill Material at Regulated Fill Operations (35 Ill. Adm. Code 1100.Subpart F) and Supplemental Section hereon referred to here as MAC TABLES and found at <http://www.epa.state.il.us/land/ccdd/new-max-allowable-concentrations-table.pdf> <http://www.epa.state.il.us/land/ccdd/supplemental-mac-table.pdf> Including as applicable analysis by TCLP/SPLP methods.
 2. Documentation and notification provided to the Owner/Engineer.
 3. Temporary Storage and all handling (Public Works cannot be used).
 4. All other associated costs.
 5. Any tests that do not reveal the presence of contaminants above MAC TABLES standards will not be eligible for payment.

1.5A REMOVAL AND DISPOSAL OF NON-HAZARDOUS SPECIAL WASTE or CERTIFIED NON-SPECIAL WASTE

- A. General: In the event that Testing within 1.5 reveals the presence of contaminants above MAC TABLES limits, this material shall be disposed of by the contractor at a Non-Hazardous Special Waste Site or appropriate facility. This work shall include all material, labor and equipment required to remove, transport, and dispose of all material defined as REMOVAL AND DISPOSAL OF NON-HAZARDOUS SPECIAL WASTE or CERTIFIED NON-SPECIAL WASTE. It shall include all fees or charges associated with the disposal including any additional testing. Any contaminated soil that is mixed with clean fill will not be eligible for payment.
- B. Measurement and Payment:
 - 1. Unit of Measure: Per Ton of REMOVAL AND DISPOSAL NON-HAZARDOUS SPECIAL WASTE or CERTIFIED NON-SPECIAL WASTE, as verified by the Field Engineer
- C. Includes costs of:
 - 1. Documentation and notification provided to the Owner/Engineer.
 - 2. Excavation
 - 3. Transportation and Disposal including all fees
 - 4. Any testing required for disposal, not previously completed.
 - 5. Temporary Storage and all handling (Public Works cannot be used).
 - 6. All other associated costs. Soils that do not test results indicating the presence of contaminants above MAC TABLES standards will not be eligible for payment.

1.6 SUBMITTALS

- A. Section 01340 – Submittals: Requirements for submittals.
- B. Excavation Protection Plan: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property.
- C. Samples: Provide samples of materials as required by the Engineer that will be used from furnished material.
- D. Test Reports: Field density test reports. Submit gradation test for all furnished material.

1.7 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 – NOT USED

PART 3 EXECUTION

3.1 PREPARATION

- A. Identify required lines, levels, contours and datum locations.
- B. Locate, identify, and protect utilities that remain from damage.
- C. Notify utility company to remove and relocate utilities if necessary.
- D. Protect plant life, lawns and other features remaining as a portion of final landscaping.
- E. Protect benchmarks, survey control points, existing structures, fences, sidewalks, paving and curbs from excavating equipment and vehicular traffic.

3.2 EXCAVATION

- A. Blasting with any type of explosive is prohibited.
- B. Provide dewatering system necessary to successfully complete compaction and construction requirements. Dewatering shall be considered incidental to the contract.
- C. Remove frozen, loose, wet, or soft material and replace with approved material as directed by Engineer.
- D. Underpin adjacent structures which may be damaged by excavating work.
- E. Excavate subsoil to accommodate building foundations, slabs-on-grade, paving, site structures and construction operations.
- F. Compact disturbed load bearing soil in direct contact with foundations to original bearing capacity; perform compaction in accordance with Sections 02320 and 02324.
- G. Slope banks with machine to angle of repose or less until shored.
- H. Do not interfere with 45 degree bearing splay of foundations.
- I. Grade top perimeter of excavating to prevent surface water from draining into excavation.
- J. Hand trim excavation. Remove loose matter.

- K. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd measured by volume. Larger material will be removed under Section 02316.
- L. Notify Engineer of unexpected subsurface conditions and discontinue affected Work in area until notified to resume Work.
- M. Correct areas over excavated with backfill and compact replacement as specified for authorized excavation or replace with fill concrete as directed.
- N. Stockpile excavated material in area designated on site in accordance with Sections 02055 and 02060. Remove excess or unsuitable material from site.

3.3 FIELD QUALITY CONTROL

- A. Section 01700 – Execution Requirements: Testing, adjusting, and balancing.
- B. Provide for visual inspection of bearing surfaces.

3.4 PROTECTION

- A. Prevent displacement or loose soil from falling into excavation. Maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- C. Protect structures, utilities and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earth operations.
- D. The Contractor shall be responsible for shoring and bracing all utilities and signs including but not limited to gas mains, water mains, sanitary sewers, powerpoles, traffic control devices, irrigation systems and public and private signage. In the event that shoring, bracing, or removal and replacement is required this cost shall be incidental to the contract. No modification to the location or routing of utilities shall be made, unless approved by the Engineer.

END 02315

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SECTION 02316
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 02315 – 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.

1.5 SUBMITTALS

- A. Section 01340 – Submittals: Submittal procedures.

- B. Survey Report: Submit survey report on conditions of buildings near locations of rock removal.

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 unshattered 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 02316

SECTION 02320

BACKFILL

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes building perimeter and site structure backfilling to subgrade elevations; site filling and backfilling; fill under paving; fill for over-excavation and consolidation and compaction as scheduled.
- B. Related Sections:
 - 1. Section 02055 – Soils.
 - 2. Section 02060 – Aggregate.
 - 3. Section 02311 – Rough Grading.
 - 4. Section 02315 – Excavation and Fill.
 - 5. Section 02324 – Trenching.
 - 6. Section 02633 – Manholes, Vaults, Frames and Covers.
 - 7. Section 02923 – Landscape Grading.

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. 2 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 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.**
 - 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.
 - 11. ASTM D4632 –Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

1.4 SUBMITTALS

- A. Section 01340 – Submittals: Requirements for submittals.

- B. Product Data: Submit data for geotextile fabric indicating fabric and construction.

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.

C. Concrete: Lean concrete with a compressive strength of 3000 psi.

2.2 ACCESSORIES

A. Geotextile Fabric: As specified in Section 210 or 282 of the Standard Specifications for Road and Bridge Construction in Illinois – Current Edition, Illinois Department of Transportation.

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. Place geotextile fabric as called for on the plans.
- D. Place fill material in continuous layers and compact.
- E. Employ a placement method that does not disturb or damage other work.

- F. Maintain optimum moisture content of backfill materials to attain required compaction density.
- G. Backfill against supported foundation walls. Do not backfill against unsupported walls.
- H. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.
- I. Slope grade away from building minimum two inches (2") in ten feet (10'), unless noted otherwise.
- J. Make gradual grade changes. Blend slope into level areas.
- K. Remove surplus backfill materials from site.
- L. 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 not permitted.

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. Structures:
 - 1) Inside of structures under foundations, under equipment support pads, under slabs-on-grade and scarified existing subgrade under fill material:
 - a) Compaction Density: 95% per ASTM D698.
 - 2) Outside structures next to walls, piers, columns and any other structure exterior member: 90% per ASTM D698.
- c. Specific Areas:
 - 1) Outside structures under equipment support foundations:
 - a) Compaction Density: 95% per ASTM D698.
 - 2) 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.
 - 3) Trenches in Open Areas:
 - a) Compact each layer if material to 90% Modified Proctor Density in accordance with ASTM D1557 or AASHTO T180.
 - 4) 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.
 - 5) 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 INSTALLATION OF GEOTEXTILE FABRIC

A. Install geotextile fabric in accordance with the requirements of SSRBC Section 210.

3.7 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.

3.8 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. Section 02055 – Soils.
 - 2. Section 02060 – Aggregate.
 - 3. Section 02311 – Rough Grading.
 - 4. Section 02315 – Excavation and Fill.
 - 5. Section 02316 – Rock Removal.
 - 6. Section 02320 – Backfill.
 - 7. Section 02512 – Site Water Distribution.
 - 8. Section 02923 – Landscape Grading.

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 or Exploratory Excavation:** Exploratory trenching to locate existing underground utilities, structures and ground conditions shall include excavating, dewatering, field measurements, excavation **and compacted backfill**, surface restoration, and disposal of all excess material. All exploratory excavation or trenching will not be measured for payment and shall be considered incidental to utility installation.

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.
- B. Product data: Submit data for geotextile fabric indicating fabric and construction.

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, etal.
- 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.

2.2 ACCESSORIES

- A. Geotextile Fabric: As specified under Section 210 or 282 of Standard Specifications for Road and Bridge Construction in Illinois – Current Edition, Illinois Department of Transportation.

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 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 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 geotextile fabric as indicated on plans, prior to placing next lift of fill.
- E. Place fill material in continuous layers and compact.
- F. Employ a placement method that does not disturb or damage foundation perimeter drainage nor utilities in trench.
- G. Maintain optimum moisture content of fill materials to attain required compaction density.
- H. Remove surplus fill materials from site.

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 PAVEMENT PATCHING, DEPTH AND MIXTURE SPECIFIED

- 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 HMA PAVEMENT DEPTH AND MIXURE SPECIFIED (FULL) as dictated by the Engineer.

A. Includes Costs of:

1. Mobilization
2. Cleaning of existing roadway and disposal of any material.
3. Traffic Control and Protection
4. Temporary access at all locations
5. Full Depth Saw Cutting of specified Pavement
6. Full Depth Bituminous Pavement Removal and disposal
7. Placement of Aggregate Base Course
8. Bituminous Prime Coat
9. Placement of Full Depth Binder and Surface
10. 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 1DOT Article 1003.03(c).

2.2 HMA MIXTURES

- A. HMA Base Course: Comply with SSRBC Section 355.
- B. HMA Binder Course:
 1. Hot Mix Asphalt Binder Course IL-19, N50
 2. Comply with SSRBC Articles 406.10 and 406.13,
- C. HMA Surface Course
 1. Hot Mix Asphalt Surface Course Mix C N50
 2. 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. Contractor shall place surface course within 7 calendar days of completion of successful testing of sanitary sewer and water mains and installation of services. No payment will be made for the removal and replacement of temporary pavement or patching at any location.

or

B. If the contractor elects not to pave in accordance with Paragraph A, the contractor will be permitted to have the trench remain as aggregate to full depth (matching adjacent pavement). The contractor shall be responsible for maintenance of the trench throughout the project. The cost of maintenance of the trench, furnish, placement and removal of temporary aggregate, and all other associated work shall be considered incidental to the contract.

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.

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: Section includes pipe and fittings for site water lines including potable and non-potable water supply lines, valves, fire hydrants and domestic water hydrants.
1. All existing water mains and appurtenances shall be exclusively operated by the Owner.
- B. Related Sections:
1. Section 02060 – Aggregate.
 2. Section 02315 – Excavation and Fill.
 3. Section 02320 – Backfill.
 4. Section 02324 – Trenching.

1.1 UNIT PRICE – MEASUREMENT AND PAYMENT

- A. Ductile Iron Watermain, Class 52, of the diameter specified.
1. Basis of Measurement: By the linear foot.
 2. Basis of Payment: Includes polyethylene encasement, hand trimming, excavation, pipe, joints, bedding, and connection of any building service piping and connection to the municipal utility water source unless indicated separately on the plans. It also includes watermain restraint, fittings and any other appurtenance or work not identified by the itemized fitting at locations both inside and outside of a casing pipe.
 3. This also includes the cost of bracing or shoring all adjacent utilities.
- B. Watermain Fittings both Temporary and Permanent (Bends, Tees, Reducers, Plugs, Crosses, Cutting-In Sleeves) of type, diameter and angle or denotation.
1. Basis of Measurement: Incidental to the cost of the watermain. Any fittings not identified or any restraint 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.
- C. Water Service, Material Specified, with Curb Stop & B-Box, Size as noted on the plans (Includes Tap, Corporation & Curb Stop, Copper water service and Box)
1. Basis of Measurement: By the unit either Long or Short
 2. Basis of Payment: Includes all material, labor and equipment along with 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. This also includes the removal of the existing b-box and any rerouting of the service as indicated on the plans or as directed by the owner.

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 ¾" or 1".

D. Fire Hydrant Assembly Complete to Main

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. All piping shall be 6". A maximum of one extension kit may be used, for a maximum extension of 36".

E. 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. Line Stops, 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.
3. This also includes the cost of bracing or shoring all adjacent utilities.

G. Connection to Existing Watermain

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.

H. Cut and Cap Existing Watermain

1. Basis of Measurement: By the unit.
2. Basis of Payment: Includes excavation, hand trimming excavation, cutting and capping accessories, required thrust restraint other than concrete thrust blocks, fittings and cutting and capping of existing pipes. This will be completed on areas where existing watermain is to be abandoned.
3. This also includes the cost of bracing or shoring all adjacent utilities.

- I. Pressure Testing and Disinfection
 - 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.

- J. Remove Fire Hydrant Assembly
 - 1. Basis of Measurement: Incidental to the cost of the watermain.
 - 2. Basis of Payment: Includes 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 or schedule pick up by the Owner.
 - 3. This also includes the cost of bracing or shoring all adjacent utilities and any required backfill.

- K. Abandon Existing Valve and Vault
 - 1. Basis of Measurement: Incidental to the cost of the watermain abandonment.
 - 2. Basis of Payment: Includes hand trimming excavation, removal of the existing valve, water tight mechanical plug to the existing main, removal of the frame and the top cone or barrel section and disposal of the backfill and disposal of the valve or schedule pick up by the Owner.
 - 3. This also includes the cost of bracing or shoring all adjacent utilities and any required backfill.

- L. Abandon Existing Watermain
 - 1. Basis of Measurement: By the unit.
 - 2. Basis of Payment: Includes connection piping to link existing, hand trimming excavation, accessories, concrete thrust block, fittings and cutting of existing pipes, cutting and capping of main to be abandoned and all temporary bracing of utilities, removal of any hydrants, pipe, fittings, valves, boxes, vaults, services. This also includes the cost of bracing or shoring all adjacent utilities.

- M. Abandon Existing Valve and Box
 - 1. Basis of Measurement: Incidental to the cost of the watermain abandonment.
 - 2. Basis of Payment: Includes hand trimming excavation, removal of the existing valve, water tight mechanical plug to the existing main, removal of the valve box and disposal of the backfill and disposal of the valve or schedule pick up by the Owner.
 - 3. This also includes the cost of bracing or shoring all adjacent utilities and any required backfill.

1.2 REFERENCES

- A. Standard Specification for Water and Sewer Main Construction in Illinois (SSWSMC), Current Edition (Illinois Society of Professional Engineers, et al).

- B. Standard Specifications for Road and Bridge Construction, Current Edition (Illinois Department of Transportation).
- 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. American Society of Mechanical Engineers (ASME):
 - 1. B16.18 – Cast Copper Alloy Solder Joint Pressure Fittings.
 - 2. B16.22 – Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.
- E. ASTM International (ASTM):
 - 1. ASTM B88 – Seamless Copper Water Tube.
 - 2. ASTM D698 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using a 5.5 lb. Rammer and 12” Drop.
 - 3. ASTM D1557 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using a 10 lb. Rammer and 18” Drop.
- F. American National Standards Institute (ANSI) / American Water Works Association (AWWA):
 - 1. AWWA C104 – Cement-Mortar Lining for Ductile Iron Pipe and Fittings.
 - 2. AWWA C105 – Polyethylene Encasement for Ductile Iron Pipe Systems.
 - 3. AWWA C110 – Ductile Iron and Gray Iron Fittings for Water.
 - 4. AWWA C111 – Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings.
 - 5. AWWA C150 – Thickness Design of Ductile Iron Pipe.
 - 6. AWWA C151 – Ductile Iron Pipe, Centrifugally Cast, for Water.
 - 7. AWWA C153 – Ductile Iron Compact Fittings for Water Service.
 - 8. AWWA C600 – Installation of Ductile Iron Water Mains and Their Appurtenances.
 - 9. AWWA C502 – Dry Barrel Fire Hydrants.
 - 10. AWWA C509 – Resilient Seated Gate Valves for Water Supply Service
 - 11. AWWA C900 – PVC Pressure Pipe and Fabricated Fittings, 4 in. Through 12 In., for Water Distribution.
 - 12. AWWA C905 – PVC Pressure Pipe and Fabricated Fittings, 14 in. Through 48 In., for Water Distribution.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with applicable sections of the Owner’s Engineering Standards and Standard Specifications for Water and Sewer Main Construction in Illinois (SSWSMC), Current Edition.
- B. Valves: Manufacturer’s name and pressure rating marked on valve body.

1.4 SUBMITTALS

- A. Section 01340 – Submittals: 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.

1.5 CLOSEOUT SUBMITTALS

- A. Section 01700 – Execution Requirements: Closeout procedures.
- B. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraint, and invert elevations.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.
- D. Operation and Maintenance Data shall be submitted in accordance with Section 01700 – Execution Requirements.

1.6 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. American Cast Iron Pipe Company – Birmingham, Alabama.
 - 2. Clow Water Systems Corporation – Coshocton, Ohio.
 - 3. Griffin Pipe Products Company – Downers Grove, Illinois
 - 4. McWane Cast Iron Pipe Company – Birmingham, Alabama.
 - 5. United States Pipe and Foundry Company – Birmingham, Alabama.
 - 6. Substitutions: Section 01600 – Product Requirements.
- B. Ductile Iron Pipe Materials:
 - 1. Ductile Iron Pipe:
 - a. Class 52 conforming to AWWA C151.
 - b. Cement lined conforming to AWWA C104.
 - 2. Fittings: Ductile iron, standard thickness.
 - 3. Joints: AWWA C111, rubber gasket with rods.
 - 4. Polyethylene Encasement:

- a. All Ductile Iron Pipe shall be provided with polyethylene encasement conforming to AWWA C105, minimum 8 mil thickness.
5. Brass Wedges: Brass wedges shall be installed at all watermain joints to provide electrical conductivity.

C. 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 only.

D. Restrained Mechanical Joint Fittings:

1. Multiple individually activated gripping surfaces built into a mechanical joint follower gland.
2. Utilize torque sensitive, "twist off nuts".
3. Pressure rating 350 PSI in sizes through 16" and 250 PSI above 20". A 2.0 safety factor shall be built in to the working pressure rating.
4. Acceptable Manufacturers:
 - a. Megalug Series 1100 or 3000, manufactured by EBAA Iron Sales, Inc. – Eastland, Texas.

E. Push Joint Pipe Restraint:

1. Field Lock 350 gasket as manufactured by United States Pipe and Foundry Company of Birmingham, Alabama.
2. Series 1390 Pipe Restraint as manufactured by Ford Meter Box CO., Inc of Wabash, Indiana.
3. Series 1700 Megalug as manufactured by EBAA Iron Sales, Inc. – Eastland, Texas.

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 HYDRANTS

A. Acceptable Manufacturers:

1. Clow Medallion Fire Hydrant – Clow Valve Company, Oskaloosa, Iowa.
2. Mueller Super Centurion 200 Fire Hydrant – Mueller Company, Decatur, Illinois.
3. Waterous Pacer Model WB-67-250.

- B. Hydrants will have two, two and one-half inch hose nozzles and one four and one-half inch steamer nozzle.
- C. Extension kits shall be installed to raise the hydrant, auxiliary valve and valve box to grade. Each hydrant is limited to one extension kit, and a maximum extension of 36". Fire hydrant extension kits must be of the same manufacturer as the hydrant, and must be installed according to manufacturer's specifications.
- D. Valve box shall have a valve box stabilizer installed, which shall be Valve Box Adaptor #2 Type A, as manufactured by Adaptor, Inc. or approved equal.
- E. Hydrants shall be of sufficient length to allow for five feet of cover over the hydrant lead.
- F. Auxiliary six-inch resilient wedge valve and valve box shall be installed on each hydrant lead.
- G. Hydrants shall have two coats of paint matching the City standard for color, Safety Red, Sherwin-Williams 'Shercryl' 6403-31922, B66R300.
- H. Hydrants shall have installed "Hydrafinder Standard" hydrant locators as manufactured by the Radon Corporation.

2.4 WATER SERVICE AND TAPS

- A. All copper water services shall be 1 1/2" or 2" (as specified in the plans) 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 an 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 main shall be kept at minimum
- C. Corporation stops shall in accordance with the details.
- D. All piping shall have a minimum cover of 5'0" on all parts of the service.
- E. Curb Stops and Curb Boxes shall be round of way type and shall be in accordance with the detail.

- F. The Curb Box, Buffalo Type, with an arch type saddle, Tyler (or approved equal) in accordance with the details.

2.5 BEDDING AND COVER MATERIALS

- A. Bedding: IDOT CA-7 (Virgin Crushed Limestone).
- B. Cover: IDOT CA-7 (Non- Recycled Crushed Limestone) within 3' of paved areas, and IDOT FA-6 (Clean Beach Sand) in non-paved areas.

2.6 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 1300 – 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 soil on inside and outside before assembly.
- C. Prepare pipe connection to equipment with flanges or unions.

3.3 BEDDING

- A. Excavate pipe trench as indicated on plans and in accordance with SSWSMC.
- B. Form and place concrete for pipe thrust restraints at any change of pipe direction. Place concrete to permit full access to pipe and pipe accessories. Provide thrust restraint bearing on subsoil.
- C. Place bedding material at trench bottom, level fill materials in one continuous layer not exceeding 4" compacted depth; compact to 95% Modified Proctor.
- D. Backfill around sides and to top of pipe with cover fill, tamp in place and compact to 95% Modified Proctor.

- E. Maintain optimum moisture content of fill material to attain required compaction density.

3.4 INSTALLATION – PIPE

- A. Maintain separation of water main from sewer piping as indicated on plans and in accordance with SSWSMC.
- B. Install pipe to indicated elevation to within tolerance of 5/8”.
- C. Install piping and fittings to applicable Municipal Code.
- D. Install brass wedges to provide electrical conductivity.
- E. Route pipe in a straight line.
- F. Take all measures to insure that the pipe remains void of dirt and debris.
- G. Install pipe to allow for expansion and contraction without stressing pipe or joints.
- H. Install access fittings to permit the disinfection of the water system as required by SSWSMC.
- I. Slope water pipe and position drains at low points.
- J. Place thrust restraints at each elbow or change in direction of pipe main.
- K. Establish elevations of buried piping to ensure not less than 5.0 feet of cover.
- L. Backfill trench as indicated on plans and in accordance with SSWSMC.

3.5 INSTALLATION – WATER SERVICE

- A. Service taps to water mains are not permitted until after bacteriological sampling and analysis has been completed
- B. Service connections shall be made by a State of Illinois licensed plumber.
- C. Curb boxes shall be installed to approximately three inches above finish grade.
- D. Every domestic water service line from the corporation to the curb stop shall be inspected by the Water Division Foreman or his designee prior to acceptance by the City.

3.6 INSTALLATION OF POLYETHYLENE WRAP

- A. Install polyethylene wrap in accordance with ANSI/AWWA C105/A21.5, Method A or B. Method C relates to flat polyethylene sheets that are not permitted with main installation. DIP and fittings installed within casing pipe does not require polyethylene wrap.
- B. Normal Dry Trench Conditions with Polyethylene Tube.
1. Cut a section of polyethylene tube approximately two (2) feet longer than the pipe section. Remove all lumps of clay, mud, cinders or other material that might have accumulated on the pipe surface during storage. Slip the polyethylene tube around the pipe, starting at the spigot end. Bunch the tube accordion fashion at the end of the pipe. Pull back the overhanging end of the tube until it clears the pipe end.
 2. Dig a shallow bell hole in the trench bottom at the joint location to facilitate installation of the polyethylene tube. Lower the pipe into the trench and make up the pipe joint with the preceding section of pipe.
 3. Move the cable to the bell end of the pipe and lift the pipe slightly to provide enough clearance to easily slide the tube. Spread the tube over the entire barrel of the pipe. Make sure that no dirt or other bedding material becomes trapped between the wrap and the pipe.
 4. Make the overlap of the polyethylene tube by pulling back the bunched polyethylene from the preceding length of pipe and secure it in place. The polyethylene may be secured in place by using tape or plastic tie straps.
 5. Overlap the secured tube end with the tube end of the new pipe section. Secure the new tube end in place.
 6. Take up the slack in the tube along the barrel of the pipe to make a snug, but not tight fit. Fold excess polyethylene back over the top of the pipe.
 7. Secure the fold at several locations along the pipe barrel at intervals (approximately every three (3) feet).
 8. Repair all small rips, tears or other tube damage with adhesive tape. If the polyethylene is badly damaged, repair the damaged area with a sheet of polyethylene and seal the edges of the repair with adhesive tape.
 9. Carefully backfill the trench. To prevent damage during backfilling, allow adequate slack in the tube at the joint. Backfill should be free of cinders, rocks, boulders, nails, sticks or other materials that might damage the polyethylene. Avoid damaging the polyethylene when using tamping devices.
 10. Any connections to non- wrapped pipe shall overlap the existing pipe by a minimum distance of two feet.
- C. Wet Trench Conditions Method B – In wet, sloppy trench conditions, the pipe should be completely covered by the polyethylene tube before it is lowered into the trench.
1. Cut the polyethylene tube to a length approximately 2 feet longer than that of the pipe section. Slip the tube over the pipe.
 2. Spread the tube over then entire barrel of the pipe, pushing back both ends of the tube until they clear both pipe ends. Make sure the tube is centered on the pipe to proved a one (1) foot overlap at each end.

3. Take up the slack in the tube to make a snug, but not tight, fit. Circumferential wraps of tape should be placed at two (2) foot intervals along the barrel of the pipe to minimize the space between the polyethylene and the pipe. Use plastic tie straps or wrap a piece of tape completely around the pipe at each end to seal the polyethylene, leaving ends free to overlap the adjoining sections of pipe.
4. Lower pipe into trench and make up pipe joint. Be careful not to damage the polyethylene when handling or jointing the pipe. Complete installation following dry condition Steps 4, 5 (taking care to seal ends of overlap by using plastic tie straps or wrapping tape completely around the pipe at each end), 8 and 9 above. When lifting polyethylene-encased pipe, use a fabric type sling or a suitably padded cable or chain to prevent damage to the polyethylene.
5. Any connections to non- wrapped pipe shall overlap the existing pipe by a minimum distance of two feet.
6. Openings for service connections shall be completed by cutting an "X" in the polyethylene and folding it back. Once the tap or connection has been made, the remaining polyethylene shall be pulled tight and then taped to seal any openings.

D. Method C For use only with odd shaped Connection

1. Cut polyethylene sheet to a length approximately two feet longer than that of the pipe section. Center the cut length to provide a 1' foot overlap on each adjacent pipe section, bunching it until it clears the pipe ends. Wrap the polyethylene around the pipe so that it circumventially overlaps the top quadrant of the pipe. Secure the cut edge of the polyethylene sheet at intervals of approximately 3'. Lower the wrapped pipe into the trench and make the pipe joint with the preceding section of pipe. A shallow bell hole must be made at joints to facilitate installation of polyethylene.
2. Any rips repairs or holes shall be repaired.

Any problems or questions regarding the installation of polyethylene encasement should be addressed to DIPRA or one of its member companies.

3.7 INSTALLATION – VALVES AND HYDRANTS

- A. Set valves on undisturbed soil.
- B. Center and plumb valve within valve vault. Set valve vault frame and lid flush with finished grade.
- C. Set hydrants plumb. Locate pumper nozzle perpendicular to and facing roadway.
- D. Set hydrants to grade, with nozzles at least 20" above ground.
- E. Locate control valve at least 16" away from hydrant.
- F. Provide a drainage pit 36" square by 24" deep filled with 2" washed gravel. Encase elbow of hydrant in gravel to 6" above drain opening. Do not connect drain opening

to sewer. Place filter fabric (3 mil minimum thickness) over the entire bed of washed stone.

G. Paint hydrants in accordance with Section 09905.

1. Color to be Safety Red, Sherwin-Williams 'Shercryl' 6403-31922, B66R300.

3.8 PRESSURE TESTING

A. Pressure testing of the main shall be completed in accordance with Standard Specifications for Water and Sewer Main Construction in Illinois (SSWSMC), Current Edition and AWWA C600 at the greater of either 150 psi or twice the operating pressure.

B. Contractor shall be responsible for providing all equipment, labor and materials required to complete pressure testing of the water main.

C. Contractor shall be responsible for all costs associated with repeated testing attempts.

3.9 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

A. Flush and disinfect water system in accordance with applicable Municipal Code.

3.10 FIELD QUALITY CONTROL

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

B. Adhere to the requirements of SSWSMC.

C. Compaction testing shall be in accordance with ASTM D1557.

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

E. Frequency of Test: As directed 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 and Concrete Anchors.

1.2 REFERENCES

- A. ACI 301 (American Concrete Institute) - Specifications for Structural Concrete for Buildings.
- B. ACI 304 (American Concrete Institute) - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
- C. ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.
- D. ASTM A497 - Welded Deformed Steel Wire Fabric for Concrete Reinforcement.
- E. ASTM A615 - Deformed and Plain Billet-Steel for Concrete Reinforcement.
- F. ASTM C33 - Concrete Aggregates.
- G. ASTM C94 - Ready Mix Concrete.
- H. ASTM C150 - Portland Cement
- I. ASTM C260 - Air-Entraining Admixtures for Concrete.
- J. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
- K. ASTM C494 - Chemical Admixtures for Concrete.
- L. ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction.
- M. 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 606 – Concrete Gutter, Curb, Median, and Paved Ditch
6. SSRBC Section 1020 – Portland Cement Concrete
7. SSRBC Section 1023 – Protective Coat

1.3 SIDEWALK REPLACEMENT, THICKNESS SPECIFIED

A. Measurement and Payment:

1. Unit of Measure: Square Foot
2. Method of Measurement: Measure Square Foot in place as dictated by the contract drawings and in accordance with SSRBC, Article 424.
3. Basis of Payment: Paid for at the CONTRACT UNIT PRICE per Square Foot for SIDEWALK REPLACEMENT, THICKNESS SPECIFIED

B. Includes costs of:

1. Mobilization
2. Saw Cutting
3. Removal and Disposal of Sidewalk
4. Traffic Control and Protection for roadways and sidewalk
5. Placement of Subbase Granular Material, 4" min
6. All Portland Cement Concrete
7. Delivery of concrete
8. Placement and consolidation, thickness specified
9. Dowels
10. Expansion & Contraction Joints
11. Protective Coat
12. Clean up and disposal of excess material
13. ADA Accessibility Patterning and Coloring.

1.4 CURB REPLACEMENT

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 CURB REPLACEMENT. **Concrete curb and gutter not identified 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 & Contraction Joints
11. Protective Coat
12. Clean up and disposal of excess material

1.5 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 DRIVEWAY PAVEMENT, PCC SIDEWALK AND COMBINATION CONCRETE CURB & GUTTER

- A. SSRBC Article 311.05, Subbase Granular Material, Type B: 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 City of St. Charles 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) or to type III of the standard specifications for high-early strength portland cement
 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. Form Ties

1. Form ties approved by the engineer shall be used. They shall be of such type as to leave no metal closer than one and one-half inches to the surface of the finished concrete and they shall not leave a hole larger than seven-eighths inches in diameter in the exposed surface of the concrete. Wire ties will not be permitted

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 B to thickness, lines and grades shown on drawings and in accordance with SSRBC Section 311.

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 to removal at the discretion of the engineer.
- D. Drill and grout 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 grout two eighteen-inch (18") long, No. 5 deformed bars between existing and new curb and gutter section. Embed at least 9 inches into existing side.
- F. Depositing Concrete

1. Concrete shall be handled from the mixer to the place of final deposit in carts, buggies and shall not be spouted nor delivered by spout or trough, nor dumped into carts with a free fall from the mixer of more than three feet. Every possible precaution shall be taken to prevent separation or loss of ingredients while transporting the concrete.
 2. Concrete shall be spaded and rodded 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 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 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

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SECTION 02633

VAULTS

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 VALVE VAULT, 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, 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.
- D. In addition to the requirements listed above, items in this section shall be in accordance with the details shown on the plans as well as the City of St. Charles' applicable ordinances and engineering design standards.

1.6 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.

1.7 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) and current City of St. Charles standards and details.

- A. Maintain one copy of SSWSMC on site at all times.

1.8 QUALIFICATIONS

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

1.9 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.

1.10 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:
 - 1. Mortar shall be one part Portland cement to not less than one part nor more than two parts plaster sand mixed with the least amount of clean water necessary to provide working mortar.

- C. Reinforcement: Formed steel wire, gage as shown on plans, galvanized finish.
- D. Frames and Covers:
 - 1. Castings shall conform to the requirements of gray iron castings in accordance with ASTM A48.
 - 2. Provide frames and lids as indicated on the plans and in accordance with City of St. Charles standard details.
- E. Base Pad: Pre-cast or Cast-in-place concrete of type specified in Section 03308, leveled top surface.
- F. Additional Valve Vault Items
 - 1. The word water shall be imprinted on the lid.
 - 2. No steps shall be included within valve vaults.

2.2 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 8" 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 02721

AGGREGATE BASE COURSE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Aggregate base course.
- B. Related Sections:
 - 1. Section 02060 – Aggregate.
 - 2. Section 02311 – Rough Grading.
 - 3. Section 02320 – Backfill.
 - 4. Section 02324 – Trenching.
 - 5. Section 02633 – Manholes, Vaults, Frames and Covers.
 - 6. Section 02753 – Portland Cement Concrete Pavement.
 - 7. Section 02763 – Hot Mix Asphalt Pavement.
 - 8. Section 02923 – Landscape Grading.

1.2 REFERENCES

- A. Illinois Department of Transportation (IDOT):
 - 1. Standard Specifications for Road and Bridge Construction (SSRBC), 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 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.

1.3 SUBMITTALS

- A. Section 01340 – Submittals: Requirements for submittals.
- B. Material Source: Submit name of aggregate materials suppliers.

1.4 QUALITY ASSURANCE

- A. Furnish each aggregate material from single source throughout the project.

PART 2 PRODUCTS

2.1 AGGREGATE MATERIALS

- A. SSRBC Article 351.05, Aggregate Base Course, Type B: Comply with SSRBC Article 1004.04, Gradation CA 6, compacted.
 - 1. No substitute or recycled material are permitted without written approval from the Engineer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01300 – Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify compacted substrate is dry and ready to support paving and imposed loads.
- C. Verify substrate has been inspected, gradients and elevations are correct.

3.2 PREPARATION

- A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.
- B. Do not place of soft, muddy, or frozen surfaces.

3.3 AGGREGATE PLACEMENT

- A. Prior to the placement of aggregate base course all areas shall be proof-rolled in accordance with Article 351 of the SSRBC. Any areas of failure as indicated by the Soils Engineer shall be corrected by the Contractor and retested.
- B. Spread aggregate over prepared substrate to a total compacted thickness as indicated on the Final Engineering Plans.

- C. Compact aggregate to 95% maximum density.
- D. Level and contour surfaces to elevations, profiles, and gradients indicated.
- E. Maintain optimum moisture content of fill materials to attain specified compaction density.
- F. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

3.4 TOLERANCES

- A. Section 01400 – Quality Requirements: Tolerances.
- B. Maximum Variation from Flat Surface: 1/4 inch measured with 10 foot straight edge.
- C. Maximum Variation from Thickness: 1/4 inch.
- D. Maximum Variation from Elevation: 1/2 inch.

3.5 FIELD QUALITY CONTROL

- A. Section 01400 – Quality Requirements: Testing, adjusting, and balancing.
- B. Compaction testing shall be performed in accordance with ASTM D1557, ASTM D698 or AASHTO T180.
- C. If tests indicated 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 in accordance with SSRBC Article 351.10.

3.6 PROTECTION OF FINISHED WORK

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

END 02721

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SECTION 02923

LANDSCAPE GRADING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes final grade topsoil for finish landscaping and includes compacting and finish grading the subsoil, placing, leveling and compacting the topsoil, sod and restoration. The contractor will be responsible for determining the means and methods required to return the landscaping on and around the Work to its original condition and to meet the City of St. Charles' expectations.
- B. Related Sections:
 - 1. Section 02924 – Seeding and Soil Supplements.
 - 2. Section 02936 – Restoration and Erosion Control

1.2 REFERENCES

- A. SSRBC Section 211, Topsoil.
- B. SSRBC Section 1081.05(a), Topsoil.
- C. SSRBC Section 251, Mulch and Excelsior Blanket.
- D. SSRBC Section 252, Sod.
- E. ASTM D2487 – Classification of Soils for Engineering Purposes.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Subsoil: Fill Type as specified in Section 02055.
- B. Topsoil: Fill Type as specified in Section 02055.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01300 – Administrative Requirements: Coordination and project conditions.
- B. Verify building, structure and trench backfilling have been inspected and approved by the Engineer. Engineer at their own discretion require compaction and density testing prior to the placement of topsoil.

C. Verify substrate base has been contoured and compacted.

3.2 SUBSTRATE PREPARATION

A. Eliminate uneven areas and low spots.

B. Remove debris, roots, branches, stones, in excess of ½” in size. Remove contaminated subsoil.

C. Scarify surface to depth of 6” where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.3 PLACING TOPSOIL

A. Place topsoil in accordance with Section 02055.

3.4 TOLERANCES

A. Section 01400 – Quality Requirements: Tolerances.

B. Top of Topsoil: Plus or minus 1/2 inch.

3.5 PROTECTION OF INSTALLED WORK

A. Section 01700 – Execution Requirements: Protecting installed Work.

B. Protect landscaping and other features remaining as final Work.

C. Protect existing structures, fences, sidewalks, utilities, paving and curbs.

D. Prohibit construction traffic over topsoil.

3.6 SCHEDULES

A. Unless otherwise indicated on plans, compact topsoil to indicated depths below:

3. Seeded Grass: 6”.

4. Sod: 4”.

5. Shrub Beds: 18”.

6. Flower Beds: 12”.

7. Planter Boxes: To within 3” of box rim.

END 02923

SECTION 02924

SEEDING AND SOIL SUPPLEMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Preparation of topsoil, hydroseeding, mulching, soil testing and fertilizer and maintenance.

B. Related Sections:

1. Section 02311 – Rough Grading.
2. Section 02320 – Backfill.
3. Section 02324 – Trenching.
4. Section 02923 – Landscape Grading
5. Section 02936 – Soil Erosion and Sedimentation Control

1.2 MEASUREMENT AND PAYMENT

A. Seeding, IDOT Class I and Fertilizer:

1. Unit of Measure: Square Yard
2. Method of Measurement: Square Yard for all Seeding, IDOT Class I and Fertilizer at each location shown on the Final Engineering Plans or as directed by Engineer.
3. Basis of Payment: Paid for at the Unit Price for Seeding, IDOT Class I and Fertilizer.
4. Seeding, IDOT Class I and Fertilizer shall include the rehabilitation of any and all disturbed items and areas during the completion of work within this contract as noted by the engineer. Restoration is intended to restore areas disrupted during excavation, transportation of excavated material, installation of improvements and all areas disturbed through the stockpiling or storage of materials and equipment. All areas with existing turf grass shall be restored with topsoil and seed as indicated within the details. The unit price shall include all labor, tools, material, equipment, erosion control and incidentals, including reseeded, necessary to complete the Work specified at each individual location.

B. Erosion Control Blanket:

1. Unit of Measure: Square Yard
2. Method of Measurement: Square Yard for all Erosion Control Blanket at each location shown on the Final Engineering Plans or as directed by Engineer.
3. Basis of Payment: Paid for at the Unit Price for Erosion Control Blanket
4. Erosion Control Blanket shall include the blanketing of any and all areas identified on the plans or as noted by the engineer. All areas where topsoil and seed are installed shall be restored with the use of erosion control blanket as

indicated within the details. The unit price shall include all labor, tools, material, equipment, erosion control and incidentals necessary to complete the Work specified at each individual location.

1.3 REFERENCES

- A. Standard Specifications for Road and Bridge Construction (SSRBC), Current Edition, Illinois Department of Transportation (IDOT):
 - 1. SSRBC Section 250 – Seeding.
 - 2. SSRBC Section 251 – Mulch.
- B. Standard Specifications for Water and Sewer Main Construction in Illinois (SSWSMC), Current Edition.

1.4 SUBMITTALS

- A. Section 01340 – Submittals: Requirements for submittals.
- B. Product Data: Submit data for seed mix, fertilizer, mulch and other accessories.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with Standard Specifications for Road and Bridge Construction (SSRBC), Current Edition, Illinois Department of Transportation (IDOT).
- B. Provide seed mixture in containers showing percentage of seed mix, germination percentage, inert matter percentage, weed percentage, year of production, net weight, date of packaging, and location of packaging.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 – Product Requirements: Product storage and handling requirements.
- B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
- C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

1.7 COORDINATION

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

PART 2 PRODUCTS

2.1 SEED MIXTURE

- A. Seed Mixture, SSRBC 250.07 Class 1A – Salt Tolerant Lawn Mixture.
 - 1. Bluegrass: 60 lb/acre
 - 2. Perennial Ryegrass: 20 lb/acre
 - 3. Audubon Red Fescue: 20 lb/acre
 - 4. Rescue 911 Hard Fescue: 20 lb/acre
 - 5. Fults Salt Grass: 60 lb/acre

2.2 SEED PROTECTION MATERIALS

- A. Erosion Control Blanket: As specified in Section 02936.

2.3 ACCESSORIES

- A. Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.
- B. Fertilizer: Turf Starter Fertilizer, 6–24–24.
- C. Water: Clean, fresh and free of substances or matter that could inhibit vigorous growth of grass.
- D. Herbicide:
 - 1. Seeded Areas (with no blanket): Ronstar 2G as manufactured by Rhone–Poulenc.
 - a. Application Rate: 3 lbs. ai/A (150 lbs. per acre).
 - 2. Blanketed Areas: Snapshot TG as manufactured by DowElanco.
 - a. Application Rate: 3.75 lbs. ai/A (150 lbs. per acre).

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01300 – Administrative Requirements: Coordination and project conditions.
- B. Verify that prepared soil base is ready to receive the Work of this section

3.2 PREPARATION

- A. Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas
- B. Remove debris, roots, branches, stones, in excess of ½” in size. Remove contaminated subsoil..

3.3 FERTILIZING

- A. Apply lime and fertilizer based on the results of the soil test(s) in Section 02923.
- B. Apply after smooth raking of topsoil and prior to roller compaction.
- C. Do not apply fertilizer at same time or with same machine as will be used to apply seed.
- D. Mix thoroughly into upper two inches (2") of topsoil.
- E. Lightly water to aid the dissipation of fertilizer. Irrigate uniformly the top level of soil.

3.4 SEEDING

- A. Conform to SSWSMC Section 21-2.05D and SSRBC Section 250.06.
- B. Apply seed at a total rate of 300 pounds of seed mix per acre evenly in two intersecting directions. Rake in lightly.
- C. Planting Season: Contractor is responsible for assuring that seeding is performed when conditions will allow for proper germination and growth.
- D. Do not sow immediately following rain, when ground is too dry or when winds are over 12 mph.
- E. Roll seeded area with roller not exceeding 112 lbs.

3.5 HYDROSEEDING

- A. Apply fertilizer, mulch and seeded slurry with a hydraulic seeder at a rate of 2400 lbs per acre evenly in one pass.
- B. After application, apply water with a fine spray immediately after each area has been hydro-seeded. Saturate to four inches (4") of soil and maintain moisture levels two to four inches.

3.6 SEED PROTECTION

- A. Identify seeded areas with stakes and string around area periphery. Set string height to twelve inches (12") and space stakes on ten foot (10') intervals.
- B. Cover seeded slopes with erosion control fabric in accordance with Section 02936.

3.7 MAINTENANCE

- A. Mow grass at regular intervals to maintain at a maximum height of two and one half inches (2-1/2"). Do not cut more than 1/3 of grass blade at any one mowing. The first mowing shall take place when seedlings are 40 percent higher than desired height.
- B. Neatly trim edges and hand clip where necessary.
- C. Immediately remove clippings after mowing and trimming. Do not let clippings lay in clumps.
- D. Water to prevent grass and soil from drying out.
- E. Roll surface to remove minor depressions or irregularities.
- F. Control growth of weeds. Apply herbicides. Remedy damage resulting from improper use of herbicides.
- G. Immediately reseed areas which show bare spots.
- H. Repair any washouts or gullies.
- I. Protect seeded areas with warning signs during maintenance period.

3.8 PROTECTION OF INSTALLED WORK

- A. Section 01700 – Execution Requirements: Protecting installed Work.
- B. Prohibit construction traffic over seeded areas.

END 02924

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SECTION 02936

RESTORATION AND EROSION CONTROL

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes final grade topsoil for finish landscaping.
- B. Restoration

1.2 REFERENCES

- A. SSRBC Section 211, Topsoil.
- B. SSRBC Section 251, Mulch and Excelsior Blanket.

1.3 RELATED SECTIONS

- A. Section 02055 – Furnish and Place Topsoil

1.4 MEASUREMENT AND PAYMENT

- A. TOPSOIL FURNISH AND PLACE, 4”
 - 1. Unit of Measure: Square Yard
 - 2. Method of Measurement: Square Yard Unit Price for all topsoil required and as directed by the OWNER throughout the project.
 - 3. Basis of Payment: Shall be paid for at the CONTRACT UNIT PRICE for TOPSOIL FURNISH AND PLACE, 4” as dictated by the engineer. The price shall include all labor, tools, equipment and incidentals to complete the work as specified.
- B. TREE PROTECTION
 - 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 for 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.

1.5 EROSION AND SEDIMENT CONTROL

- A. Measurement and Payment: Erosion and sediment control will not be measured for payment and will be considered incidental to the project.
- B. Contractor shall also be responsible for the monitoring and documentation of all aspects of the SWPPP.

PART 2 PRODUCTS

2.1 Topsoil: Fill Type as specified in Section 02055.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify building and trench backfilling have been inspected.
- C. Verify substrate base has been contoured and compacted.

3.2 SUBSTRATE PREPARATION

- A. Eliminate uneven areas and low spots.
- B. Remove debris, roots, branches, stones, in excess of 1/2 inches in size. Remove contaminated subsoil.
- C. Scarify surface to depth of 4 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.3 PLACING TOPSOIL

- A. Place topsoil in areas where seeding, sodding and planting is required to a depth of 4". Place topsoil during dry weather.
- B. Fine grade topsoil to eliminate rough or low areas. Maintain profiles and contour of subgrade.
- C. Remove roots, weeds, rocks, and foreign material while spreading.

- D. Manually spread topsoil close to plant material and buildings to prevent damage.
- E. Lightly compact placed topsoil.
- F. Remove surplus subsoil and topsoil from site.
- G. Leave stockpile area and site clean and raked, ready to receive landscaping.

3.4 TOLERANCES

- A. Section 01400 - Quality Requirements: Tolerances.
- B. Top of Topsoil: Plus or minus 1/2 inch.

3.5 PROTECTION OF INSTALLED WORK

- A. Section 01700 - Execution Requirements: Protecting installed Work.
- B. Protect landscaping and other features remaining as final Work.
- C. Protect existing structures, fences, sidewalks, utilities, paving and curbs.
- D. Prohibit construction traffic over topsoil.

3.6 SCHEDULES

- A. Unless otherwise indicated on plans, compact topsoil to indicated depths below:
 - 1. Seeded Grass: 4 inches.

3.7 SEEDING

- A. Ground shall be prepared per SSRBC Section 252.05.
- B. Seed shall be placed in accordance with 250.06
- C. Seeding shall be IDOT CLASS I.

3.2 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 be restored to their original condition and approved by the engineer. **Restoration is intended to restore areas both paved and**

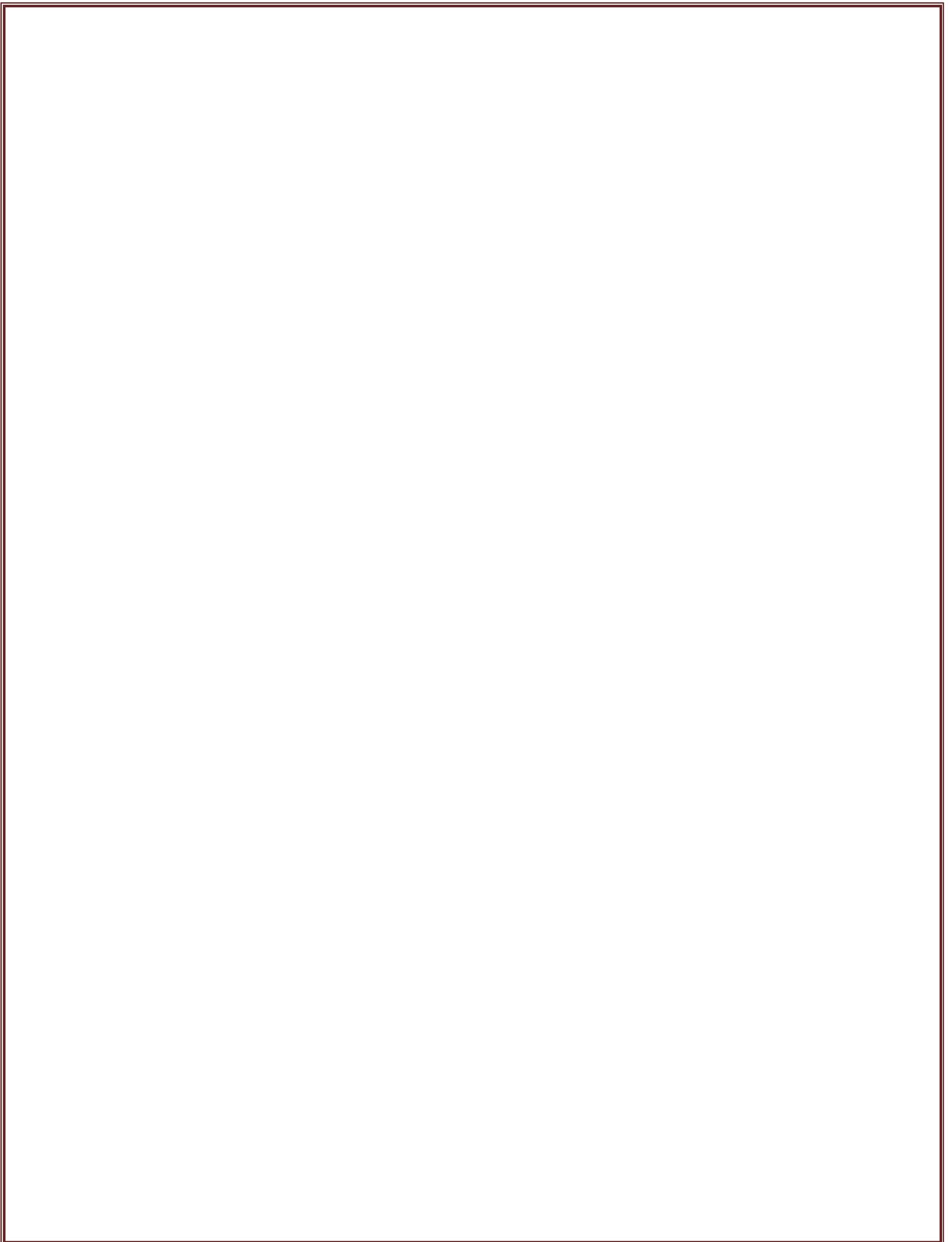
unpaved included but not limited to areas disrupted during excavation, transportation of excavated material, installation of water main, services and all areas disturbed through the stockpiling or storage of materials and equipment.

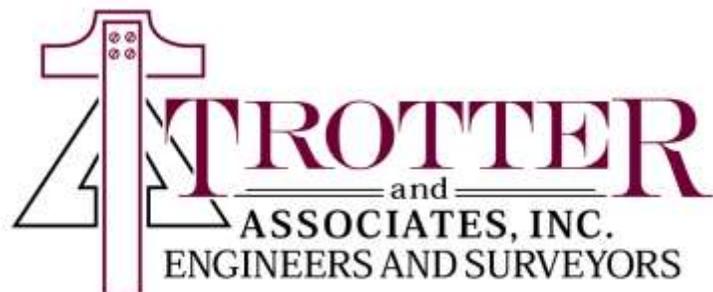
- D. Areas outside the limits of the plans shall be considered incidental unless approved by the owner.**
- E. The contractor will be responsible for any additional maintenance of the rehabilitated items until the item has been restored to its original condition as deemed by the engineer.

3.3 EROSION AND SEDIMENT CONTROL

- A. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- B. Minimize amount of bare soil exposed at one time.
- C. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
- D. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
- E. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- F. Provide, maintain and remove alternate erosion control measures as necessary or as directed by the engineer.
- G. Contractor shall be responsible for completing documentation in accordance with the IEPA SWPPP Guidelines.

END 02936





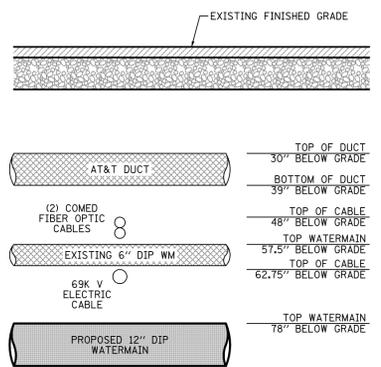
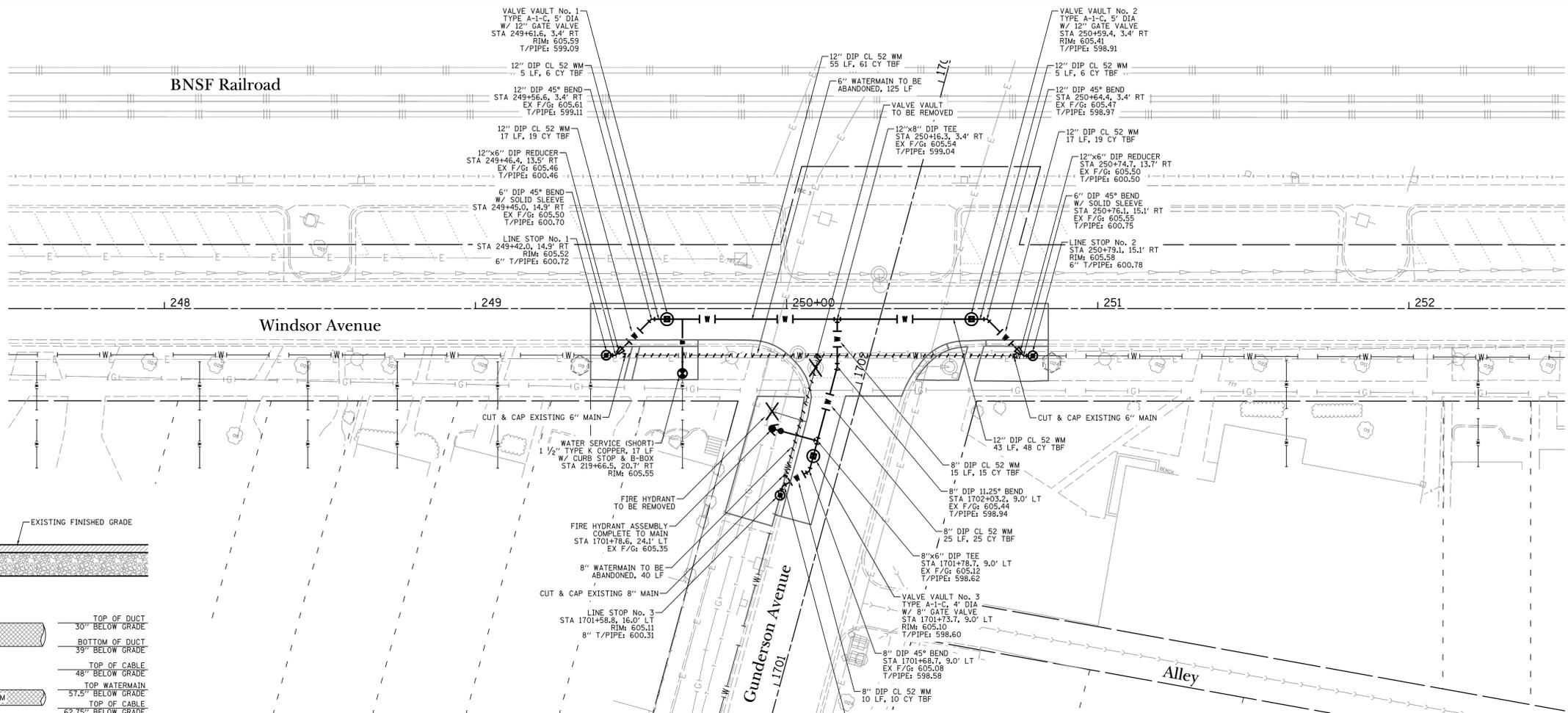
TROTTER AND ASSOCIATES, INC.

**40W201 WASCO ROAD SUITE D
ST. CHARLES, ILLINOIS 60175
PHONE 630.587.0470
FAX 630.587.0475**

**38 W. GRAND AVENUE SUITE 300
FOX LAKE, ILLINOIS 60020
PHONE 224.225.1300**

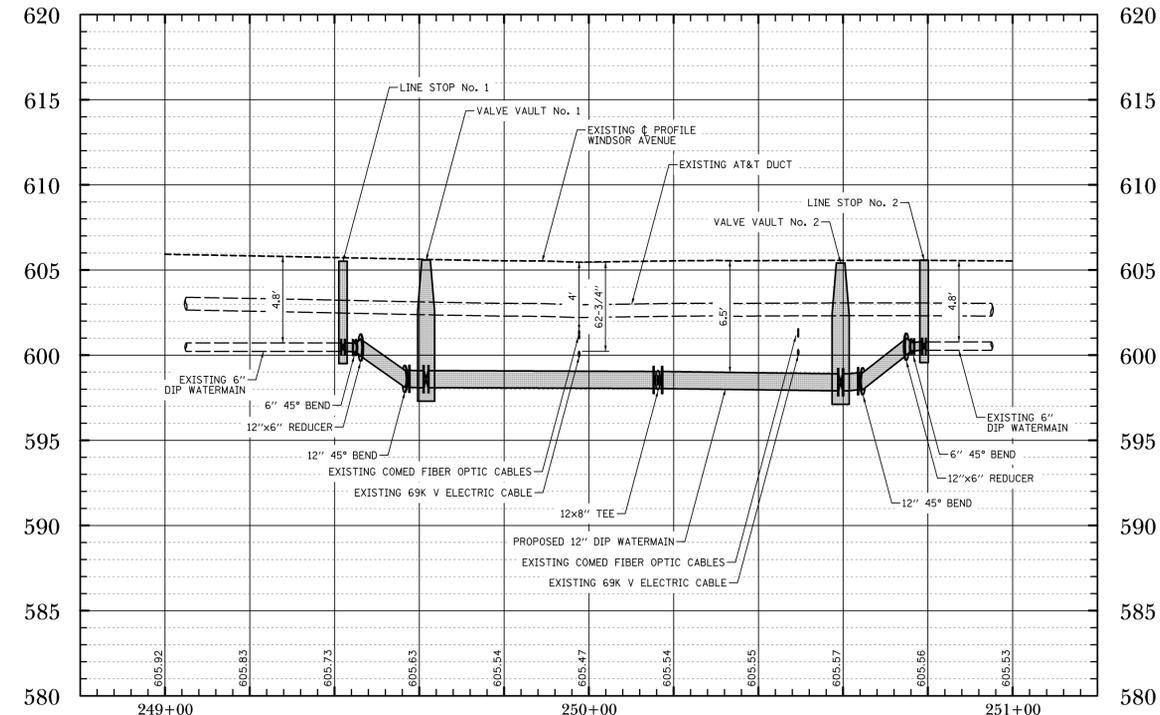
DATE		REVISIONS		ISSUE		PROJECT STATUS	
		PROJECT MANAGER	LOCAL REPRESENTATIVE	ENGINEER	COURT MADE FILE		
		ENGINEER	ENGINEER	ENGINEER	ENGINEER		
		TECHNICIAN	TECHNICIAN	TECHNICIAN	TECHNICIAN		
	7/8/15						ISSUED FOR BIDDING
	6/2/15						ISSUED FOR CITY REVIEW
<p>General Construction Notes</p> <ol style="list-style-type: none"> ALL EARTHWORK, PAVING AND STREET CONSTRUCTION WITHIN THE LIMITS OF THE PROJECT SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS (SSRBC), CURRENT EDITION, AND ALL SUPPLEMENTS AND REVISIONS THERETO; THE SPECIAL PROVISIONS; THESE CONSTRUCTION PLANS; AND THE STANDARD SPECIFICATIONS OF THE CITY/VILLAGE. ALL SEWER AND WATER MAIN CONSTRUCTION WITHIN THE LIMITS OF THIS PROJECT SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS (SSRBC), CURRENT EDITION, AND ALL SUPPLEMENTS AND REVISIONS THERETO; THE SPECIAL PROVISIONS; THESE CONSTRUCTION PLANS; AND THE STANDARD SPECIFICATIONS OF THE CITY/VILLAGE. A COPY OF THE ABOVE SPECIFICATIONS SHALL BE IN THE POSSESSION OF THE CONTRACTOR OF THIS PROJECT AT ALL TIMES. CODES OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY TITLE 35, AND ALL PERTINENT O.S.H.A. REGULATIONS SHALL BE ADHERED TO FOR THE CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTING COMPLETE SETS OF THE PLANS AND PROJECT SPECIFICATIONS TO ALL SUBCONTRACTORS INVOLVED IN THIS PROJECT. A COMPLETE COPY OF THE PLANS AND PROJECT SPECIFICATIONS SHALL BE KEPT ON SITE AT ALL TIMES DURING CONSTRUCTION OPERATIONS. EXISTING UTILITIES AND UTILITY EASEMENTS, BOTH PUBLIC AND PRIVATE, ARE SHOWN ON THE PLANS ACCORDING TO INFORMATION AVAILABLE TO THE ENGINEER AND ARE ONLY INCLUDED FOR THE CONVENIENCE OF THE CONTRACTOR. THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY IN RESPECT TO THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN ON THE PLANS RELATIVE TO THE LOCATION OF UNDERGROUND UTILITY FACILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION IN THE FIELD OF ALL UTILITY LINES, FOR THEIR PROTECTION, AND FOR THE PROPER REPAIR OR REPLACEMENT OF FACILITIES DAMAGED DUE TO CONSTRUCTION OPERATIONS. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES TO MARK FIELD LOCATIONS OF THEIR FACILITY PRIOR TO THE BEGINNING OF CONSTRUCTION. IF EXISTING UTILITY LINES OF ANY NATURE ARE ENCOUNTERED WHICH CONFLICT IN LOCATION WITH NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT SAID CONFLICT MAY BE RESOLVED. CONTRACTOR SHALL INFORM THE OWNER/ENGINEER AND THE RESPONSIBLE MUNICIPAL DEPARTMENT PRIOR TO COMMENCING WORK ON EACH CATEGORY OF CONSTRUCTION, I.E. ELECTRIC, WATERMAIN, SANITARY, STREET, STORM SEWER, ETC. A TWENTY FOUR (24) HOUR NOTICE SHALL BE GIVEN FOR ANY ITEM THAT REQUIRES FINAL TESTING AND INSPECTION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS FOR CONSTRUCTION ALONG OR ACROSS EXISTING STREETS OR HIGHWAYS. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THE PROPER BRACING, SHORING, AND OTHER REQUIRED PROTECTION OF ALL ROADWAYS BEFORE CONSTRUCTION BEGINS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE STREETS OR ROADWAYS AND ASSOCIATED STRUCTURES AND SHALL MAKE REPAIRS AS NECESSARY TO THE SATISFACTION OF THE ENGINEER AND OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ADEQUATE SIGNS AND WARNING DEVICES TO INFORM AND PROTECT THE PUBLIC. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED BY REGULATORY AGENCIES. PERMITS SHALL BE PAID FOR BY THE OWNER. CONTRACTOR SHALL INDEMNIFY OWNER AND ENGINEER AGAINST ANY PERSONAL INJURY CLAIMS OR OTHER CLAIMS RESULTING FROM THE PERFORMANCE OF ANY WORK IN CONNECTION WITH THE INSTALLATION, MAINTENANCE, AND SUBCONTRACTORS SHALL OBTAIN AND MAINTAIN COMPREHENSIVE GENERAL LIABILITY AND OTHER INSURANCE AS SPECIFIED WHICH WILL PROVIDE PROTECTION FROM ANY OF THE AFORESAID CLAIMS WHICH MAY ARISE OUT OF, OR RESULT FROM, THE PERFORMANCE OF WORK BY ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY THE CONTRACTOR, OR BY ANYONE WHOSE ACTS THE CONTRACTOR MAY BE LIABLE FOR. CONTRACTOR MAY NOT COMMENCE WORK UNTIL HE HAS FILED WITH OWNER A CERTIFICATE OF INSURANCE SHOWING COMPLETE COVERAGE OF ALL INSURANCE REQUIRED, SIGNED BY THE INSURANCE COMPANIES AND THEIR AUTHORIZED AGENTS. EACH CERTIFICATE SHALL PROVIDE THAT COVERAGE SHALL NOT BE TERMINATED OR REDUCED WITHOUT THIRTY (30) DAYS ADVANCE WRITTEN NOTICE TO THE OWNER AND ENGINEER. CONTRACTOR SHALL NAME OWNER AND ENGINEER AS ADDITIONAL INSURED ON THE COMPREHENSIVE GENERAL LIABILITY AND AUTOMOBILE LIABILITY INSURANCE POLICIES. THE CITY/VILLAGE AND THEIR REPRESENTATIVES SHALL BE ALLOWED ACCESS TO THE SITE AT ALL TIMES. CONTRACTOR SHALL TAKE WHATEVER STEPS NECESSARY TO ASSURE THE SAFETY, ACCESSIBILITY AND FULL COOPERATION WITH THE CITY/VILLAGE REPRESENTATIVES. THE CITY/VILLAGE AND/OR THEIR REPRESENTATIVES SHALL BE ALLOWED, AT ALL TIMES, TO INSPECT QUANTITY AND QUALITY OF THE WORK AND MATERIALS, AND SHALL BE GIVEN THE AUTHORITY TO REJECT WORK AND/OR MATERIALS THAT DO NOT COMPLY WITH THE PLANS AND SPECIFICATIONS. THE FINAL ACCEPTANCE OF THE WORK SHALL BE AUTHORIZED BY THE CITY/VILLAGE. BEFORE FINAL APPROVAL BY THE OWNER AND FINAL PAYMENT, ALL WORK SHALL BE INSPECTED BY A REPRESENTATIVE OF THE OWNER. THE FINAL PAYMENT WILL BE MADE AFTER ALL OF THE CONTRACTORS WORK HAS BEEN APPROVED AND CERTIFIED TO BE COMPLETE. CONTRACTOR SHALL GUARANTEE THE WORK PERFORMED FOR A PERIOD OF AT LEAST ONE (1) YEAR FROM THE DATE ON THE CERTIFICATE OF COMPLETION AND SHALL BE HELD RESPONSIBLE FOR ANY DEFECTS IN MATERIAL OR WORKMANSHIP OF THIS WORK DURING THAT PERIOD. CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE, SHOP DRAWING SCHEDULE AND PAYMENT SCHEDULE PRIOR TO THE START OF WORK. CONSTRUCTION MEETINGS: <ol style="list-style-type: none"> MEETING SHALL BE WEEKLY AT AN AGREED TIME AND DAY. CONTRACTORS PROJECT MANAGER AND SUPERINTENDENT SHALL BE IN ATTENDANCE AT ALL CONSTRUCTION MEETINGS. CONTRACTOR SHALL PROVIDE CONTINUITY BETWEEN ANY CHANGES IN STAFF AND SHALL PROVIDE WRITTEN NOTICE TO THE ENGINEER ONE WEEK PRIOR TO CHANGES IN STAFF. CONTRACTOR SHALL PRESENT AN UPDATED CONSTRUCTION SCHEDULE, PAY REQUESTS, SHOP DRAWINGS AND AS-BUILT DRAWINGS AT THE WEEKLY MEETINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY AND SECURITY. ANY OPEN EXCAVATIONS OR OTHER POTENTIALLY DANGEROUS AREAS SHALL BE FENCED OR GUARDED IN AN ACCEPTABLE MANNER DURING CONSTRUCTION OPERATIONS AND AT THE END OF EACH DAY FOR THE PROTECTION OF THE CONTRACTORS EMPLOYEES AND FOR GENERAL PUBLIC SAFETY. WHEN REQUIRED TO SUPPLY FIELD OFFICES, CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING POWER AND TELEPHONE FOR ENGINEER AND CONTRACTOR. COST SHALL BE CONSIDERED INCIDENTAL TO WORK. ALL FIELD OFFICES, STORAGE TRAILERS, AND EQUIPMENT SHALL BE PLACED ON SITE. PLACEMENT SHALL BE COORDINATED WITH CITY/VILLAGE. CONTRACTOR SHALL COORDINATE PARKING FOR HIS STAFF PRIOR TO THE START OF WORK. CONTRACTOR SHALL SUPPLY PORTABLE SANITARY FACILITIES FOR WORKERS USE. CONTRACTOR SHALL NOT USE MUNICIPAL STAFF FACILITIES. NO CONSTRUCTION SHALL BE PERMITTED WITHIN 1.5 TIMES THE DIAMETER OF THE DRIP LINE OF ANY TREE TO REMAIN. NO BURNING OR INCINERATION OF TREES, BRUSH OR RUBBISH WILL BE PERMITTED. DIMENSIONS NOT SHOWN ON THE PLANS ARE TO BE DETERMINED BY THE MANUFACTURER/CONTRACTOR AND/OR FIELD VERIFIED DURING CONSTRUCTION. <p>Water Distribution</p> <ol style="list-style-type: none"> ALL WATERMAIN CONSTRUCTION WITHIN THE LIMITS OF THIS PROJECT SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, CURRENT EDITION, AND ALL SUPPLEMENTS AND REVISIONS THERETO; THE SPECIAL PROVISIONS; THESE CONSTRUCTION PLANS; AND THE STANDARD SPECIFICATIONS OF THE CITY/VILLAGE. A COPY OF THE ABOVE SPECIFICATIONS SHALL BE IN THE POSSESSION OF THE CONTRACTOR OF THIS PROJECT AT ALL TIMES. CONTRACTOR SHALL NOTIFY THE CITY/VILLAGE AT LEAST 48 HOURS IN ADVANCE OF ANY CONNECTIONS TO OR SHUTDOWNS OF THE WATER DISTRIBUTION SYSTEM. ALL SHUT DOWNS SHALL BE ACCOMPLISHED UNDER THE DIRECTION OF THE CITY/VILLAGE. GRANULAR BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL BE PROVIDED FOR THE ENTIRE LENGTH OF THE WATERMAIN AND SERVICES. THE COST FOR THE BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL BE MERGED WITH THE COST OF THE MAIN AND SERVICES RESPECTIVELY. SELECT GRANULAR TRENCH BACKFILL SHALL BE PROVIDED FOR ALL WATERMAIN AND SERVICES UNDER OR WITHIN 2 FEET HORIZONTALLY OF A PAVED SURFACE, CURB AND GUTTER OR SIDEWALK. TRENCH BACKFILL MATERIAL SHALL BE IDOT GRADATION CA-6 OR FA-6 COMPACTED TO 90% MODIFIED PROCTOR DENSITY. ALL SURPLUS EXCAVATED MATERIAL FROM THE TRENCH SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR AT HIS EXPENSE. ALL WATERMAIN, HYDRANT LEADS, AND SERVICES SHALL HAVE A MINIMUM COVER OF 5' - 0" FROM THE PROPOSED FINAL GROUND SURFACE. ALL WATERMANS SHALL BE DUCTILE CAST IRON, CLASS 52, IN ACCORDANCE WITH ANSI/AWWA C-151/A21.51 AND ANSI/AWWA C-111/A21.11 STANDARDS. FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT CONFORMING TO THE LATEST ANSI SPECIFICATION A21.0 AND AWWA C-100. ALL PIPE AND FITTINGS SHALL BE CEMENT LINED IN ACCORDANCE WITH AWWA C-104. JOINTS SHALL BE PUSH-ON OR MECHANICAL. ELECTRICAL CONDUCTIVITY SHALL BE PROVIDED WITH BRASS WEDES. CORROSION PROTECTION OF THE WATER MAIN SHALL BE PROVIDED THROUGH THE USE OF A PROPERLY INSTALLED 8 MIL POLYETHYLENE DOUBLE WRAPPED EASEMENT WITH TAPED JOINTS. PROVIDE JOINT RESTRAINTS IN ACCORDANCE WITH CITY/VILLAGE STANDARDS. WATERMANS SHALL BE TESTED BY THE CONTRACTOR AND WITNESSED BY A REPRESENTATIVE OF THE PROJECT. TESTING SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF SECTION 41-2.140F OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS. IF EXISTING VALVES ARE TO BE USED FOR PRESSURE TESTING, CONTRACTOR IS RESPONSIBLE FOR THE PERFORMANCE OF THE VALVE. THE COST OF TESTING SHALL BE INCLUDED IN THE UNIT PRICE FOR WATERMAIN. NO ADDITIONAL COMPENSATION WILL BE ALLOWED. WATER SERVICES SHALL BE SOFT TEMPERED, TYPE K COPPER LINES, INSTALLED IN ONE PIECE. CONTRACTOR SHALL MARK THE END OF ALL WATER SERVICE LINES WITH A 4 INCH x 4 INCH PINE WOOD POST AT LEAST TEN (10) FEET IN LENGTH. THE POST SHALL BE BURIED WITH THE LOWER END AT THE INVERT OF THE EXPOSED PORTION OF THE POST SHALL BE PAINTED BLUE TO MARK THE LOCATION OF THE SERVICE LINES. CONTRACTOR SHALL TIE IN THE LOCATION OF THE END OF THE SERVICE LINE BY MEASUREMENTS TO LOT CORNERS AND SHALL FURNISH A COPY OF SUCH MEASUREMENTS TO THE ENGINEER OR CITY/VILLAGE. SERVICE CONNECTIONS SHALL INCLUDE FURNISHING AND INSTALLING ALL FITTINGS, CORPORATION STOPS AND CURB STOPS IN A BOX, AND TAPPING OF THE WATER MAIN AS REQUIRED FOR A COMPLETE WATER SERVICE. CONTRACTOR SHALL TIE IN THE LOCATION OF ALL SERVICE BOXES BY MEASUREMENT TO LOT CORNERS AND SHALL FURNISH A COPY OF SAID MEASUREMENTS TO ENGINEER AND CITY/VILLAGE. WATER SERVICES MAY ONLY BE INTERRUPTED WHEN THE TRANSFER OF SERVICE TO THE NEW MAIN TAKES PLACE. SERVICES SHALL BE TRANSFERRED SUBSEQUENT TO TESTING AND CHLORINATION OF THE PROPOSED MAIN. THE CONTRACTOR SHALL CONTACT THE CITY/VILLAGE WATER DIVISION AT LEAST 48 HOURS PRIOR TO TRANSFER OF SERVICE. RESIDENTS MUST BE INFORMED OF ANY INTERRUPTION TO THEIR WATER SERVICES AT LEAST 24 HOURS IN ADVANCE. ALL VALVES SHALL BE INSTALLED IN VALVE VAULTS HAVING A MINIMUM DIAMETER OF FOUR (4) FEET BELOW THE CONCENTRIC CONE SECTION. THE VAULTS SHALL BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE AND SHALL CONFORM TO THE DETAILS SHOWN ON THE PLANS. (AUXILIARY VALVES FOR FIRE HYDRANTS EXCLUDED) VALVE VAULT STRUCTURES SHALL BE IN ACCORDANCE WITH THESE PLANS AND THE APPLICABLE STANDARD SPECIFICATIONS. WHERE GRANULAR TRENCH BACKFILL IS REQUIRED AROUND THESE STRUCTURES, THE COST SHALL BE CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE STRUCTURE. CONTRACTOR SHALL PROVIDE A BITUMINOUS JOINTING COMPOUND AT ALL JOINTS IN VALVE VAULTS TO PREVENT INFILTRATION. THE COST SHALL BE CONSIDERED INCIDENTAL TO THE VALVE VAULT. ALL JOINT SECTIONS IN VALVE VAULTS SHALL BE SEALED WITH CONTINUOUS BUTYL MASTIC ROPE AND MORTARED WITH NON-SHRINK MORTAR. THE MORTAR SHALL BE COMPOSED OF ONE PART CEMENT TO THREE PARTS SAND, BY VOLUME, BASED ON DRY MATERIALS AND SHALL BE THOROUGHLY WETTED BEFORE APPLYING. THE COST SHALL BE CONSIDERED INCIDENTAL TO THE VALVE VAULT. CONNECTIONS TO EXISTING VALVE VAULTS SHALL BE MADE BY CORING OR SAW-CUTTING THE EXISTING STRUCTURE. BREAKING INTO STRUCTURES WILL NOT BE ALLOWED. STEPS SHALL BE INSTALLED IN ALL VALVE VAULTS EXCEEDING SIX (6) FEET IN DEPTH. STEPS SHALL BE ON 16 INCH CENTERS. STEPS SHALL BE NEENAH R-1991-1 OR EAST JORDAN 8533. UNLESS INDICATED OTHERWISE, ALL VALVE VAULTS FRAMES SHALL BE NEENAH R-1530. UNLESS INDICATED OTHERWISE, ALL VALVE VAULT LIDS SHALL BE NEENAH R-1712, TYPE B, SELF SEALING WITH A CONCEALED PICK HOLE. WATER SHALL BE CAST INTO THE TOP SURFACE OF THE LID TO IDENTIFY THE LINE. ALL TOPS OF FRAMES FOR VALVE VAULTS SHALL BE ADJUSTED TO MEET FINAL FINISHED GRADE. ADJUSTMENTS ARE TO BE MADE BY THE WATER CONTRACTOR. ALL ADJUSTMENTS SHALL BE MADE WITH PRECAST CONCRETE ADJUSTING RINGS NOT TO EXCEED 12 INCHES. THE COST FOR ADJUSTMENT SHALL BE CONSIDERED INCIDENTAL TO THE STRUCTURE. VALVE BOXES SHALL BE AS DETAILED ON THE PLANS. FIRE HYDRANTS SHALL BE IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION, IN ILLINOIS, LATEST EDITION. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE SPECIFIC REQUIREMENTS SET FORTH UNDER DIVISION IV, SECTION 45-3 GOVERNING CONSTRUCTION DETAILS AND ALSO TO THE DETAILS SHOWN IN THESE PLANS. HYDRANTS SHALL BE PROVIDED WITH MECHANICAL JOINT INLET. HYDRANTS SHALL HAVE ONE SHOP COAT AND ONE FIELD COAT OF PAINT. THE FIELD COAT SHALL MEET THE REQUIREMENTS OF THE CITY/VILLAGE. HYDRANTS SHALL BE SET ON A PRECAST CONCRETE OR STONE BLOCK CAPABLE OF SUPPORTING THE SAME AND THE BOTTOM TWO FEET OF BACKFILL SHALL CONSIST OF COARSE GRAVEL TO PERMIT QUICK DRAINAGE. BACK OF HYDRANT SHALL BE ADEQUATELY BRACED AGAINST UNDISTURBED EARTH. THE COST SHALL BE INCLUDED IN THE UNIT PRICE FOR FIRE HYDRANTS. CONTRACTOR SHALL PROVIDE EAST JORDAN 98725 VALVE BOX STABILIZER AND TYLER SERIES 6850 AUXILIARY VALVE AND AUXILIARY VAULT WITH STAINLESS STEEL TRIM AT ALL FIRE HYDRANTS. TAPPING SLEEVES SHALL BE ROMAC SST-945 STAINLESS STEEL (4 INCH 8 INCH DIAMETER) OR MUELLER MECHANICAL JOINT TAPPING SLEEVE MODEL 6H15 CAST IRON (10 INCH AND LARGER). ALL HARDWARE SHALL BE STAINLESS STEEL. <p>Sanitary and Storm Sewers</p> <ol style="list-style-type: none"> ALL SANITARY SEWER AND STORM SEWER CONSTRUCTION WITHIN THE LIMITS OF THIS PROJECT SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, CURRENT EDITION, AND ALL SUPPLEMENTS AND REVISIONS THERETO; THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS (SSRBC), CURRENT EDITION, AND ALL SUPPLEMENTS AND REVISIONS THERETO; THE SPECIAL PROVISIONS; THESE CONSTRUCTION PLANS; AND THE STANDARD SPECIFICATIONS OF THE CITY/VILLAGE. A COPY OF THE ABOVE SPECIFICATIONS SHALL BE IN THE POSSESSION OF THE CONTRACTOR OF THIS PROJECT AT ALL TIMES. GRANULAR BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL BE PROVIDED FOR THE ENTIRE LENGTH OF THE SEWER AND SEWER SERVICES. THE COST FOR THE BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL BE MERGED WITH THE COST OF THE SEWER AND SERVICES RESPECTIVELY. SELECT GRANULAR TRENCH BACKFILL SHALL BE PROVIDED FOR ALL SANITARY AND STORM SEWER UNDER OR WITHIN 2 FEET HORIZONTALLY OF A PAVED SURFACE, CURB AND GUTTER OR SIDEWALK. TRENCH BACKFILL MATERIAL SHALL BE IDOT GRADATION CA-6 OR FA-6 COMPACTED TO 90% MODIFIED PROTOR DENSITY. ALL SURPLUS EXCAVATED MATERIAL FROM THE TRENCH SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR AT HIS EXPENSE. SANITARY SEWER PIPE SHALL BE DUCTILE IRON PIPE CLASS 50 OR POLYVINYL CHLORIDE (PVC) SDR 26 CONFORMING TO ASTM D-3034, WITH FLEXIBLE ELASTOMERIC SEALED JOINTS CONFORMING TO ASTM D-3212. STORM SEWER AND CULVERT PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) CLASS IV CONFORMING TO ASTM C-76, WITH GASKETED JOINTS MEETING THE REQUIREMENTS OF WATERMAIN QUALITY PIPE IN ACCORDANCE WITH AASHTO M315 / ASTM C-443.05A. SANITARY SEWERS SHALL BE TESTED BY THE CONTRACTOR AND WITNESSED BY A REPRESENTATIVE OF THE PROJECT. TESTING SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF SECTIONS 31-1.12 AND 31-1.13 OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS. METHOD D SHALL BE USED FOR FLEXIBLE PIPE. THE COST OF TESTING SHALL BE INCLUDED IN THE UNIT PRICE FOR SANITARY SEWERS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED. CONTRACTOR SHALL MARK THE END OF ALL SANITARY SERVICE AND SUMP PUMP SERVICE LINES WITH A 4 INCH x 4 INCH PINE WOOD POST AT LEAST TEN (10) FEET IN LENGTH. THE POST SHALL BE BURIED WITH THE LOWER END AT THE INVERT OF THE SERVICE LINE. THE EXPOSED PORTION OF THE POST SHALL BE PAINTED YELLOW TO MARK SANITARY SERVICE LINES AND ORANGE TO MARK SUMP SERVICE LINES. CONTRACTOR SHALL TIE IN THE LOCATION OF THE END OF THE SERVICE LINE BY MEASUREMENTS TO LOT CORNERS AND SHALL FURNISH A COPY OF SUCH MEASUREMENTS TO THE ENGINEER OR CITY/VILLAGE. CONTRACTOR SHALL MAINTAIN A RECORD OF THE LOCATION OF ALL SANITARY SEWER WYE CONNECTIONS ALONG SEWER MAINS BY MEASUREMENT TO THE NEAREST DOWNSTREAM MANHOLE. CONTRACTOR SHALL TIE IN THE LOCATION OF THE END OF ALL SANITARY SEWER SERVICE LINES BY MEASURING THE APPROXIMATE DEPTH FROM THE GROUND TO THE PIPE INVERT. A COPY OF SUCH MEASUREMENTS SHALL BE FURNISHED TO THE ENGINEER OF CITY/VILLAGE. SANITARY SEWER AND STORM SEWER STRUCTURES SHALL BE IN ACCORDANCE WITH THESE PLANS AND THE APPLICABLE STANDARD SPECIFICATIONS, WHERE GRANULAR TRENCH BACKFILL IS REQUIRED AROUND THESE STRUCTURES, THE COST SHALL BE CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE STRUCTURE. CONTRACTOR SHALL PROVIDE A BITUMINOUS JOINTING COMPOUND AT ALL JOINTS IN SANITARY MANHOLES TO PREVENT INFILTRATION. THE COST SHALL BE CONSIDERED INCIDENTAL TO THE SANITARY SEWER STRUCTURE. ALL JOINT SECTIONS IN STORM SEWER STRUCTURES SHALL BE SEALED WITH CONTINUOUS BUTYL MASTIC ROPE AND MORTARED WITH NON-SHRINK MORTAR. THE COST SHALL BE CONSIDERED INCIDENTAL TO THE STORM SEWER STRUCTURE. CONNECTIONS TO EXISTING SANITARY AND STORM MANHOLES SHALL BE MADE BY CORING OR SAW-CUTTING THE EXISTING STRUCTURE. BREAKING INTO STRUCTURES WILL NOT BE ALLOWED. STEPS SHALL BE INSTALLED IN ALL SANITARY AND STORM MANHOLES ON 16 INCH CENTERS. STEPS SHALL BE NEENAH R-1981-1 OR EAST JORDAN 8533. UNLESS INDICATED OTHERWISE, ALL SANITARY AND STORM MANHOLE FRAMES SHALL BE NEENAH R-1712 OR R-1510 UNLESS INDICATED OTHERWISE, ALL SANITARY AND STORM MANHOLE LIDS SHALL BE NEENAH R-1712 OR R-1510, TYPE B, SELF SEALING WITH A CONCEALED PICK HOLE. SANITARY OR STORM SHALL BE CAST INTO THE TOP SURFACE OF THE LID TO IDENTIFY THE LINE. STORM SEWER LIDS, WHERE PRACTICAL, SHALL COMPLY WITH NPDES PHASE II BEST MANAGEMENT PRACTICES THROUGH APPROPRIATE FACIAL MARKINGS. ALL TOPS OF FRAMES FOR SANITARY AND STORM SEWER STRUCTURES SHALL BE ADJUSTED TO MEET FINAL FINISHED GRADE. ADJUSTMENTS ARE TO BE MADE BY THE WATER CONTRACTOR. ALL ADJUSTMENTS SHALL BE MADE WITH PRECAST CONCRETE ADJUSTING RINGS NOT TO EXCEED 12 INCHES. THE COST FOR ADJUSTMENT SHALL BE CONSIDERED INCIDENTAL TO THE STRUCTURE. INLINE CURB DRAINAGE STRUCTURES MAY NOT INCLUDE THE USE OF SHIMS. ALL FRAMES SHALL SIT DIRECTLY ABOVE THE ADJACENT RINGS OR FLAT POT. OFFSET FRAMES WILL NOT BE ACCEPTED. <p>Watermain & Sewer Separation</p> <ol style="list-style-type: none"> HORIZONTAL SEPARATION BETWEEN WATERMANS AND SEWERS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 41-2.01A OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS: <ol style="list-style-type: none"> WATERMANS SHALL BE LOCATED AT LEAST TEN (10) FEET HORIZONTAL FROM ANY EXISTING OR PROPOSED DRAIN, STORM SEWER, SANITARY SEWER, COMBINED SEWER OR SEWER SERVICE CONNECTION. <ol style="list-style-type: none"> LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET; AND THE WATERMAIN INVERT IS AT LEAST 18 INCHES ABOVE THE CROWN OF THE SEWER; AND THE WATERMAIN IS EITHER IN A SEPARATE TRENCH OR IN THE SAME TRENCH ON AN UNDISTURBED EARTH SHELF LOCATED TO ONE SIDE OF THE SEWER. WHEN IT IS IMPOSSIBLE TO MEET A OR B ABOVE, BOTH THE WATER MAIN AND DRAIN OR SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST IRON OR DUCTILE IRON PIPE, PRE-STRESSED CONCRETE PIPE, OR PVC PIPE EQUIVALENT TO WATERMAIN STANDARDS OF CONSTRUCTION. THE DRAIN OR SEWER SHALL BE INSTALLED TO THE MAXIMUM EXPECTED SURCHARGE HEAD BEFORE BACKFILLING. SEE STANDARD DRAWING NO. 18 IN THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS. VERTICAL SEPARATION BETWEEN WATERMANS AND SEWERS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 41-2.01B OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS: <ol style="list-style-type: none"> A WATERMAIN SHALL BE SEPARATED FROM A SEWER SUCH THAT ITS INVERT IS A MINIMUM OF 18 INCHES ABOVE THE CROWN OF THE DRAIN OR SEWER WHENEVER WATERMANS CROSS STORM, SANITARY, OR SEWER SERVICE CONNECTIONS. THE VERTICAL SEPARATION SHALL BE MAINTAINED FOR THAT PORTION OF THE WATERMAIN CROSSING UNDER A SEWER OR DRAIN. SUPPORT THE SEWER OR DRAIN LINES TO PREVENT SETTLING AND BREAKING THE WATERMAIN, AS SHOWN ON THE PLANS APPROVED BY THE ENGINEER. <ol style="list-style-type: none"> IT IS IMPOSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION AS DESCRIBED IN A ABOVE; OR THE WATERMAIN PASSES UNDER A SEWER OR DRAIN. A VERTICAL SEPARATION OF 18 INCHES BETWEEN THE INVERT OF THE SEWER OR DRAIN AND THE CROWN OF THE WATERMAIN SHALL BE MAINTAINED WHERE THE WATERMAIN CROSSES UNDER A SEWER OR DRAIN. SUPPORT THE SEWER OR DRAIN LINES TO PREVENT SETTLING AND BREAKING THE WATERMAIN, AS SHOWN ON THE PLANS APPROVED BY THE ENGINEER. CONSTRUCTION OF WATERMAIN QUALITY PIPE SHALL EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE PERPENDICULAR DISTANCE FROM THE WATERMAIN TO THE SEWER OR DRAIN IS AT LEAST TEN (10) FEET. <p>Pavement / Roadways</p> <ol style="list-style-type: none"> ALL PAVING AND STREET CONSTRUCTION WITHIN THE LIMITS OF THE PROJECT SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS (SSRBC), CURRENT EDITION, AND ALL SUPPLEMENTS AND REVISIONS THERETO; THE SPECIAL PROVISIONS; THESE CONSTRUCTION PLANS; AND THE STANDARD SPECIFICATIONS OF THE CITY/VILLAGE. A COPY OF THE ABOVE SPECIFICATIONS SHALL BE IN THE POSSESSION OF THE CONTRACTOR OF THIS PROJECT AT ALL TIMES. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF ALL REQUIRED PERMITS FOR CONSTRUCTION ALONG OR ACROSS EXISTING STREETS OR HIGHWAYS. BRACING, SHORING AND OTHER REQUIRED PROTECTION OF ALL ROADWAYS BEFORE CONSTRUCTION BEGINS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE STREETS OR ROADWAYS AND ASSOCIATED STRUCTURES AND SHALL MAKE REPAIRS AS NECESSARY TO THE SATISFACTION OF THE ENGINEER AND THE CITY/VILLAGE. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ADEQUATE SIGNS AND WARNING DEVICES TO INFORM AND PROTECT THE PUBLIC DURING CONSTRUCTION OPERATIONS. CONTRACTOR SHALL NOTIFY CITY/VILLAGE ENGINEERING DEPARTMENT AND EMERGENCY DISPATCHER A MINIMUM OF 48 HOURS IN ADVANCE OF ANY ROAD OR LANE CLOSURES. CONTRACTOR SHALL COORDINATE WITH THE CITY/VILLAGE ENGINEERING OFFICE 24 HOURS IN ADVANCE OF CURB PLACEMENT AND/OR PAVING IN THE PUBLIC RIGHT OF WAY. CONTRACTOR SHALL SUPPLY THREE (3) CONCRETE TEST CYLINDERS FOR EACH DAY OF POURING. STREET PAVING AND CURBS TO REMAIN SHALL BE PROTECTED FROM DAMAGE. IF DAMAGED THEY SHALL BE REPLACED TO MEET CITY/VILLAGE STANDARD SPECIFICATION IN MATERIAL AND WORKMANSHIP. SAWCUTTING OF EXISTING SURFACES WHEN REQUIRED FOR REMOVAL OR CONSTRUCTION SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS REMOVAL ITEMS AND WILL NOT BE PAID FOR SEPARATELY, UNLESS NOTED OTHERWISE. PAVEMENT, CURBS, AND SIDEWALKS SHALL BE CONSTRUCTED ON A THOROUGHLY COMPACTED SUBGRADE MEETING THE REQUIREMENTS OF THE IDOT STANDARD SPECIFICATIONS. BASE COURSE SHALL BE AGGREGATE BASE COURSE, TYPE A, IDOT GRADATION CA-6 (CRUSHED STONE, GRADE 8), CONFORMING TO THE CURRENT STANDARD SPECIFICATIONS. SEE PLANS FOR THICKNESS. BASE COURSE SHALL BE PRIMED AT THE RATE OF 0.25 TO .50 GALLONS PER SQUARE YARD WITH A LIQUID ASPHALT CONFORMING TO IDOT STANDARDS AND APPROPRIATE FOR PREVAILING WEATHER CONDITIONS. PRIME COAT AND CLEANING THE EXISTING SURFACE SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. SURFACE COURSE AND BINDER COURSE SHALL CONFORM TO IDOT STANDARD SPECIFICATIONS FOR HOT MIX ASPHALT, EXCEPT WHERE SPECIFIED OTHERWISE. SEE PLANS FOR THICKNESS. ALL CURB AND GUTTER TO BE REMOVED AND REPLACED SHALL BE SAWCUT IN FIVE (5) FOOT SECTION. EXPANSION JOINTS SHALL BE USED WITH DOWEL RODS PER THE DETAIL PROVIDED IN THESE PLANS. CURB AND GUTTER SHALL BE PORTLAND CEMENT CONCRETE WITH AIR ENTRAPMENT OF 5% +/- 1%. A 6 BAG MIX SHALL BE USED WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS. MAXIMUM ALLOWABLE SLUMP IS THREE (3) INCHES. CURING COMPOUND SHALL BE APPLIED AFTER FINISHING. SIDEWALKS SHALL BE PORTLAND CEMENT CONCRETE WITH AIR ENTRAPMENT OF 5% +/- 1%. A 6 BAG MIX SHALL BE USED. MAXIMUM ALLOWABLE SLUMP IS FOUR (4) INCHES. CURING COMPOUND SHALL BE APPLIED AFTER FINISHING. SEE PLANS FOR SIDEWALK THICKNESS. ALL SIDEWALKS WHICH INTERSECT STREET SHALL HAVE HANDICAPPED ACCESSIBLE RAMPS PER IDOT STANDARDS. ALL STRUCTURE ADJUSTMENTS NECESSARY SHALL BE MADE WITH PRECAST CONCRETE ADJUSTING RINGS NOT TO EXCEED A MAXIMUM OF TWELVE (12) INCHES OVERALL IN HEIGHT. BITUMASTIC MATERIAL SHALL BE USED ON ALL JOINTS BETWEEN THE PRECAST ELEMENTS. AFTER FINAL ADJUSTMENTS HAVE BEEN MADE, ALL JOINTS IN PRECAST STRUCTURES SHALL BE MORTARED. THE MORTAR SHALL BE COMPOSED OF ONE PART CEMENT TO THREE PARTS SAND, BY VOLUME, BASED ON DRY MATERIALS AND SHALL BE THOROUGHLY WETTED BEFORE LAYING. <p>Traffic Control and Protection</p> <ol style="list-style-type: none"> ALL TRAFFIC CONTROL DEVICES AND PRACTICES USED WITHIN THE LIMITS OF THE PROJECT SHALL BE IN ACCORDANCE WITH THE ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD), CURRENT EDITION, AND ALL SUPPLEMENTS AND REVISIONS THERETO; THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS (SSRBC), CURRENT EDITION, AND ALL SUPPLEMENTS AND REVISIONS THERETO; THESE CONSTRUCTION PLANS; THE SPECIAL PROVISIONS; AND THE STANDARD SPECIFICATIONS OF THE CITY/VILLAGE. CONTRACTOR SHALL FURNISH THE NAME OF THE INDIVIDUAL RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF THE TRAFFIC CONTROL FOR THIS PROJECT. THE TRAFFIC CONTROL CONTRACTOR SHALL PROVIDE A PHONE NUMBER WHICH CAN BE UTILIZED FOR 24 HOUR EMERGENCY MAINTENANCE OF THE TRAFFIC CONTROL FACILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ADEQUATE SIGNS AND TRAFFIC CONTROL DEVICES TO INFORM AND PROTECT THE PUBLIC DURING CONSTRUCTION OPERATIONS. CONTRACTOR SHALL NOTIFY CITY/VILLAGE ENGINEERING DEPARTMENT AND EMERGENCY DISPATCHER A MINIMUM OF 48 HOURS IN ADVANCE OF ANY ROAD OR LANE CLOSURES. SPECIAL SIGNAGE AS PROVIDED BY THE CITY/VILLAGE SHALL BE MAINTAINED BY THE CONTRACTOR. <p>Earthwork / Excavation / Grading</p> <ol style="list-style-type: none"> ALL EARTHWORK AND GRADING WITHIN THE LIMITS OF THE PROJECT SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS (SSRBC), CURRENT EDITION, AND ALL SUPPLEMENTS AND REVISIONS THERETO; THE SPECIAL PROVISIONS; THESE CONSTRUCTION PLANS; AND THE STANDARD SPECIFICATIONS OF THE CITY/VILLAGE. A COPY OF THE ABOVE SPECIFICATIONS SHALL BE IN THE POSSESSION OF THE CONTRACTOR OF THIS PROJECT AT ALL TIMES. CONTRACTOR SHALL BID WORK BASED ON THEIR OWN BORINGS, EXPLORATIONS AND OBSERVATIONS TO DETERMINE SOIL CONDITIONS AT THE LOCATION OF THE PROPOSED WORK. THE ELEVATIONS SHOWN ON THE CONSTRUCTION PLANS ARE FINISHED GRADE UNLESS NOTED OTHERWISE. THE GRADING OPERATIONS ARE TO BE CLOSELY SUPERVISED AND INSPECTED, PARTICULARLY DURING THE REMOVAL OF UNSUITABLE MATERIAL AND THE CONSTRUCTION OF EMBANKMENTS, BY THE SOILS ENGINEER OR THEIR REPRESENTATIVE. THE REMOVAL AND BACKFILL OF UNSUITABLE MATERIAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR UNSUITABLE SOIL REMOVAL WITH THE QUANTITY DETERMINED BY FIELD MEASUREMENT AND VERIFIED BY THE ENGINEER. CONSTRUCTION ACCESS POINTS TO THE SITE SHALL BE PROTECTED IN SUCH A WAY AS TO PREVENT ACCUMULATIONS OF SOIL ON PUBLIC THROUGHFARES. AT THE END OF EACH DAY THE CONTRACTOR SHALL CLEAN UP ALL SOIL WHICH HAS BEEN TRACKED ONTO PUBLIC STREETS OR AS REQUIRED BY THE CITY/VILLAGE. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE NECESSARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES PRIOR TO BEGINNING CONSTRUCTION. PRIOR TO COMMENCEMENT OF GRADING ACTIVITIES, CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTING CONSTRUCTION FENCE AROUND ALL EXISTING TREES AND LANDSCAPING TO REMAIN. THIS SHALL BE MAINTAINED AT ALL TIMES UNTIL THE COMPLETION OF THE PROJECT. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION, AND PREVENT STORMWATER FROM RUNNING INTO OR STANDING IN EXCAVATED AREAS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR WORK RESULTING FROM CONTRACTOR'S FAILURE TO PROVIDE PROPER DRAINAGE. GRADED AREAS SHALL BE PROTECTED AGAINST DAMAGE FROM EROSION, SEDIMENTATION AND TRAFFIC. ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION OPERATIONS SHALL BE CONNECTED TO THE STORM SEWER SYSTEM OR EXTENDED TO THE OUTLET INTO A DRAINAGE WAY. IF THIS CANNOT BE ACCOMPLISHED, THEN IT SHALL BE REPAIRED OR REPLACED WITH NEW PIPE OF SIMILAR SIZE AND MATERIAL AND PUT IN ACCEPTABLE OPERATING CONDITION. CITY/VILLAGE SEWER DIVISION SHALL BE NOTIFIED OF LINE BREAKS OR WHEN TILES ARE ENCOUNTERED. A RECORD OF THE LOCATION OF ALL FIELD TILE OR DRAIN PIPE ENCOUNTERED SHALL BE KEPT BY THE CONTRACTOR AND TURNED OVER TO THE CITY/VILLAGE UPON COMPLETION OF THE PROJECT. EARTH EXCAVATION SHALL INCLUDE CLEARING, STRIPPING AND STOCKPILING TOPSOIL, REMOVING UNSUITABLE MATERIALS, THE CONSTRUCTION OF EMBANKMENTS, CONSTRUCTING FILLS AND FINAL SHAPING AND TRIMMING TO THE LINES, GRADES AND CROSS-SECTIONS SHOWN ON THE PLANS. GENERAL EXCAVATION ACROSS THE SITE SHALL BE COORDINATED WITH REQUIRED REMOVAL OF SOIL AS CALLED FOR IN THE GEOTECHNICAL REPORT. THE EXCAVATION FOR WALL FOOTINGS, SPREAD FOOTINGS, PITS, ETC. SHALL BE EXCAVATED ON AN INDIVIDUAL LOCALIZED BASIS DOWN TO THE REQUIRED SUBGRADE ELEVATIONS. EACH EXCAVATION SHALL BE EXCAVATED TO A TRIM, LEVEL SURFACE BY METHODS ACCEPTABLE TO THE OWNER'S SOIL TESTING LABORATORY, WITH MINIMAL DISTURBANCE TO THE NATURAL SUBGRADE. THE PERIMETER OF THE GENERAL EXCAVATION SHALL BE RETAINED BY A SOIL RETENTION SYSTEM AS REQUIRED. THE DESIGN, INSTALLATION, AND REMOVAL OF THE RETENTION SYSTEM SHALL BE COMPLETE AND SOLE RESPONSIBILITY OF THE CONTRACTOR. ANY DAMAGE TO NEW OR EXISTING CONSTRUCTION, INSIDE OR OUTSIDE OF THE PROJECT LIMITS, CAUSED BY CONSTRUCTION TECHNIQUES OR MOVEMENTS OF THE SOIL RETENTION SYSTEM, IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED AT HIS EXPENSE. THE EXCAVATION RETENTION SYSTEM SHALL BE DESIGNED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE GEOTECHNICAL DESIGN PARAMETERS AND SOIL PRESSURE AS INDICATED IN THE GEOTECHNICAL EXPLORATION REPORT. CONTRACTOR SHALL COORDINATE ALL ELEMENTS OF THE SOIL RETENTION SYSTEM WITH ALL PERMANENT CONSTRUCTION ELEMENTS, INCLUDING PROCEDURES AND SEQUENCES RELATED WITH THE REMOVAL OF THE RETENTION SYSTEM. TOPSOIL EXCAVATION WILL CONSIST OF EXCAVATING, TRANSPORTING, SPREADING, STOCKPILING, COMPACTING AND FINISHING TOPSOIL MATERIAL IN ACCORDANCE WITH THE LINES AND GRADES ESTABLISHED IN THE PLANS AND AS DIRECTED BY THE ENGINEER. IF THE PLANS SPECIFY THAT THE EXCAVATED TOPSOIL IS TO BE SPREAD ON LOT AREAS OR PARKWAYS, IT SHALL BE PLACED IN UNIFORM LAYERS AND GRADED SMOOTH TO THE MEET THE LINES, GRADES AND MINIMUM THICKNESSES SHOWN ON THE PLANS. IF IT IS SPECIFIED THAT THE TOPSOIL IS TO BE STOCKPILED, A LOCATION WILL BE DESIGNATED ON THE PLANS OR BY THE ENGINEER IN THE FIELD. TOPSOIL SHALL BE REMOVED WITHIN THOSE AREAS THAT WILL REQUIRE EARTH EXCAVATION OR STRUCTURAL FILL MATERIAL. EXISTING VEGETATION SHALL BE REMOVED PRIOR TO STRIPPING TOPSOIL OR FILLING AREAS. CONTRACTOR SHALL STOCKPILE EXCAVATED TOPSOIL AND CLAY ON THE SITE AT SEPARATE LOCATIONS DESIGNATED BY THE OWNER AND IN ACCORDANCE WITH THE SPECIFICATIONS. EXCAVATED MATERIAL SHALL BE STOCKPILED IN SUCH A SEQUENCE SO AS TO ELIMINATE ANY REHANDLING OR DOUBLE MOVEMENTS BY THE CONTRACTOR. FAILURE TO PROPERLY SEQUENCE THE STOCKPILING OPERATION SHALL NOT CONSTITUTE A CLAIM FOR ADDITIONAL COMPENSATION. TOPSOIL SHALL BE PLACED IN OWNER DESIGNATED AREAS FOR FUTURE USE WITHIN AREAS TO BE LANDSCAPED, AND THOSE AREAS NOT REQUIRING STRUCTURAL FILL MATERIAL. PROVIDE NECESSARY EROSION CONTROL MEASURES FOR STOCKPILE. TOPSOIL STOCKPILED FOR PRESPREAD SHALL BE FREE OF CLAY AND SHALL NOT CONTAIN ANY OF THE TRANSITIONAL MATERIAL BETWEEN THE TOPSOIL AND CLAY. THE TRANSITIONAL MATERIAL SHALL BE USED IN NON-STRUCTURAL FILL AREAS OR DISPOSED OF OFF-SITE. UNSUITABLE MATERIAL SHALL BE CONSIDERED AS MATERIAL WHICH IS NOT SUITABLE FOR THE SUPPORT OF PAVEMENT AND BUILDING CONSTRUCTION, AND IS ENCOUNTERED BELOW NORMAL TOPSOIL DEPTHS AND THE PROPOSED SUBGRADE ELEVATION. THE DECISION TO REMOVE SAID MATERIAL, AND TO WHAT EXTENT, SHALL BE MADE BY A SOILS ENGINEER WITH THE CONCURRENCE OF THE OWNER. CONTRACTOR SHALL PROVIDE AS A MINIMUM, A FULLY LOADED SIX-WHEEL DUMP TRUCK FOR PROOF ROLLING THE PAVEMENT SUBGRADE PRIOR TO THE PLACEMENT OF THE CURB AND GUTTER AND THE BASE MATERIAL. THIS SHALL BE WITNESSED BY THE COUNTY, TOWNSHIP AND THE OWNER OR HIS REPRESENTATIVE. ANY UNSUITABLE AREA ENCOUNTERED AS A RESULT OF PROOF ROLLING SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL, OR OTHERWISE CORRECTED, AS APPROVED BY THE SOILS CONSULTANT. SUB-GRADE SHALL BE GRADED TO WITHIN A TOLERANCE OF 0.1 FEET ± OF THE PLAN SUBGRADE ELEVATIONS WHILE MAINTAINING PROPER DRAINAGE. THE ± TOLERANCE WITHIN PAVEMENT AREAS SHALL BE SUCH THAT THE EARTH MATERIALS SHALL BE SUGNAE DURING THE FINE GRADING OPERATION. STRUCTURAL FILL MATERIAL MAY BE PLACED WITHIN THOSE PORTIONS OF THE SITE NOT REQUIRING STRUCTURAL FILL, TO WITHIN SIX (6) INCHES OF THE PLAN FINISHED GRADE ELEVATION. IN AREAS REQUIRING STRUCTURAL FILL, HOWEVER, THIS MATERIAL SHALL NOT BE PLACED OVER TOPSOIL OR OTHER UNSUITABLE MATERIALS UNLESS SPECIFICALLY DIRECTED BY A SOILS ENGINEER WITH THE CONCURRENCE OF THE OWNER. FILL MATERIAL SHALL BE PLACED IN LOOSE LIFTS THAT SHALL NOT EXCEED EIGHT (8) INCHES IN THICKNESS AND THE WATER CONTENT SHALL BE ADJUSTED IN ORDER TO ACHIEVE REQUIRED COMPACTION. COMPACTION OF THE CLAY AND OTHER SUITABLE MATERIALS SHALL BE TO AT LEAST 93% OF THE MODIFIED PROCTOR DRY DENSITY WITHIN PROPOSED BUILDING AND SIDEWALK AREAS. COMPACTION SHALL BE AT LEAST 95% OF THE MODIFIED PROCTOR WITHIN PROPOSED BUILDING PAD AREAS. MODERATE COMPACTION IS REQUIRED IN NON-STRUCTURAL FILL AREAS. PARKWAY RESTORATION SHALL BE ACCOMPLISHED WITH FOUR (4) INCHES OF PULVERIZED TOPSOIL AND SOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIRST THREE (3) WATERINGS OF THE SOD. ALL RESTORATION SHALL MEET THE SATISFACTION OF THE CITY/VILLAGE. EXCESS MATERIALS SHALL BE COMPLETELY REMOVED FROM THE CONSTRUCTION SITE AND LEGALLY DISPOSED OF OFF-SITE BY THE CONTRACTOR. ALL CONSTRUCTION AND DEMOLITION DEBRIS OR WASTE SHALL BE DISPOSED OF IN A LICENSED LANDFILL, RECYCLED, REUSED, OR OTHERWISE DISPOSED OF AS ALLOWED BY STATE AND/OR FEDERAL SOLID WASTE DISPOSAL LAWS AND REGULATIONS AND SOLID WASTE DETERMINATIONS OF THE TEPA. <p>Soil Erosion and Sediment Control</p> <ol style="list-style-type: none"> ALL SOIL EROSION AND SEDIMENTATION CONTROL PRACTICES AND MEASURES SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE ILLINOIS URBAN MANUAL, CURRENT EDITION, THE SPECIAL PROVISIONS; THESE CONSTRUCTION PLANS; AND WITH COUNTY SOIL EROSION AND SEDIMENT CONTROL ORDINANCE. A COPY OF THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON SITE AT ALL TIMES. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION AND MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ANY MEASURES IN ADDITION TO THOSE SHOWN ON THE PLANS, AS NECESSARY TO PREVENT SOIL EROSION AND SEDIMENTATION. CONTRACTOR SHALL BE RESPONSIBLE FOR INFORMING ANY SUBCONTRACTORS WHO MAY PERFORM WORK ON THIS PROJECT OF THE REQUIREMENTS IN ORDERING AND MAINTAINING THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS SET FOR THE ILLINOIS EPA. RUNOFF FROM DISTURBED AREAS SHALL NOT LEAVE THE SITE WITHOUT FIRST PASSING THROUGH STORMWATER POLLUTION PREVENTION MEASURES OR DEVICES. SOIL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE IN PLACE AND FUNCTIONAL BEFORE LAND IS OTHERWISE DISTURBED ON THE SITE. TEMPORARY SOIL EROSION AND SEDIMENT CONTROL DEVICES AND MEASURES SHALL BE IN PLACE AND FUNCTIONAL UNTIL ALL PERMANENT SOIL EROSION AND SEDIMENT CONTROL ITEMS ARE FULLY FUNCTIONAL. CONTRACTOR SHALL INSPECT SOIL EROSION AND SEDIMENT CONTROL DEVICES AND MEASURES WEEKLY AND AFTER ANY STORM EVENT IN EXCESS OF 1/4 INCH. ANY DEFICIENCIES SHAL BE CORRECTED IMMEDIATELY. BEFORE STARTING CLEARING AND SITE GRADING WORK, A CONSTRUCTION ENTRANCE AND SILT FENCES SHALL BE INSTALLED, AS SHOWN ON THE PLANS, IF DIRECTED BY THE OWNER, COUNTY, TOWNSHIP, OR OTHER AGENCY HAVING JURISDICTION, THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL DEVICES WHERE NEEDED. THE CONSTRUCTION ENTRANCE TO THE SITE SHALL BE STABILIZED WITH GRAVEL PRIOR TO ANY WORK ON THE SITE. THE ENTRANCE SHALL BE MONITORED PERIODICALLY FOR ITS EFFECTIVENESS TO COLLECT DIRT WHICH COULD LEAVE THE SITE VIA CONSTRUCTION VEHICLES. ANY DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY. GRAVELED ROADS, ACCESS DRIVES, PARKING AREAS OF SUFFICIENT WIDTH AND LENGTH, AND VEHICLE WASHDOWN FACILITIES SHALL BE PROVIDED AS NECESSARY TO PREVENT SOIL FROM BEING TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS. ANY SOIL REACHING A PUBLIC OR PRIVATE ROADWAY SHALL BE REMOVED IMMEDIATELY AND AGAIN BEFORE THE END OF EACH WORKDAY. ANY PUBLIC AND/OR PRIVATE ROADS THAT ARE ADJACENT TO THE SITE AND USED FOR INGRESS AND EGRESS, SHALL BE MONITORED AND SWEEP WHEN DIRTY AT THE DIRECTION OF THE OWNER, COUNTY OR TOWNSHIP. IF A STOCKPILE IS TO REMAIN IN PLACE FOR MORE THAN 7 CALENDAR DAYS, SEDIMENT AND EROSION CONTROL SHALL BE PROVIDED AROUND SUCH STOCKPILE. IF THEY ARE TO REMAIN FOR MORE THAN 2 MONTHS, THEN IT IS REQUIRED THAT THE STOCKPILE BE SEEDED SO AS TO MINIMIZE SOIL EROSION BY BOTH WIND AND WATER. THE SURFACE OF STRIPPED AREAS SHALL BE PERMANENTLY OR TEMPORARILY PROTECTED FROM SOIL EROSION WITHIN 7 CALENDAR DAYS AFTER FINAL GRADE IS REACHED. STRIPPED AREAS NOT AT FINAL GRADE THAT WILL REMAIN UNDISTURBED FOR MORE THAN 7 CALENDAR DAYS AFTER INITIAL DISTURBANCE SHALL BE PROTECTED FROM EROSION. TEMPORARY COVER SHALL BE MAINTAINED CONTINUOUSLY UNTIL PERMANENT COVER IS ESTABLISHED. CONTRACTOR SHALL PROTECT SLOPES WITH SEEDING AND STRAW MULCH NETTING OR WITH EROSION CONTROL BLANKETS. ALL OPEN GRATE STORMWATER INLETS, CATCH BASINS AND MANHOLES SHALL BE PROTECTED WITH SEDIMENT TRAPPING OR FILTERING DEVICES DURING CONSTRUCTION. ADDITIONAL PERIMETER SILT FENCE MAY BE NEEDED IN AREAS NOT SHOWN ON THE PLANS. CONTRACTOR SHALL MONITOR LIMITS OF CONSTRUCTION TO DETERMINE IF SUCH AREAS EXIST AND SHALL INSTALL ADDITIONAL SILT FENCE AS NEEDED. WATER PUMPED OR OTHERWISE DISCHARGED FROM THE SITE DURING CONSTRUCTION DEWATERING SHALL BE FILTERED. DEWATERING DIRECTLY INTO FIELD TILES OR STORMWATER STRUCTURES IS PROHIBITED. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED WITH PERMANENT SOIL STABILIZATION MEASURES. TRAPPED SEDIMENT AND OTHER DISTURBED SOILS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION. AT THE COMPLETION OF THE PROJECT, ALL STORM SEWER PIPES AND STRUCTURES SHALL BE CLEANED AND FREE OF DIRT AND DEBRIS. THE SEDIMENTATION SHALL BE REMOVED FROM THE STORM SEWER SYSTEM AND SHALL NOT BE WASHED OUT IN THE STORM SEWER SYSTEM. 							



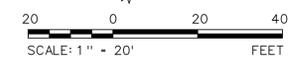
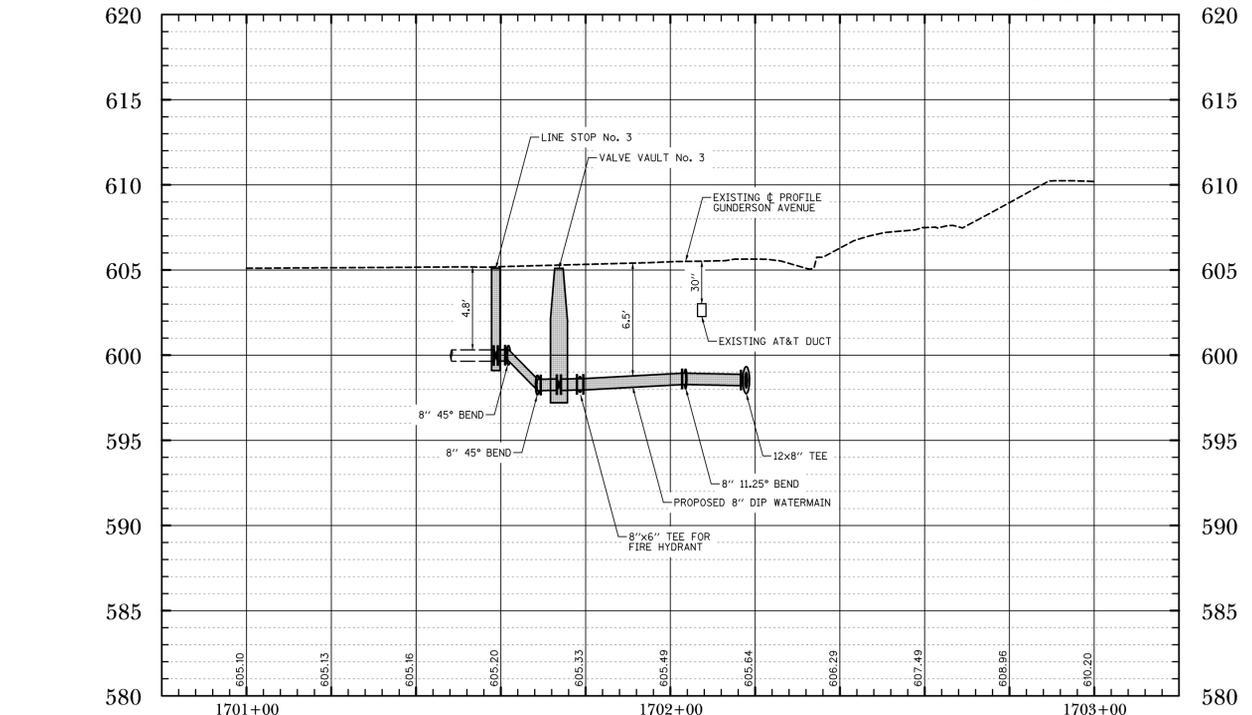


Utility Crossings
Sta 249+97.7 and Sta 250+49.4

Windsor Avenue Profile



Gunderson Avenue Profile



- NOTES:
1. ALL EXISTING CONDITIONS INFORMATION PROVIDED BY THE CITY OF BERWYN. CONTRACTOR TO FIELD VERIFY PRIOR TO CONSTRUCTION OF PROPOSED IMPROVEMENTS.
 2. ACCESS TO THE FIRE STATION MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE CONSTRUCTION SCHEDULE WITH THE FIRE CHIEF (708-484-1664).

PROJECT STAFF	ISSUE	REVISIONS	DATE
PROJECT MANAGER: LOU BERGONZI, P.E. ENGINEER: COURTNEY PYLE ENGINEER: JAMES W. BERGONZI TECHNICIAN: MIKE WATSON TECHNICIAN: JAMES WATSON	2, 1		7/8/15 6/2/15

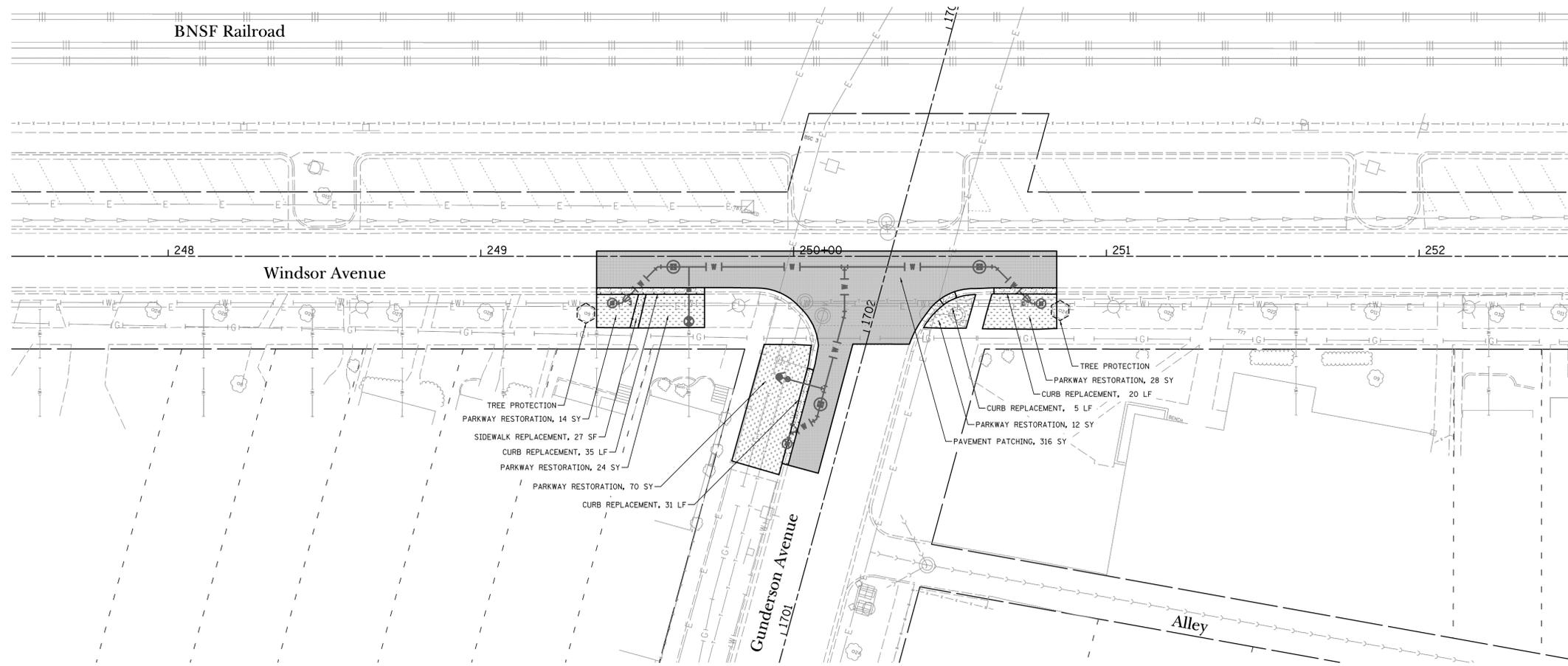
TROTTER ASSOCIATES, INC.
ENGINEERS AND SURVEYORS
409001 Wacker Road, Suite D
St. Charles, IL 60175
PH: 630.587.0770 • FAX: 630.587.0715

Windsor Avenue & Gunderson Avenue Watermain Improvements
Plan and Profile
City of Berwyn, Cook County, Illinois

Project No.:	BER001
Base File:	
Sheet File:	C.2.dgn
Issue Date:	MAY 22, 2015
Scale:	Horiz: 1" = 20' Vert: 1" = 5'
Sheet Number:	C.2

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DATE PRINTED: 7/8/2015
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NOTES:
 1. ALL EXISTING CONDITIONS INFORMATION PROVIDED BY THE CITY OF BERWYN. CONTRACTOR TO FIELD VERIFY PRIOR TO CONSTRUCTION OF PROPOSED IMPROVEMENTS

	"PARKWAY RESTORATION" SHALL INCLUDE: FURNISH & PLACE TOPSOIL, 4" MIN. DEPTH SEEDING, IDOT CL 1 & FERTILIZER EROSION CONTROL BLANKET
	"CURB REPLACEMENT" SHALL INCLUDE: REMOVAL AND REPLACEMENT OF EXISTING CURB OR CURB & GUTTER
	"PAVEMENT PATCHING" SHALL INCLUDE: FULL DEPTH REMOVAL OF EXISTING PAVEMENT 2" HMA SURFACE, MIX "C", N50 6" HMA BINDER, IL 19.0, N50 12" AGGREGATE BASE, TYPE B
	"SIDEWALK REPLACEMENT" SHALL INCLUDE: REMOVAL AND REPLACEMENT OF EXISTING 5" PCC OVER 4" AGGREGATE BASE

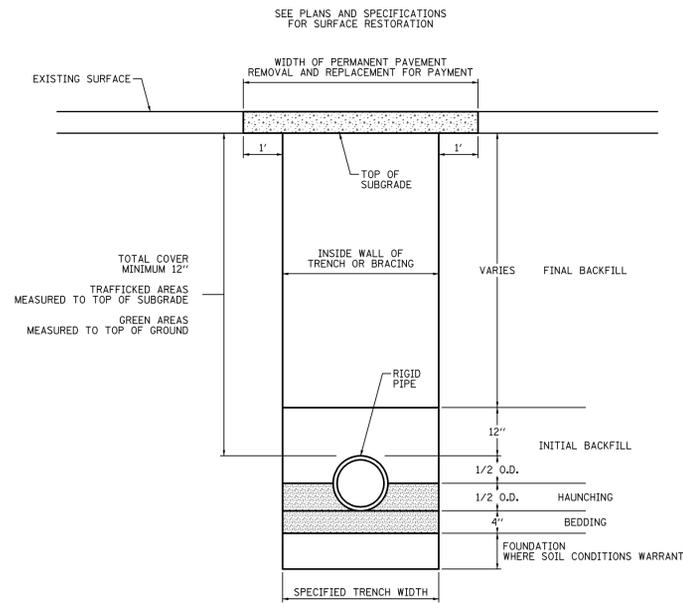
• UNLESS NOTED OTHERWISE ON PLANS

PROJECT STAFF	ISSUE	REVISIONS	DATE
PROJECT MANAGER: LOU BERGSON, P.E.			
ENGINEER: COURTNEY WAGLE, P.E.			
ENGINEER: MIKE WADSWORTH			
TECHNICIAN: MIKE WADSWORTH			
	2.	ISSUED FOR BIDDING	7/8/15
	1.	ISSUED FOR CITY REVIEW	6/23/15

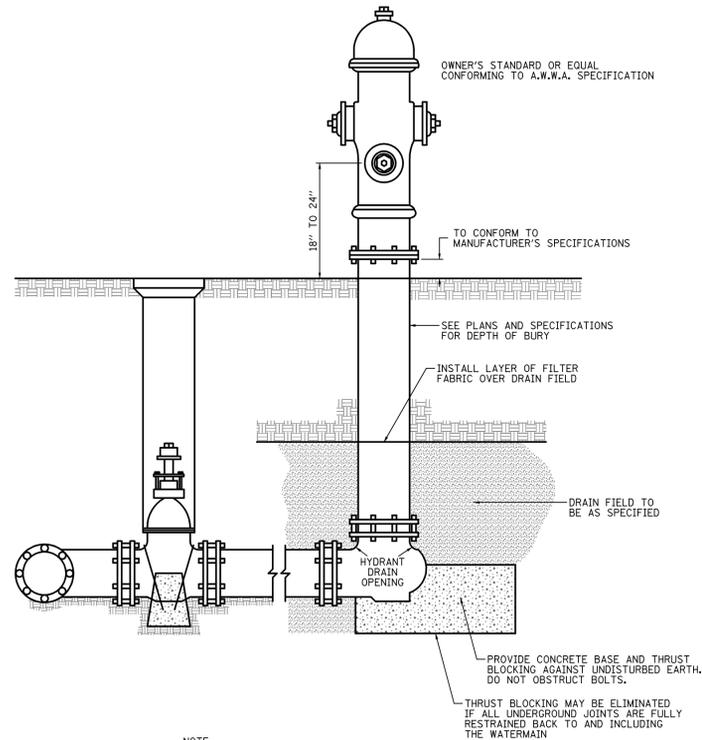
TROTTER
 ASSOCIATES, INC.
 ENGINEERS AND SURVEYORS
 404001 Wisco Road, Suite D
 St. Charles, IL 60175
 Ph: 630.587.0170 • Fax: 630.587.0175

Windsor Avenue & Gundersen Avenue Watermain Improvements
Paving and Restoration
 City of Berwyn, Cook County, Illinois

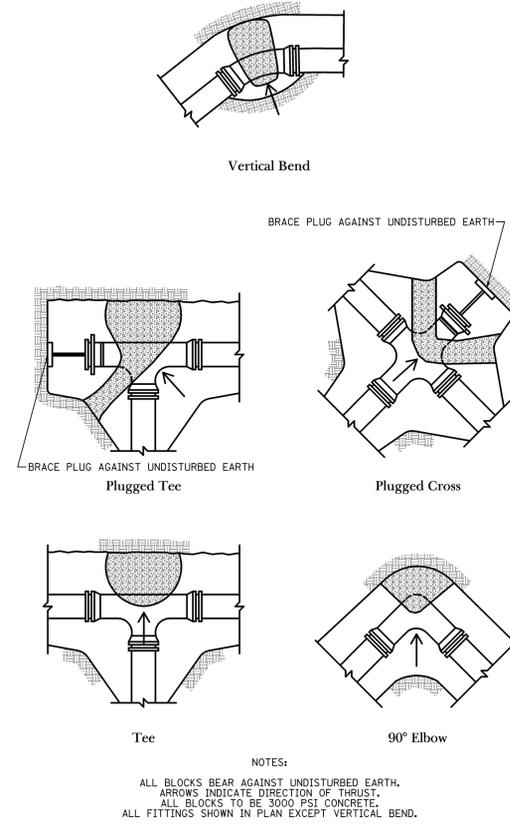
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Base File:	
Sheet File:	C.3.dgn
Issue Date:	MAY 22, 2015
Scale:	1" = 20'
Sheet Number	C.3



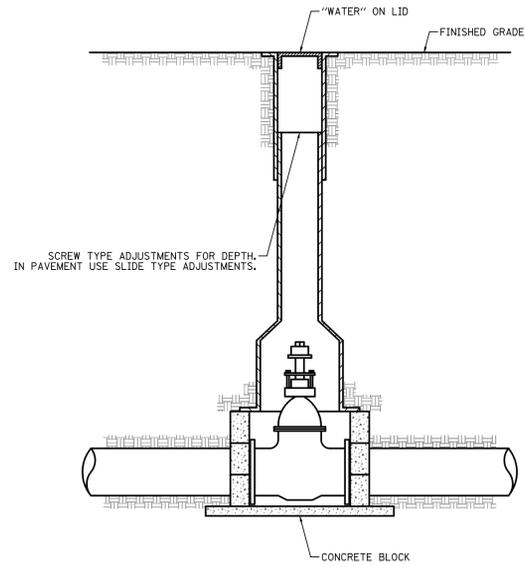
Rigid Pipe Installation



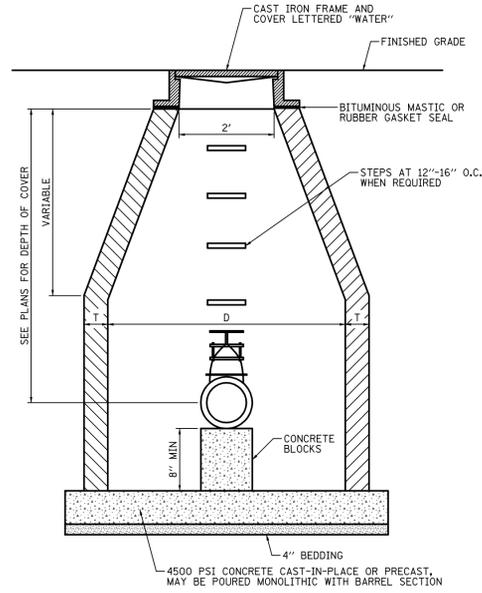
Fire Hydrant Installation



Thrust Block Installation



Valve Box Installation



- NOTES:
- VALVE VAULT DIA SHALL BE 48" FOR 8" AND SMALLER VALVES, AND 60" FOR 10" AND LARGER VALVES.
 - D = DIAMETER OF MANHOLE
 - MATERIAL WALL THICKNESS (T) PRECAST CONC = MIN 1/2 "D" CAST-IN-PLACE CONC = MIN 6"

Valve Vault

Minimum Restrained Lengths (in feet) back from both sides of fitting						
Fitting type/nominal size	4"	6"	8"	10"	12"	16"
90 Degree Bend	17	25	32	38	45	59
45 Degree Bend	7	10	13	16	19	24
22.5 Degree Bend	3	5	6	8	9	12
11.25 Degree Bend	2	2	3	4	4	6
Dead End	39	55	73	87	103	134
Top Side Vertical Offset * (45°)	16	23	30	36	43	55
Bottom Side Vertical Offset * (45°)	4	6	8	10	11	15
Tee Run X Branch **	6" by 1	17				
Tee Run X Branch **	8" by 1	5	34			
Tee Run X Branch **	10" by 1	1	24	49		
Tee Run X Branch **	12" by 1	1	15	41	65	
Tee Run X Branch **	16" by 1	1	1	26	52	95
Reducer ***	6" by 28					
Reducer ***	8" by 52	30				
Reducer ***	10" by 71	54	29			
Reducer ***	12" by 90	75	55	51		
Reducer ***	16" by 123	113	97	94	54	

* Vertical offset with MINIMUM 10' of solid pipe between upper and lower bend.
** Tee with MINIMUM 10' solid pipe on both sides of run. Number indicates length of branch to be restrained.
*** Length back from Large End of Reducer.

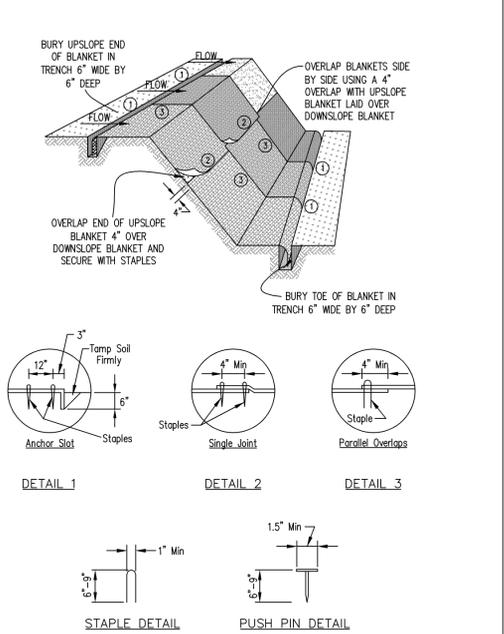
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PROJECT STAFF	ISSUE	REVISIONS	DATE
PROJECT MANAGER: LOU BERDORN, P.E.			
ENGINEER: COURT WAGLE, P.E.			
ENGINEER: MIKE DAVISON			
TECHNICIAN: MIKE DAVISON			
TECHNICIAN: MIKE DAVISON			
	2.		7/8/15
	1.		6/2/15

TROTTER ASSOCIATES, INC.
ENGINEERS AND SURVEYORS
40501 Wisco Road, Suite D
St. Charles, IL 60175
Ph: 630.587.0700 • Fax: 630.587.0415

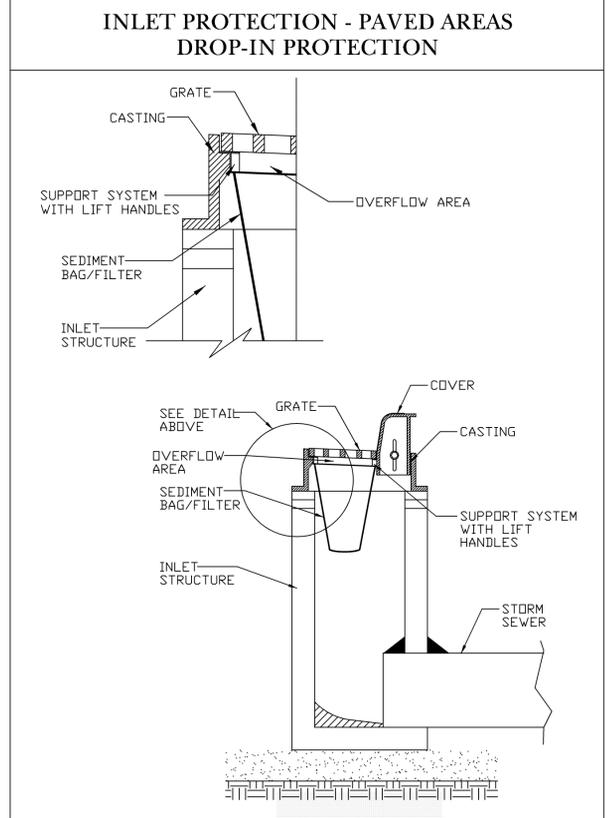
Windsor Avenue & Gunderson Avenue Watermain Improvements
Watermain Details
City of Berwyn, Cook County, Illinois

Project No.: BER001
Base File:
Sheet File: C.4.dgn
Issue Date: MAY 22, 2015
Scale:
Sheet Number
C.4

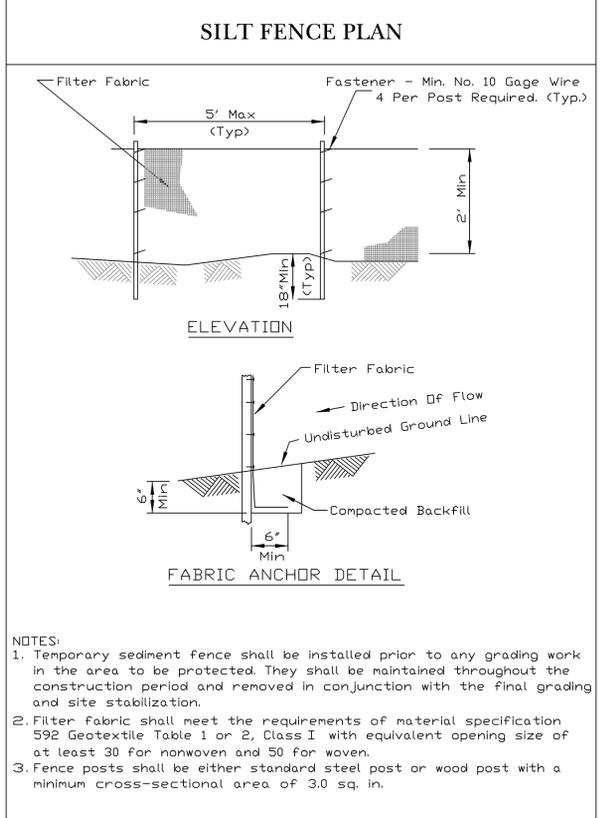


- NOTES:
1. Staples shall be placed in a diamond pattern at 2 per s.y. for stitched blankets. Non-stitched shall use 4 staples per s.y. of material. This equates to 200 staples with stitched blanket and 400 staples with non-stitched blanket per 100 s.y. of material.
 2. Staple or push pin lengths shall be selected based on soil type and conditions. (minimum staple length is 6")
 3. Erosion control material shall be placed in contact with the soil over a prepared seedbed.
 4. All anchor slots shall be stapled at approximately 12" intervals.

EROSION CONTROL
BLANKET INSTALLATION DETAILS



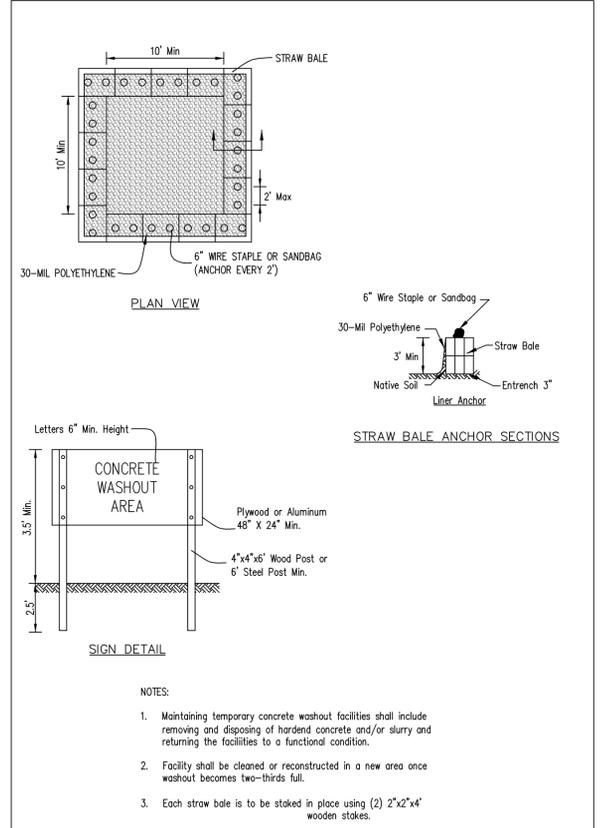
INLET PROTECTION - PAVED AREAS
DROP-IN PROTECTION



SILT FENCE PLAN

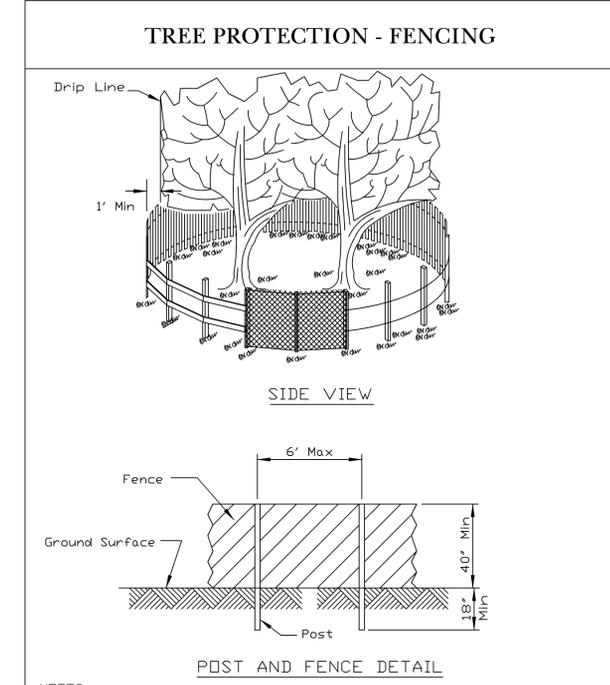
- NOTES:
1. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
 2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class I with equivalent opening size of at least 30 for nonwoven and 50 for woven.
 3. Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3.0 sq. in.

STANDARD DWG. NO.
IL-620
SHEET 1 OF 2
DATE 11-20-01



TEMPORARY CONCRETE
WASHOUT FACILITY - STRAW BALE

- NOTES:
1. Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete and/or slurry and returning the facilities to a functional condition.
 2. Facility shall be cleaned or reconstructed in a new area once washout becomes two-thirds full.
 3. Each straw bale is to be staked in place using (2) 2"x2"x4" wooden stakes.



- NOTES:
1. The fence shall be located a minimum of 1 foot outside the drip line of the tree to be saved and in no case closer than 5 feet to the trunk of any tree.
 2. Fence posts shall be either standard steel posts or wood posts with a minimum cross sectional area of 3.0 sq. in.
 3. The fence may be either 40" high snow fence, 40" plastic web fencing or any other material as approved by the engineer/inspector.

STANDARD DWG. NO.
IL-690
SHEET 1 OF 1
DATE 4-7-94

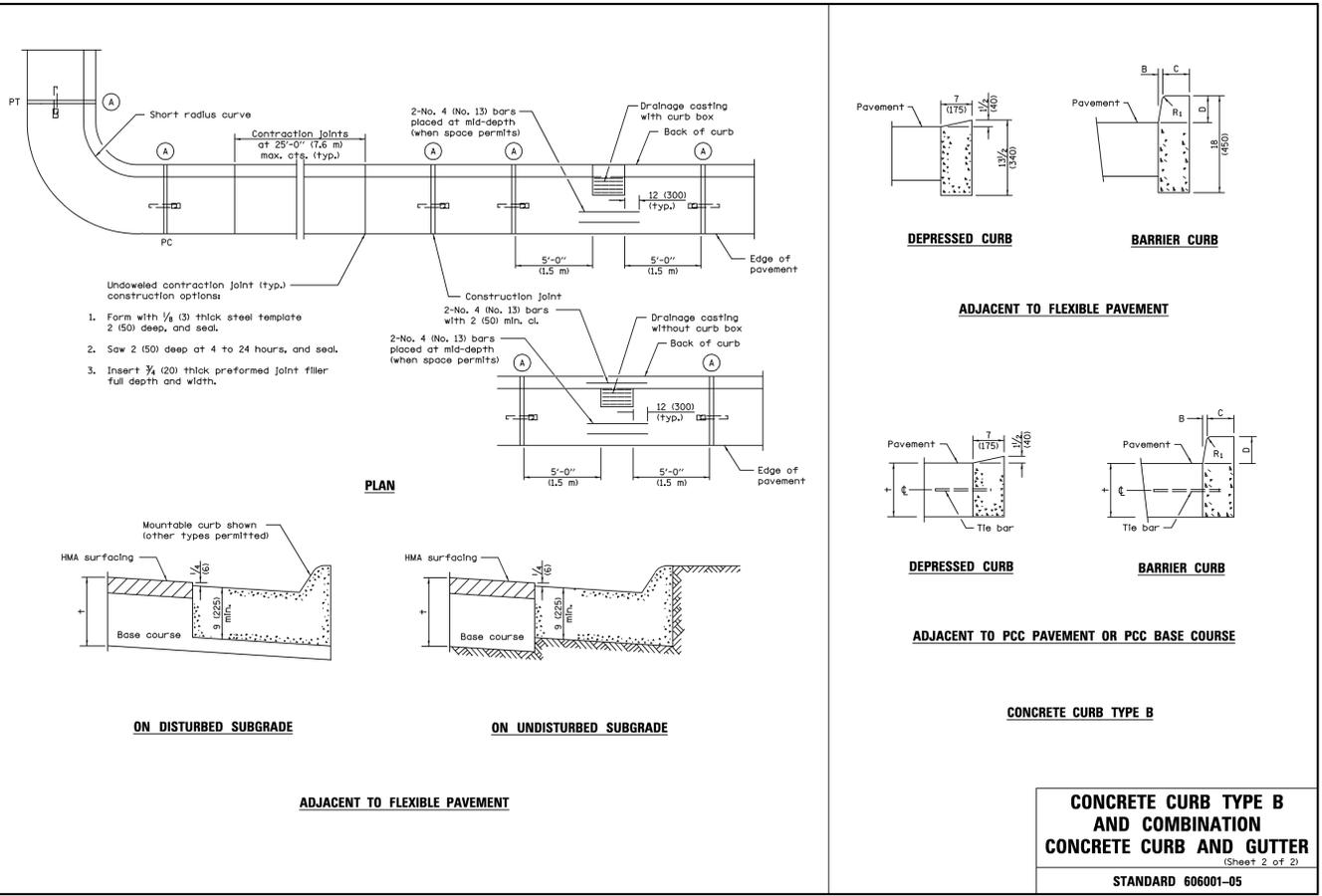
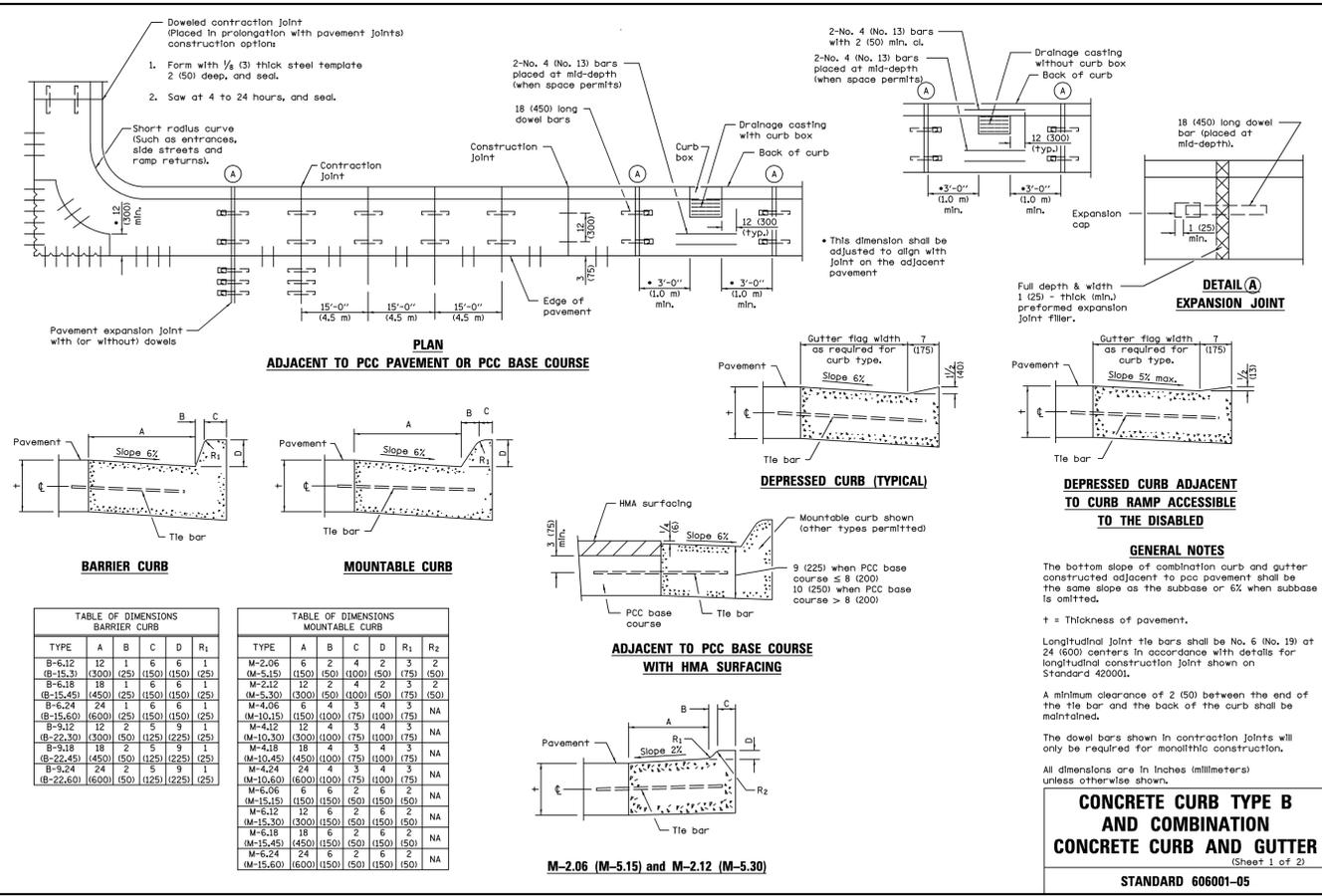
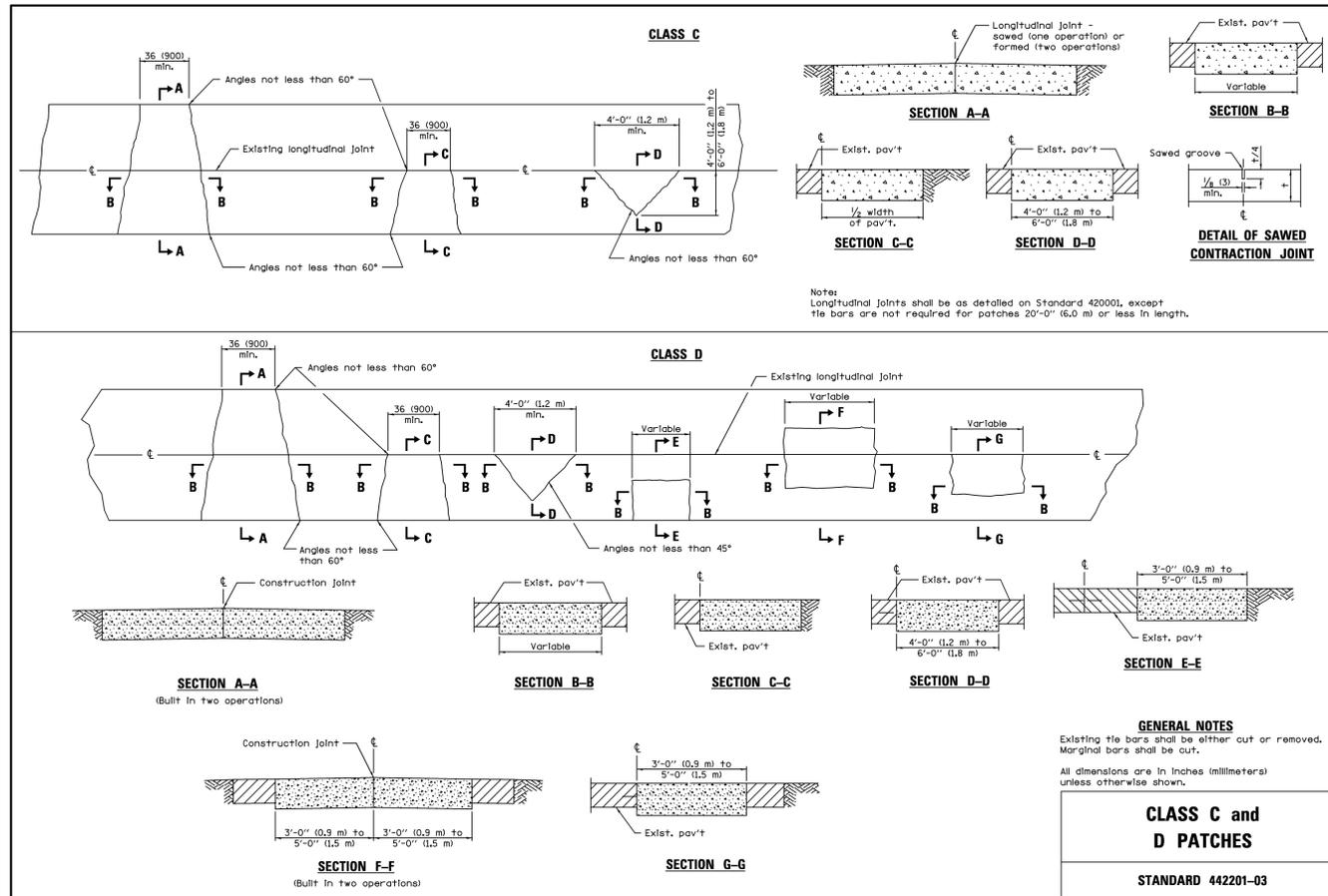


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PROJECT STAFF	REVISIONS	DATE
PROJECT MANAGER: LOU BERDIN, P.E.		
ENGINEER: COURTNEY P.L.		
ENGINEER: MIKE WATSON		
TECHNICIAN: MIKE WATSON		
ISSUE	2.	7/8/15
	1.	6/23/15

Windsor Avenue & Gunderson Avenue Watermain Improvements
Erosion Control Details
City of Berwyn, Cook County, Illinois

Project No.: BER001
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C.5



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TROTTER ASSOCIATES, INC.
 ENGINEERS AND SURVEYORS
 405001 Wisco Road, Suite D
 St. Charles, IL 60175
 Ph: (630) 587-0170 • Fax: (630) 587-0175

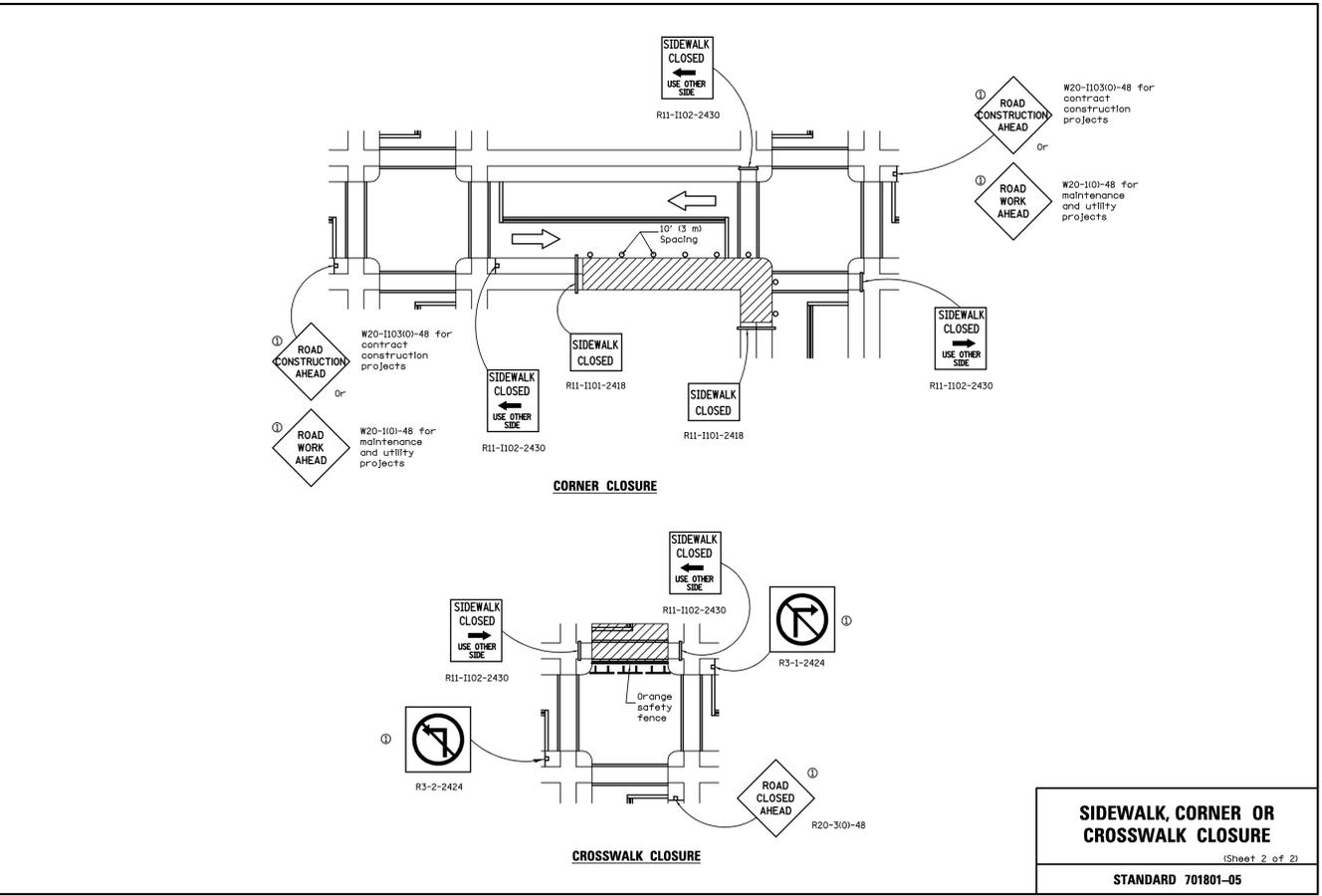
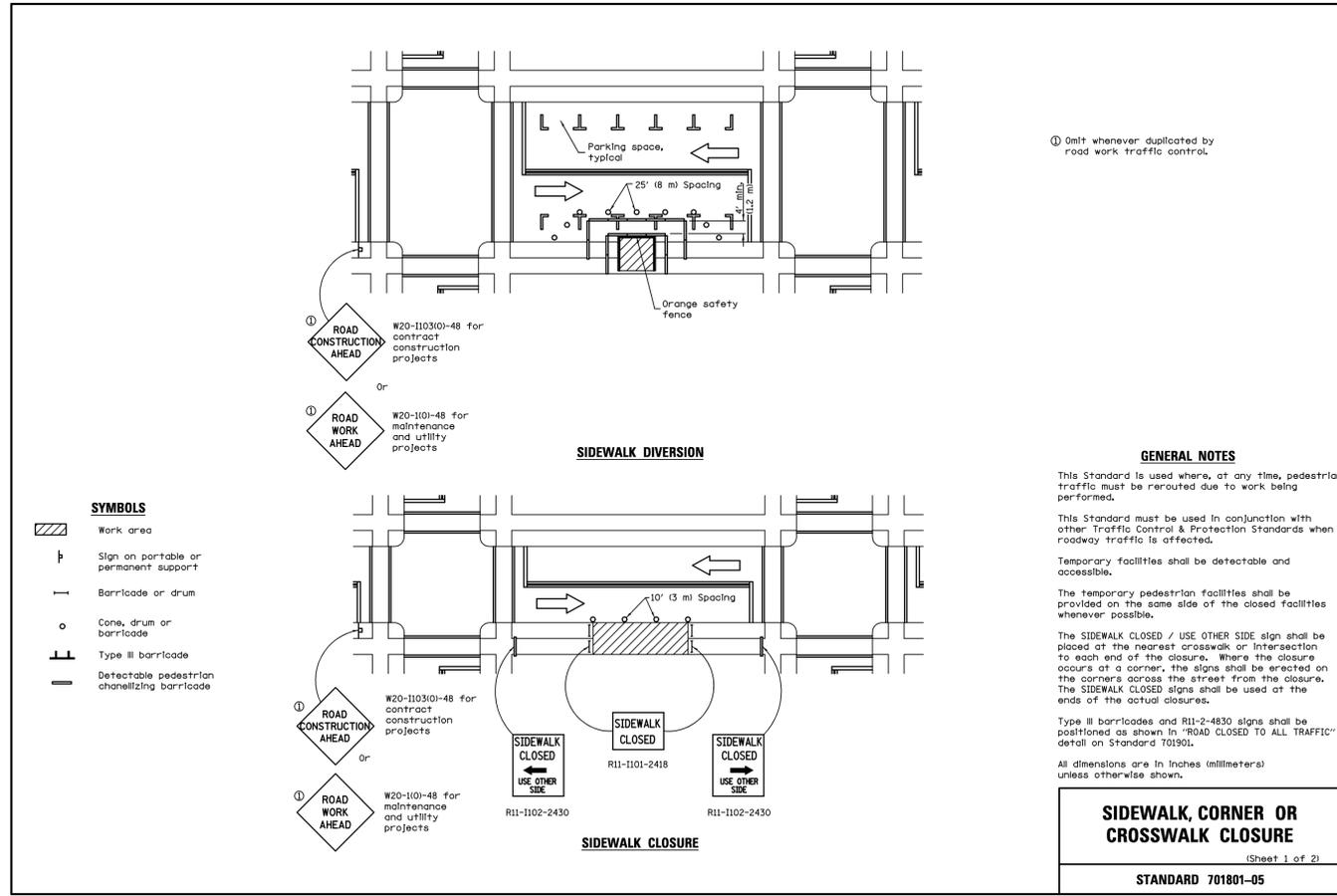
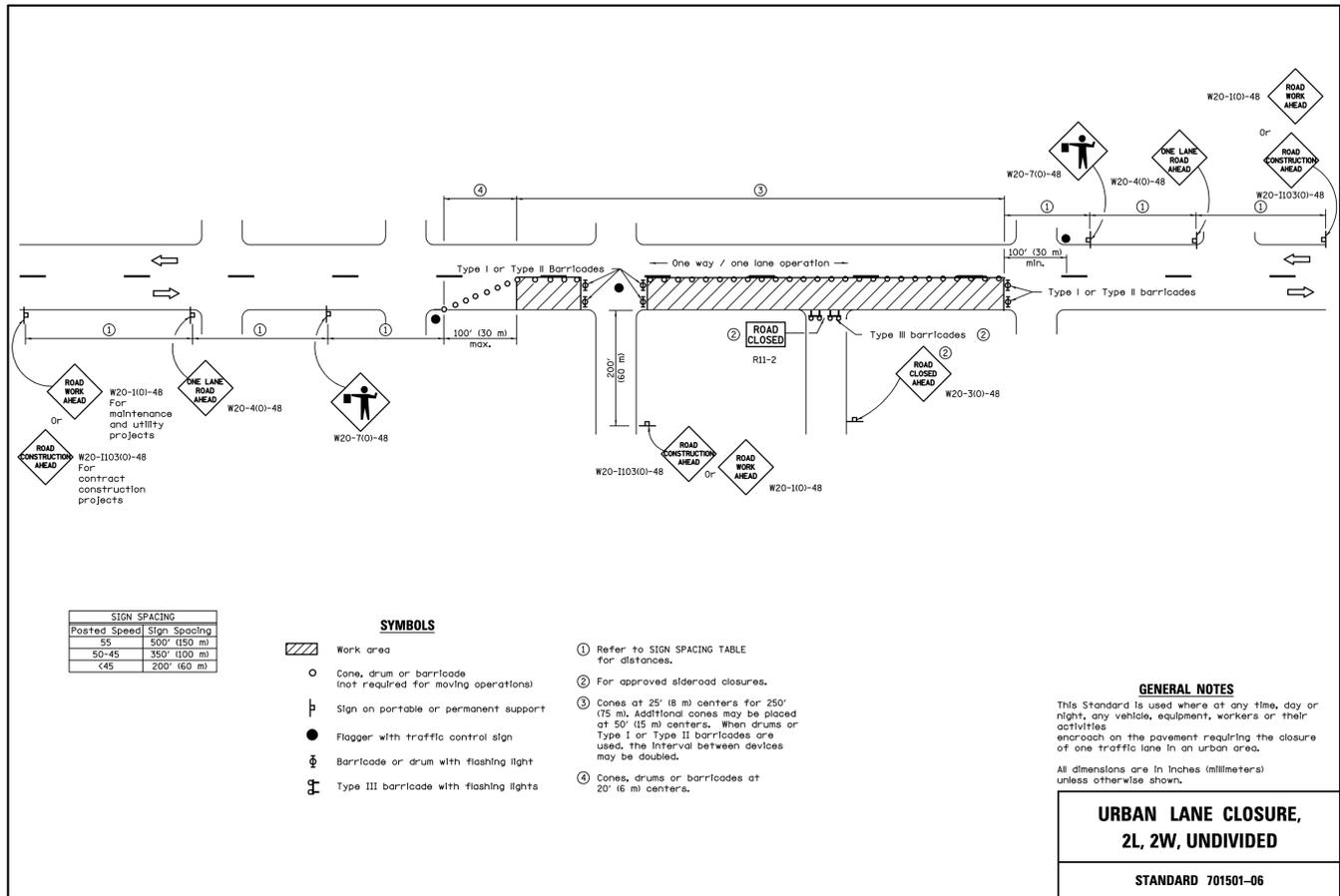
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 Sheet File: C.6.dgn
 Issue Date: MAY 22, 2015
 Scale:
 Sheet Number

City of Berwyn, Cook County, Illinois

Windsor Avenue & Gunderson Avenue Watermain Improvements

Paving Details

ISSUED FOR BIDDING
 7/8/15
 6/2/15



Windsor Avenue & Gunderson Avenue Watermain Improvements

Traffic Control Details

City of Berwyn, Cook County, Illinois

Project No.: BER001
 Base File:
 Sheet File: C.7.dgn
 Issue Date: MAY 22, 2015
 Scale:
 Sheet Number

C.7

TROTTER ASSOCIATES, INC.
 ENGINEERS AND SURVEYORS
 40501 West Road, Suite D
 St. Charles, IL 60175
 Ph: 630.587.0700 • Fax: 630.587.0415

REVISIONS	DATE
ISSUE	
PROJECT STAFF	
PROJECT MANAGER	LOU BERBEROIN, P.E.
ENGINEER	CURT WAGLE, P.E.
ENGINEER	
TECHNICIAN	MIKE WADSWON
TECHNICIAN	
ISSUED FOR BIDDING	7/8/15
ISSUED FOR CITY REVIEW	6/2/15

