



**Project Manual and Bid Specifications for  
Rolling Meadows Park District  
3000 Central Road Building Fire Alarm Replacement  
Rolling Meadows, IL. 60008  
Rolling Meadows Park District PROJECT #064  
20/10 Engineering Group, LLC PROJECT #2122-A-1**

October 20, 2022

**Mandatory pre-bid meeting: October 27, 2022 - 10:00 AM**  
3000 Central Road, Rolling Meadows, IL. 60008  
**Bid opening: November 3, 2022 - 10:00 AM**  
3000 Central Road, Rolling Meadows, IL. 60008

**20/10 Engineering Group, LLC  
1216 Tower Road  
Schaumburg, IL. 60173**

## **3000 Central Road Building Fire Alarm Replacement.**

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## 1. Invitation to Bid

The Rolling Meadows Park District will receive sealed bids for the 3000 Central Road Building Fire Alarm Replacement Project. Bids will be received until exactly 10:00 AM, November 3, 2022 and then publicly opened and read aloud at the Administration Office of the Rolling Meadows Park District, 3000 Central Road, Rolling Meadows, IL 60008. Bids submitted after the closing time will be returned unopened. No oral or telephone bids and or modifications will be considered.

**There will be a mandatory pre bid meeting October 27, 2022 at 10:00 AM at 3000 Central Road, Rolling Meadows, Illinois 60008**

The proposed work is called: “**3000 Central Road Building Fire Alarm Replacement**” located at 3000 Central Road, Rolling Meadows, Illinois 60008, within the Rolling Meadows Park District. Each proposal shall be made on the form furnished by the Park District and must be accompanied by a bid bond, bank cashier’s check, cash or certified check for ten percent (10%) of the bid total.

The Rolling Meadows Park District will accept **the lowest responsive and responsible bid**, and may reject a bid or bids where it determines such rejection to be in the best interest of the Park District. The rejection of a bid or bids shall not result in accrual of any rights, claims or cause of action by the Bidder against the Rolling Meadows Park District. The Park District reserves the right to waive technicalities and irregularities.

**The Illinois Prevailing Wage Act applies to this project along with the Davis Bacon Act.** Contractors must pay and require all subcontractors to pay the prevailing rate of wages to all related laborers, workers, and mechanics involved in this project. As established by the Illinois Department of Labor for each craft or type of work needed to execute the contract in accordance with 820 ILCS 130/.01 et seq. Any increases in cost to the contractor due to changes in the prevailing rate of wage during the terms of any contract shall be at the expense of the contractor and not the Park District. The Contractor shall be solely responsible to maintain accurate records as required by the prevailing wage statute. The Contractor shall be solely liable for paying the difference between prevailing wages and any wages actually received by the laborers, workmen and or mechanics engaged in the Work and in every way defend and indemnify the Park District against any claims arising under or related to the payment of wages in accordance with the Prevailing Wage Act.

The Bid Documents may be downloaded at: [www:rmparks.org](http://www:rmparks.org) or picked up at the Rolling Meadows Park District Administrative Offices located at 3000 Central Road, Rolling Meadows, Illinois 60008, weekdays from 9:00 am until 4:00 pm.

The Rolling Meadows Park District encourages small and minority businesses and women's business firms to submit bids on all projects they are qualified for. **The Park District also encourages all successful contract bidders to utilize small and minority businesses and women's businesses as sub-contractors for supplies, equipment, services and construction.**

Brian McKenna,  
Superintendent of Parks  
Published Daily Herald: October 20, 2022

END OF SECTION

## 2. Project Identification, Summary and Schedule

### 1. Identification and summary of Project

The official name and location of the project shall henceforth be known as:

**“3000 Central Road Building Fire Alarm Replacement”**

The official name and address of the project owner shall henceforth be known as:

**Rolling Meadows Park District  
3000 Central Road.  
Rolling Meadows, IL 60008**

**“3000 Central Road Building Fire Alarm Replacement” Project consists of:**

**The complete replacement of the existing fire alarm system at 3000 Central Road. Replacement shall consist of all fire alarm devices, fire alarm control panels, fire alarm annunciators, modules and wiring. Raceway systems for fire alarm shall be modified and extended as required. The existing building fire alarm system shall remain in operation during the entire project until such time as installation and start up of the new system has been completed and accepted by the Authority Having Jurisdiction.**

**Please refer to plans and project specifications as a reference point.**

***NOTICE: 50% of the labor hours on the project must be performed by actual residents of Illinois. Article 80 of the FY 10 Budget Implementation (Capital) Act, P.A. 96-37 (HB2424).***

### 2. Commencement of Work:

Work shall be commenced within ten (10) days of Notice to Proceed,

Final Completion:

January 30, 2023

END OF SECTION

### **3. Form Requirements**

1. Contractor Compliance & Certifications Attachment:
  - a. As attached
2. Bid Bond:
  - a. AIA Document A310, latest edition
3. Application and Certificate for Payment:
  - a. AIA Document G702, latest edition, with Continuation Sheet G703
4. Affidavit Payment:
  - a. AIA Document G706, latest edition
5. Labor and Material Payment Bond:
  - a. AIA Document A311, latest edition
6. Performance Bond:
  - a. AIA Document A312, latest edition
7. Waiver Forms:
  - a. Chicago Title Insurance Company.
    - i. "Waiver of Lien-to-Date," pink, Form # F.1722 R5/92.
    - ii. "Final Waiver of Lien," blue, Form # F.3870 R1/89

END OF SECTION

## 4. Instruction to Bidders

### 1. Bidding and Contract Documents

Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the Bid Form, certifications and other documents required to be submitted with the Bid Form or in connection with the bid, and other sample bidding and contract forms. **ALL certifications contained within the bid document MUST be completed and submitted in their entirety; failure to comply will result in your bid being disqualified.** The proposed Contract Documents consist of the Owner-Contractor Agreement (AIA Form A-101 latest edition as modified by Owner), Conditions of the Contract (General Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract, and other documents listed in the Agreement and Modifications. Each of the Contract Documents shall be the form of said document as it has been provided or specified by Owner in the Project Manual for use with this Project.

### 2. Interpretation or Clarification of Bidding or Contract Documents

Any explanation desired by a Bidder regarding the meaning or interpretation of the Bidding Documents must be requested in writing and with sufficient time allowed for a reply to reach all prospective Bidders before the bid submission date.

Any interpretation made will be in the form of an addendum to the Bidding Documents and will be distributed to all prospective Bidders. Its receipt by the Bidder must be acknowledged in the space provided on the Bid Form or by letter or telegram received before the time set for opening of bids.

### 3. Conditions Affecting the Work

Bidders shall visit the site and take such other steps as may be reasonably necessary to ascertain the nature and location of the Work, and the general and local conditions which can affect the Work or the cost thereof. Failure to do so will not relieve a Bidder from responsibility for estimating properly the difficulty or cost of successfully performing the Work, and will not entitle the Bidder to any adjustment in the Contract Time or Contract Sum.

### 4. Bid Guarantee

A Bid Guarantee is required by the Invitation to Bid in the amount of 10% of the Contract Bid Amount. Failure to furnish a Bid Guarantee in the proper form and amount, by the time set for opening of bids, will render the bid non-responsive and ineligible for acceptance.

A Bid Guarantee shall be in the form of a bid bond or cashiers check made payable to the Owner. Bid Guarantees, other than those stated, will be returned (a) to unsuccessful Bidders as soon as practicable after the award of the Contract, and (b) to the successful Bidder upon its execution and provision of such further Contract Documents required by the Owner.

The successful Bidder, upon being given a written "Notice of Award," will have ten (10) calendar days to provide the required Labor and Material Payment Bond, Performance Bond, and Insurance Policies or certificates for same, and commence the Work. Failure to comply with the conditions set forth in the Contract Documents shall result in the termination of the Contract for default. In such event, the Contractor may be liable for any costs of performing the Work which exceed the amount of its bid, and the Bid Guarantee shall be available toward offsetting such difference.

#### 5. Preparation and Submission of Bids

Before submitting its bid, each Bidder shall examine carefully all of the Bidding Documents and other documents provided to Bidder by Engineer or Owner pertaining to the Work and visit the site to verify conditions under which the Work will be performed.

Submission of a bid will constitute the unqualified representation of the Bidder, and shall be considered presumptive evidence, that: the Bidder has visited and examined the site, and is fully familiar with and has satisfied itself as to the site and the local and other conditions and difficulties under which the Work is to be performed, including without limitation, (i) surface conditions of the site and subsurface conditions readily observable or ascertainable upon the exercise of reasonable diligence and all structures and obstructions thereon and there under, both natural and manmade; (ii) the nature, location, and character of the general area in which the Project is located, including without limitation, its climatic conditions, available labor supply and labor costs, and available equipment supply and equipment costs; and (iii) the quality and quantity of all materials, supplies, tools, equipment, labor, and professional services necessary to complete the Work in the manner and within the cost and time frame indicated by the Contract Documents; and has correlated the Bidder's personal observations with the requirements of and matters indicated in or by the proposed Contract Documents.

The Bidding Documents, including the Contract Documents, are full and complete; are sufficient to have enable the Bidder to determine the cost of the Work and to construct the Work indicated therein in accordance with applicable laws, regulations, and codes, and otherwise to fulfill all of the Contractor's obligations there under including but not limited to the Contractor's obligation to construct the Work for an amount not in excess of the Contract Sum on or before the date(s) of Substantial and Final Completion; and the omission from the Contract Documents of minor details which ordinarily form a part of first class work and are necessary to the completion of the Work as indicated shall not be cause for any extra



cost but shall be included as if specifically mentioned or detailed.

The Bidder has carefully examined the Drawings, Specifications and other Contract Documents and it has no knowledge of any discrepancies, omissions, ambiguities, or conflicts in or between the Contract Documents except those, if any, which have been clarified by the Engineer by Addenda acknowledged in the Bidder's Bid Form.

A Bidder must include in its bid all costs of labor (in accordance with prevailing wage rates as required by law), materials, equipment, supplies, allowances, fees, guarantees, applicable taxes (**The Rolling Meadows Park District** is exempt from State sales taxes and no amount for such taxes should be included in the bid. **The Rolling Meadows Park District will provide the Contractor with its tax exemption number for use with this project only**), insurance and contingencies, with overhead and profit necessary to produce a complete project, without further cost to the Owner.

No compensation will be allowed by reason of any difficulties which the Bidder could have discovered or reasonably should have been known to a Contractor experienced in the type of Work called for in the Contract Documents.

All bids must be made upon the Bid Form furnished by the Owner, attached hereto, and should give the amounts bid for Work, in words and numbers, and must be signed and acknowledged by the Bidder in order to insure consideration, the Bid Form should be enclosed in the envelope provided or in an envelope marked "**Sealed Bid – "3000 Central Road Building Fire Alarm Replacement" Project**" showing the name and return address of the sender and addressed to: **Rolling Meadows Park District, 3000 Central Road., Rolling Meadows, IL 60008**. Bids must be sealed, marked and addressed as directed above. Failure to do so may result in a premature opening of, or a failure to open, such bid.

The bid submitted must not contain erasures, interlineations, or other corrections unless each correction is suitably authenticated by affixing in the margin immediately opposite the correction the surname or surnames of the person or persons signing the bid.

Modifications of bids already submitted will be considered if received at the office designated in the Invitation to Bid by the time set for opening of bids. Faxed modifications will be considered, if in the required form, but should not reveal the amount of the original or revised bid. Unless specifically requested or allowed in the bid documents, alternate bids will not be considered.

The bid submitted must be accompanied by the Contractor Compliance & Certifications Attachment. Any bid submitted without this attachment will be rejected as non-responsive.

## 6. Prices

The prices are to include the furnishing of all materials, equipment, supplies, tools, transportation, superintendence, insurances, bonds, warranties, and all other facilities, and the performance of all labor and services necessary for the proper and timely completion of the Work in accordance with the Bidding Documents.

## 7. Time Schedule

The timely execution of any project is extremely important. As timing is of importance to us, we ask that you submit **critical path method scheduling information along with your bid**. Failure to supply this information may be considered cause for rejecting your bid.

## 8. Late Bids and Modifications or Withdrawals

Bids and modifications or withdrawals thereof received at the office designated in the Invitation to Bid after the exact time set for opening of bids will not be considered.

## 9. Withdrawal of Bids

Bids may be withdrawn by written or faxed request received from Bidders prior to the time set for opening of bids.

## 10. Public Opening of Bids

Bids will be publicly opened at the time set for opening in the Invitation to Bid. Their content will be made public for the information of Bidders and others interested, who may be present either in person or by representative.

## 11. Award of Contract

It is the intent of the Owner to award a Contract to the lowest responsible Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's own best interest. In determining responsibility of a Bidder, the Owner may consider the following factors among others, the experience of the Bidder on projects of similar size, kind and scope; the Bidder's level of performance on other projects; the size and experience of the Bidder's workforce, Bidder's commitments on other projects which will run concurrently with this Project; Bidder's references; claims against or disputes involving the bidder on other Projects, including labor disputes; cost overruns or delays in completion of other projects, and such other matters as the Owner determines relevant to successful completion of this Project.

The Board may reject any or all bids without disclosure of a reason. The failure to make such a disclosure shall not result in accrual of any right, claim, or cause of action by any Bidder against the **Rolling Meadows Park District**.

## 12. Contract and Insurance

The accepted Bidder shall enter into a written contract, provide the Owner with a Labor and Material Payment Bond and Performance Bond in an amount not less than 100% of the Contract Sum, copies of Workman's Compensation and Comprehensive General Liability Insurance Policies, within ten (10) calendar days of the written "Notice to Proceed" and prior to the commencement of work.

All Contractors must comply with the provisions of all applicable Federal, State and Local laws, including without limitation, laws pertaining to the payment of prevailing rates of wages, the provisions of the Illinois Human Rights Act (Act) dealing with equal employment opportunities (Section 2-105, 775 ILCS 5/2-105) including equality of employment opportunity and the regulations of the Department of Human Rights of the State of Illinois and also must provide for the adoption and implementation of written Sexual Harassment Policies. The Contract with the Bidder will provide for this requirement. The statutory provisions setting forth

What such policies shall include as a minimum under the Act are on file with the District and available to the Contractor upon request.

## 13. Postponement of Date for Opening Bids

The Owner reserves the right to postpone the date of presentation and opening of bids and will give faxed or emailed notice of any such postponement to each interested party.

## 14. Post Bid Information

- a. A Bidder to whom award of a Contract is under consideration shall submit to the Engineer or Owner upon request unless such information has been previously submitted with the Bidder's Bid Form:
  - i. A properly executed AIA Document A305 latest edition, Contractor's Qualification Statement,
  - ii. A list of lawsuits in which the Bidder was/is a named plaintiff or defendant within the last four (4) years and an explanation of the nature and status or outcome of each such lawsuit.
  - iii. A designation of the Work to be performed with the Bidder's own forces;
  - iv. Names of the manufacturers, products, and the suppliers of principal items or systems of materials and equipment proposed for the Work;
  - v. Names of persons or entities (including those who are to furnish materials or equipment fabricated to a special

- design) proposed for the principal portions of the Work using the form included in the Project Manual;
- vi. Project references containing such information as required by the Engineer or Owner

The Bidder will be required to establish to the satisfaction of the Engineer and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

END OF SECTION

## 5. Contractor Compliance and Certifications

**Note: The following certifications form an integral part of the Agreement between the Owner and Contractor. Breach by Contractor of any of the certifications may result in immediate termination of the Contractor's services by Owner.**

THE UNDERSIGNED CONTRACTOR ("CONTRACTOR") HEREBY CERTIFIES, AFFIRMS AND AGREES AS FOLLOWS:

- A. Contractor has carefully read and understands the contents, purpose and legal effect of this document as stated above and hereafter in this document. The certifications contained herein are true, complete and correct in all respects.
- B. Contractor shall abide by and comply with all applicable Federal, State and local laws and rules and regulations including without limitation those relating to 1) fair employment practices, affirmative action and prohibiting discrimination in employment; 2) workers' compensation; 3) workplace safety; 4) wages and claims of laborers, mechanics and other workers, agents, or servants in any manner employed in connection with contracts involving public funds or the development or construction of public works, buildings or facilities; and 5) steel products procurement.

- C. All contracts for this Project are subject to the provisions of the Illinois Prevailing Wage Act (820 ILCS 130/0.01 *et seq.*), providing for the payment of the prevailing rate of wage to all laborers, workmen and mechanics engaged in the Work. Contractor shall pay prevailing rates of wages in accordance with the wage determination included with the Contract Documents and any subsequent determinations issued by the Illinois Department of Labor which shall supersede the determination included in the Contract Documents, all in accordance with applicable law. Contractor shall be responsible for determining the applicable prevailing wage rates at the time of bid submission and at the time of performance of the Work. Failure of Contractor to make such determination shall not relieve it of its obligations in accordance with the Contract Documents. Contractor shall also comply with all other requirements of the Act including without limitation those pertaining to inclusion of required language in subcontracts, job site posting, maintenance and submission of certified payroll records and inspection of records. Contractor is not barred from entering into public contracts under Section 11a of the Illinois Prevailing Wage Act due to its having been found to have disregarded its obligations under the Act. In accordance with 820 ILCS 130/5, Payment by the District for work performed that is subject to the Illinois Prevailing Wage Act is conditional on submission of contractors/subcontractors certified payrolls. Contractors/subcontractors shall timely submit certified payroll and all information required by the Act to the Illinois Department of Labor (IDOL) at its Certified Transcript of Payroll Portal and shall comply with all the requirements of the Act, 820 ILCS 130/0.01 *et seq.* The Park District must receive proof of submission to the IDOL Portal before remitting payment.
- <https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/CertifiedTranscriptOfPayroll.aspx>. Any questions regarding this or any other prevailing wage issues should be addressed to the Illinois Department of Labor at (217) 782-1710 or <https://www2.illinois.gov/idol/Pages/default.aspx>. Upon 2 business days' notice, the contractor and each subcontractor shall make available for inspection the records to the **Rolling Meadows Park District**, its officers and agents, and to the Director of Labor and his deputies and agents at all reasonable hours at a location within this State. The Contractor and each subcontractor shall permit his/her employees to be interviewed on the job, during working hours, by compliance investigations of the Department of the Department of Labor
- D. To the best of Contractor's knowledge, no officer or employee of Contractor has been convicted of bribery or attempting to bribe an officer or employee of the State of Illinois, or any unit of local government, nor has any officer or employee made an admission of guilt of such conduct which is a matter of record.

- E. Contractor is not barred from bidding on or entering into public contracts due to having been convicted of bid-rigging or bid rotating under paragraphs 33E-3 or 33E-4 of the Illinois Criminal Code. Contractor also certifies that no officers or employees of the Contractor have been so convicted and that Contractor is not the successor company or a new company created by the officers or owners of one so convicted. Contractor further certifies that any such conviction occurring after the date of this certification will be reported to the Owner, immediately in writing, if it occurs during the bidding process, or otherwise prior to entering into the Contract therewith.
- F. Pursuant to the Illinois Human Rights Act (775 ILCS 5/2-105), Contractor has a written sexual harassment policy that includes, at a minimum, the following information: (i) a statement on the illegality of sexual harassment; (ii) the definition of sexual harassment under State law; (iii) a description of sexual harassment utilizing examples; (iv) the Contractor's internal complaint process including penalties; (v) the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Human Rights Commission and directions on how to contact both; and (vi) protection against retaliation as provided by Section 6-101 of the Illinois Human Rights Act. Contractor further certifies that such policy shall remain in full force and effect. A copy of the policy shall be provided to the Illinois Department of Human Rights upon request.
- G. Contractor shall abide by the "Employment of Illinois Workers on Public Works Act" which stipulates that whenever there is a period of excessive unemployment in Illinois, defined as any month immediately following two (2) consecutive calendar months during which the level of unemployment in Illinois exceeds five percent (5%) as measured by the U.S. Bureau of Labor Statistics in its monthly publication of employment and unemployment figures, the Contractor shall employ only Illinois laborers unless otherwise exempted as so stated in the Act. ("Illinois laborer" means any person who has resided in Illinois for at least 30 days and intends to become or remain an Illinois resident). Other laborers may be used if Illinois laborers are not available or are incapable of performing the particular type of work involved if so certified by the Contractor and approved by the Engineer.
- H. (i) Contractor's bid proposal was made without any connection or common interest in the profits anticipated to be derived from the Contract by Contractor with any other persons submitting any bid or proposal for the Contract; (ii) the Contract terms are in all respects fair and the Contract will be entered into by Contractor without collusion or fraud; and (iii) no official, officer or employee of the Owner has any direct or indirect financial interest in Contractor's bid proposal or in Contractor.
- I. Contractor knows and understands the Equal Employment Opportunity Clause administered by the Illinois Department of Human Rights, which is incorporated herein by this reference, and agrees to comply with the provisions thereof. Contractor further certifies that Contractor is an "equal opportunity employer" as defined by Section 2000 (e) of Chapter 21, Title 42 of the United States Code Annotated and Executive Orders #11246 and #11375 as amended, which are incorporated herein by this reference.
- J. Neither Contractor nor any substantially owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.





I, the undersigned, a notary public in and for the State and County, aforesaid, hereby certify that \_\_\_\_\_ appeared before me this day and, being first duly sworn on oath, acknowledged that he/she executed the foregoing instrument as his/her free act and deed and as the act and deed of the Contractor.

Dated: \_\_\_\_\_

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

(SEAL)

END OF SECTION

## 6. Prevailing Wages

Each CONTRACTOR or Subcontractor performing Work on this project shall comply in all respects with all laws governing the employment of labor, Social Security, and Unemployment Insurance of both the State and Federal government. There shall be paid each employee engaged in Work under this Contract at the site of the Project, no less than the minimum wage for the classifications of labor employed in compliance with 820ILCS 130/1 et seq., as now existing or hereafter amended. A copy of "General Prevailing Hourly Rates" is hereinafter included.

In accordance with 820 ILCS 130/5, The Contractor and each subcontractor shall make and keep, for a period of not less than 3 years, records of all laborers, mechanics, and other workers employed by them on the Project; the records shall include each worker's name, address, telephone number when available, social security number, classification or classifications, the hourly wages paid in each period, the number of hours worked each day, and the starting and ending times or work each day.

The Contractor and each subcontractor shall submit monthly, in person, by mail, or electronically a certified payroll to the **Rolling Meadows Park District**. The certified payroll shall consist of a complete copy of the records. The certified payroll shall be accompanied by a statement signed by a duly authorized officer of the contractor or subcontractor, as applicable, which affirmatively declares that:

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

Upon 2 business days' notice, the contractor and each subcontractor shall make available for inspection the records to the **Rolling Meadows Park District**, its officers and agents, and to the Director of Labor and his deputies and agents at all reasonable hours at a location within this State. The Contractor and each subcontractor shall permit his/her employees to be interviewed on the job, during working hours, by compliance investigations of the Department of the Department of Labor.

### **IDOL Portal Submission Requirement**

Payment by the District for work performed that is subject to the Illinois Prevailing Wage Act is conditional on submission of contractors/subcontractors certified payrolls. Contractors/subcontractors shall timely submit certified payroll and all information required by the Act to the Illinois Department of Labor (IDOL) at its Certified Transcript of Payroll Portal and shall comply with all the requirements of the Act, 820 ILCS 130/0.01 et seq. The Park District must receive proof of submission to the IDOL Portal before remitting payment. <https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/CertifiedTranscriptOfPayroll.aspx>. Any questions regarding this or any other prevailing wage issues should be addressed to the Illinois Department of Labor at (217) 782-1710 or <https://www2.illinois.gov/idol/Pages/default.aspx>.

END OF SECTION

**7. Substance Abuse Prevention Program Certification**

The Substance Abuse Prevention on Public Works Projects Act, 820 ILCS 265/1 *et seq.*, ("Act") prohibits any employee of the contractor or any subcontractor on a public works project to use, possess or be under the influence of a drug or alcohol, as those terms are defined in the Act, while performing work on the project. The contractor/subcontractor [**circle one**], by its undersigned representative, hereby certifies and represents to the **Rolling Meadows Park District** that **[contractor/subcontractor must complete either Part A or Part B below]:**

A. The contractor/subcontractor [**circle one**] has in place for all employees not covered by a collective bargaining agreement that deals with the subject of the Act a written substance abuse prevention program, a true and correct copy of which is attached to this certification, which meets or exceeds the requirements of the Substance Abuse Prevention on Public Works Projects Act, 820 ILCS 265/1 *et seq.* **[Contractor/subcontractor must attach a copy of its substance abuse prevention program to this Certification.**

\_\_\_\_\_  
Name of Contractor/Subcontractor (print or type)

\_\_\_\_\_  
Name and Title of Authorized Representative (print or type)

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_ Dated: \_\_\_\_\_

B. The contractor/subcontractor [**circle one**] has one or more collective bargaining agreements in effect for all of its employees that deal with the subject matter of the Substance Abuse Prevention on Public Works Projects Act, 820 ILCS 265/1 *et seq.*

\_\_\_\_\_  
Name of Contractor/Subcontractor (print or type)

\_\_\_\_\_  
Name and Title of Authorized Representative (print or type)

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_ Dated: \_\_\_\_\_

END OF SECTION



I, the undersigned, a notary public in and for the State and County aforesaid, hereby certify that \_\_\_\_\_ appeared before me this day in person and, being first duly sworn on oath, acknowledged that he/she is authorized to act on behalf of Bidder, and that he/she executed the foregoing bid as his/her free act and deed and as the act and deed of Bidder.

Dated: \_\_\_\_\_, 20\_\_

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(Notary Public)

[Notary Seal]

END OF SECTION

## **9. Equal Employment Opportunity**

The Contractor and all subcontractors shall not unlawfully discriminate against any employee or applicant for employment because of race, religion, color, sex, age, national origin or ancestry, citizenship status, disability, marital status, unfavorable discharge from military service, or sexual orientation.

The Contractor shall take affirmative action to ensure that all applicants are employed, and that employees are equally treated during employment. Such action shall include, but not be limited to the following:

1. Employment, upgrading, demotion and transfer.
2. Recruitment or recruitment advertising.
3. Layoff or termination.
4. Rates of pay or other forms of compensation.
5. Selection for training including apprenticeship.

The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

The Contractor and all subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf provide language notifying applicants that the Contractor is an equal opportunity employer and does not unlawfully discriminate in its employment practices.

Comply with all terms of the Equal Employment Opportunity Clause of the Illinois Fair Employment Practices Commission.

END OF SECTION

## **10. Insurance Requirements**

Contractor shall obtain insurance of the types and in the amounts listed below.

### **A. Commercial General and Umbrella Liability Insurance**

Contractor shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella insurance with a limit of not less than \$2,000,000 each occurrence. If such CGL insurance contains a general aggregate limit, it shall apply separately to this project/location.

CGL insurance shall be written on Insurance Services Office (ISO) occurrence form CG 00 01 10 93, or a substitute form providing equivalent coverage, and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

Owner, its **Park Board of Commissioners**, officers and employees, and the Project Engineer (20/10 Engineering Group, LLC), its directors, officers and employees shall be included as additional insured under the CGL, using ISO additional insured endorsement CG 20 10 or a substitute providing equivalent coverage, and under the commercial umbrella if any. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance afforded to any additional insured entity or person.

There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from pollution, explosion, collapse, or underground property damage.

If Owner has not been included as an insured under the CGL using ISO additional insured endorsement CG 20 10 under the Commercial General and Umbrella Liability Insurance required in this Contract, the Contractor waives all rights against Owner and its officers, officials, employees, volunteers and agents for recovery of damages arising out of or incident to the Contractor's Work.

### **B. Continuing Completed Operations Liability Insurance**

Contractor shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella liability insurance with a limit of not less than \$2,000,000 each occurrence for at least three years following substantial completion of the work.

Continuing CGL insurance shall be written on ISO occurrence form CG 00 01 10 93, or substitute form providing equivalent coverage, and shall, at minimum, cover liability arising from products-completed operations and liability assumed under an insured contract.

Continuing CCL insurance shall have a products-completed operations aggregate of at least two times its each occurrence limit.

Continuing commercial umbrella coverage, if any, shall include liability coverage for damage to the insured's completed work; equivalent to that provided under ISO form CG 00 01.

### **C. Business Auto and Umbrella Liability Insurance**

Contractor shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit of not less than \$2,000,000 each accident. Such insurance shall cover liability arising out of any auto including owned, hired and non-owned autos.

Business auto insurance shall be written on Insurance Services Office (ISO) form CA 00 01, CA 00 05, CA 00 12, CA 00 20, or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage equivalent to that provided in the 1990 and later editions of CA 00 01.

### **D. Workers Compensation Insurance**

Contractor shall maintain workers compensation as required by statute and employers liability insurance. The commercial umbrella and or employers liability limits shall not be less than \$1,000,000 each accident for bodily injury by accident or \$1,000,000 each employee for bodily injury by disease.

### **E. General Insurance Provisions**

#### **Evidence of Insurance**

No less than 15 days prior to beginning work, Contractor shall furnish Owner with a certificate(s) of insurance and applicable policy endorsement(s), executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth above.

All certificates shall provide for 30 days' written notice to Owner prior to the cancellation or material change of any insurance referred to therein. Written notice to Owner shall be by certified mail, return receipt requested.

Failure of Owner to demand such certificate, endorsement or other evidence of full compliance with these insurance requirements or failure of Owner to identify a deficiency from evidence that is provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

Owner shall have the right, but not the obligation, of prohibiting Contractor or any subcontractor from entering the project site until such certificates or other evidence that insurance has been placed in complete compliance with these requirements is received and approved by Owner.

Failure to maintain the required insurance may result in termination of this Contract at Owner's option.



With respect to insurance maintained after final payment in compliance with a requirement above, an additional certificate(s) evidencing such coverage shall be promptly provided to Owner whenever requested.

Contractor shall provide certified copies of all insurance policies required above within 10 days of Owners' written request for said copies.

### **Acceptability of Insurers**

For insurance companies which obtain a rating from A.M. Best, that rating should be no less than A VII using the most recent edition of the A.M. Best's Key Rating Guide. If the Best's rating is less than A VII or a Best's rating is not obtained, the Owner has the right to reject insurance written by an insurer it deems unacceptable.

### **Cross-Liability Coverage**

If Contractor's liability policies do not contain the standard ISO separation of insureds provision, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

### **Deductibles and Self-Insured Retentions**

Any deductibles or self-insured retentions must be declared to the Owner. At the option of the Owner, the Contractor may be asked to eliminate such deductibles or self-insured retentions as respects the Owner, its officers, officials, employees, volunteers and agents or required to procure a bond guaranteeing payment of losses and other related costs including but not limited to investigations, claim administration and defense expenses.

### **Subcontractors**

Contractor shall cause each subcontractor employed by Contractor to purchase and maintain insurance of the type specified above. When requested by the Owner, Contractor shall furnish copies of certificates of insurance evidencing coverage for each subcontractor.

## **F. Indemnification**

Contractor shall protect, indemnify, hold and save harmless and defend the Owner, its officers, officials, employees, volunteers, and agents against and from any and all claims, costs, causes, actions and expenses, including but not limited to legal fees (attorneys, paralegal and court cost) incurred by reason of a lawsuit or claim for compensation arising in favor of any person, including the employees or officers or independent contractors or subcontractors of the Contractor or Owner, on account of personal injuries or death, or damages to property occurring, growing out of incident to, or resulting directly or indirectly from any act or omission of Contractor, whether such loss, damage, injury or liability is contributed to by the negligence of the Owner or by premises themselves or any equipment thereon whether latent or patent, or from other causes whatsoever, except that Contractor shall have no liability for damages or the costs incident thereto caused by the sole negligence of the Owner. Contractor shall similarly protect, indemnify, hold and save harmless and defend the Owner, its officers, officials, employees, volunteers and agents against and from any and all claims, costs, causes, actions and expenses, including but not limited to or incurred by reason of Contractor's breach of its obligations under its contracts with the Owner for the provision for transportation services.

END OF SECTION

## **11. Law Compliance**

All project construction Work shall comply with all Federal, State and Local Laws and Regulations, and with all Local Ordinances and Rules pertaining to this Work. Such Laws, Regulations, Ordinances and Rules shall be considered a part of these Specifications.

All successful Contractors must comply with the provisions of all applicable Federal, State and Local laws, including without limitation, laws pertaining to the payment of prevailing rates of wages, the provisions of the Illinois Human Rights Act (Act) dealing with equal employment opportunities (Section 2-105, 775 ILCS 5/2-105) including equality of employment opportunity and the regulations of the Department of Human Rights of the State of Illinois and also must provide for the adoption and implementation of written Sexual Harassment Policies. The Contract with the Bidder will provide for this requirement. The statutory provisions setting forth what such policies shall include as a minimum under the Act are on file with the **Rolling Meadows Park District** and are available to the Contractor upon request.

END OF SECTION



**13. Contractor References**

CONTRACTOR \_\_\_\_\_  
CONTACT \_\_\_\_\_ SIGNATURE \_\_\_\_\_  
PHONE \_\_\_\_\_ FAX \_\_\_\_\_  
ADDRESS \_\_\_\_\_

Contractor References:

Please include three references with which the Contractor has completed similar work in the past three years. List name of owner, contact person, address and **phone number**.

1. Project Description \_\_\_\_\_  
Address \_\_\_\_\_  
Contract Amount \_\_\_\_\_  
Owner \_\_\_\_\_  
Contact Person \_\_\_\_\_  
Phone \_\_\_\_\_
  
2. Project Description \_\_\_\_\_  
Address \_\_\_\_\_  
Contract Amount \_\_\_\_\_  
Owner \_\_\_\_\_  
Contact Person \_\_\_\_\_  
Phone \_\_\_\_\_
  
3. Project Description \_\_\_\_\_  
Address \_\_\_\_\_  
Contract Amount \_\_\_\_\_  
Owner \_\_\_\_\_  
Contact Person \_\_\_\_\_  
Phone \_\_\_\_\_

END OF SECTION

**14. Subcontractors Listing**

Please list any sub-contractors information below. Include Plumbers and/or Electricians State license number.

CONTRACTOR \_\_\_\_\_  
CONTACT \_\_\_\_\_ STATE LICENSE # \_\_\_\_\_  
PHONE \_\_\_\_\_  
ADDRESS \_\_\_\_\_

CONTRACTOR \_\_\_\_\_  
CONTACT \_\_\_\_\_ STATE LICENSE # \_\_\_\_\_  
PHONE \_\_\_\_\_  
ADDRESS \_\_\_\_\_

CONTRACTOR \_\_\_\_\_  
CONTACT \_\_\_\_\_ STATE LICENSE # \_\_\_\_\_  
PHONE \_\_\_\_\_  
ADDRESS \_\_\_\_\_

CONTRACTOR \_\_\_\_\_  
CONTACT \_\_\_\_\_ STATE LICENSE # \_\_\_\_\_  
PHONE \_\_\_\_\_  
ADDRESS \_\_\_\_\_

CONTRACTOR \_\_\_\_\_  
CONTACT \_\_\_\_\_ STATE LICENSE # \_\_\_\_\_  
PHONE \_\_\_\_\_  
ADDRESS \_\_\_\_\_

## **15. General Conditions Rolling Meadows Park District**

### **Article 1 - General Provisions**

#### 1.1 Basic Definitions

##### 1.1.1 The Contract Documents

The Contract Documents consist of the Agreement between Owner and Contractor (hereinafter the Agreement), Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications (Written amendment signed by both parties, Change Order or Construction Change Directive) issued after execution of the Contract.

##### 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representation or agreements, either written or oral. The Contract may be amended or modified only by a written Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Engineer and Contractor, (2) between the Owner and a Subcontractor, (3) between the Owner and Engineer or (4) between any persons or entities other than the Owner and Contractor. The Engineer shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Engineer's duties.

##### 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

##### 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner or by separate contractors.

##### 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details schedules and diagrams.

##### 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

#### 1.1.7 The Project Manual

The Project Manual is a volume assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract and Specifications.

#### 1.1.8 The Bidder

"Bidder" refers to and indicates any individual, firm or corporation submitting an approved proposal for work contemplated.

#### 1.1.9 The Contractor

"Contractor" refers to person, firm or corporation with whom the contract is made by the Owner. Only Prime Contractors are recognized as a part of the contract and where the term "Contractor" is used, the Prime Contractor or Prime Contractors is referred to. The term "Contractor" as used herein shall mean person, firm or corporation named in the Agreement who will perform the work described herein. Where subcontractors are referred to, it has been for convenience only. Nothing contained in this contract shall create any contractual relation between any subcontractor and the Owner.

#### 1.1.10 Subcontractor

"Subcontractor" refers to a person, firm or corporation other than an employee of the Contractor, who contracts with the Contractor to furnish labor or materials at the site of the work.

#### 1.1.11 Other

"Other" refers to parties other than a Prime Contractor, his subcontractors, or suppliers.

#### 1.1.12 Provide

"Provide" shall be interpreted as meaning "Furnish and install, complete in place, ready to use or operation, in accordance with the Terms of the Contract Documents.

#### 1.1.13 Specifications

"Specifications" refers to and indicates description, provisions and requirements, contained herein, together with all written agreements made or to be made, pertaining to qualities of materials to be furnished under the Agreement.

#### 1.1.14 Drawings

"Drawings" refers to and indicates all drawings or reproduction of drawings pertaining to construction of the work contemplated, and its accessories. Words "As required", "As directed", "As permitted", and words of like import, mean that requirements, direction or permission of the Engineer are intended; similarly, the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by", "acceptable to" or "satisfactory to" the Engineer.

1.1.15 Words "necessary", "proper" or words of like imports as used with respect to extent, conduct or character of work specified shall mean that work shall be carried to extent, must be conducted in a manner or be of a character which is "necessary" or "proper" under the circumstances, in the opinion of the Engineer. The Engineer's judgment in such matters shall be considered final.

1.1.16 "Substantial Completion" means the date that all of the Work has been completed to the point where it can be occupied and used for all purposes intended by Owner and has been accepted by Owner and Engineer as such, subject only to minor Punch List Items, and Owner has received all required occupancy permits.

1.1.17 "Punch List Items" shall mean and shall be limited to uncompleted items of the Work (a) that do not interfere with the use and occupancy of any area of the Site for its intended purpose and (b) that, as a group, are capable of being completed by the Contractor within thirty (30) days of issuance of any Punch List. The "Punch List" is the list containing the Punch list items.

1.1.18 "Final Completion" means the date the Contract has been fully performed, all the Work has been completed and a final Certificate for Payment approved by the Owner has been issued by the Engineer.

## 1.2 Correlation and Intent of the Contract Documents

1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

1.2.3 Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.2.4 Figured dimensions and marked data shall take precedence over scale measurements and details shall take precedence over smaller scale general Drawings. Discrepancies or ambiguities found in Drawings or Specifications shall at once be reported to the Engineer for clarification.

1.2.5 Certain reference is made in these Specifications and Drawings to standard designation of ASTM, ACI, AISC, and other similar organizations and associations. The Engineer will give no consideration to any claimed ignorance as to what a cited standard contains, since each Contractor is considered to be experienced and familiar with his own trade's generally accepted, published standards of quality and workmanship.

1.2.6 If work is required in a manner to make it impossible to produce first-class work, or should discrepancies appear among Contract Documents, or if the Contractor has any questions regarding the meaning of Contract Documents, the Contractor must request the Engineer's interpretation and clarification before proceeding with work. If the Contractor fails to make such request, no excuse will thereafter be entertained for failure to carry out the work in a satisfactory manner.



Should any conflict occur in or between Drawings and Specifications, the Contractor is deemed to have estimated on, and agreed to provide the greater quantity or better quality of materials and work unless he shall have, before submission of proposal, asked for and obtained a written decision of the Engineer as to which method or materials will be required.

### 1.3 Capitalization

1.3.1 Terms capitalized in these General Conditions include those which are (1) specifically defined, (2) the titles of numbered articles and identified references to Paragraphs, Subparagraphs and Clauses in the document or (3) the titles of other documents published by the American Institute of Engineers.

### 1.4 Interpretation

1.4.1 In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

### 1.5 Execution of Contract Documents

1.5.1 The Contract Documents shall be signed by the Owner and Contractor. If either Owner or Contractor or both do not sign all the Contract Documents, the Engineer shall identify such unsigned Documents upon request.

1.5.2 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

### 1.6 Ownership and Use of Drawings, Specifications and Other Instruments of Service

1.6.1 The Drawings, Specifications and other documents, including those in electronic form, prepared by the Engineer and the Engineer's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor or material or equipment supplier shall own or claim a copyright in the drawings, Specification and other documents prepared by the Engineer or the Engineer's consultants, and unless otherwise indicated the Engineer and the Engineer's consultants shall be deemed the authors of them and will retain all common law, statutory and other reserved rights, in addition to the copyrights. The Drawings, Specifications and other documents prepared by the Engineer and the Engineer's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Engineer and the Engineer's consultants. The Contractor, Subcontractor, Sub-subcontractor and material or

equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Engineer and the Engineer's consultants appropriate to and for use in the execution of their Work under the Contract Documents.

## **Article 2 - Owner**

### 2.1 General

2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Subparagraph 4.2.1, the Engineer does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights.

### 2.2 Information and Services Required of the Owner

2.2.1 The Owner shall, at the written request of the Contractor, prior to commencement of the Work and thereafter, furnish to the Contractor reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Furnishing of such evidence shall be a condition precedent to commencement or continuation of the Work. After such evidence has been furnished, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

2.2.2 Except for permits and fees, including those required under Subparagraph 3.7.1, which are the responsibility of the Contractor under the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor acknowledges that these drawings may be representational and all information shall be field verified and exercise proper precautions relating to the safe performance of the Work.

### 2.3 Owner's Right to Stop the Work

2.3.1 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Paragraph 12.2 or persistently fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Subparagraph 6.1.3.

## 2.4 Owner's Right to Carry Out the Work

2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after such seven-day period give the Contractor a second written notice to correct such deficiencies within a three-day period. If the Contractor within such three-day period after receipt of such second notice fails to commence and continue to correct any deficiencies, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Engineer's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Engineer. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

## **Article 3 - Contractor**

### 3.1 General

3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative.

3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Engineer in the Engineer's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

### 3.2 Review of Contract Documents and Field Conditions by Contractor

3.2.1 Since the Contract Documents are complimentary, before starting each portion of the Work, the Contractor shall carefully study and compare the various Drawings and other Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Subparagraph 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, any errors, inconsistencies or omissions discovered by the Contractor shall be reported promptly to the Engineer as a request for information in such form as the Engineer may require.

3.2.2 Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Engineer, but it is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity discovered by or made known to the Contractor shall be reported promptly to the Engineer.

3.2.3 If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Engineer in response to the Contractor's notices or requests for information pursuant to Subparagraphs 3.2.1 and 3.2.2, the Contractor shall make Claims as provided in Subparagraphs 4.3.6 and 4.3.7. If the Contractor shall make claims as provided in Subparagraphs 3.2.1 and 3.2.2, The Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. The Contractor shall not be liable to the Owner or Engineer for damages resulting from errors, inconsistencies or omissions in the Contract Documents or for differences between field measurements or conditions and the Contract Documents unless the Contractor recognized such error, inconsistency, omission or difference and knowingly failed to report it to the Engineer.

### 3.3 Supervision and Construction Procedures

3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Engineer and shall not proceed with that portion of the Work without further written instructions from the Engineer. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any resulting loss or damage.

3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

### 3.4 Labor and Materials

3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

3.4.2 The Contractor may make substitutions only with the consent of the Owner, after evaluation by the Engineer and in accordance with a Change Order.

3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons not skilled in tasks assigned to them.

3.4.4 Wherever any provision of the Specifications conflict with any agreements or regulations of any kind at any time in force among members of any Trade Associations, unions or Councils, which regulate or distinguish what work shall not be included in the work of any particular trade, the Contractor shall make all necessary arrangements to reconcile any such conflict without delay, damage or cost to the Owner and without recourse to the Engineer or the Owner. In case the progress of the work is affected by any undue delay in furnishing or installing any

items of material or equipment required under the Contract because of a conflict involving any such agreement or regulation, the Engineer may require that other material or equipment of equal kind or quality be provided at no additional cost to the Owner.

3.4.5 Contractor agrees to pay prevailing rates of wages in accordance with the most recent prevailing wage determination and any subsequent determination all in accordance with applicable law, providing for the payment of, and ascertaining the, prevailing rate of wages. All Contractors' bonds shall include a provision as will guarantee the faithful performance of such prevailing wage clause. Such provision shall be plainly marked on the face of such bond.

### 3.5 Warranty

3.5.1 The Contractor warrants to the Owner and Engineer that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modification not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### 3.6 Taxes

3.6.1 The Owner is exempt from the payment of sales tax. The Owner will provide Contractor with its tax-exempt number which Contractor can use **to make purchases of materials and equipment for this Project only.**

3.6.2 This requirement excludes taxes and assessments on real property comprising site of project.

### 3.7 Permits, Fees and Notices

3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received or negotiations concluded.

3.7.2 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities applicable to performance of the Work.

3.7.3 It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly

notify the Engineer and Owner in writing, and necessary changes shall be accomplished by appropriate modification.

3.7.4 If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Engineer and Owner, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

3.7.5 At the completion of work and before final certificate is issued by the Engineer, the Contractor shall turn over to the Engineer, for the Owner, any sets of the Engineer's drawings which were stamped and approved by the Building Department, and all permits or certificates issued to him.

### 3.8 Allowances

3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

3.8.2 Unless otherwise provided in the Contract Documents:

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances;
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect
  - (1) the difference between actual costs and the allowances under Clause 3.8.2.1 and
  - (2) changes in contractor's costs under Clause 3.8.2.2

3.8.3 Materials and equipment under an allowance shall be selected by the Owner in sufficient time to avoid delay in the Work.

### 3.9 Superintendent

3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications shall be confirmed in writing.

### 3.10 Contractors Construction Schedules

3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Engineer's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the



conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

3.10.2 The Contractor shall prepare and keep current, for the Engineer's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Engineer reasonable time to review submittals.

3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Engineer.

### 3.11 Documents and Samples at the Site

3.11.1 The Contractor shall maintain at the site for the Owner one record copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record field changes and selections made during construction, and one record copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Engineer and shall be delivered to the Engineer for submittal to the Owner upon completion of Work.

### 3.12 Intentionally left Blank

### 3.13 Use of Site

3.13.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipments.

3.14 Cutting and Patching 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work. 3.14.3 Cleaning Up

3.14.4 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

3.14.5 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

### 3.15 Access to Work

3.15.1 The Contractor shall provide the Owner and Engineer access to the Work to review preparation and progress whenever needed.

### 3.16 Royalties, Patents and Copyrights

3.16.1 The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Engineer harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Engineer. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Engineer.

### 3.17 Indemnification

3.17.1 To the fullest extent permitted by law and to the extent claims, damages, losses or expenses are not covered by Project Management Protective Liability insurance purchased by the Contractor in accordance with Paragraph 11.3, the Contractor shall indemnify and hold harmless the Owner, Engineer, Engineer's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Paragraph 3.18.

3.17.2 In claims against any person or entity indemnified under this Paragraph 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Subparagraph 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

3.17.3 In addition, Contractor shall indemnify and hold harmless Owner, its park commissioners, officers, employees and agents, from and against any claim, loss or cost, including without limitation court costs and attorneys fees, resulting directly or indirectly from Contractor's breach of any of the provisions of, or its failure to perform the Work in accordance with, the Contract Documents.

3.17.4 The obligations of the Contractor under this Article 3.18 shall be construed to include, but not be limited to, injury or damage consequent upon failure to use or misuse by the Contractor, his agents, and employees, of any scaffold, hoist, crane, stay, ladder, support, or other mechanical contrivance erected or constructed by any person; or any or all other kinds of equipment whether or not owned or furnished by the Owner.

## **Article 4 - Administration of the Contract**

### **4.1 Engineer**

4.1.1 The Engineer is the person lawfully licensed to practice Engineering or an entity lawfully practicing Engineering or Engineering identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Engineer" means the Engineer, Landscape Engineer or the Engineer's or Engineer's authorized representative.

4.1.2 Duties, responsibilities and limitations of authority of the Engineer as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Engineer. Consent shall not be unreasonably withheld.

4.1.3 If the employment of the Engineer is terminated, the Owner shall employ a new Engineer against whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the former Engineer.

### **4.2 Engineer's Administration of the Contract**

4.2.1 The Engineer will provide administration of the Contract as described in the Contract Documents, and will be an Owner's representative (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the one-year period for correction of Work described in Paragraph 12.2. The Engineer will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

4.2.2 The Engineer, as a representative of the Owner, will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Engineer will neither have control over or charge of, nor be responsible for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Subparagraph 3.3.1

4.2.3 The Engineer will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Engineer will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

4.2.4 Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall

endeavor to communicate with each other through the Engineer about matters arising out of or relating to the Contract. Communications by and with the Engineer's consultants shall be through the Engineer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

4.2.5 Based on the Engineer's evaluations of the Contractor's Applications for Payment, the Engineer will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

4.2.6 The Engineer will have authority to reject Work that does not conform to the Contract Documents. Whenever the Engineer considers it necessary or advisable, the Engineer will have authority to require inspection or testing of the Work in accordance with Subparagraphs 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Engineer nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Engineer to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

4.2.7 The Engineer will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Engineer's action will be taken with such reasonable promptness as to cause no delay in the Work or in the activities of the Owner, Contractor or separate contractors, while allowing sufficient time in the Engineer's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Engineer's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Paragraphs 3.3, 3.5 and 3.12. The Engineer's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Engineer, of any construction means, methods, techniques, sequences or procedures. The Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

4.2.8 The Engineer will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Paragraph 7.4.

4.2.9 The Engineer will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion, will receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.

4.2.10 If the Owner and Engineer agree, the Engineer will provide one or more project representatives to assist in carrying out the Engineer's responsibilities at the

site.

4.2.11 The Engineer will prepare and decide matters concerning performance under, and requirements of, Engineer's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If no agreement is made concerning the time within which interpretations required of the Engineer shall be furnished in compliance with this Paragraph 4.2, then delay shall not be recognized on account of failure by the Engineer to furnish such interpretations until 15 days after written request is made for them.

4.2.12 Interpretations and decisions of the Engineer will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and initial decisions, the Engineer will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions so rendered in good faith.

4.2.13 The Engineer's decision on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

#### 4.3 Claims and Disputes

4.3.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, and extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. Claims must be initiated by written notice. The responsibility to substantiate Claims shall rest with the party making the Claim.

4.3.2 Time Limits on Claims. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be initiated by written notice to the Engineer and the other party.

4.3.3 Continuing Contract Performance. Pending final resolution of a Claim except as otherwise agreed in writing or as provided in Subparagraph 9.7.1 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

4.3.4 Claims for Concealed or Unknown Conditions. If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Engineer will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for,

performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Engineer determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Engineer shall so notify the Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within 21 days after the Engineer has given notice of the decision. If the conditions encountered are materially different, the Contract Sum and Contract Time shall be equitably adjusted, but if the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Engineer for initial determination, subject to further proceedings pursuant to Paragraph 4.4.

4.3.5 Claims for Additional Cost. If the Contractor wishes to make Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency life or property arising under Paragraph 10.6.

4.3.6 If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Engineer, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Engineer, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be filed in accordance with this Paragraph 4.3.

#### 4.3.7 Claims for Additional Time

4.3.7.1 If the Contractor wishes to make Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

4.3.7.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

4.3.8 Injury or Damage to Person or Property. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

4.3.9 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

4.3.10 Claims for Consequential Damages. The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to

this Contract. This mutual waiver includes:

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Subparagraph 4.3.10 shall be deemed to preclude and award of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

## **Article 5 - Subcontractors**

### 5.1 Definitions

5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### 5.2 Award of Subcontractors and Other Contracts for Portions of the Work

5.2.1 Proper and complete execution of all work shall be the responsibility of the Contractor and should he properly subcontract certain parts of the work, the Owner and Engineer will hold him responsible for proper and complete execution thereof. If the Contractor elects to enter into subcontracts for any section of the work, he shall assume all responsibility of ascertaining that the subcontractor for the work is thoroughly acquainted with all conditions of work and that the subcontractor has included all materials and appurtenances in connection therewith. It shall also be the responsibility of the Contractor to notify sub-bidders at time of request for bids of all requirements of the Contract Documents that he, the Contractor, intends to include as part of subcontract.

5.2.2 The Contractor shall not subcontract any work without prior written approval of the Owner, which approval will not be given until the Contractor submits to the Engineer a written statement concerning the proposed subcontract, which statement shall contain such information as the Engineer may require.

5.2.3 The Contractor shall list in the Proposal the names of subcontractors taken



from the approved list proposed for the principal parts of the work, and for other parts of the work shall not employ any that the Engineer may, within a reasonable time, object to as incompetent or unfit.

5.2.4 The Contractor shall be as fully responsible to the Owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is for his acts and the acts and omissions of person directly employed by him.

5.2.5 The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the Contract Documents, and to require subcontractors to comply with the Contract Documents, and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of the Contract Documents.

5.2.6 Nothing contained in the Contract shall create any contractual relation between any subcontractor and the Owner.

### 5.3 Sub contractual Relations

5.3.1 By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these 4 Documents, assumes toward the Owner and Engineer. Each subcontract agreement shall preserve and protect the rights of the Owner and Engineer under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

### 5.4 Contingent Assignment of Subcontracts

5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

**.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Paragraph 14.2 and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor and Contractor in writing; and**

**.2 assignment is subject to the prior rights of the surety, in any, obligated under bond relating to the Contract.**

5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

## **Article 6 - Construction by Owner or by Separate Contractors**

### 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Paragraph 4.3.

6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights which apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

### 6.2 Mutual Responsibility

6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Engineer apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonable discoverable.

6.2.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate contractor because of delays, improperly

timed activities or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, and damage to the Work or defective construction of a separate contractor. 6.2.4 The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors as provided in Subparagraph 10.2.5.

6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Subparagraph 3.14.

### 6.3 Owner's Right to Clean Up

6.3.1 If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Engineer will allocate the cost among those responsible.

## **Article 7 - Changes In The Work**

### 7.1 General

7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Engineer; a Construction Change Directive requires agreement by the Owner and Engineer and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Engineer alone.

7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

### 7.2 Change Orders

7.2.1 A Change Order is a written instrument prepared by the Engineer and signed by the Owner, Contractor and Engineer, stating their agreement upon all of the following:

- .1 change in the Work;
- .2 the amount of the adjustment, if any, in the Contract Sum; and
- .3 the extent of the adjustment, if any, in the Contract Time.

7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Subparagraph 7.3.3.

### 7.3 Construction Change Directives

7.3.1 A Construction Change Directive is a written order prepared by the Engineer and signed by the Owner and Engineer, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods

- .1 mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 unit prices stated in the Contract Documents or subsequently agreed

upon;

.3 cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

.4 as provided in Subparagraph 7.3.6.

7.3.4 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Engineer of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

7.3.5 A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

7.3.6 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by the Engineer on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Clause 7.3.3.3, the Contractor shall keep and present, in such form as the Engineer may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Subparagraph 7.3.6 shall be limited to the following;

.1 costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

.2 costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;

.3 rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and

.5 additional costs of supervision and field office personnel directly attributable to the change.

7.3.7 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Engineer. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

7.3.8 Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs. For any portion of such cost that remains in dispute, the Engineer will make an interim determination for purposes of monthly certification for payment for those costs. That determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to

the right of either party to disagree and assert a claim in accordance with Article 4.

7.3.9 When the Owner and Contractor agree with the determination made by the Engineer concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

#### 7.4 Minor Changes in the Work

7.4.1 The Engineer will have authority to order minor changes in the Work not involving adjustments in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

## **Article 8 – Time**

### **8.1 Definitions**

8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

8.1.2 The date of commencement of the Work is the date established in the Agreement.

8.1.3 The date of Substantial Completion is the date certified by the Engineer in accordance with Paragraph 9.8.

8.1.4 The term “day” as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

8.1.5 “Calendar Day” is one (1) day or twenty-four (24) hours beginning at 12:00 midnight, including every day shown on the calendar; Saturday, Sunday, and Holidays included.

8.1.6 A “Working Day” is a Calendar Day, exclusive of Saturdays, Sundays, or Holidays, when weather or other conditions beyond the Contractor’s control does not prevent the completion of at least seven (7) hours of work on the principal unit of work underway between the hours of 7:00 a.m. and 6:00 p.m.

8.1.7 “Contract Starting Date” refers to the date (day, month, year) on which Contract time begins, as set forth in the Notice to Proceed.

8.1.8 “Scheduled Completion Date” refers to date on which the Contract time ends as determined by the terms of the Contract. Original Contract time may be extended or shortened by change orders.

8.1.9 “Final Inspection Date” refers to date on which a detailed inspection of the project will be made in compliance with the terms of the Contract, and the final inspection list (punch list).

### **8.2 Progress and Completion**

8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance. Unless the date of commencement is established by the Contract Documents or a notice to proceed given by the Owner, the Contractor shall notify the Owner in writing not less than five days or other agreed period before commencing the Work to permit the timely filing



of mortgages, mechanic's liens and other security interests.

8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

### 8.3 Delays and Extensions of Time

8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Engineer, or of an employee of either, or of a separate contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, or by delay authorized by the Owner pending mediation and arbitration, or by other causes which the Engineer determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Engineer may determine.

8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Paragraph 4.3.

8.3.3 This Paragraph 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## **Article 9 - Payments and Completion**

### 9.1 Contract Sum

9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

### 9.2 Schedule of Values

9.2.1 Before the first Application for Payment, the Contractor shall submit to the Engineer a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Engineer may require. This schedule, unless objected to by the Engineer, shall be used as a basis for reviewing the Contractor's Applications for Payment.

### 9.3 Applications for Payment

9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Engineer an itemized Application for Payment for operations completed in accordance with the schedule of values. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Engineer may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents.

9.3.1.1 As provided in Subparagraph 7.3.8, such applications may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives, or by interim determinations of the Engineer, but not yet included in Change Orders.

9.3.1.2 Such applications may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the

Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

#### 9.4 Certificates for Payment

9.4.1 The Engineer will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Engineer determines is properly due, or notify the Contractor and Owner in writing of the Engineer's reasons for withholding certification in whole or in part as provided in Subparagraph 9.5.1

9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Engineer to the Owner, based on the Engineer's evaluation of the Work and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Engineer's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Engineer. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Engineer has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

9.4.3 Partial progress payments will be made, as the work progresses, once each calendar month, on certificates issued by the Engineer. Estimates shall be on AIA Form G-702 and the cost breakdown shall aggregate the Contract Sum.

9.4.4 In making such partial payments, there shall be retained 10 percent (10%) of the estimated amount until final completion and acceptance of all work covered by the Contract.

#### 9.5 Decisions to Withhold Certification

9.5.1 The Engineer may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Engineer's opinion the representations to the Owner required by Subparagraph 9.4.2 cannot be made. If the Engineer is unable to certify payment in the amount of the Application, the Engineer will notify the Contractor and Owner as provided in Subparagraph 9.4.1. If the Contractor and Engineer cannot agree on a revised amount, the Engineer will promptly issue a Certificate for Payment for the amount for which the Engineer is able to make such representations to the Owner. The Engineer may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may

nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Engineer's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Subparagraph 3.3.2, because of:

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or another contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 persistent failure to carry out the Work in accordance with the Contract Documents.

9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

## 9.6 Progress Payments

9.6.1 After the Engineer has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Engineer.

9.6.2 The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

9.6.3 The Engineer will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Engineer and Owner on account of portions of the Work done by such Subcontractor.

9.6.4 Neither the Owner nor Engineer shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

9.6.5 Payment to material suppliers shall be treated in a manner similar to that provided in Subparagraphs 9.6.2, 9.6.3 and 9.6.4.

9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

## 9.7 Failure of Payment

9.7.1 If the Engineer does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Engineer or awarded by arbitration, then the Contractor may, upon seven additional days' written notice to the Owner and Engineer, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

## 9.8 Substantial Completion

9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Engineer a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

9.8.3 Upon receipt of the Contractor's list, the Engineer will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Engineer's inspection discloses anytime, whether or not included to the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Engineer. In such case, the Contractor shall then submit a request for another inspection by the Engineer to determine Substantial Completion.

9.8.4 When the Work or designated portion thereof is substantially complete, the Engineer will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and

Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

## 9.9 Partial Occupancy or Use

9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Clause 11.4.1.5 and authorized by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Engineer as provided under Subparagraph 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Engineer.

9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Engineer shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

## 9.10 Final Completion and Final Payment

9.10.1 Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Engineer will promptly make such inspection and, when the Engineer finds the Work acceptable under the Contract Documents and the Contract fully performed, the Engineer will promptly issue a final Certificate for Payment stating that to the best of the Engineer's knowledge, information and belief, and on the basis of the Engineer's

on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Engineer's final Certificate for Payment will constitute a further representation that conditions listed in Subparagraph 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Engineer (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorney's fees.

9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Engineer so confirms, the Owner shall, upon application by the Contractor and certification by the Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Engineer prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims. 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from:

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

## **Article 10 - Protection of Persons and Property**

### 10.1 Safety Precautions and Programs

10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

### 10.2 Safety of Persons and Property

10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

- .1 employees on the Work and other persons who may be affected thereby
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

10.2.2 The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulation and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Clauses 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Clauses 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Engineer or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Paragraph 3.18.

10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Engineer.



10.2.7 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

### 10.3 Hazardous Materials

10.3.1 If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Engineer in writing.

10.3.2 The Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to verify that it has been rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Engineer the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal of safe containment of such material or substance. The Contractor and the Engineer will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Engineer has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Engineer have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. The Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up, which adjustments shall be accomplished as provided in Article 7.

10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Engineer, Engineer's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Subparagraph 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to the bodily injury, sickness disease or death, or to injury to or destruction of tangible property (other than the Work itself) and provided that such damage, loss or expense is not due to the sole negligence of a party seeking indemnity.

10.3.4 The Owner shall not be responsible under Paragraph 10.3 for materials and substances brought to the site by the Contractor unless such materials or substances were required by the Contract Documents.

10.3.5 If, without negligence on the part of the Contractor, the Contractor is held liable for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

## 10.6 Emergencies

10.6.1 In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Paragraph 4.3 and Article 7.

## **Article 11 - Insurance and Bonds**

### 11.1 Commercial General and Umbrella Liability Insurance

11.1.1 Contractor shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella insurance with a limit of not less than \$2,000,000 each occurrence. If such CGL insurance contains a general aggregate limit, it shall apply separately to this project/location.

11.1.2 CGL insurance shall be written on Insurance Services Office (ISO) occurrence form CG 00 01 10 93, or a substitute form providing equivalent coverage, and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

11.1.3 Owner, its park commissioners, officers and employees, and the Project Engineer, its directors, officers and employees, shall be included as insureds under the CGL, using ISO additional insured endorsement CG 20 10 or a substitute providing equivalent coverage, and under the commercial umbrella if any. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance afforded to Owner and to Engineer.

11.1.4 There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from pollution, explosion, collapse, or underground property damage.

### 11.2 Continuing Completed Operations Liability Insurance

11.2.1 Contractor shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella liability insurance with a limit of not less than \$2,000,000 each occurrence for at least three years following substantial completion of the work.

11.2.2 Continuing CGL insurance shall be written on ISO occurrence form CG 00 01 10 93, or substitute form providing equivalent coverage, and shall, at minimum, cover liability arising from products-completed operations and liability assumed under an insured contract.

11.2.3 Continuing CCL insurance shall have a products-completed operations aggregate of at least two times its each occurrence limit.

11.2.4 Continuing commercial umbrella coverage, if any, shall include liability coverage for damage to the insured's completed work; equivalent to that provided under ISO form CG 00 01.

### 11.3 Business Auto and Umbrella Liability Insurance

11.3.1 Contractor shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit of not less than \$2,000,000 each accident. Such insurance shall cover liability arising out of any auto including owned, hired

and non-owned autos.

11.3.2 Business auto insurance shall be written on Insurance Services Office (ISO) form CA 00 01, CA 00 05, CA 00 12, CA 00 20, or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage equivalent to that provided in the 1990 and later editions of CA 00 01.

11.3.3 If Owner has not been included as an insured under the CGL using ISO additional insured endorsement CG 20 10 under the Commercial General and Umbrella Liability Insurance required in this Contract, the Contractor waives all rights against Owner and its officers, officials, employees, volunteers and agents for recovery of damages arising out of or incident to the Contractor's work.

#### 11.4 Workers Compensation Insurance

11.4.1 Contractor shall maintain workers compensation as required by statute and employers liability insurance. The commercial umbrella and or employers liability limits shall not be less than \$1,000,000 each accident for bodily injury by accident or \$1,000,000 each employee for bodily injury by disease.

#### 11.5 General Insurance Provisions

##### 11.5.1 Evidence of Insurance

11.5.1.1 No less than 15 days prior to beginning work, Contractor shall furnish Owner with a certificate(s) of insurance and applicable policy endorsement(s), executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth above.

11.5.1.2 All certificates shall provide for 30 days' written notice to Owner prior to the cancellation or material change of any insurance referred to therein. Written notice to Owner shall be by certified mail, return receipt requested.

11.5.1.3 Failure of Owner to demand such certificate, endorsement or other evidence of full compliance with these insurance requirements or failure of Owner to identify a deficiency from evidence that is provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

11.5.1.4 Owner shall have the right, but not the obligation, of prohibiting Contractor or any subcontractor from entering the project site until such certificates or other evidence that insurance has been placed in complete compliance with these requirements is received and approved by Owner.

11.5.1.5 Failure to maintain the required insurance may result in termination of this Contract at Owner's option.

11.5.1.6 With respect to insurance maintained after final payment in compliance with a requirement above, an additional certificate(s) evidencing such coverage shall be promptly provided to Owner whenever requested.

11.5.1.7 Contractor shall provide certified copies of all insurance policies required above within 10 days of Owners' written request for said copies.

#### 11.5.2 Acceptability of Insurers

11.5.2.1 For insurance companies which obtain a rating from A.M. Best, that rating should be no less than A VII using the most recent edition of the A.M. Best's Key Rating Guide. If the Best's rating is less than A VII or a Best's rating is not obtained, the Owner has the right to reject insurance written by an insurer it deems unacceptable.

#### 11.5.3 Cross-Liability Coverage

11.5.3.1 If Contractor's liability policies do not contain the standard ISO separation of insured's provision, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

#### 11.5.4 Deductibles and Self-Insured Retentions

11.5.4.1 Any deductibles or self-insured retentions must be declared to the Owner. At the option of the Owner, the Contractor may be asked to eliminate such deductibles or self-insured retentions as respects the Owner, its officers, officials, employees, volunteers and agents or required to procure a bond guaranteeing payment of losses and other related costs including but not limited to investigations, claim administration and defense expenses.

#### 11.5.5 Subcontractors

11.5.5.1 Contractor shall cause each subcontractor employed by Contractor to purchase and maintain insurance of the type specified above. When requested by the Owner, Contractor shall furnish copies of certificates of insurance evidencing coverage for each subcontractor.

#### 11.5.6 Indemnification

11.5.6.1 Contractor shall protect, indemnify, hold and save harmless and defend the **Rolling Meadows Park District**, its officers, officials, employees, volunteers, and agents against and from any and all claims, costs, causes, actions and expenses, including but not limited to legal fees (attorneys, paralegal and court cost) incurred by reason of a lawsuit or claim for compensation arising in favor of any person, including the employees or officers or independent contractors or subcontractors of the Contractor or **Rolling Meadows Park District**, on account of personal injuries or death, or damages to property occurring, growing out of incident to, or resulting directly or indirectly from any act or omission of Contractor, whether such loss, damage, injury or liability is contributed to by the negligence of the **Rolling Meadows Park District** or by premises themselves or any equipment thereon whether latent or patent, or from other causes whatsoever, except that Contractor shall have no liability for damages or the costs incident thereto caused by the sole negligence of the **Rolling Meadows Park District**. Contractor shall similarly protect, indemnify, hold and save harmless and defend the **Rolling Meadows Park District**, its officers, officials, employees, volunteers and agents against and from

any and all claims, costs, causes, actions and expenses, including but not limited to or incurred by reason of Contractor's breach of its obligations under its contracts with the **Rolling Meadows Park District** for the provision for transportation services.

#### 11.6 Performance Bond and Payment Bond

11.6.1 Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

11.6.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.

11.6.3 The performance bond and Material Payment Bond shall remain in effect for a period of one year after substantial completion as a warranty against any defective materials or workmanship.

**11.6.4 The Contractor shall furnish, supply and deliver a surety bond to secure the performance of the contract and payment of all subcontractors and material suppliers in accordance with the Illinois Public Construction Bond Act.**

## **Article 12 - Uncovering and Correction of Work**

### 12.1 Uncovering of Work

12.1.1 If a portion of the Work is covered contrary to the Engineer's request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Engineer, be uncovered for the Engineer's examination and be replaced at the Contractor's expense without change in the Contract Time

12.1.2 If a portion of the Work has been covered which the Engineer has not specifically requested to examine prior to it's being covered, the Engineer may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

### 12.2 Correction of Work 12.2.1 Before or After Substantial Completion

12.2.1.1 The Contractor shall promptly correct Work rejected by the Engineer or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections and compensation for the Engineer's services and expenses made necessary thereby, shall be at the Contractor's expense.

### 12.2.2 After Substantial Completion

12.2.2.1 In addition to the Contractor's obligations under Paragraph 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Subparagraph 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Engineer, the Owner may correct it in accordance with Paragraph 2.4.

12.2.2.2 The on-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work.

12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Paragraph 12.2.

12.2.3 The Contractor shall remove from the site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

12.2.5 Nothing contained in this Paragraph

12.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the one-year period for correction of Work as described in Subparagraph 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

12.3 Acceptance of Nonconforming Work

12.3.1 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.



## **Article 13 - Miscellaneous Provisions**

### **13.1 Governing Law**

13.1.1 The Contract shall be governed by the law of the place where the Project is located.

### **13.2 Successors and Assigns**

13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligation contained in the Contract Documents. Except as provided in Subparagraph 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

13.2.2 The Owner may, without consent of the Contractor, assign the Contract to an institutional lender providing construction financing for the Project. In such event, the lender shall assume the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

### **13.3 Written Notice**

13.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

### **13.4 Rights and Remedies**

13.4.1 Duties and obligation imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

13.4.2 No action or failure to act by the Owner, Engineer or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

### **13.5 Tests and Inspections**

13.5.1 Tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules regulation or orders of public authorities having jurisdiction shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals. The Contractor shall give the Engineer timely notice of when and where tests and inspections are to be made so that the Engineer may be present for such procedures. The Owner shall bear costs of tests, inspections or

approvals which do not become requirements until after bids are received or negotiations concluded.

13.5.2 If the Engineer, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Subparagraph 13.5.1, the Engineer will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Engineer of when and where tests and inspections are to be made so that the Engineer may be present for such procedures. Such costs, except as provided in Subparagraph 13.5.3, shall be at the Owner's expense.

13.5.3 If such procedures for testing, inspection or approval under Subparagraphs 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Engineer's services and expenses shall be at the Contractor's expense.

13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Engineer.

13.5.5 If the Engineer is to observe tests, inspections or approvals required by the Contract Documents, the Engineer will do so promptly and, where practicable, at the normal place of testing.

13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

## **Article 14 - Termination or Suspension of the Contract**

### **14.1 Termination by the Contractor**

14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons;

- .1 issuance of an order of a court or other public authority having jurisdiction which requires all Work to be stopped;
- .2 an act of government, such as a declaration of national emergency which requires all Work to be stopped;
- .3 because the Engineer has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Subparagraph 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 the Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Subparagraph 2.2.1.

14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Paragraph 14.3 constitute in the aggregate more than 100 percent of the total number of days schedules for completion, or 120 days in any 365-day period, whichever is less.

14.1.3 If one of the reasons described in Subparagraph 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Engineer, terminate the Contract and recover from the Owner payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead, profit and damages.

14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor because the Owner has persistently failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and Engineer, terminate the Contract and recover from the Owner as provided in Subparagraph 14.1.3.

### **14.2 Termination by the Owner for Cause**

14.2.1 The Owner may terminate the Contract if the Contractor:

- .1 persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and Subcontractors;
- .3 persistently disregards laws, ordinances, or rules, regulation or orders of a public authority having jurisdiction; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

14.2.2 When any of the above reasons exist, the Owner, upon certification by the Engineer that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety;

- .1 take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 accept assignment of subcontracts pursuant to Paragraph 5.4; and
- .3 finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

14.2.3 When the Owner terminates the Contract for one of the reasons stated in Subparagraph 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Engineer's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Engineer, upon application, and this obligation for payment shall survive termination of the Contract.

### 14.3 Suspension by the Owner for Convenience

14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Subparagraph 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent;

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of

the Contract.

#### 14.4 Termination by the Owner for Convenience

14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause

14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall;

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination.

## **Article 15 – Equal Employment Opportunity**

15.1 The Contractor shall maintain and shall require its Subcontractors to maintain policies of employment as follows:

15.1.1 In the event of the Contractor's non-compliance with the provisions of this equal opportunity clause, the Illinois Human Rights Act or the Rules and Regulations of the Illinois Department of Human Rights ("Department"), Contractor may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and the Contract may be cancelled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation. During the performance of this Contract, Contractor agrees as follows:

**1) That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, marital status, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to a person's ability to perform the essential functions of the job, association with a person with a disability, military status or an unfavorable discharge from military service, or record of arrest; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.**

**2) That, if it hires additional employees in order to perform this Contract or any portions thereof, it will determine the availability (in accordance with the Department's Rules and Regulations) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.**

**3) That, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, sexual orientation, marital status, national origin or ancestry, citizenship status, age, physical or mental handicap or disability unrelated to a person's ability to perform the essential function of the job, or association with a person with a disability, military status or an unfavorable discharge from military service, or record of arrest.**

**4) That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the Contractor's obligations under the Illinois Human Rights Act and the Department's rules and regulations. If any such labor organization or representative fails or refuses to cooperate with the Contractor in its efforts to comply with such Act and rules and regulations, the Contractor will promptly notify the Department and the Owner and will recruit employees from other sources when necessary to fulfill its obligations thereunder.**

**5) That it will submit reports as required by the Department's rules and regulations, furnish all relevant information as may from time to time be requested by the Department or the Owner, and in all respects comply with the Illinois Human Rights Act and the Department's rules and regulations.**

**6) That it will permit access to all relevant books, records, accounts and work sites by personnel of the Owner and the Department for purposes of investigation to ascertain Department's rules and regulations.**

**7) That it will include verbatim or by reference the provisions of this clause in every subcontract it awards under which any portion of the Contract obligations are undertaken or assumed, so that such provisions will be binding upon such subcontractor. In the same manner as with other provisions of this Contract, the Contractor will be liable for compliance with applicable provisions of this clause by such subcontractors; and further it will promptly notify the Owner and the Department in the event any subcontractor fails or refuses to comply therewith. In addition, the Contractor will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.**

**15.2 The Contractor is encouraged to utilize qualified minority businesses as subcontractors for supplies, services and construction.**

## **Article 16 – Prevailing Rates of Wages**

16.1 All Contracts for Work for this Project are subject to the provisions of the Illinois Prevailing Wage Act (820 ILCS 130/0.01 et seq.), providing for the payment of the prevailing rate of wage to all laborers, workmen and mechanics engaged on the Work. The Contractor shall pay prevailing rates of wages in accordance with the Owner's annual wage determination included with the Contract Documents, and any subsequent determinations issued by the Illinois Department of Labor which shall supersede the Owner's determination, all in accordance with applicable law. Bidders and contractors performing work on this Project are responsible for determining the applicable prevailing wage rates issued by the Illinois Department of Labor at the time of bid submission and performance of the Work. Failure of a bidder/contractor to make such determination shall not relieve it of its obligations in accordance with the Contract Documents.

16.2 The Contractor shall insert into each subcontract and into the project specifications for each subcontract (i) a written stipulation to the effect that not less than the prevailing rate of wages shall be paid to all laborers, workers and mechanics performing work under the subcontract; and (ii) a requirement that each subcontractor include a comparable provisions in each lower tiered subcontract and in the project specifications for each lower tiered subcontract.

16.3 The Contractor and each of its subcontractors shall make and keep, for a period of not less than three years, true and accurate records of the name, address, telephone number when available, Social Security number, and occupation of all laborers, workers and mechanics employed by them in connection with performance of the Work. These records must show the actual hourly wages paid in each pay period to each employee, and the hours worked each day in each work week by each employee, including his or her starting and ending times. The Contractor and each of its subcontractors shall make these records available for inspection at all reasonable hours to the Director of Labor and his deputies and agents. Any Contractor or subcontractor that maintains its principal place of business outside of Illinois is required to make these records or accurate copies of them available within Illinois at all reasonable hours for inspection.



## **Article 17 – Sexual Harassment Policy**

17.1 Pursuant to Section 2-105 of the Illinois Human Rights Act (775 ILCS 5/1-101 et seq.) (“Act”), the Contractor shall have in effect and in force, a written sexual harassment policy which includes, at a minimum, the following provisions: (i) a statement on the illegality of sexual harassment; (ii) the definition of sexual harassment under Illinois law; (iii) a description of sexual harassment, utilizing examples; (iv) an internal complaint process, including penalties; (v) the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights (“Department”) and the Illinois Human Rights Commission (“Commission”); (vi) directions on how to contact the Department and the Commission; and (vii) protections against retaliation as provided by Section 6-101 of the Act.

17.2 The Contractor understands, acknowledges, agrees and warrants to the Owner that it is now, and will remain for the entirety of the Contract in compliance with Section 2-105. A violation of Section 2-105 is grounds for the immediate cancellation of the Contract. However, any forbearance or delay by the Owner in canceling the Contract shall not be construed as Owner's consent to such violation and shall not constitute a waiver of any rights the Owner may have, including, without limitation, cancellation of the Contract.

## **PERMITTING**

**The Owner shall be responsible at their expense to provide all necessary permitting per the project scope and as directed by the Rolling Meadows Park District (RMPD). The Contractor is responsible for registering with the City of Rolling Meadows Community Development and payment of any related fees.**

END OF SECTION

**Bidder Certification**

Proposal of \_\_\_\_\_, hereinafter called "BIDDER",

\_\_\_\_\_  
(a)/(an) (corporation, partnership, individual)

doing business as \_\_\_\_\_

to the **Rolling Meadows Park District**, hereinafter called the "Owner".

The Bidder, in response to your advertisement for bids of “**3000 Central Road Building Fire Alarm Replacement**”, examined the Specifications and other documents, hereby proposes to furnish and deliver all materials and supplies in accordance with the Contract Documents, within the time set forth therein and at the prices stated below. These prices are to cover full completion of the Work described within these documents.

Bidder acknowledges receipt of the following Addenda, which are a part of the Contract Documents:

Addendum # \_\_\_\_\_ Dated \_\_\_\_\_

Addendum # \_\_\_\_\_ Dated \_\_\_\_\_

Addendum # \_\_\_\_\_ Dated \_\_\_\_\_

Addendum # \_\_\_\_\_ Dated \_\_\_\_\_

Bidder hereby agrees to start work within ten (10) days after receipt of "Notice to Proceed" from the Owner and to substantially complete the project as specified in the Project Identification and Schedule.

Important Note – Federal Laws and Regulations Concerning the Payment of Prevailing Wages Apply to this Project. Copies of the Labor Standards Provisions and the most recent Department of Labor Wage Determination are herewith provided.

**THE FOLLOWING MUST BE RETURNED WITH THE BID:**

The Bid Form Completed.

The Required Certifications forms.

Bidder agrees to perform all of the work described in the Specifications and shown on the Drawings for the Unit Prices or Lump Sum, as applicable, as listed on the Line Item Bid Form.

Accompanying bid is a 10 % Bid Bond (in the form of a Bid Bond or Cashier's Check) in the amount of (s \_\_\_\_\_), the same being subject to forfeiture in the event of default by the undersigned.

In submitting this bid, it is understood that the right is reserved by the Owner to reject any and all bids and it is agreed that this bid may not be withdrawn during the period of days provided in the Contract Documents.

The Bidder hereby certifies:

- A. That this bid is genuine and is not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation.
- B. That he has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid.
- C. That he has not solicited or induced any person, firm, or corporation to refrain from bidding.
- D. That he has not sought by collusion or otherwise to obtain for himself any advantage over any other bidder or over the "Owner".
- E. That he will comply with all provisions of the current Prevailing Wage Ordinance.
- F. That he is in compliance with the Criminal Code Act of 1961, Article E-11, Public Contracts, and Public Act 85-1295.
- G. That all materials, methods and workmanship shall conform to the drawings, specifications, manufacturer's standards and specifications.
- H. That the Contractor Compliance and Certifications Attachment is true and correct in all respects.

---

(Company)

BY: \_\_\_\_\_

(Sign)

(Date)

---

(Print Name & Title)

END OF SECTION

**17. BID FORM**



**“3000 Central Road Building Fire Alarm Replacement”  
Project/Renovation  
3705 Pheasant Drive  
Rolling Meadows, IL. 60008**

**Date** \_\_\_\_\_

**Company Name** \_\_\_\_\_

**Address** \_\_\_\_\_

**City** \_\_\_\_\_

**Phone** \_\_\_\_\_ **Fax** \_\_\_\_\_

**Email Address** \_\_\_\_\_

**Authorized by** \_\_\_\_\_

**Base Bid Total:** \_\_\_\_\_

**Materials Cost:** \_\_\_\_\_

**Labor Cost:** \_\_\_\_\_

**Profit and Overhead:** \_\_\_\_\_

**UNIT COSTS**

**Unit Price 1: Ceiling Mounted Smoke Detector with 25' of Cable Installed**

**Material Cost:** \_\_\_\_\_ **Labor Cost:** \_\_\_\_\_

**Profit and Overhead:** \_\_\_\_\_

**Unit Price 2: Ceiling Mounted Heat Detector with 25' of Cable Installed**

**Material Cost:** \_\_\_\_\_ **Labor Cost:** \_\_\_\_\_

**Profit and Overhead:** \_\_\_\_\_

**Unit Price 3: Wall Mounted Pull Station with Raceway System and Cabling Installed**

**Material Cost:** \_\_\_\_\_ **Labor Cost:** \_\_\_\_\_

**Profit and Overhead:** \_\_\_\_\_

**Unit Price 4: Wall Mounted Visual Notification with Raceway System and Cabling Installed**

**Material Cost:** \_\_\_\_\_ **Labor Cost:** \_\_\_\_\_

**Profit and Overhead:** \_\_\_\_\_

**Unit Price 5: Wall Mounted Audio/Visual Notification Device with Raceway System and Cabling Installed**

**Material Cost:** \_\_\_\_\_ **Labor Cost:** \_\_\_\_\_

**Profit and Overhead:** \_\_\_\_\_

**Unit Price 6: Ceiling Mounted Visual Notification Device with Cabling Installed**

**Material Cost:** \_\_\_\_\_ **Labor Cost:** \_\_\_\_\_

**Profit and Overhead:** \_\_\_\_\_

**Unit Price 7: Ceiling Mounted Audio/Visual Notification Device with Cabling Installed**

Material Cost: \_\_\_\_\_ Labor Cost: \_\_\_\_\_

Profit and Overhead: \_\_\_\_\_

**Unit Price 8: Duct Smoke Detector with Raceway and Cabling Installed**

Material Cost: \_\_\_\_\_ Labor Cost: \_\_\_\_\_

Profit and Overhead: \_\_\_\_\_

**Unit Price 9: Duct Smoke Detector Keyed Test Switch Mounted on Ceiling with Raceway System and Cabling Installed**

Material Cost: \_\_\_\_\_ Labor Cost: \_\_\_\_\_

Profit and Overhead: \_\_\_\_\_

**Unit Price 10: Module for Tamper or Flow Switch with Raceway System and Cabling Installed**

Material Cost: \_\_\_\_\_ Labor Cost: \_\_\_\_\_

Profit and Overhead: \_\_\_\_\_

**Unit Price 11: Pull Station Alarmed Guard Installed**

Material Cost: \_\_\_\_\_ Labor Cost: \_\_\_\_\_

Profit and Overhead: \_\_\_\_\_

**Unit Price 12: Rewiring and Integration of Exiting Door Hold Open Into New Fire Alarm System.**

Material Cost: \_\_\_\_\_ Labor Cost: \_\_\_\_\_

Profit and Overhead: \_\_\_\_\_

The Rolling Meadows Park District reserves the right to obtain all materials through a Co-op Purchasing Programing. Low Bidder may only be based on labor.

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 WORK INCLUDES

- A. Submittals procedures.
- B. Shop drawings.
- C. Product data.
- D. Manufacturers' instructions.
- E. Schedule of Values.
- F. Contractor responsibilities.
- G. Engineer's duties.

1.3 RELATED WORK

- A. Specified Elsewhere:
  - 1. Section 01 3100 - Project Coordination
  - 2. Section 01 7700 - Closeout Procedures: Contract warranty and manufacturer's certificates; closeout submittals.

1.4 DEFINITIONS

- A. Shop Drawings: Shop drawings are original drawings prepared by Contractor, subcontractor, sub-subcontractor, supplier, or distributor, which illustrate some portion of the work, showing fabrication, layout, setting or erection details.
  - 1. Prepared by qualified detailer.
  - 2. Identify details by reference to sheet and detail number shown on contract drawings.
  - 3. Minimum sheet size: 8-1/2" x 11".
  - 4. PDF Format.
- B. Product Data:
  - 1. Manufacturer's standard schematic drawings.



- a. Modify to delete information which is not applicable to project.
  - b. Supplement standard information to provide additional information applicable to project.
2. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data.
- C. Samples: Physical samples to illustrate materials, equipment or workmanship. Approved samples establish standards by which complete work is judged. Maintain at site as directed. Protect until no longer needed.

#### 1.5 CONTRACTOR'S USE OF ENGINEER'S ELECTRONIC FILES

- A. General: At Contractor's written request, copies of Engineer's electronic files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:
1. Upon request to utilize electronic media, the Contractor shall complete an "Electronic File Transfer" form provided by 20/10 Engineering and return the signed form.
  2. Construction drawings for this project have been prepared utilizing AutoCAD. We make no representation as to the compatibility of these files with your hardware or your software beyond the specified release of the referenced specifications.
  3. The electronic contract documents can be used for preparation of shop drawings and as-built drawings only. The information may not be used in whole or in part for any other project.
  4. The use of these AutoCAD documents by the Contractor does not relieve them from their duty to fully comply with the contract documents, including, and without limitation, the need to check, confirm and coordinate all dimensions and details, take field measurements, verify field conditions and coordinate your work with that of the other contractors for the project.
  5. The information is provided to expedite the project and assist the Contractor with no guarantee by 20/10 Engineering as to the accuracy or correctness of the information provided. 20/10 Engineering accepts no responsibility or liability for the Contractor's use of these documents.

#### 1.6 SUBMITTAL PROCEDURES - GENERAL

- A. Sequentially number the transmittal forms. Re-submittals to have original number with an alphabetic suffix.
- B. Make all submittals in PDF Format.
- C. Reproduction of the Contract Documents will not be accepted as submittals. The Contract Documents are protected by copyright laws, and shall not be reused or copied in any form without written permission of the authors.
- D. Apply contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction work, and coordination of information, is in accordance with the requirements of the work and Contract Documents.
1. Contractor review must be completed to the greatest extent possible prior to submission to the Engineer.
- E. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of the completed work.

1.7 MANUFACTURER'S INSTRUCTIONS SUBMITTAL PROCEDURES

- A. When specified in individual specification Sections, submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.8 SCHEDULE OF VALUES

- A. Submit Schedule of Values to Engineer at least 15 business days prior to submitting first application for payment.
  - 1. Support values given with data to substantiate its correctness.
  - 2. List quantities of materials specified under unit prices.
  - 3. Use Schedule of Values as only basis for application for payment.
  - 4. Payment for materials stored on or off site will be limited to those materials listed in Schedule of Values.
- B. Form of Submittal
  - 1. Submit typewritten Schedule of Values on form acceptable to the Engineer.
  - 2. Use Project Manual Table of Contents as basis of format for listing costs of all work, unless otherwise indicated by the Engineer.
  - 3. Identify each line item with number and title listed in Project Manual Table of Contents.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 CONTRACTOR RESPONSIBILITIES

- A. Review shop drawings, product data, and samples prior to submission to Engineer.
- B. Verify:
  - 1. Field dimensions.
  - 2. Field construction criteria.
  - 3. Catalog numbers and similar data.
- C. Coordinate each submittal with requirements of:
  - 1. The work.
  - 2. The contract documents.
  - 3. The work of other contractors and Subcontractors.

- D. Contractor's responsibility for errors and omissions in submittals is not relieved by Engineer's review of submittals.
- E. Prior to submission, notify Engineer in writing of all proposed deviations in submittals from contract requirements.
- F. Do not begin any work which requires submittals without having Engineer's stamp and initials or signature.
- G. After Engineer's review, make response indicated by the Engineer's stamp. Distribute copies of reviewed submittals to concerned parties.
  - 1. Instruct parties to promptly report any inability to comply with provisions.

### 3.2 ENGINEER'S DUTIES

- A. Review submittals within 20 business days, unless notice is otherwise given to the Contractor.
- B. Review for:
  - 1. Consistency with design concept of project.
  - 2. Compliance with Contract Documents.
- C. Review all requests for proposed deviations.
- D. Review of separate item does not constitute review of assembly in which item functions.
- E. Affix stamp, date and initials or signature certifying to review of submittal, and with indications for Contractor response.
- F. Return submittals to Contractor for response or distribution. The Engineer will return the reviewed and stamped in electronic PDF Format to the Contractor.

### 3.3 RESUBMISSION REQUIREMENTS

- A. Shop drawings:
  - 1. Revise initial drawings as indicated and resubmit in accordance with submittal procedures.
  - 2. Indicate on drawings all changes which have been made in addition to those requested by Engineer.
- B. Product data and samples: Submit new data and samples as specified for initial submittal.
- C. Make all re-submittals within 10 business days after date of Engineer's previous review.

END OF SECTION 013300

SECTION 017329 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 WORK INCLUDES

- A. Requirements and limitations for cutting and patching of work.
  - 1. Execute cutting, filling, or patching of work, required to:
    - a. Make several parts fit properly.
    - b. Uncover work to provide for installation of ill-timed work.
    - c. Remove and replace defective work.
    - d. Remove and replace work not conforming to contract requirements.
    - e. Install specified work in existing construction.
  - 2. Do not cut or alter work of another contractor without written consent of Engineer.

1.3 RELATED WORK

- A. Specified Elsewhere:
  - 1. Section 01 1000 - Project Summary
  - 2. Section 01 3300 - Submittal Procedures

1.4 SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:
  - 1. Structural integrity of any element of Project.
  - 2. Integrity of weather-exposed or moisture-resistant element.
  - 3. Efficiency, maintenance, or safety of any operational element.
  - 4. Visual qualities of sight exposed elements.
- B. Prior to cutting and patching done on request of Engineer, submit cost estimate.

1.5 PAYMENT FOR COSTS

- A. Costs caused by ill-timed or defective work, or work not conforming to contract documents, including costs for additional services of Engineer: Party responsible for ill-timed, rejected, or non-conforming work.

- B. Work done on request of Engineer, in addition to the contract requirements, other than defective or non-conforming work: Owner.
- C. Cutting and patching of all major holes in existing materials in remodeling work for the penetration of any contractor's work shall be installed by the Contractor. Cost of cutting and patching of these holes, as well as costs for lintels, sleeves, or other associated construction, shall be borne by the Contractor.
- D. Cost of cutting of minor holes in existing materials in remodeling work, and cost of cutting of new materials installed in remodeling work shall be the responsibility of the trade requiring the cutting. Patching shall be done by the trade normally involved with that type of work at the cost of the trade requiring the cutting.
- E. Major holes shall be defined as any opening 8" x 8" or 8" in diameter, or larger, in surface area by depth as required. Minor holes shall be defined as any opening smaller than a major hole.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Primary Products: Those required for original installation.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- B. After uncovering existing Work, inspect conditions affecting performance of work.
- C. Beginning of cutting or patching means acceptance of existing conditions.

### 3.2 PREPARATION

- A. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.

### 3.3 CUTTING AND PATCHING

- A. Execute cutting, fitting, and patching to complete work.
- B. Fit products together, to integrate with other work.
- C. Remove and replace defective or non-conforming work.

3.4 PERFORMANCE

- A. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- B. Employ original installer to perform cutting and patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.
- C. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior acceptance.
- D. Restore work with new products in accordance with requirements of Contract Documents.
- E. Fit work air tight to pipes, sleeves, conduit, and other penetrations through surfaces.
- F. At penetrations of fire-rated walls, completely seal voids with fire-rated, fire resistant material to full thickness of the penetrated element.
- G. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION 017329

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. Grounding electrodes and conductors.
  - 2. Equipment grounding conductors.
  - 3. Bonding methods and materials.
  - 4. Conduit and equipment supports.
  - 5. Anchors and fasteners.
  - 6. Nameplates and labels.
  - 7. Wire markers.
  - 8. Raceway markers.
  - 9. Underground warning tape.
  - 10. Sealing and fireproofing of sleeves and openings between conduits, wireways, boxes and troughs.

1.3 REFERENCES

- A. NECA (National Electrical Contractors Association) - Standard of Installation.
- B. NETA ATS (International Electrical Testing Association) - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.

1.4 SYSTEM DESCRIPTION

- A. Grounding systems use the following elements as grounding electrodes:
  - 1. Metal underground water pipe.
  - 2. Metal building frame.
  - 3. Concrete-encased electrode.
  - 4. Ground ring.
  - 5. Rod electrode.
- B. Anchor and fasten electrical products to building elements and finishes as follows:
  - 1. Concrete Structural Elements: Provide precast inserts, expansion anchors, powder actuated anchors and preset inserts.

2. Steel Structural Elements: Provide beam clamps, spring steel clips, steel ramset fasteners, and welded fasteners.
3. Concrete Surfaces: Provide self-drilling anchors and expansion anchors.
4. Hollow Masonry, Plaster, and Gypsum Board Partitions: Provide toggle bolts and hollow wall fasteners.
5. Solid Masonry Walls: Provide expansion anchors and preset inserts.
6. Sheet Metal: Provide sheet metal screws.
7. Wood Elements: Provide wood screws.

C. Identify electrical components as follows:

1. Nameplate for each electrical distribution and control equipment enclosure.
2. Wire marker for each conductor at panelboard gutters, pull boxes, outlet and junction boxes and each load connection.
3. Underground warning tape along length of each underground raceway or cable.

1.5 DESIGN REQUIREMENTS

- A. Select materials, sizes, and types of anchors, fasteners, and supports to carry loads of equipment and raceway, including weight of wire and cable in raceway.

1.6 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 25 ohms or less.

1.7 SUBMITTALS FOR REVIEW

- A. Coordination Shop Drawings: Provide 1/8" = 1'-0" scale drawings indicating location and elevation of all conduits 2" and larger, both above and below grade, pull boxes, panelboards, grounding electrodes, etc., prior to fabrication or installation of any work. Drawings shall also be submitted electronically in AutoCAD to ventilation contractor who will create "overlay" drawings indicating locations and elevations of work of all trades in different colors for final coordination and sign-off by all trades.

1.8 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Provide updated version of 1/8" = 1'-0" scale coordination shop drawings indicating actual locations of items shown on the original drawings. Drawings shall include all revisions incorporated throughout the project. Drawings shall include updated plans views, circuiting, risers, panel schedules and routing of all feeders.
- B. Test Reports: Indicate overall resistance to ground and resistance of each electrode.

1.9 QUALIFICATIONS

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



1.10 REGULATORY REQUIREMENTS

- A. Conform to the 2018 International Building Code (IBC).
- B. Conform to the 2018 International Existing Building Code (IEBC).
- C. Conform to the 2018 International Fuel Gas Code (IFGC).
- D. Conform to the 2018 International Property Maintenance Code (IPMC).
- E. Conform to the 2018 International Fire Code (IFC), excluding Chapter 4.
- F. Conform to the 2018 Illinois Accessibility Code, 71 Illinois Administrative Code 400.
- G. Conform to the 2018 International Mechanical Code (IMC).
- H. Conform to 2017 NFPA 70, National Electrical Code.
- I. Conform to 2016 NFPA 72, National Fire Alarm Code.
- J. Conform to all local amendments as adopted by the City of Rolling Meadows to the listed Codes
- K. Products: Listed and classified by Underwriter's Laboratories, Inc. as suitable for the purpose specified and indicated.

1.11 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

PART 2 - PRODUCTS

2.1 ROD ELECTRODES

- A. Material: Copper-clad steel.
- B. Diameter: 3/4 inch or larger.
- C. Length: 10'-0" or longer.

2.2 MECHANICAL CONNECTORS

- A. Description: Bronze connectors, suitable for grounding and bonding applications, in configurations required for particular installation.

2.3 EXOTHERMIC CONNECTIONS

- A. Manufacturers:

1. Erico, Inc.
2. Harger Lightning Protection.
3. Thomas & Betts Corp.

- B. Product Description: Exothermic materials, accessories, and tools for preparing and making permanent field connections between grounding system components.

#### 2.4 WIRE

- A. Material: Stranded copper.
- B. Foundation Electrodes: 4 AWG. or larger.
- C. Grounding Electrode Conductor.

#### 2.5 ANCHORS AND FASTENERS

- A. Anchors and Fasteners: Compatible with application.
- B. Materials and Finishes: Corrosion resistant.

#### 2.6 FORMED STEEL CHANNEL

- A. Manufacturers:
1. Cooper B-Line.
  2. Unistrut.
  3. Superstrut.
- B. Description: Galvanized steel.

#### 2.7 SPRING STEEL CLIPS

- A. Manufacturers:
1. Cooper B-Line.
  2. Erico, Inc.
  3. Thomas & Betts Corp.

#### 2.8 NAMEPLATES AND LABELS

- A. Nameplates: Engraved three-layer laminated plastic, black letters on white background.
- B. Letter Size:
1. 1/4" letters for identifying individual equipment and loads.
- C. Labels: Embossed adhesive tape, with 3/16 inch white letters on black background.

2.9 WIRE MARKERS

- A. Description: Cloth tape , split sleeve , or tubing type wire markers.
- B. Legend:
  - 1. Power and Lighting Circuits: Branch circuit or feeder number as indicated on Drawings.
  - 2. Control Circuits: Control wire number as indicated on shop drawings, schematic and interconnection diagrams.

2.10 UNDERGROUND WARNING TAPE

- A. Description: 4 inch wide plastic tape, colored red or yellow with suitable warning legend describing buried electrical lines.

2.11 SEALING AND FIREPROOFING

- A. Fire and Smoke Rated Surfaces:
  - 1. Manufacturers:
    - a. 3M CP 25N/S or CP25S/L caulk.
    - b. 3M FS 195 wrap or strip with restricting collar.
    - c. 3M CS 195 composite sheet.
    - d. 3M Fire Barrier Moldable Putty Pads MPP+
    - e. Pipe Shield, Inc. series F fire barrier kits.
    - f. Proset Systems fire rated floor and wall penetrations.
    - g. Insta-Foam Products Insta-Fire Seal Firestop Foam.
    - h. Dow Corning Fire Stop System.
    - i. Substitutions: Under provisions of Section 01 60 00.
- B. General:
  - 1. Furnish UL listed products or products tested by independent testing laboratory.
  - 2. Select products with rating not less than rating of wall or floor being penetrated.
- C. Non-Rated Surfaces:
  - 1. Stamped steel, chrome plated, hinged, split ring escutcheons or floor plates or ceiling plates for covering openings in occupied areas where conduit is exposed.
  - 2. For exterior wall openings below grade, furnish modular mechanical type seal consisting of interlocking synthetic rubber links shaped to continuously fill annular space between conduit and cored opening or water-stop type wall sleeve.
  - 3. For interior wall or floor openings, furnish one of the following to effect seal:
    - a. Tremco Dymonic.
    - b. Sika Corp. Sikaflex la.
    - c. Sonneborn Sonolastic NPI.
    - d. Mameco Vilken 116 urethane caulk
    - e. .ATS acoustical Putty Pads for Junction Boxes
    - f. Substitutions: Under provisions of Section 01 60 00.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify final backfill and compaction has been completed before driving rod electrodes.
- B. Verify abandoned wiring and equipment serve only abandoned facilities.

3.2 INSTALLATION

A. Grounding and Bonding Installation:

- 1. Install rod electrodes at required locations. Install additional rod electrodes to achieve specified resistance to ground.
- 2. Install bonding meeting Regulatory Requirements.
- 3. Provide service grounding electrode from service to street side service entrance location of main water pipe. Provide jumper around water meter.
- 4. Provide grounding electrode connection to the metal frame of the building, where effectively grounded.
- 5. Provide and electrode encased by at least 2 inches of concrete, located within and near the bottom of a concrete foundation or footing that is in direct contact with the earth, consisting of at least 20 feet of one or more bare or zinc galvanized or other electrically conductive coated steel reinforcing bars or rods of not less than copper conductor not smaller than No. 4.
- 6. Provide a ground ring encircling the building or structure, in direct contact with the earth at a depth below earth surface not less than 2 1/2 feet, consisting of at least 20 feet of bare copper conductor not smaller than No. 2.
- 7. Bond together metal siding not attached to grounded structure; bond to ground.
- 8. Equipment Grounding Conductor: Install separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.
- 9. Locate and install anchors, fasteners, and supports in accordance with NECA "Standard of Installation".
- 10. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
- 11. Do not use spring steel clips and clamps.
- 12. Obtain permission from Architect/Engineer before using powder-actuated anchors.
- 13. Obtain permission from Architect/Engineer before drilling or cutting structural members.

B. Supports:

- 1. Fabricate supports from structural steel or formed steel members. Rigidly weld members or install hexagon head bolts to present neat appearance with adequate strength and rigidity. Install spring lock washers under nuts.
- 2. Install surface mounted cabinets and panelboards with minimum of four anchors.
- 3. In wet and damp locations install steel channel supports to stand cabinets and panelboards 1 inch off wall.
- 4. Install sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

C. Identification Components:

- 1. Degrease and clean surfaces to receive nameplates and labels.
- 2. Install nameplate and label parallel to equipment lines.

3. Secure nameplate to equipment front using screws , rivets , or adhesive.
4. Secure nameplate to inside surface of door on recessed panelboard in finished locations.
5. Identify underground conduits using one underground warning tape for each trench at 4 inches below finished grade.

D. Box Painting: Identify fire alarm system junction, pull and backboxes with paint, red in color.

E. Panelboard Schedules:

1. Provide typed circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes required to balance phase loads.
2. Provide typed circuit directory for each existing panelboard modified under contract. New directory shall include all existing loads previously documented in existing directory and new loads. Identify any breakers in existing panels that do not have load conductors terminated at their lugs and mark as spare. Leave spare breakers in the off position.
3. All panelboard schedules shall list the date created and the size and location (source panel and room) of the upstream over current protection for the feeder serving the panel.

### 3.3 SEALING AND FIREPROOFING

A. Fire Rated Surface:

1. Seal opening at floor, wall, partition, ceiling, and roof as follows:
  - a. Install 12 gage steel sleeve through opening and extending beyond minimum of 1 inch on each side of building element.
  - b. Size sleeve allowing minimum of 1 inch void between sleeve and building element.
  - c. Pack void with backing material.
  - d. Seal ends of sleeve with UL listed fire resistive silicone compound to meet fire rating of structure penetrated.
2. Where conduit or other type of electrical raceway, bus or enclosure penetrates fire rated surface, install firestopping product in accordance with manufacturer's published instructions.
3. Utilize suitable and listed materials and methods to maintain fire and smoke resistive rating of all partitions. Penetration and boxes shall be installed and fire sealed to maintain listed partition ratings.

B. Non-Rated Surfaces:

1. Seal opening through non-fire rated wall, floor, ceiling, and roof opening as follows:
  - a. Install 12 gage steel sleeve through opening and extending beyond minimum of 1 inch on each side of building element.
  - b. Size sleeve allowing minimum of 1 inch void between sleeve and building element.
  - c. Install type of firestopping material recommended by manufacturer.
2. Install escutcheons floor plates or ceiling plates where conduit, penetrates non-fire rated surfaces in occupied spaces. Occupied spaces include rooms with finished ceilings and where penetration occurs below finished ceiling.
3. Exterior wall openings below grade: Assemble rubber links of mechanical seal to size of conduit and tighten in place, in accordance with manufacturer's instructions.

4. Interior partitions: Seal pipe penetrations at computer rooms, telecommunication rooms and data rooms. Apply sealant to both sides of penetration to completely fill annular space between sleeve and conduit.
5. In acoustical partitions, install pads and sealant to maintain acoustical ratings.

C. Sleeves:

1. Sleeves shall be provided for all cable penetrations through partitions for any and all systems. Where sleeve size is not specified on the plans, sleeves shall be provided such that no sleeve is filled beyond 40%. Seal sleeve after completion of cable pulls. Minimum size sleeve shall be 3/4" EMT.

3.4 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS, except Section 4.
- B. Grounding and Bonding: Perform inspections and tests listed in NETA ATS, Section 7.13.

END OF SECTION 260500

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. Building Wire and Cable.
  - 2. Exterior Direct Bury Cable Assemblies.
  - 3. Wiring Connectors and Connections.

1.3 REFERENCES

- A. NECA Standard of Installation (National Electrical Contractors Association).
- B. NETA ATS (International Electrical Testing Association) - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- C. NFPA 70 - National Electrical Code.

1.4 SUBMITTALS

- A. See Division 01 for project requirements.
- B. Product Data: Submit for building wire and cable type.

1.5 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of components and circuits.

1.6 QUALIFICATIONS

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

1.7 REGULATORY REQUIREMENTS

- A. Conform to the 2018 International Building Code (IBC).

- B. Conform to the 2018 International Existing Building Code (IEBC).
- C. Conform to the 2018 International Fuel Gas Code (IFGC).
- D. Conform to the 2018 International Property Maintenance Code (IPMC).
- E. Conform to the 2018 International Fire Code (IFC), excluding Chapter 4.
- F. Conform to the 2018 Illinois Accessibility Code, 71 Illinois Administrative Code 400.
- G. Conform to the 2018 International Mechanical Code (IMC).
- H. Conform to 2017 NFPA 70, National Electrical Code.
- I. Conform to 2016 NFPA 72, National Fire Alarm Code.
- J. Conform to all local amendments as adopted by the City of Rolling Meadows to the listed Codes
- K. Products: Listed and classified by Underwriter's Laboratories, Inc. as suitable for the purpose specified and indicated.

#### 1.8 PROJECT CONDITIONS

- A. Verify that field measurements are as indicated.
- B. Conductor sizes are based on copper.
- C. Wire and cable routing indicated is approximate unless dimensioned. Include wire and cable lengths within 10 ft of length shown.

#### 1.9 COORDINATION

- A. Where wire and cable destination is indicated and routing is not shown, determine exact routing and lengths required.

### PART 2 - PRODUCTS

#### 2.1 BUILDING WIRE

- A. Manufacturers:
  - 1. Allied Wire & Cable.
  - 2. Encore Wire.
  - 3. Cerro Wire and Cable.
  - 4. Southwire.
  - 5. Republic Wire
- B. Description: Single conductor insulated wire.



- C. Conductor: Copper.
- D. Insulation Voltage Rating: 600 volts.
- E. Insulation: NFPA 70, Type THHN/THWN-2 or XHHW-2 for service-entrance conductors, feeders and branch circuits.

## 2.2 EXTERIOR DIRECT BURY CABLE ASSEMBLIES

- A. Manufactures:
  - 1. General Cable
  - 2. Southwire.
- B. Description: Unshielded, multiconductor, cable assembly under one sheath. Type TC-ER with Method 4 Color Code, suitable for direct burial in soil.
- C. Conductor: Copper.
- D. Insulation Voltage Rating: 600 volts.

## 2.3 WIRING CONNECTORS

- A. Provide connectors specifically designed for the conductor sizes utilized.
- B. When splicing or connecting dissimilar metal conductors (copper to aluminum) use only UL listed, labeled and identified materials and methods.
- C. All terminals and splicing shall be in accordance with NEC Section 110-14.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that interior of building has been protected from weather.
- C. Verify that mechanical work likely to damage wire and cable has been completed.
- D. Verify that raceway installation is complete and supported.

### 3.2 PREPARATION

- A. Completely and thoroughly swab raceway before installing wire and cable.

### 3.3 INSTALLATION

- A. Route wire and cable as required to meet Project Conditions.
- B. Install cable in accordance with the NECA "Standard of Installation."
- C. Use solid conductor for feeders and branch circuits 10 AWG and smaller.
- D. Use stranded conductors for control circuits.
- E. Use conductor not smaller than 12 AWG for power and lighting circuits.
- F. Use conductor not smaller than 18 AWG for control circuits.
- G. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.
- H. Pull all conductors into raceway at same time.
- I. Use suitable wire pulling lubricant for building wire 4 AWG and larger unless pre-lubricated.
- J. Protect exposed cable from damage.
- K. Support cables above accessible ceiling, using bridal rings. Do not rest cable on ceiling panels.
- L. Use UL listed and labeled cable fittings and connectors.
- M. Neatly train and lace wiring inside boxes, equipment, switchboards and panelboard enclosures.
- N. Clean conductor surfaces before installing lugs and connectors.
- O. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
- P. Use split bolt connectors for copper conductor splices and taps, 6 AWG and larger. Tape uninsulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.
- Q. Use solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG.
- R. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.
- S. Identify and color code wire and cable under provisions of Section 26 05 53. Identify each conductor with its circuit number or other designation indicated.
- T. All terminations, splices and taps shall be torqued in accordance with manufacturer's recommendations. In the absence of connector or equipment manufacturer's recommended torque values, use UL Standard 486A-B or NFPA70- Informative Annex I.

### 3.4 FIELD QUALITY CONTROL

- A. Inspect and test prior to starting system.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. Rod Electrodes.
  - 2. Wire.
  - 3. Mechanical Connectors.
  - 4. Exothermic Connections.

1.3 REFERENCES

- A. IEEE 142 - Recommended Practice for Grounding of Industrial and Commercial Power Systems.
- B. IEEE 1100 - Recommended Practice for Powering and Grounding Electronic Equipment.
- C. NETA ATS (International Electrical Testing Association) - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- D. NFPA 70 - National Electrical Code.

1.4 GROUNDING SYSTEM DESCRIPTION

- A. Grounding systems use the following elements as grounding electrodes.
  - 1. Metal underground water pipe.
  - 2. Metal building frame.
  - 3. Concrete-encased electrode.
  - 4. Ground ring.
  - 5. Ground rod.
  - 6. Plate electrode.

1.5 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 25 ohms or less. Capable of achieving 0.1 ohms or less at the sound system master technical, ground bus. The main utility ground electrode system may need to be augmented by supplementary ground electrode(s) to achieve this low resistance to ground.

1.6 REGULATORY REQUIREMENTS

- A. Conform to the 2018 International Building Code (IBC).
- B. Conform to the 2018 International Existing Building Code (IEBC).
- C. Conform to the 2018 International Fuel Gas Code (IFGC).
- D. Conform to the 2018 International Property Maintenance Code (IPMC).
- E. Conform to the 2018 International Fire Code (IFC), excluding Chapter 4.
- F. Conform to the 2018 Illinois Accessibility Code, 71 Illinois Administrative Code 400.
- G. Conform to the 2018 International Mechanical Code (IMC).
- H. Conform to 2017 NFPA 70, National Electrical Code.
- I. Conform to 2016 NFPA 72, National Fire Alarm Code.
- J. Conform to all local amendments as adopted by the City of Rolling Meadows to the listed Codes
- K. Products: Listed and classified by Underwriter's Laboratories, Inc. as suitable for the purpose specified and indicated.

1.7 QUALITY ASSURANCE

- A. Provide grounding materials conforming to requirements of NEC, IEEE 142, and UL labeled.

1.8 COORDINATION

- A. Complete grounding and bonding of building reinforcing steel prior concrete placement.

PART 2 - PRODUCTS

2.1 ROD ELECTRODES

- A. Manufacturers:
  - 1. Erico Inc.
  - 2. Cadweld.
  - 3. Harger Lightning Protection.
  - 4. ILSCO.
  - 5. Thomas & Betts Corp.
- B. Product Description:
  - 1. Material: Copper-clad steel.
  - 2. Diameter: 3/4 inch.

3. Length: 10 feet.

## 2.2 WIRE

- A. Material: Stranded copper.
- B. Foundation Electrodes: 4 AWG.
- C. Grounding Electrode Conductor: Size to meet NFPA 70 requirements unless indicated larger.

## 2.3 MECHANICAL CONNECTORS

- A. Manufacturers:
  1. Erico Inc.
  2. Cadweld.
  3. Harger Lightning Protection.
  4. ILSCO.
  5. Thomas & Betts Corp.
- B. Description: Bronze connectors, suitable for grounding and bonding applications, in configurations required for particular installation.

## 2.4 EXOTHERMIC CONNECTIONS

- A. Manufacturers:
  1. Erico Inc.
  2. Cadweld.
  3. Harger Lightning Protection.
  4. ILSCO.
  5. Thomas & Betts Corp.
- B. Description: Exothermic materials, accessories, and tools for preparing and making permanent field connections between grounding system components.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify final backfill and compaction has been completed before driving rod electrodes.

### 3.2 PREPARATION

- A. Remove paint, rust, mill oils, surface contaminants at connection points.

### 3.3 EXISTING WORK

- A. Verify that existing grounding system is effectively grounded.
- B. Modify existing grounding system to maintain continuity to accommodate renovations.
- C. Extend existing grounding system using material and methods compatible with existing electrical installations, or as specified.

### 3.4 INSTALLATION

- A. Install in accordance with IEEE.
- B. Install rod electrodes at locations as indicated on Drawings. Install additional rod electrodes to achieve specified resistance to ground.
- C. Install grounding and bonding conductors concealed from view.
- D. Install 4 AWG bare copper wire in foundation footing where available.
- E. Bond together reinforcing steel and metal accessories in pool structures.
- F. Install branch circuits feeding isolated ground receptacles with separate insulated grounding conductor, connected only at isolated ground receptacle, ground terminals, and at ground bus of serving panel.
- G. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.
- H. Provide service grounding electrode from service to street side service entrance location of main water pipe. Provide jumper around water meter.
- I. Permanently ground entire light and power system in accordance with NEC, including service equipment, distribution panels, lighting panelboards, switch and starter enclosures, motor frames, grounding type receptacles, and other exposed non-current carrying metal parts of electrical equipment.
- J. Accomplish grounding of electrical system by using insulated grounding conductor installed with feeders and branch circuit conductors in conduits. Size grounding conductors in accordance with NEC. Install from grounding bus of serving panel to ground bus of served panel, grounding screw of receptacles, lighting fixture housing, light switch outlet boxes or metal enclosures of service equipment. Ground conduits by means of grounding bushings on terminations at panelboards with installed number 12 conductor to grounding bus.
- K. Grounding electrical system using continuous metal raceway system enclosing circuit conductors in accordance with NEC.
- L. Permanently attach equipment and grounding conductors prior to energizing equipment.

### 3.5 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS, except Section 4.

- B. Grounding and Bonding: Perform inspections and tests listed in NETA ATS, Section 7.13.
- C. Perform ground resistance testing in accordance with IEEE 142.
- D. Perform leakage current tests in accordance with NFPA 99.
- E. Perform continuity testing in accordance with IEEE 142.
- F. When improper grounding is found on receptacles, check receptacles in entire project and correct. Perform retest.

END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. Conduit and equipment supports.
  - 2. Anchors and fasteners.

1.3 REGULATORY REQUIREMENTS

- A. Conform to the 2018 International Building Code (IBC).
- B. Conform to the 2018 International Existing Building Code (IEBC).
- C. Conform to the 2018 International Fuel Gas Code (IFGC).
- D. Conform to the 2018 International Property Maintenance Code (IPMC).
- E. Conform to the 2018 International Fire Code (IFC), excluding Chapter 4.
- F. Conform to the 2018 Illinois Accessibility Code, 71 Illinois Administrative Code 400.
- G. Conform to the 2018 International Mechanical Code (IMC).
- H. Conform to 2017 NFPA 70, National Electrical Code.
- I. Conform to 2016 NFPA 72, National Fire Alarm Code.
- J. Conform to all local amendments as adopted by the City of Rolling Meadows to the listed Codes
- K. Products: Listed and classified by Underwriter's Laboratories, Inc. as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 PRODUCT REQUIREMENTS

- A. Materials and Finishes: Provide adequate corrosion resistance.



- B. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products.
- C. Anchors and Fasteners:
  - 1. Concrete Structural Elements: Use precast insert system, expansion anchors and preset inserts.
  - 2. Steel Structural Elements: Use beam clamps, spring steel clips, steel ramset fasteners, and welded fasteners.
  - 3. Concrete Surfaces: Use self-drilling anchors and expansion anchors.
  - 4. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts and hollow wall fasteners.
  - 5. Solid Masonry Walls: Use expansion anchors and preset inserts.
  - 6. Sheet Metal: Use sheet metal screws.
  - 7. Wood Elements: Use wood screws.

## 2.2 STEEL CHANNEL

- A. Manufacturer:
  - 1. Cooper B-Line.
  - 2. Unistrut.
  - 3. Superstrut.
  - 4. Substitutions: Under provisions of Section 01 60 00.
- B. Description: Galvanized steel, channel, size accordingly to accommodate load served.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".
- C. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.
- D. Do not use spring steel clips and clamps.
- E. Do not use powder-actuated anchors.
- F. Obtain permission from Architect/Engineer before drilling or cutting structural members.
- G. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts. Paint exposed ends of steel channels to protect from corrosion. Provide plastic end caps by steel channel manufacture for all exposed ends below 8'.
- H. Install surface-mounted cabinets with minimum of four anchors.

END OF SECTION 260529

SECTION 260533 - RACEWAY AND BOXES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. Conduit and Tubing.
  - 2. Surface Raceways.
  - 3. Wireways.
  - 4. Outlet Boxes.
  - 5. Pull and Junction Boxes.
  - 6. Wall and ceiling outlet boxes.

1.3 REFERENCES

- A. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
- B. ANSI C80.3 - Electrical Metallic Tubing, Zinc Coated.
- C. ANSI C80.5 - Rigid Aluminum Conduit.
- D. NECA (National Electrical Contractor's Association) - "Standard of Installation"
- E. NEMA FB 1 (National Electrical Manufacturers Association) - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
- F. NEMA OS 1 (National Electrical Manufacturers Association) - Sheet-steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
- G. NEMA OS 2 (National Electrical Manufacturers Association) - Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports.
- H. NEMA RN 1 (National Electrical Manufacturers Association) - Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.
- I. NEMA TC 2 (National Electrical Manufacturers Association) - Electrical Polyvinyl Chloride (PVC) Tubing and Conduit.
- J. NEMA TC 3 (National Electrical Manufacturers Association) - PVC Fittings for Use with Rigid PVC Conduit and Tubing.

- K. NEMA WD 6 - Wiring Device Configurations.
- L. NEMA 250 (National Electrical Manufacturers Association) - Enclosures for Electrical Equipment (1000 Volts Maximum).

#### 1.4 SYSTEM DESCRIPTION

- A. Raceway and boxes located as indicated on Drawings, and at other locations required for splices, taps, wire pulling, equipment connections, and compliance with regulatory requirements. Raceway and boxes are shown in approximate locations unless dimensioned. Provide raceway to complete wiring system.
- B. Underground Outside Foundation Wall: Provide rigid steel conduit, intermediate metal conduit, plastic coated rigid steel conduit. Where approved by all bodies having jurisdiction and indicated on drawings, provide nonmetallic conduit with steel elbows. Provide cast boxes.
- C. In or Under Slab on Grade: Provide rigid steel conduit, intermediate metal conduit, plastic coated rigid steel conduit. Where approved by all bodies having jurisdiction and indicated on drawings, provide nonmetallic conduit with steel elbows. Provide cast boxes.
- D. Outdoor Locations, Above Grade: Provide rigid steel and aluminum conduit. Provide cast metal or nonmetallic outlet, pull, and junction boxes.
- E. In Slab Above Grade: Provide rigid steel conduit or intermediate metal conduit or where approved by all bodies having jurisdiction; provide thickwall nonmetallic conduit with steel elbows. Provide cast or sheet metal boxes.
- F. Wet and Damp Locations: Provide rigid steel and aluminum conduit. Provide cast metal, junction, and pull boxes. Provide flush mounting outlet box in finished areas.
- G. Concealed Dry Locations: Provide rigid steel and aluminum conduit , intermediate metal conduit or electrical metallic tubing. Provide sheet-metal boxes. Provide flush mounting outlet box in finished areas. Provide hinged enclosure for large pullboxes. Conduits 2" and below may be electrical metallic tubing. Conduits over 2" shall be rigid steel and aluminum conduit , intermediate metal conduit, unless indicated otherwise on drawings.
- H. Exposed Dry Locations: Provide rigid steel and aluminum conduit or intermediate metal conduit where subject to damage, otherwise provide electrical metallic tubing. Provide sheet-metal boxes. Provide flush mounting outlet box in finished areas. Provide hinged enclosure for large pullboxes. Conduits 2" and below may be electrical metallic tubing. Conduits over 2" shall be rigid steel and aluminum conduit , intermediate metal conduit, unless indicated otherwise on drawings.
- I. Sleeves: Provided for all cable penetrations through partitions for any and all systems. Where sleeve size is not specified on the plans, sleeves shall be provided such that no sleeve is filled beyond 40%. Seal sleeve after completion of cable pulls. Minimum size sleeve shall be 3/4" EMT.

#### 1.5 REGULATORY REQUIREMENTS

- A. Conform to the 2018 International Building Code (IBC).
- B. Conform to the 2018 International Existing Building Code (IEBC).

- C. Conform to the 2018 International Fuel Gas Code (IFGC).
- D. Conform to the 2018 International Property Maintenance Code (IPMC).
- E. Conform to the 2018 International Fire Code (IFC), excluding Chapter 4.
- F. Conform to the 2018 Illinois Accessibility Code, 71 Illinois Administrative Code 400.
- G. Conform to the 2018 International Mechanical Code (IMC).
- H. Conform to 2017 NFPA 70, National Electrical Code.
- I. Conform to 2016 NFPA 72, National Fire Alarm Code.
- J. Conform to all local amendments as adopted by the City of Rolling Meadows to the listed Codes
- K. Products: Listed and classified by Underwriter's Laboratories, Inc. as suitable for the purpose specified and indicated.

#### 1.6 DESIGN REQUIREMENTS

- A. Minimum raceway size for concealed or exposed locations within building: 3/4 inch. 1/2 inch conduit will be acceptable for end of the line (no more than one circuit). Branch conduits to receptacles or lighting fixtures.
- B. Minimum raceway size in or below slab on grade: 1 inch.
- C. Conduit Size: ANSI/NFPA 70.

#### 1.7 SUBMITTALS

- A. Product Data: Submit for surface raceway system. Provide dimensions, knockout sizes and locations, materials, fabrication details, finishes, and accessories.
- B. Manufacturer's Installation Instructions: Submit application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, and installation of Product.

#### 1.8 CLOSEOUT SUBMITTALS

- A. Project Record Documents:
  - 1. Record actual routing of conduits larger than 2 inch trade size.
  - 2. Record actual locations and mounting heights of outlet, pull, and junction boxes.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Accept conduit on site. Inspect for damage.

- B. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.
- C. Protect PVC conduit from sunlight.

1.10 QUALITY ASSURANCE

- A. Perform work in accordance with NECA Standard of Installation.

1.11 QUALIFICATIONS

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

1.12 COORDINATION

- A. Coordinate installation of outlet boxes for equipment connected under other sections.
- B. Coordinate mounting heights, orientation and locations of outlets mounted above counters, benches, and backsplashes.

PART 2 - PRODUCTS

2.1 METAL CONDUIT

- A. Manufacturers:
  - 1. Allied Tube and Conduit Corp.
  - 2. Republic Conduit.
  - 3. Wheatland Tube Company.
  - 4. Substitutions: Under provisions of Section 01 60 00.
- B. Rigid Steel Conduit: ANSI C80.1.
- C. Rigid Aluminum Conduit: ANSI C80.5.
- D. Intermediate Metal Conduit (IMC): Rigid steel.
- E. Fittings and Conduit Bodies: NEMA FB 1; material to match conduit.

2.2 FLEXIBLE METAL CONDUIT

- A. Manufacturers:
  - 1. Alflex.
  - 2. Anamet Electrical.
  - 3. Electri-Flex Co.

4. Substitutions: Under provisions of Section 01 60 00.

B. Product Description: Interlocked steel or aluminum construction.

C. Fittings: NEMA FB 1.

### 2.3 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

A. Manufacturers:

1. Alflex.
2. Anamet Electrical.
3. Electri-Flex Co.
4. Substitutions: Under provisions of Section 01 60 00.

B. Product Description: Interlocked steel or aluminum construction with PVC jacket.

C. Fittings: NEMA FB 1.

### 2.4 ELECTRICAL METALLIC TUBING (EMT)

A. Manufacturers:

1. Allied Tube and Conduit Corp.
2. Republic Conduit.
3. Wheatland Tube Company.
4. Substitutions: Under provisions of Section 01 60 00.

B. Product Description: ANSI C80.3; galvanized tubing.

C. Fittings and Conduit Bodies: NEMA FB 1; steel or malleable iron, compression type.

D. Provide Red conduit for Fire Alarm conductors.

### 2.5 NONMETALLIC CONDUIT

A. Manufacturers:

1. Cantex, Inc.
2. Carlon Electrical Products.
3. PW Pipe.
4. Substitutions: Under provisions of Section 01 60 00.

B. Product Description: NEMA TC 2; Schedule 40 or outdoors provide Schedule 80 PVC.

C. Fittings and Conduit Bodies: NEMA TC 3.

2.6 SURFACE METALLIC RACEWAYS

- A. Manufacturers:
  - 1. Wiremold, 700 Series.
  - 2. Substitutions: Under provisions of the General Requirements of this specification.
- B. Description: One piece surface steel raceway.
- C. Size: 3/4" wide x 21/32" deep by length as required.
- D. Finish: Ivory scuff coat finish.
- E. Fittings, Device Brackets and Faceplates: Furnish with manufacturer's standard accessories. Accessories include but are not limited to, transition fittings offsets, cover, end caps, dividers and mounting hardware. Where surface mount raceway transition to above ceilings, provide transition fitting that immediately below ceiling cover opening through ceiling materials.
- F. Backboxes and junction boxes containing fire alarm wiring and devices shall be "red" in color.

2.7 SURFACE MULTI CHANNEL METALLIC RACEWAYS

- A. Manufacturers:
  - 1. Wiremold, 4000 Series.
  - 2. Substitutions: Under provisions of the General Requirements of this specification.
- B. Description: Two-piece multichannel steel raceway system with two compartments.
- C. Size: 4 3/4" wide x 1 3/4" deep by length as required.
- D. Finish: Ivory scuff coat finish.
- E. Device Brackets and Faceplates: Furnish high impact plastic mounting bracket and trim.
- F. Fittings: Furnish with manufacturer's standard accessories. Accessories include but are not limited to, transition fittings offsets, cover, end caps, dividers and mounting hardware. Where surface mount raceway transition to above ceilings, provide transition fitting that immediately below ceiling cover opening through ceiling materials.

2.8 WIREWAY

- A. Manufacturers:
  - 1. Cooper B-Line.
  - 2. Hoffman.
  - 3. Square D Company.
  - 4. Substitutions: Industry Standard Equivalent.
- B. Product Description: General purpose or Oiltight and dusttight or Raintight type wireway.

- C. Knockouts: Manufacturer's standard.
- D. Size: 4 x 4 inch unless indicated larger on drawings. Provide length as required.
- E. Cover: Screw cover with full gasketing.
- F. Finish: Rust inhibiting primer coating with gray enamel finish.

## 2.9 OUTLET BOXES

- A. Manufacturers: Minimum depth 2 1/8"
  - 1. Appleton Electric.
  - 2. OZ Gedney.
  - 3. Raco.
  - 4. Red Dot.
  - 5. Thomas & Betts.
  - 6. Substitutions: Industry Standard Equivalent.
- B. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel.
  - 1. Luminaire and Equipment Supporting Boxes: Rated for weight of equipment supported; furnish 3/4 inch male fixture studs where required.
  - 2. Concrete Ceiling Boxes: Concrete type.
- C. Cast Boxes: NEMA FB 1, Type FD, aluminum or cast ferrous alloy. Furnish gasketed cover by box manufacturer. Furnish threaded hubs.
- D. Wall Plates for Finished Areas: As specified in Section 26 27 26.
- E. Wall Plates for Unfinished Areas: Furnish gasketed cover.

## 2.10 BACKBOXES - A/V

- A. Manufacturers: Minimum depth 3"
  - 1. Hubbell. Basis of Design, HBL 260
  - 2. Thomas and Betts. 4 Square
  - 3. Raco. 260
- B. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel.
  - 1. Audio Visual Back Boxes: Concentric knock outs with combinations of 3/4", 1", 1 1/4", 1 1/2", 2" are required. Minimum (2) 2" knock outs are required.
- C. Locations: As detailed on division 27 drawings.

## 2.11 PULL AND JUNCTION BOXES

- A. Manufacturers:



1. Appleton Electric.
  2. Hoffman.
  3. OZ Gedney.
  4. Raco.
  5. Thomas & Betts.
  6. Substitutions: Industry Standard Equivalent.
- B. Sheet Metal Boxes: NEMA OS 1, galvanized steel.
- C. Surface Mounted Cast Metal Box: NEMA 250, Type 4 or 4X; flat-flanged, surface mounted junction box:
1. Material: Galvanized cast iron.
  2. Cover: Furnish with ground flange, neoprene gasket, and stainless steel cover screws.
- D. In-Ground Cast Metal Box: NEMA 250, Type 6, outside or inside flanged, recessed cover box for flush mounting:
1. Material: Galvanized cast iron.
  2. Cover: Nonskid cover with neoprene gasket and stainless steel cover screws.
  3. Cover Legend: "ELECTRIC".
- E. Fiberglass Concrete composite Handholes: Die-molded, glass-fiber concrete composite hand holes:
1. Cable Entrance: Pre-cut 6 inch x 6 inch cable entrance at center bottom of each side.
  2. Cover: Glass-fiber concrete composite, weatherproof cover with nonskid finish.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Verify locations of outlets in offices and work areas prior to rough-in. Review all casework shop drawings and existing conditions prior to rough in. Report discrepancies to architect for direction.

#### 3.2 INSTALLATION

- A. Install raceway and boxes in accordance with NECA "Standard of Installation."
- B. Ground and bond raceway and boxes in accordance with Section 26 05 26.
- C. Fasten raceway and box supports to structure and finishes in accordance with Section 26 05 29.
- D. Identify raceway and boxes in accordance with Section 26 05 53.
- E. Arrange raceway and boxes to maintain headroom and present neat appearance.
- F. Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.

- G. Maintain headroom and present neat mechanical appearance.
- H. Install boxes to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.
- I. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.
- J. Locate outlet boxes to allow luminaires positioned as shown on reflected ceiling plan.
- K. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.
- L. Use flush mounting outlet box in finished areas.

### 3.3 INSTALLATION - RACEWAY

- A. Raceway routing is shown in approximate locations unless dimensioned. Route to complete wiring system.
- B. Arrange raceway supports to prevent misalignment during wiring installation.
- C. Support raceway using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
- D. Group related raceway; support using conduit rack. Construct rack using steel channel specified in Section 26 05 29; provide space on each for 25 percent additional raceways.
- E. Do not support raceway with wire or perforated pipe straps. Remove wire used for temporary supports
- F. Do not attach raceway to ceiling support wires or other piping systems.
- G. Construct wireway supports from steel channel specified in Section 26 05 29.
- H. Route exposed raceway parallel and perpendicular to walls.
- I. Route raceway installed above accessible ceilings parallel and perpendicular to walls.
- J. Route conduit in and under slab from point-to-point.
- K. Maintain clearance between raceway and piping for maintenance purposes.
- L. Maintain 12 inch clearance between raceway and surfaces with temperatures exceeding 104 degrees F.
- M. Cut conduit square using saw or pipe cutter; de-burr cut ends.
- N. Bring conduit to shoulder of fittings; fasten securely.
- O. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for minimum 20 minutes.
- P. Install conduit hubs or sealing locknuts to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.

- Q. Install no more than equivalent of three 90 degree bends between boxes. Install conduit bodies to make sharp changes in direction, as around beams. Install hydraulic one-shot bender to fabricate or factory elbows for bends in metal conduit larger than 2 inch size.
- R. Avoid moisture traps; install junction box with drain fitting at low points in conduit system.
- S. Install fittings to accommodate expansion and deflection where raceway crosses seismic, control and expansion joints.
- T. Install suitable pull string or cord in each empty raceway except sleeves and nipples.
- U. Install suitable caps to protect installed conduit against entrance of dirt and moisture.
- V. Surface Raceway: Install flat-head screws, clips, and straps to fasten raceway channel to surfaces; mount plumb and level. Install insulating bushings and inserts at connections to outlets and corner fittings.
- W. Close ends and unused openings in wireway.
- X. Flexible raceway systems shall not be used to penetrate roofs, floors and air/moisture barriers.
- Y. Raceway systems shall not be routed thru or in HVAC ducts.
- Z. For exterior wall openings below grade, furnish modular mechanical type seal consisting of interlocking synthetic rubber links shaped to continuously fill annular space between conduit and cored opening or water-stop type wall sleeve. Provide products such as LINK-SEAL

#### 3.4 INSTALLATION - SURFACE RACEWAYS

- A. Install Products in accordance with manufacturer's instructions.
- B. Use screws to fasten raceway channel to surfaces. Drill all tile and brick surfaces or fasten into grout lines to limit the damage to these surfaces. Construction adhesive may be used to assist in the mounting of raceway, but shall not be the primary method of support. Mount plumb and level or align with block joints to create a level appearance.
- C. Close ends of raceway and unused conduit openings.
- D. Ground and bond raceway under provisions of Section 26 05 26.
- E. Provide supplemental lumber furring as required to shim surface raceway off of existing walls to allow for installation around columns, imperfections or other obstructions on face of wall. Furring shall be pine or oak lumber, Grade "A". Plywood or composite wood shall not be acceptable.
- F. Surface raceways shall be routed exposed between floor and ceiling. Raceway system shall not protrude above ceiling, through walls or floors or into nonaccessible spaces.

#### 3.5 INSTALLATION - BOXES

- A. Install wall mounted boxes at elevations to accommodate mounting heights as indicated on Drawings.
- B. Adjust box location up to 10 feet prior to rough-in to accommodate intended purpose.

- C. Orient boxes to accommodate wiring devices oriented as specified in Section 26 27 26.
- D. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
- E. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.
- F. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
- G. Do not install flush mounting box back-to-back in walls; install with minimum 6 inches separation. Install with minimum 24 inches separation in acoustic rated walls.
- H. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
- I. Install stamped steel bridges to fasten flush mounting outlet box between studs.
- J. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
- K. Install adjustable steel channel fasteners for hung ceiling outlet box.
- L. Do not fasten boxes to ceiling support wires or other piping systems.
- M. Support boxes independently of conduit.
- N. Install gang box where more than one device is mounted together. Do not use sectional box.
- O. Install gang box with plaster ring for single device outlets.
- P. Use cast outlet box in exterior locations exposed to the weather and wet locations.
- Q. Large Pull Boxes: Use hinged enclosure in interior dry locations, surface-mounted cast metal box in other locations.
- R. Where existing boxes are utilized it shall be the contractors responsibility to modify as required to meet the intent of this specification.

### 3.6 INTERFACE WITH OTHER PRODUCTS

- A. Install conduit to preserve fire resistance rating of partitions and other elements, using approved materials and methods.
- B. Route conduit through roof openings for piping and ductwork or through suitable roof jack with pitch pocket. Coordinate location with roofing installation.
- C. Locate outlet boxes to allow luminaires positioned as indicated on reflected ceiling plan.
- D. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.

3.7 ADJUSTING

- A. Adjust flush-mounting outlets to make front flush with finished wall material.
- B. Install knockout closures in unused openings in boxes.

3.8 CLEANING

- A. Clean interior of boxes to remove dust, debris, and other material.
- B. Clean exposed surfaces and restore finish.

END OF SECTION 260533

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. Nameplates and labels.
  - 2. Wire and cable markers.

1.3 REFERENCES

- A. NFPA 70 - National Electrical Code.

1.4 REGULATORY REQUIREMENTS

- A. Conform to the 2018 International Building Code (IBC).
- B. Conform to the 2018 International Existing Building Code (IEBC).
- C. Conform to the 2018 International Fuel Gas Code (IFGC).
- D. Conform to the 2018 International Property Maintenance Code (IPMC).
- E. Conform to the 2018 International Fire Code (IFC), excluding Chapter 4.
- F. Conform to the 2018 Illinois Accessibility Code, 71 Illinois Administrative Code 400.
- G. Conform to the 2018 International Mechanical Code (IMC).
- H. Conform to 2017 NFPA 70, National Electrical Code.
- I. Conform to 2016 NFPA 72, National Fire Alarm Code.
- J. Conform to all local amendments as adopted by the City of Rolling Meadows to the listed Codes
- K. Products: Listed and classified by Underwriter's Laboratories, Inc. as suitable for the purpose specified and indicated.

## PART 2 - PRODUCTS

### 2.1 NAMEPLATES AND LABELS

- A. Nameplates: Engraved three-layer laminated plastic, black letters on white background.
- B. Locations:
  - 1. Each electrical distribution and control equipment enclosure.
  - 2. Disconnect, starters, enclosed circuit breakers and transformers
  - 3. Security control equipment and enclosures.
  - 4. Communication cabinets.
- C. Letter Size: Use 1/4 inch letters for identifying equipment and describing area served.

### 2.2 WIRE MARKERS

- A. Description: Tape, split sleeve, or tubing type wire markers.
- B. Locations: Each conductor at panelboard gutters, pull boxes, outlet and junction boxes, and each load connection.
- C. Legend:
  - 1. Power and Lighting Circuits: Branch circuit or feeder number indicated on drawings.

### 2.3 CONDUIT MARKERS

- A. Description: Color code all wire and cable as scheduled.
- B. Location: Color coding shall be continuous in the wire insulation or jacket. Where colors cannot be provided, apply color coding tape of the color designated in sufficient quantity for permanency at all exposed terminals, loops and splices.
- C. Wire Color Coding Schedule:
  - 1. 120/208V., 3 phase, 4 wire system:
    - A Phase - Black
    - B Phase - Red
    - C Phase - Blue
    - Neutral - White
    - Ground - Bare or Green
  - 2. 277/480V., 3 phase, 4 wire system:
    - A Phase - Brown
    - B Phase - Orange
    - C Phase - Yellow
    - Neutral - Gray
    - Ground - Bare or Green with Yellow Stripe

2.4 BOX MARKERS

- A. Description: All junction boxes and device boxes serving fire alarm system devices and wiring shall be "red" in color.

2.5 PANELBOARD SCHEDULES

- A. Provide typed circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes required to balance phase loads or other field changes
- B. Provide typed circuit directory for each existing panelboard modified under contract. New directory shall include all existing loads previously documented in existing directory and new loads. Identify any breakers in existing panels that do not have load conductors terminated at their lugs and mark as spare. Leave spare breakers in the off position.
- C. All panelboard schedules shall list the date created and the size and location (source panel and room) of the upstream over current protection for the feeder serving the panel.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Degrease and clean surfaces to receive nameplates and labels.

3.2 APPLICATION

- A. Install nameplate and label parallel to equipment lines.
- B. Secure nameplate to equipment front using screws, rivets, or adhesive.
- C. Secure nameplate to inside surface of door on panelboard that is recessed in finished locations.
- D. Identify underground conduits using underground warning tape. Install one tape per trench at 3 inches below finished grade.
- E. Provide typed panelboard directories inside all panelboards indicating description of load served.

END OF SECTION 260553



SECTION 283100 - ADDRESSABLE FIRE ALARM SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 DESCRIPTION

- A. This section of the specification includes the furnishing, installation, connection and testing of the microprocessor controlled, intelligent reporting fire alarm equipment required to form a complete, operative, coordinated system. It shall include, but not be limited to, alarm initiating devices, alarm notification appliances, Fire Alarm Control Panel (FACP), auxiliary control devices, annunciators, Ethernet and/or digital alarm communications to central stations and wiring as shown on the drawings and specified herein.
- B. The fire alarm system shall comply with requirements of NFPA Standard No. 72 for Local Protected Premises Signaling Systems except as modified and supplemented by this specification. The system field wiring shall be supervised either electrically or by software-directed polling of field devices.
  - 1. The Secondary Power Source of the fire alarm control panel will be capable of providing at least 24 hours of backup power with the ability to sustain 5 minutes in alarm at the end of the backup period.
- C. The fire alarm system shall comply with requirements of NFPA Standard No. 72 for Auxiliary Protected Premises Signaling Systems except as modified and supplemented by this specification. The system field wiring shall be supervised either electrically or by software-directed polling of field devices.
  - 1. The Secondary Power Source of the fire alarm control panel will be capable of providing at least 60 hours of backup power with the ability to sustain 5 minutes in alarm at the end of the backup period.
- D. The FACP and peripheral devices shall be manufactured 100% by a single U.S. manufacturer (or division thereof).
- E. Underwriters Laboratories Inc. (UL) - USA:
  - 1. No. 38 Manually Actuated Signaling Boxes
  - 2. No. 50 Cabinets and Boxes
  - 3. No. 864 Control Units for Fire Protective Signaling Systems
  - 4. No. 268 Smoke Detectors for Fire Protective Signaling Systems
  - 5. No. 268A Smoke Detectors for Duct Applications
  - 6. No. 346 Waterflow Indicators for Fire Protective Signaling Systems
  - 7. No. 464 Audible Signaling Appliances
  - 8. No. 521 Heat Detectors for Fire Protective Signaling Systems
  - 9. No. 1971 Visual Notification Appliances
- F. The installing company shall employ NICET (minimum Level II Fire Alarm Technology) technicians on site to guide the final check-out and to ensure the systems integrity.

- G. The FACP shall meet requirements of UL ANSI 864 Ninth Edition

### 1.3 SCOPE

- A. An intelligent, microprocessor-controlled, fire alarm detection system shall be installed in accordance to the project specifications and drawings.

- B. Basic Performance:

1. Alarm, trouble and supervisory signals from all intelligent reporting devices shall be encoded on NFPA Style 4 (Class B) Signaling Line Circuits (SLC).
2. Initiation Device Circuits (IDC) shall be wired Class B (NFPA Style B) as part of an addressable device connected by the SLC Circuit.
3. Notification Appliance Circuits (NAC) shall be wired Class B (NFPA Style Y) as part of an addressable device connected by the SLC Circuit.
4. All circuits shall be power-limited, per UL864 requirements.
5. A single ground fault or open circuit on the system Signaling Line Circuit shall not cause system malfunction, loss of operating power or the ability to report an alarm.
6. Alarm signals arriving at the main FACP shall not be lost following a primary power failure or outage of any kind until the alarm signal is processed and recorded.

- C. BASIC SYSTEM FUNCTIONAL OPERATION

1. When a fire alarm condition is detected and reported by one of the system initiating devices, the following functions shall immediately occur:
  - a. Indication of alarm condition at the FACP and the annunciator(s).
  - b. Identification of the device /zone that is the source of the alarm at the FACP and the annunciator(s).
  - c. A backlit 80-character LCD display on the FACP shall indicate all information associated with the fire alarm condition, including the type of alarm point and its location within the protected premises.
  - d. In response to a fire alarm condition, the system will process all control programming and activate all system outputs (alarm notification appliances and/or relays) associated with the point(s) in alarm. Additionally, the system shall send events to a central alarm supervising station via either dial-up over PSTN or Internet or Intranet via PSDN or virtual private network.
  - e. Selectively closing doors normally held open by magnetic door holders on the fire floor, floor above and floor below.
  - f. Shutting down supply fans where duct smoke detectors are installed and the initiation of alarm.
  - g. Transmission of signal to the supervising station.
  - h. Initiation of elevator Phase I functions (recall, shunt trip, illumination of indicator in cab, etc.) in accordance with ANSI/ASME A17.1 / CSA B44, Safety Code for Elevators, when specified detectors or sensors are activated, as appropriate.

D. MONITORING AND DISPATCH.

1. Fire alarm system shall transmit trouble, supervisory and fire signals to the City of Rolling Meadows designated proprietary agents receiving point via wireless transmitter in accordance with NFPA 72. Coordinate with the City of Rolling Meadows and, Northwest Central Dispatch System (NWCD) for connection between fire alarm system and wireless transmitter. Provide all required labor, materials, hardware and programming required to program system for communication with Dispatch.

1.4 SUBMITTALS

A. General:

1. Two copies of all submittals shall be submitted to the Owner/Engineer for review.
2. All references to manufacturer's model numbers and other pertinent information herein is intended to establish minimum standards of performance, function and quality. Equivalent compatible UL-listed equipment from other manufacturers may be substituted for the specified equipment as long as the minimum standards are met.
3. For equipment other than that specified, the contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment.

B. Shop Drawings:

1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
2. Include manufacturer's name(s), model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts.
3. Show annunciator layout, configurations, and terminations.

C. Manuals:

1. Submit simultaneously with the shop drawings, complete operating and maintenance manuals listing the manufacturer's name(s), including technical data sheets.
2. Wiring diagrams shall indicate internal wiring for each device and the interconnections between the items of equipment.
3. Provide a clear and concise description of operation that gives, in detail, the information required to properly operate the equipment and system.

D. Software Modifications

1. Provide the services of a qualified technician to perform all system software modifications, upgrades or changes. Response time of the technician to the site shall not exceed 4 hours.
2. Provide all hardware, software, programming tools and documentation necessary to modify the fire alarm system on site. Modification includes addition and deletion of devices, circuits, zones and changes to system operation and custom label changes for devices or zones. The system structure and software shall place no limit on the type or extent of software modifications on-site. Modification of software shall not require power-down of the system or loss of system fire protection while modifications are being made.

E. Submittal to AHJ

1. Submission to Authority Having Jurisdiction: In addition to routine submission of the above material, make an identical submission to the authority having jurisdiction. Include copies of shop drawings as required to depict component locations to facilitate review. Upon receipt of comments from the Authority, make resubmissions, if required, to make clarifications or revisions to obtain approval.

#### 1.5 GUARANTY

- A. All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance. The full cost of maintenance, labor and materials required to correct any defect during this one year period shall be included in the submittal bid.

#### 1.6 MAINTENANCE

- A. Maintenance and testing shall be on a semi-annual schedule or as required by the local AHJ. A preventive maintenance schedule shall be provided by the contractor describing the protocol for preventive maintenance. The schedule shall include:
  1. Systematic examination, adjustment and cleaning of all detectors, manual fire alarm stations, control panels, power supplies, relays, waterflow switches and all accessories of the fire alarm system.
  2. Each circuit in the fire alarm system shall be tested semiannually.
  3. Each smoke detector shall be tested in accordance with the requirements of NFPA 72 Chapter 10.
- B. As part of the bid/proposal, include a quote for a maintenance contract to provide all maintenance, tests, and repairs described below. Include also a quote for unscheduled maintenance/repairs, including hourly rates for technicians trained on this equipment, and response travel costs for each year of the maintenance period. Submittals that do not identify all post contract maintenance costs will not be accepted. Rates and costs shall be valid for the period of five (5) years after expiration of the guaranty.

#### 1.7 POST CONTRACT EXPANSIONS

- A. The contractor shall have the ability to provide parts and labor to expand the system specified, if so requested, for a period of five (5) years from the date of acceptance.
- B. As part of the submittal, include a quotation for all parts and material, and all installation and test labor as needed to increase the number of intelligent or addressable devices by ten percent (10%). This quotation shall include intelligent smoke detectors, intelligent heat detectors, addressable manual stations, addressable beam detectors, addressable monitor modules and addressable control modules equal in number to one tenth of the number required to meet this specification (list actual quantity of each type).
- C. The quotation shall include installation, test labor, and labor to reprogram the system for this 10% expansion. If additional FACP hardware is required, include the material and labor necessary to install this hardware.
- D. Do not include cost of conduit or wire or the cost to install conduit or wire except for labor to make final connections at the FACP and at each intelligent addressable device. Do not include the cost of conventional peripherals or the cost of initiating devices or notification appliances connected to the addressable monitor/control modules.
- E. Submittals that do not include this estimate of post contract expansion cost will not be accepted.

1.8 APPLICABLE STANDARDS AND SPECIFICATIONS:

- A. The specifications and standards listed below form a part of this specification. The system shall fully comply with the latest issue of these standards, if applicable.
- B. National Fire Protection Association (NFPA) - USA:
  - 1. No. 13 Sprinkler Systems
  - 2. No. 70 National Electric Code (NEC)
  - 3. No. 72 National Fire Alarm Code
  - 4. No. 101 Life Safety Code
  - 5. No. 38 Manually Actuated Signaling Boxes
  - 6. No. 217 Smoke Detectors, Single and Multiple Station
  - 7. No. 228 Door Closers-Holders for Fire Protective Signaling Systems
  - 8. No. 268 Smoke Detectors for Fire Protective Signaling Systems
  - 9. No. 268 A Smoke Detectors for Duct Applications
  - 10. No. 346 Waterflow Indicators for Fire Protective Signaling Systems
  - 11. No. 464 Audible Signaling Appliances
  - 12. No. 521 Heat Detectors for Fire Protective Signaling Systems
  - 13. No. 864 Control Units for Fire Protective Signaling Systems
  - 14. No. 1481 Power Supplies for Fire Protective Signaling Systems
  - 15. No. 1610 Central Station Burglar Alarm Units
  - 16. No. 1638 Visual Signaling Appliances
  - 17. No. 1971 Visual Signaling Appliances
  - 18. No. 2017 General-Purpose Signaling Devices and Systems
  - 19. CAN/ULC S524-01 Standard for Installation of Fire Alarm Systems
    - a. The FACP shall be ANSI 864, 9th Edition Listed. Systems listed to ANSI 864, 8th edition (or previous revisions) shall not be accepted.
- C. The system and its components shall be Underwriters Laboratories, Inc. listed under the appropriate UL testing standard as listed herein for fire alarm applications and the installation shall be in compliance with the UL listing.
- D. Local and State Building Codes.
- E. All requirements of the Authority Having Jurisdiction (AHJ).

1.9 APPROVALS

- A. The system shall have proper listing and/or approval from the following nationally recognized agencies:  
UL Underwriters Laboratories Inc

1.10 REGULATORY REQUIREMENTS

- A. Conform to the 2018 International Building Code (IBC).
- B. Conform to the 2018 International Existing Building Code (IEBC).
- C. Conform to the 2018 International Fuel Gas Code (IFGC).

- D. Conform to the 2018 International Property Maintenance Code (IPMC).
- E. Conform to the 2018 International Fire Code (IFC), excluding Chapter 4.
- F. Conform to the 2018 Illinois Accessibility Code, 71 Illinois Administrative Code 400.
- G. Conform to the 2018 International Mechanical Code (IMC).
- H. Conform to 2017 NFPA 70, National Electrical Code.
- I. Conform to 2016 NFPA 72, National Fire Alarm Code.
- J. Conform to all local amendments as adopted by the City of Rolling Meadows to the listed Codes
- K. Products: Listed and classified by Underwriter's Laboratories, Inc. as suitable for the purpose specified and indicated.

## PART 2 - PRODUCTS

### 2.1 EQUIPMENT AND MATERIAL, GENERAL:

- A. All equipment and components shall be new, and the manufacturer's current model. The materials, appliances, equipment and devices shall be tested and listed by a nationally recognized approvals agency for use as part of a fire protective signaling system, meeting the National Fire Alarm Code.
- B. All equipment and components shall be installed in strict compliance with manufacturers' recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation.
- C. All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., detectors shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.
- D. All equipment must be available "over the counter" through the Security Equipment Distributor (SED) market and can be installed by dealerships independent of the manufacturer.

### 2.2 CONDUIT AND WIRE

- A. Conduit:
  - 1. Conduit shall be in accordance with The National Electrical Code (NEC), local and state requirements.
  - 2. Where required, all wiring shall be installed in conduit or raceway. Conduit fill shall not exceed 40 percent of interior cross sectional area where three or more cables are contained within a single conduit.
  - 3. Cable must be separated from any open conductors of power, or Class 1 circuits, and shall not be placed in any conduit, junction box or raceway containing these conductors, per NEC Article 760-29.

4. Wiring for 24-volt DC control, alarm notification, emergency communication and similar power-limited auxiliary functions may be run in the same conduit as initiating and signaling line circuits. All circuits shall be provided with transient suppression devices and the system shall be designed to permit simultaneous operation of all circuits without interference or loss of signals.
5. Conduit shall not enter the fire alarm control panel, or any other remotely mounted control panel equipment or backboxes, except where conduit entry is specified by the FACP manufacturer.
6. Conduit shall be 3/4-inch (19.1 mm) minimum.
7. Fire Alarm Conduit, boxes and fittings shall be red

B. Wire:

1. All fire alarm system wiring shall be new.
2. Wiring shall be in accordance with local, state and national codes (e.g., NEC Article 760) and as recommended by the manufacturer of the fire alarm system. Number and size of conductors shall be as recommended by the fire alarm system manufacturer, but not less than 18 AWG (1.02 mm) for Initiating Device Circuits and Signaling Line Circuits, and 14 AWG (1.63 mm) for Notification Appliance Circuits.
3. All wire and cable shall be listed and/or approved by a recognized testing agency for use with a protective signaling system.
4. Wire and cable not installed in conduit shall have a fire resistance rating suitable for the installation as indicated in NEC 760 (e.g., FPLR).
5. Wiring used for the multiplex communication circuit (SLC) shall be twisted and support a minimum wiring distance of 10,000 feet when sized at 12 AWG. The design of the system shall permit use of IDC and NAC wiring in the same conduit with the SLC communication circuit. Shielded wire shall not be required.
6. All field wiring (with exception of external communications Ethernet) shall be electrically supervised for open circuit and ground fault.
7. The fire alarm control panel shall be capable of T-tapping NFPA Style 4 (Class B) Signaling Line Circuits (SLCs). Systems which do not allow or have restrictions in, for example, the amount of T-taps, length of T-taps etc., is not acceptable.

C. Terminal Boxes, Junction Boxes and Cabinets:

1. All boxes and cabinets shall be UL listed for their use and purpose.

- D. The fire alarm control panel shall be connected to a separate dedicated branch circuit, maximum 20 amperes. This circuit shall be labeled at the main power distribution panel as FIRE ALARM. Fire alarm control panel primary power wiring shall be 12 AWG. The control panel cabinet shall be grounded securely to either a cold water pipe or grounding rod. The control panel enclosure shall feature a quick removal chassis to facilitate rapid replacement of the FACP electronics.

2.3 ACCEPTABLE MANUFACTURES:

- A. The products specified herein are that of the manufacture Fire-Lite. Acceptable alternative manufactures shall be as follows
1. Silent Knight
  2. Notifier
- B. Equipment from the listed alternate manufactures shall meet or exceed the specifications of the basis of design manufacture Fire Lite.

2.4 MAIN FIRE ALARM CONTROL PANEL:

- A. The FACP shall be a Fire-Lite Model MS-9600UDLS and shall contain a microprocessor-based Central Processing Unit (CPU). The CPU shall communicate with and control the following types of equipment used to make up the system: intelligent addressable smoke and thermal (heat) detectors, addressable modules, printer, annunciators, Digital Dialer and Ethernet Communicators and other system controlled devices. Ethernet communications shall be via a Fire-Lite Model IPDACT. Central station supervisory equipment shall be a Teldat Corporation Visoralarm-Plus 2U listed to UL-864 standards.
- B. Operator Control
1. Acknowledge Switch:
    - a. Activation of the control panel Acknowledge switch in response to new alarms and/or troubles shall silence the local panel piezo electric signal and change the alarm and trouble LEDs from flashing mode to steady-ON mode. If multiple alarm or trouble conditions exist, depression of this switch shall advance the 80-character LCD display to the next alarm or trouble condition.
    - b. Depression of the Acknowledge switch shall also silence all remote annunciator piezo sounders.
  2. Alarm Silence Switch:
    - a. Activation of the alarm silence switch shall cause all programmed alarm notification appliances and relays to return to the normal condition after an alarm condition. The selection of notification circuits and relays that are silenceable by this switch shall be fully field programmable within the confines of all applicable standards. The FACP software shall include silence inhibit and auto-silence timers.
  3. Alarm Activate (Drill) Switch:
    - a. The Alarm Activate switch shall activate all notification appliance circuits. The drill function shall latch until the panel is silenced or reset.
  4. System Reset Switch:
    - a. Activation of the System Reset switch shall cause all electronically-latched initiating devices, appliances or software zones, as well as all associated output devices and circuits, to return to their normal condition.
  5. Lamp Test:
    - a. The Lamp Test switch shall activate all system LEDs and light each segment of the liquid crystal display.
- C. System Capacity and General Operation
1. The control panel shall provide, or be capable of, expansion to 636 intelligent/addressable devices.
  2. The control panel shall include Form-C Alarm, Trouble and Supervisory relays rated at a minimum of 2.0 amps @ 30 VDC. It shall also include programmable Notification Appliance Circuits (NACs) capable of being wired as NFPA Style Y (Class B) or NFPA Style Z (Class A).
  3. The fire alarm control panel shall include an operator interface control and annunciation panel that shall include a backlit Liquid Crystal Display (LCD), individual color-coded system status LEDs, and an alphanumeric keypad for the field programming and control of the fire alarm system.



4. All programming or editing of the existing program in the system shall be achieved without special equipment and without interrupting the alarm monitoring functions of the fire alarm control panel. The system shall be fully programmable, configurable, and expandable in the field without the need for special tools, PROM programmers or PC based programmers. It shall not require replacement of memory ICs to facilitate programming changes. The control unit will support the ability to upgrade its operating program using FLASH memory technology. The unit shall provide the user with the ability to program from either the included keypad, a standard PS2-style PC keyboard or from a computer running upload/download software.
5. The system shall allow the programming of any input to activate any output or group of outputs. Systems which have limited programming (such as general alarm), have complicated programming (such as a diode matrix), are not considered suitable substitutes.
6. The FACP shall provide the following features:
  - a. Drift compensation to extend detector accuracy over life. Drift compensation shall also include a smoothing feature, allowing transient noise signals to be filtered out.
  - b. Detector sensitivity test, meeting requirements of NFPA 72, Maintenance alert, with two levels (maintenance alert/maintenance urgent), to warn of excessive smoke detector dirt or dust accumulation.
  - c. The ability to display or print system reports.
  - d. Alarm verification, with counters and a trouble indication to alert maintenance personnel when a detector enters verification an excessive number of times.
  - e. Positive Alarm Sequence (PAS presignal), meeting NFPA 72 requirements.
  - f. Rapid manual station reporting.
  - g. Non-alarm points for general (non-fire) control.
  - h. Periodic detector test, conducted automatically by the software.
  - i. Walk test, with a check for two detectors set to same address.
7. The FACP shall be capable of coding Notification Appliance Circuits in March Time Code (120 PPM), Temporal (NFPA 72), and California Code. Main panel notification circuits shall also automatically synchronize any of the following manufacturer's notification appliances connected to them: System Sensor, Wheelock, or Gentex with no need for additional synchronization modules.

D. Central Microprocessor

1. The microprocessor shall be a state-of-the-art and it shall communicate with, monitor and control all external interfaces. A "watch dog" timer circuit to detect and report microprocessor failure.
2. The microprocessor shall contain and execute all specific actions to be taken in the condition of an alarm. Control programming shall be held in non-volatile programmable memory, and shall not be lost even if system primary and secondary power failure occurs.
3. The microprocessor shall also provide a real-time clock for time annotation of system displays, printer, and history file.
4. A special program check function shall be provided to detect common operator errors.
5. An auto-programming capability (self-learn) shall be provided to quickly identify devices connected on the SLC and make the system operational.
6. For flexibility and to ensure program validity, an optional Windows(TM) based program utility shall be available. This program shall be used to off-line program the system with batch upload/download. This program shall also have a verification utility which scans the program files, identifying possible errors. It shall also have the ability to compare old program files to new ones, identifying differences in the two files to allow complete testing of any system operating changes. This shall be in compliance with the NFPA 72 requirements for testing after system modification.

E. Local Keyboard Interface

1. In addition to an integral keypad, the fire alarm control panel will accept a standard PS2-style keyboard for programming, testing, and control of the system. The keyboard will be able to execute the system functions ACKNOWLEDGE, SIGNALS SILENCED, DRILL and RESET.

F. Display

1. The display shall provide all the controls and indicators used by the system operator and may also be used to program all system operational parameters.
2. The display shall include status information and custom alphanumeric labels for all intelligent detectors, addressable modules, internal panel circuits, and software zones.
3. The display shall contain an alphanumeric, text-type display and dedicated LEDs for the annunciation of AC POWER, FIRE ALARM, SUPERVISORY, TROUBLE, MAINTENANCE, ALARM SILENCED, DISABLED, BATTERY, and GROUND conditions.
4. The display keypad shall be part of the standard system and have the capability to command all system functions, entry of any alphabetic or numeric information, and field programming. Two different password levels shall be provided to prevent unauthorized system control or programming.
5. The display shall include the following operator control switches: ACKNOWLEDGE, ALARM SILENCE, DRILL (alarm activate), and SYSTEM RESET.

G. Signaling Line Circuits (SLC)

1. The SLC interface shall provide power to and communicate with up to 159 intelligent detectors (ionization, photoelectric or thermal) addressable Beam Detectors, and 159 addressable pull stations, intelligent modules (monitor or control) for a system capacity of 636 devices (2 SLC). Each SLC shall be capable of NFPA 72 Style 4, Style 6, or Style 7 (Class A or B) wiring.
2. The CPU shall receive information from all intelligent detectors to be processed to determine whether normal, alarm, prealarm, or trouble conditions exist for each detector. The software shall automatically compensate for the accumulation of dust in each detector up to allowable limits. The information shall also be used for automatic detector testing and for the determination of detector maintenance conditions.
3. The detector software shall meet NFPA 72, Chapter 10 requirements and be certified by UL as a calibrated sensitivity test instrument.

H. Serial Interfaces

1. The system shall provide a means of interfacing to UL Listed Electronic Data Processing (EDP) peripherals using the EIA-232 communications standard.

I. Enclosures:

1. The control panel shall be housed in a UL-listed cabinet suitable for surface or semi-flush mounting. The cabinet and front shall be corrosion protected and painted red using powder coat techniques in the manufacturer's standard finish.
2. The back box and door shall be constructed of steel with provisions for electrical conduit connections into the sides and top.
3. The door shall provide a key lock and shall provide for the viewing of all indicators.
4. The cabinet shall accept a chassis containing the PCB and to assist in quick replacement of all the electronics including power supply shall require no more than two bolts to secure the panel to the enclosure back box.

J. Power Supply:

1. The main power supply for the fire alarm control panel shall provide 7.0 amps of available power for the control panel and peripheral devices.
2. Provisions will be made to allow the audio-visual power to be increased as required by adding modular expansion audio-visual power supplies.
3. Positive-Temperature-Coefficient (PTC) thermistors, circuit breakers, or other over-current protection shall be provided on all power outputs. The power supply shall provide an integral battery charger or may be used with an external battery and charger systems. Battery arrangement may be configured in the field.
4. The main power supply shall continuously monitor all field wires for earth ground conditions.
5. The main power supply shall operate on 120 VAC, 60 Hz, and shall provide all necessary power for the FACP.

K. Programmable Electronic Sounders:

1. Electronic sounders shall operate on 24 VDC nominal.
2. Electronic sounders shall be field programmable without the use of special tools, to provide slow whoop, continuous, or interrupted tones with an output sound level of at least 90 dBA measured at 10 feet from the device.
3. Shall be flush or surface mounted as show on plans.

L. Strobe lights shall meet the requirements of the ADA, UL Standard 1971 and shall meet the following criteria:

1. The maximum pulse duration shall be 2/10 of one second.
2. Strobe intensity shall meet the requirements of UL 1971.
3. The flash rate shall meet the requirements of UL 1971.

M. Audible/Visual Combination Devices:

1. Shall meet the applicable requirements of Section A listed above for audibility.
2. Shall meet the requirements of Section B listed above for visibility.

N. Specific System Operations

1. Alarm Verification: Each of the intelligent addressable smoke detectors in the system may be independently for verification of alarm signals. The alarm verification time period shall not exceed 2 minutes.
2. Point Disable: Any addressable device or conventional circuit in the system may be enabled or disabled through the system keypad.
3. Point Read: The system shall be able to display or print the following point status diagnostic functions:
  - a. Device status
  - b. Device type
  - c. Custom device label
  - d. Device zone assignments
4. System Status Reports: Upon command from an operator of the system, a status report will be generated and printed, listing all system status.

5. System History Recording and Reporting: The fire alarm control panel shall contain a history buffer that will be capable of storing up to 1000 events. Each of these activations will be stored and time and date stamped with the actual time of the activation. The contents of the history buffer may be manually reviewed, one event at a time, or printed in its entirety. The history buffer shall use non-volatile memory. Systems that use volatile memory for history storage are not acceptable substitutes.
6. Automatic Detector Maintenance Alert: The fire alarm control panel shall automatically interrogate each intelligent detector and shall analyze the detector responses over a period of time. If any intelligent detector in the system responds with a reading that is above or below normal limits, then the system will enter the trouble mode, and the particular detector will be annunciated on the system display. This feature shall in no way inhibit the receipt of alarm conditions in the system, nor shall it require any special hardware, special tools or computer expertise to perform.
7. Pre-Alarm Function: The system shall provide two levels of pre-alarm warning to give advance notice of a possible fire situation. Both pre-alarm levels shall be fully field adjustable. The first level shall give an audible indication at the panel. The second level shall give an audible indication and may also activate control relays. The system shall also have the ability to activate local detector sounder bases at the pre-alarm level, to assist in avoiding nuisance alarms.
8. The fire alarm control panel shall include Silent and Audible Walk Test functions - Silent and Audible. It shall include the ability to test initiating device circuits and notification appliance circuits from the field without returning to the panel to reset the system. The operation shall be as follows:
  - a. The Silent Walk Test will not sound NACs but will store the walk test information in History for later viewing.
  - b. Alarming an initiating device shall activate programmed outputs, which are selected to participate in Walk Test.
  - c. Introducing a trouble into the initiating device shall activate the programmed outputs.
  - d. Walk test shall be selectable on a per device/circuit basis. All devices and circuits which are not selected for walk test shall continue to provide fire protection and if an alarm is detected, will exit walk test and activate all programmed alarm functions.
  - e. All devices tested in walk test shall be recorded in the history buffer.
  - f. All devices not tested in walk test shall be recorded in the history buffer.
9. Waterflow Operation
  - a. An alarm from a waterflow detection device shall activate the appropriate alarm message on the 80-character display; turn on all programmed Notification Appliance Circuits and shall not be affected by the Signal Silence switch.
10. Supervisory Operation
  - a. An alarm from a supervisory device shall cause the appropriate indication on the 80-character display, light a common supervisory LED, but will not cause the system to enter the trouble mode.
11. Signal Silence Operation
  - a. The FACP shall have the ability to program each output circuit (notification circuit or relay) to deactivate upon depression of the Signal Silence switch.
12. Non-Alarm Input Operation

- a. Any addressable initiating device in the system may be used as a non-alarm input to monitor normally open contact type devices. Non-alarm functions are a lower priority than fire alarm initiating devices.

## 2.5 SYSTEM COMPONENTS

### A. Addressable Pull Box (manual station)

1. Addressable pull boxes shall, on command from the control panel, send data to the panel representing the state of the manual switch and the addressable communication module status. They shall use a key operated test-reset lock, and shall be designed so that after actual emergency operation, they cannot be restored to normal use except by the use of a key.
2. All operated stations shall have a positive, visual indication of operation and utilize a key type reset.
3. Manual pull stations shall be constructed of Lexan with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in raised letters, 1.75 inches (44 mm) or larger.
4. Protective Shield: Where required, as indicated on the drawings, provide a tamperproof, clear LEXAN shield and red frame that easily fits over manual pull stations. When shield is lifted to gain access to the station, a battery powered piercing warning horn shall be activated. The horn shall be silenced by lowering and realigning the shield. The horn shall provide 85dB at 10 feet and shall be powered by a 9 VDC battery.

### B. Intelligent Multi-Sensing Detector

1. The intelligent detector shall be an addressable device which is capable of detecting multiple threats by employing photoelectric and thermal technologies in a single unit. This detector shall utilize advanced electronics which react to slow smoldering fires (photoelectric) and heat (thermal) all within a single sensing device.
2. The multi-detector shall include two bicolor LEDs for 360-degree viewing.
3. Automatically adjusts sensitivity levels without the need for operator intervention or programming. Sensitivity increases with heat.

### C. Intelligent Photoelectric Smoke Detector

1. The detectors shall use the photoelectric (light-scattering) principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the analog level of smoke density.
2. The detectors shall be ceiling-mounted and available in an alternate model with an integral fixed 135-degree heat-sensing element.
3. Each detector shall contain a remote LED output and a built-in test switch.
4. Detector shall be provided on a twist-lock base.
5. It shall be possible to perform a calibrated sensitivity and performance test on the detector without the need for the generation of smoke. The test method shall test all detector circuits.
6. A visual indication of an alarm shall be provided by dual latching Light Emitting Diodes (LEDs), on the detector, which may be seen from ground level over 360 degrees. These LEDs shall periodically flash to indicate that the detector is in communication with the control panel.
7. The detector shall not go into alarm when exposed to air velocities of up to 1500 feet per minute (fpm).
8. The detector screen and cover assembly shall be easily removable for field cleaning of the detector chamber.
9. All field wire connections shall be made to the base through the use of a clamping plate and screw.

D. Intelligent Thermal Detectors

1. Thermal detectors shall be intelligent addressable devices rated at 135 degrees Fahrenheit (58 degrees Celsius) and have a rate-of-rise element rated at 15 degrees F (9.4 degrees C) per minute. It shall connect via two wires to the fire alarm control panel signaling line circuit.

E. Intelligent Duct Smoke Detector

1. The smoke detector housing shall accommodate either an intelligent ionization detector or an intelligent photoelectric detector, of that provides continuous analog monitoring and alarm verification from the panel.
2. When sufficient smoke is sensed, an alarm signal shall be initiated at the FACP, and appropriate action taken to change over air handling systems to help prevent the rapid distribution of toxic smoke and fire gases throughout the areas served by the duct system.
3. Each duct smoke sensor shall have a Remote Test Station with an alarm LED and test switch.

F. Addressable Control Relay Module

1. Addressable control relay modules shall be provided to control the operation of fan shutdown and other auxiliary control functions.
2. The control module shall mount in a standard 4-inch square, 2-1/8 inch deep electrical box, or to a surface mounted backbox.
3. The control relay module will provide a dry contact, Form-C relay. The relay coil shall be magnetically latched to reduce wiring connection requirements, and to insure that 100% of all auxiliary relays may be energized at the same time on the same pair of wires.
4. The control relay module shall be suitable for pilot duty applications and rated for a minimum of 0.6 amps at 30 VDC.

G. Six Output Addressable Control Relay Module

1. Up to 6 Addressable intelligent control relay modules combined on one circuit board shall be provided to control the operation of fan shutdown and other auxiliary control functions.
2. Using rotary address switches, the first module shall be addressed from 01 to 154 while the remaining modules shall be automatically assigned to the next five higher addresses. Note: binary dipswitches for setting address are not acceptable.
3. Provision shall be included for disabling a maximum of three unused modules.
4. A single isolated set of dry relay form C contacts shall be provided for each of the 6 module addresses, which shall be capable of being wired for either a normally open or normally closed operation.
5. The module shall allow an addressable control panel to switch these contacts on command.
6. The module shall contain removable plug in terminal blocks capable of supporting 12 AWG to 18 AWG wire.
7. The control relays mounted on the module shall be suitable for pilot duty applications and rated for a maximum of 3.0 amps at 30 VDC, resistive, non-coded and 2.0 amps at 30 VDC maximum, resistive, coded.

H. Multiple Two-Wire Detector Monitoring

1. A single multi input module shall be provided for the monitoring of up to 10 conventional Initiating Device Circuits populated with 2-wire smoke detectors as well as normally-open contact alarm initiating devices (pull stations, heat detectors, etc).
2. Each IDC of conventional devices will be monitored as a distinct address on the polling circuit by an addressable point. The module will supervise the IDC for alarms and circuit integrity (opens).

3. The first address on the 10 input boards shall be set from 01 to 150 and the remaining module addresses shall be automatically assigned to the next nine higher addresses.
4. Provision shall be included for disabling a maximum of two unused addresses.
5. The supervised state (normal, open, or short) of the monitored device shall be sent back to the panel. A common SLC input shall be used for all modules, and the initiating device loops shall share a common supervisory supply and ground.
6. The IDC zone may be wired for Style D or Style B (Class A or B) operation. A green LED for each circuit shall be provided that shall flash under normal conditions, indicating that the monitor module is operational and in regular communication with the control panel. LEDs shall latch on when a circuit is in alarm.

I. Isolator Module

1. Isolator modules shall be provided to automatically isolate wire-to-wire short circuits on an SLC Style 6 (Class A) or Style 4 (Class B branch). The isolator module shall limit the number of modules or detectors that may be rendered inoperative by a short circuit fault on the SLC loop segment or branch. At least one isolator module shall be provided for each floor or protected zone of the building.
2. If a wire-to-wire short occurs, the isolator module shall automatically open-circuit (disconnect) the SLC. When the short circuit condition is corrected, the isolator module shall automatically reconnect the isolated section.
3. The isolator module shall not require any address setting, and its operations shall be totally automatic. It shall not be necessary to replace or reset an isolator module after its normal operation.
4. The isolator module shall mount in a standard 4-inch (101.6 mm) deep electrical box or in a surface mounted backbox. It shall provide a single LED that shall flash to indicate that the isolator is operational and shall illuminate steadily to indicate that a short circuit condition has been detected and isolated.

J. ACS Serially Connected Annunciator

1. The annunciator shall communicate with the fire alarm control panel via a two wire EIA 485 (multi-drop) communications circuit.
2. The annunciator shall require no more than four wires for operation. Annunciation shall include: intelligent addressable points, system software zones, control relays, and notification appliance circuits. The following operations shall also be provided:
  - a. Up to 32 annunciators, each with up to 64 points may be installed on the system.
  - b. The annunciator shall include a single electrical key switch to disable all switch functions.
  - c. The annunciator shall provide alarm and trouble resound, with flash for new conditions.
  - d. This unit shall provide for each zone: alarm indications, using a red alarm and yellow trouble LEDs, and switches for the control of fire alarm control panel functions. The annunciator will also have an ON-LINE LED, local piezo electric signal, local acknowledge/lamp test switch, and custom slide-in zone/function identification labels.
  - e. Switches shall be available for remote annunciation and control of output points in the system, system acknowledge, telephone zone select, speaker select, global signal silence, and global system reset within the confines of all applicable standards.
3. This system shall provide a means of interfacing to a graphic style annunciator.
4. The graphic annunciator interface will possess the capability of individually annunciating each individual addressable device in the system.

K. Alphanumeric LCD Type Annunciator (terminal mode):

1. The alphanumeric display annunciator shall be a supervised, remotely located back-lit LCD display containing a minimum of eighty (80) characters for alarm annunciation in clear English text.
2. The LCD annunciator shall display all alarm and trouble conditions in the system.
3. An audible indication of alarm shall be integral to the alphanumeric display.
4. The display shall be UL listed for fire alarm application.
5. It shall be possible to connect up to 32 LCD displays and be capable of wiring distances up to 6,000 feet from the control panel.
6. The annunciator shall connect to a separate, dedicated "terminal mode" EIA-485 interface. This is a two-wire loop connection and shall be capable of distances to 6,000 feet. Each terminal mode LCD display shall mimic the main control panel.

L. Alphanumeric LCD Type Annunciator (Ann-Bus Mode):

1. The alphanumeric display annunciator shall be a supervised, remotely located back-lit eighty (80) characters LCD display for alarm annunciation in clear English text.
2. The LCD annunciator shall display all alarm and trouble conditions in the system.
3. An audible indication of alarm shall be integral to the alphanumeric display.
4. It shall be possible to connect up to 8 LCD displays and be capable of wiring distances up to 6,000 feet from the control panel.
5. Up to 8 total devices of any kind, LCD, printer gateway, LED, Relay or I/O module may be installed on the ANN-BUS.

2.6 SYSTEM COMPONENTS - ADDRESSABLE DEVICES

A. Addressable Devices - General

1. Addressable devices shall employ the simple-to-set decade addressing scheme. Addressable devices which use a binary-coded address setting method, such as a DIP switch, are not an allowable substitute.
2. Detectors shall be addressable and intelligent, and shall connect with two wires to the fire alarm control panel signaling line circuits.
3. Addressable smoke and thermal (heat) detectors shall provide dual alarm and power/polling LEDs. Both LEDs shall flash under normal conditions, indicating that the detector is operational and in regular communication with the control panel, and both LEDs shall be placed into steady illumination by the control panel, indicating that an alarm condition has been detected. An output connection shall also be provided in the base to connect an external remote alarm LED.
4. Using software in the FACP, detectors shall automatically compensate for dust accumulation and other slow environmental changes that may affect their performance. The detectors shall be listed by UL as meeting the calibrated sensitivity test requirements of NFPA Standard 72, Chapter 10.
5. Detectors shall be ceiling-mount and shall include a separate twist-lock base with tamper proof feature. Base options shall include a base with a built-in (local) sounder rated for a minimum of 85 DBA, a relay base and an isolator base designed for Style 7 applications.
6. Detectors shall provide a test means whereby they will simulate an alarm condition and report that condition to the control panel.
7. Detectors shall also store an internal identifying type code that the control panel shall use to identify the type of device (ION, PHOTO, THERMAL).
8. Detectors shall provide address-setting means using decimal switches.

2.7 BATTERIES

- A. Upon loss of Primary (AC) power to the control panel, the batteries shall have sufficient capacity to power the fire alarm system for required standby time (24 or 60 hours) followed by 5 minutes of alarm.



- B. The batteries are to be completely maintenance free. No liquids are required. Fluid level checks for refilling, spills, and leakage shall not be required.
- C. If necessary to meet standby requirements, external battery/charger systems may be used.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Installation shall be in accordance with the NEC, NFPA 72, local and state codes, as shown on the drawings, and as recommended by the major equipment manufacturer.
- B. All conduit, junction boxes, conduit supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas. Smoke detectors shall not be installed prior to the system programming and test period. If construction is ongoing during this period, measures shall be taken to protect smoke detectors from contamination and physical damage.
- C. All fire detection and alarm system devices, control panels and remote annunciators shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas.
- D. Manual pull stations shall be suitable for surface mounting or semi flush mounting as shown on the plans, and shall be installed not less than 42 inches (1067 mm), nor more than 48 inches (122 mm) above the finished floor.

#### 3.2 TEST

- A. The service of a competent, NICET level II technician shall be provided to technically supervise and participate during all of the adjustments and tests for the system. All testing shall be in accordance with NFPA 72, Chapter 10.
- B. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.
- C. Close each sprinkler system flow valve and verify proper supervisory alarm at the FACP.
- D. Verify activation of all waterflow switches.
- E. Open initiating device circuits and verify that the trouble signal actuates.
- F. Open and short signaling line circuits and verify that the trouble signal actuates.
- G. Open and short notification appliance circuits and verify that trouble signal actuates.
- H. Ground all circuits and verify response of trouble signals.
- I. Check presence and audibility of tone at all alarm notification devices.
- J. Check installation, supervision, and operation of all intelligent smoke detectors using the walk test.

- K. Each of the alarm conditions that the system is required to detect should be introduced on the system. Verify the proper receipt and the proper processing of the signal at the FACP and the correct activation of the control points.
- L. When the system is equipped with optional features, the manufacturer's manual shall be consulted to determine the proper testing procedures. This is intended to address such items as verifying controls performed by individually addressed or grouped devices, sensitivity monitoring, verification functionality and similar.

### 3.3 FINAL INSPECTION

- A. At the final inspection, a minimum NICET Level II technician shall demonstrate that the system functions properly in every respect.

### 3.4 INSTRUCTION

- A. Instruction shall be provided as required for operating the system. Hands-on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.
- B. The contractor or installing dealer shall provide a user manual indicating "Sequence of Operation."

END OF SECTION 283100