

CITY OF EVANSTON
SPECIFICATIONS AND BID DOCUMENTS
Construction Bid with Sub-contractors

BID NUMBER: 23-39

For

James Park Athletic Lighting
July 27, 2023



BID DUE DATE: **2:00 P.M., Tuesday, August 22, 2023**

VIRTUAL BID OPENING: **2:15 P.M., Tuesday, August 22, 2023**
Google Meet ID: meet.google.com/erk-vjyw-pza
Phone Numbers: 617-675-4444
PIN: 491 020 418 0044#

**NON-MANDATORY
PRE-BID MEETING** **11:00 A.M., Thursday, August 3, 2023**
Lorraine H. Morton Civic Center
2100 Ridge Avenue, Conference
Room 2402
Evanston, Illinois 60201

BID BOND: **5% of Contract Amount**

**PERFORMANCE/MATERIAL
& LABOR PAYMENT BOND:** **100% of Contract Amount**

CONTRACT PERIOD: **Substantial Completion: April 26, 2024**
Final Completion: May 31, 2024

ELECTRONIC BID SUBMITTAL:

Bid responses will only be accepted electronically
via E-bidding through DemandStar (WWW.DEMANDSTAR.COM)

**It is highly recommended that new DemandStar users complete the account
setup process prior to project due date/time.**

TABLE OF CONTENTS

SPECIFICATION SECTION	PAGES
DIVISION 0 – BIDDING REQUIREMENTS	
Notice to Bidders	1 page
Instructions to Bidders/Requirements for Bidding	12 pages
General Conditions	11 pages
Insurance Requirements	1 page
RETURN ALL EXHIBITS WITH THE BID	
Exhibit A Bid Form	8 pages
Exhibit B City of Evanston M/W/D/EBE Policy	1 page
Exhibit C M/W/D/EBE Participation Compliance Form.....	1 page
Exhibit D M/W/D/EBE Participation Waiver Request	1 page
Exhibit E Construction Contractors’ Assistance Organizations	1 page
*Exhibit F Local Employment Program Compliance.....	2 pages
Exhibit G Certification of Bidder Regarding Equal Employment Opportunity	1 page
Exhibit H Disclosure of Ownership Interests	4 pages
Exhibit I Additional Information Sheet	1 page
Exhibit J Certification of Compliance with Prevailing Wage Rate Act.....	1 page
Exhibit K Major Sub-contractors Listing	1 page
Exhibit L Conflict of Interest	1 page
Exhibit M Signature Form.....	1 page
Exhibit N Contractor Services Agreement Acknowledgement.....	1 page
Exhibit N Contractor Services Agreement	21 pages
Exhibit O BID Bond Submittal Label	1 page
DIVISION 1 – General Requirements	
Section 010000 Project Requirements	3 pages
Section 010100 Summary of Work.....	3 pages
Section 010270 Applications for Payment	3 pages
Section 010450 Cutting and Patching	3 pages
Section 010510 Grades Lines and Levels	3 pages
Section 010600 Regulatory Requirements	3 pages
Section 010950 Reference Standards and Definitions	9 pages
Section 011050 Existing Utility Procedures	3 pages
Section 012000 Project Meetings	3 pages
Section 012100 Allowances.....	2 pages
Section 013000 Submittals	9 pages
Section 013562 Erosion and Sedimentation Control	4 pages
Section 014000 Quality Control Services	5 pages
Section 015000 Temporary Facilities	4 pages
Section 015600 Temporary Environmental Controls	3 pages
Section 016000 Materials and Equipment	4 pages
Section 016300 Substitutions and Product Options	3 pages

Section 017000 Project Closeout	4 pages
Section 017100 Cleaning.....	3 pages
Section 017200 Project Record Documents.....	2 pages
Section 017300 Operations and Maintenance Data	5 pages
Section 017400 Warrantees and Bonds.....	2 pages

DIVISION 2 – Existing Conditions

Section 020640 Contaminated Soil Removal and Disposal	3 pages
---	---------

DIVISION 26 – Electrical

Section 260100 General Electrical Requirements	3 pages
Section 260501 Minor Electrical Demolition	2 pages
Section 260519 Low-Voltage Electrical Power Conductors and Cables.....	7 pages
Section 260526 Grounding and Bonding for Electrical Systems	4 pages
Section 260529 Hangers and Supports for Electrical Systems	4 pages
Section 260534 Conduit	7 pages
Section 260537 Boxes.....	3 pages
Section 260553 Identification for Electrical Systems	5 pages
Section 262726 Wiring Devices.....	3 pages
Section 262813 Fuses	2 pages
Section 265600 Exterior Lighting.....	5 pages
Section 265668 Exterior Athletic Lighting.....	9 pages

DIVISION 31 – Earthwork

Section 312316 Trenching.....	3 pages
-------------------------------	---------

ATTACHMENTS

1. Drawings	17 pages
2. Interra Geotechnical Report.....	19 pages
3. TSC Geotechnical Report	36 pages
4. Environmental Information	17 pages
5. Musco Control System Summary.....	8 pages
6. Prevailing Wages	7pages
7. DemandStar E-bidding Information.....	14 pages

***NOTE: THE SELECTED BIDDER WILL BE SUBJECT TO THE REGULATIONS CONTAINED IN CITY OF EVANSTON ORDINANCE 60-O-14 AMENDMENTS TO THE LOCAL EMPLOYMENT PROGRAM (LEP)**

**CITY OF EVANSTON
NOTICE TO BIDDERS**

Bids will be received by the City's Purchasing Office until 2:00 P.M. local time Tuesday, **August 22, 2023** and will be publically read virtually via Google Meets at 2:15 P.M. Interested parties can use the following link: meet.google.com/erk-vjyw-pza or join by phone 617-675-4444, PIN: 491 020 418 0044# to access the virtual bid opening. The City of Evanston no longer accepts hard copy paper submittals for any solicitation. Responses will only be accepted electronically via E-bidding through DemandStar (www.demandstar.com). Although registration is required, vendors can download solicitations and upload responses for free. Bids shall cover the following:

James Park Athletic Lighting
Bid Number: 23-39

Work on this project includes installation of new athletic and security lighting at James Park in Evanston, Illinois. Base bid work will provide athletic and security lighting at one soccer field and one baseball field. Add alternate work will provide athletic and security lighting at six tennis courts.

A non-mandatory pre-bid meeting will be held in Conference Room 2402 at the Lorraine H. Morton Civic Center, 2100 Ridge Avenue, Evanston, IL 60201 at 11:00 A.M. on Thursday, August 3, 2023. The above item shall conform to the Invitation for Bids on file in the Purchasing Office. Parties interested in submitting a bid should contact the Purchasing Office to receive a copy of the bid or see the City's website at: www.cityofevanston.org/business/bids-proposals/ or DemandStar at: www.demandstar.com.

The City of Evanston (the City) in accordance with the laws of the State of Illinois, hereby notifies all Bidders that it will affirmatively ensure that the contract(s) entered into pursuant to this Notice will be awarded to the successful Bidders without discrimination on the ground of race, color, religion, sex, age, sexual orientation, marital status, disability, familial status or national origin. The State of Illinois requires under Public Works contracts that the general prevailing rate of wages in this locality be paid for each craft or type of worker hereunder. This requirement is in accordance with The Prevailing Wage Act (820 ILCS 130) as amended. The City of Evanston reserves the right to reject any or all submittals or to accept the submittal(s) deemed most advantageous to the City.

The Evanston City Council also reserves the right to award the contract to an Evanston firm if that firm's bid is within 5% of the low bid.

Each Bidder shall be required to submit with their bid a disclosure of ownership interest statement form in accordance with the provisions of City Code Section 1-18-1 *et seq.* Failure to submit such information will result in the disqualification of such bid.

Linda Thomas
Purchasing Specialist

INSTRUCTIONS TO BIDDERS/REQUIREMENTS FOR BIDDING (CONTRACTS OVER \$25,000)

1. ON-LINE NOTIFICATION OF SOLICITATIONS

The City is utilizing Demandstar.com (www.demandstar.com) for on-line notification purposes only for sealed bids when it is anticipated that the amount of the resulting contract will be in excess of its formal bid limit of \$25,000, such as this requirement. Interested Bidders are required to submit a sealed bid to the City by the date/time indicated for this requirement on the forms provided by the City.

2. SUBMISSION OF BIDS

- A. The City of Evanston will no longer accept hard copy paper submittals for any solicitation. Responses will only be accepted electronically via E-bidding through DemandStar (WWW.DEMANDSTAR.COM). Although registration is required, vendors can download solicitations and upload bid responses for free. **Please refer to attached DemandStar E-bidding documents.**
- B. ANY BIDS RECEIVED AFTER THE TIME AND DATE SPECIFIED FOR THE RECEIPT OF BIDS WILL NOT BE ACCEPTED. It is the sole responsibility of the Bidder to insure that his or her bid is delivered by the stated bid opening time. THE CITY IS NOT RESPONSIBLE FOR INCOMPLETE UPLOADED SUBMITTALS.
- C. Bids will be opened on the date and time stated.
- D. Any Bidder may withdraw his or her bid by letter or with proper identification by personally securing his or her bid at any time prior to the stated bid opening time. No telephone request for withdrawal of bids will be honored.

3. PREPARATION OF BIDS

The Bidder must prepare the bid on the attached bid forms. Unless otherwise stated, all blank spaces on the bid form or pages must be filled in. Either a unit price, lump sum price, or a "no-bid", as the case may be, must be stated for each and every item and must be either typed in or written in ink.

4. SIGNING OF BIDS

- A. Bids which are signed for a partnership should be signed in the firm's name by all partners or in the firm's name by Attorney-in-Fact. If signed by Attorney-in-Fact, there should be attached to the bid a Power of Attorney evidencing authority to sign the bid, dated the same date as the bid and executed by all partners of the firm.
- B. Bids which are signed for a corporation should have the correct corporate name thereon and signature of an authorized officer of the corporation manually written below the corporate name following words "By: " _____ " title of office held by the person signing for corporation, which shall appear below signature of an officer.

- C. Bids which are signed by an individual doing business under a fictitious name should be signed in the name of the individual "doing business as. _____."
- D. The name of each person signing the bid shall be typed or printed below his or her signature.

5. CONSIDERATION OF BIDS

The Purchasing Specialist shall represent and act for the City in all matters pertaining to this bid and the contract in conjunction therewith.

6. WITHDRAWAL OF BIDS

Bidders may withdraw or cancel their bids at any time prior to the advertised bid opening time. After the bid opening time, no bid shall be withdrawn or canceled for a period of sixty (60) calendar days. When contract approval is required by another agency, such as the Federal Government or the State of Illinois, no bid shall be withdrawn or canceled for a period of ninety (90) calendar days.

7. ERRORS IN BIDS

Bidders are cautioned to verify their bids before submission. Negligence on the part of the respondent in preparing the bid confers no right for withdrawal or modification of the bid after it has been opened. In case of error in the extension of prices in the bid, unit prices will govern.

8. ADDENDA

- A. Any and all changes to the specifications/plans are valid only if they are included by written addendum to all Bidders. Each Bidder must acknowledge receipt of any addenda by indicating on the Bid form. Each Bidder, by acknowledging receipt of any addenda, is responsible for the contents of the addenda and any changes to the bid therein. Failure to acknowledge any addenda may cause the bid to be rejected.
- B. Addenda information is available over the internet at: [City of Evanston Notices to Bidders](#) or www.demandstar.com, or by contacting the Purchasing Office.

9. RESERVED RIGHTS

The City of Evanston reserves the right at any time and for any reason to cancel his or her solicitation, to accept or reject any or all bids or any portion thereof, or to accept an alternate response. The City reserves the right to waive any immaterial defect in any response. The City may seek clarification from any respondent at any time, and failure to respond within a reasonable time period, or as otherwise directed, will be cause for rejection.

10. AWARD

It is the intent of the City to award a contract to the lowest responsible Bidder meeting specifications. The City reserves the right to determine the lowest

responsible Bidder on the basis of an individual item, groups of items, or in any way determined to be in the best interest of the City. Award will be based on the following factors (where applicable): (a) adherence to all conditions and requirements of the bid specifications; (b) price; (c) qualifications of the Bidder, including past performance, financial responsibility, general reputation, experience, service capabilities, and facilities; (d) delivery or completion date; (e) product appearance, workmanship, finish, taste, feel, overall quality, and results of product testing; (f) maintenance costs and warranty provisions; and (g) repurchase or residual value.

11. INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

Bidder's shall promptly notify the City of any ambiguity, inconsistency, or error that they discover upon examination of the bidding documents. Interpretations, corrections, and changes will be made by addendum. Each Bidder shall ascertain prior to submitting a bid that all addenda have been received and are acknowledged in the bid.

12. INCONSISTENCIES AND OMISSIONS

These specifications and the accompanying plans, if any, are intended to include all information necessary for the work contemplated. If, by inadvertence or otherwise, the plans or specifications omit some information necessary for that purpose, the contractor shall, nevertheless, be required to perform such work at no additional cost to the City so that the project may be completed according to the true intent and purpose of the plans and specifications.

13. CONDITIONS

Bidders are advised to become familiar with all conditions, instructions, and specifications governing his or her bid. Once the award has been made, failure to have read all the conditions, instructions and specifications of this contract shall not permit the Bidder to amend contract or to request additional compensation.

14. VERIFICATIONS OF DATA

- A. It is understood and agreed that the unit quantities given in these specifications are approximate only, and the contractor shall verify these quantities before bidding as no claim shall be made against the City on, or account of, any excess or deficiency in the same.
- B. The contractor shall have visited the premises and determined for itself, by actual observation, boring, test holes, or other means, the nature of all soil and water conditions (both above and below ground in the line of work) that may be encountered in all construction work under this contract. The cost of all such inspection, borings, etc. shall be borne by the contractor, and no allowance will be made for the failure of the contractor to estimate correctly the difficulties attending the execution of the work.

15. SPECIFICATIONS

Reference to brand names and numbers is meant to be descriptive, not restrictive,

unless otherwise specified. Bids on equivalent items will be considered, provided the Bidder clearly states exactly what is proposed to be furnished, including complete specifications. Unless the Bidder specifies otherwise, it is understood the Bidder is offering a referenced brand item as specified or is bidding as specified when no brand is referenced, and does not propose to furnish an “equal.” The City reserves the right to determine whether a substitute offer is equivalent to, and meets the standard of quality indicated by the brand name and number.

16. SAMPLES

When samples of items are called for by the specifications, samples must be furnished free of expense, and if not destroyed in the evaluation process will be returned at the Bidder’s expense upon request. Request for the return of samples must accompany the sample and must include a UPS/Fed-Ex Pickup Slip, postage, or other acceptable mode of return. Individual samples must be labeled with Bidder’s name, invitation number, item reference, manufacturer’s brand name and number.

17. REGULATORY COMPLIANCE

Each Bidder represents and warrants that the goods or services furnished hereunder (including all labels, packages and containers for said goods) comply with all applicable standards, rules and regulations in effect under the requirements of all Federal, State, and local laws, rules and regulations as applicable, including the Occupational Safety and Health Act as amended, with respect to design, construction, manufacture, or use for their intended purpose of said goods or services. Each Bidder must furnish a “Material Safety Data Sheet” in compliance with the Illinois Toxic Substances Disclosure to Employees Act when required.

18. PRICING

The price quoted for each item is the full purchase price, including delivery to destination, and includes all transportation and handling charges, materials or service costs, patent royalties, and all other overhead charges of every kind and nature. Unless otherwise specified, prices shall remain firm for the contract period.

19. DISCOUNTS

Prices quoted must be net after deducting all trade and quantity discounts. Where cash discounts for prompt payment are offered, the discount period shall begin with the date of receipt of a correct invoice or receipt or final acceptance of goods, whichever is later.

20. INSPECTION

Materials or equipment purchased are subject to inspection and approval at the City’s destination. The City reserves the right to reject and refuse acceptance of items which are not in accordance with the instructions, specifications, drawings or data of Seller’s warranty (express or implied). Rejected materials or equipment shall be removed by, or at the expense of, the Seller promptly after rejection.

21. BIDS AND PLAN DEPOSITS

- A. When required on the cover sheet, all bids shall be accompanied by a bid deposit in the amount specified. Bid deposits shall be in the form of cash, a certified check, or cashier's check drawn on a responsible bank doing business in the United States and shall be made payable to the City of Evanston. Bid Bonds are also acceptable. All bids not accompanied by a bid deposit, when required, will be rejected.
- B. The City will return the bid deposits of all but the 3 lowest qualified Bidders, whose deposit will be held until contract award or at the expiration of the sixty-day or ninety-day period for bid award.
- C. The bid deposit of the successful Bidder will be retained until contract documents have been executed and the Contractor has submitted all the required information. Failure to comply with the terms of this specification may be cause for forfeiture of said deposit.
- D. When required, plan deposits will be refunded should the plans be returned in good condition within 10 days of the bid opening.

22. DISPUTES

Any dispute concerning a question of fact arising under this bid shall be decided by the Purchasing Specialist, who shall issue a written decision to the Bidder. The decision of the Purchasing Specialist shall be final and binding.

23. CATALOGS

Each Bidder shall submit, when requested by the Purchasing Specialist, catalogs, descriptive literature, and detailed drawings, fully detailing features, designs, construction, appointments, finishes and the like not covered in the specifications, necessary to fully describe the material or work proposed to be furnished.

24. TAXES

- A. Federal Excise Tax does not apply to materials purchased by the City of Evanston by virtue of Exemption Certificate No. A-208762, Illinois Retailers' Occupation Tax, Use Tax, and Municipal Retailers' Occupation Tax do not apply to materials or services purchased by the City of Evanston by virtue of Statute.
- B. The City of Evanston is exempt from Illinois Sales Tax by virtue of Exemption Identification number E9998-1750.
- C. The City's federal tax ID number is 36-6005870.

25. PERMITS & FEES

All Bidders awarded a contract must secure and pay for any licenses required by the City of Evanston. Necessary building permits will be required, but all permit fees will be waived and moneys for same must not be included in any bid.

26. ROYALTIES & PATENTS

Seller must pay all royalties and license fees. Seller must defend all suits or claims for infringement of any patent, copyright or trademark rights, and must hold the City harmless from loss on account thereof.

27. LOCAL PREFERENCE POLICY

The Evanston City Council reserves the right to award the contract to an Evanston firm if the firm's bid is within five (5%) percent of the low bid of a non-Evanston firm.

28. POWER OF ATTORNEY

An Attorney-In-Fact, who signs any and all of the bond or contract bonds submitted with this bid, must file with each bond a certified and effectively dated copy of their Power of Attorney. These dates should be the same or after the date of the contract.

29. WARRANTY

- A. The contractor warrants that all goods and services furnished to the City shall be in accordance with specifications and free from any defects of workmanship and materials: that goods furnished to the City shall be merchantable and fit for the City's described purposes, and that no governmental law, regulation, order, or rule has been violated in the manufacture or sale of such goods.
- B. The contractor warrants all equipment furnished to be in acceptable condition, and to operate satisfactorily for a period of one (1) year from delivery of, or the completion of installation, whichever is latest, unless stated otherwise in the specifications, and that if a defect in workmanship and/or quality of materials are evidenced in this period, the Seller shall remit full credit, replace, or repair at City's discretion immediately, such equipment and/or parts that are defective at no additional cost to the City.
- C. The contractor warrants to the City that each item furnished hereunder, and any component part thereof, will be new and in conformity with the specifications in all respects, unless otherwise specified, and is of the best quality of its respective kind, free from faulty workmanship, materials, or design, and installed sufficiently to fulfill any operating conditions specified by the City.
- D. The contractor shall repair or replace any item or component part thereof found not to be in conformity with this paragraph provided the City notified the Seller of such nonconformity within one (1) year after initial use or within eighteen (18) months after delivery, whichever occurs first. In the event Seller fails to proceed diligently to so replace or repair within a reasonable time after receipt of such notice, the City may undertake or complete such replacement or repair for Seller's account, and the seller will be responsible for any additional costs. Acceptance shall not relieve the seller of its responsibility.

30. INCURRED COSTS

The City will not be liable for any costs incurred by Bidders in replying to this invitation for bids.

31. VARIANCES

Each Bidder must state or list by reference any variations to specifications, terms and/or conditions set forth herein with its bid.

32. INDEMNIFICATION

- A. The awarded Bidder/Contractor shall defend, indemnify and hold harmless the City and its officers, elected and appointed officials, agents, and employees from any and all liability, losses, or damages as a result of claims, demands, suits, actions, or proceedings of any kind or nature, including but not limited to costs, and fees, including attorney's fees, judgments or settlements, resulting from or arising out of any negligent or willful act or omission on the part of the Contractor or Contractor's sub-contractors, employees, agents or sub-contractors during the performance of this Agreement. Such indemnification shall not be limited by reason of the enumeration of any insurance coverage herein provided. This provision shall survive completion, expiration, or termination of this Agreement.
- B. Nothing contained herein shall be construed as prohibiting the City, or its officers, agents, or employees, from defending through the selection and use of their own agents, attorneys, and experts, any claims, actions or suits brought against them. The Contractor shall be liable for the reasonable costs, fees, and expenses incurred in the defense of any such claims, actions, or suits. Nothing herein shall be construed as a limitation or waiver of defenses available to the City and employees and agents, including but not limited to the Illinois Local Governmental and Governmental Employees Tort Immunity Act, 745 ILCS 10/1-101 *et seq.*
- C. At the City Corporation Counsel's option, Contractor must defend all suits brought upon all such Losses and must pay all costs and expenses incidental to them, but the City has the right, at its option, to participate, at its own cost, in the defense of any suit, without relieving Contractor of any of its obligations under this Agreement. Any settlement of any claim or suit related to this Project by Contractor must be made only with the prior written consent of the City Corporation Counsel, if the settlement requires any action on the part of the City.
- D. To the extent permissible by law, Contractor waives any limits to the amount of its obligations to indemnify, defend, or contribute to any sums due under any Losses, including any claim by any employee of Contractor that may be subject to the Illinois Compensation Act, 820 ILCS 305/1 *et seq.* or any other related law or judicial decision, including but not limited to, *Kotecki v. Cyclops Welding Corporation*, 146 Ill. 2d 155 (1991). The City, however, does not waive any limitations it may have on its liability under the Illinois Workers Compensation Act, the Illinois Pension Code or any other statute.

- E. The Contractor shall be responsible for any losses and costs to repair or remedy work performed under this Agreement resulting from or arising out of any act or omission, neglect, or misconduct in the performance of its Work or its sub-contractors' work. Acceptance of the work by the City will not relieve the Contractor of the responsibility for subsequent correction of any such error, omissions and/or negligent acts or of its liability for loss or damage resulting therefrom.
- F. All provisions of this Section 32 shall survive completion, expiration, or termination of this Agreement.

33. DEFAULT

Time is of the essence as to the awarded contract and, of delivery or acceptable items or rendering of services is not completed by the time promised, the City reserves the right, without liability, in addition to its other rights and remedies, to terminate the contract by notice effective when received by Seller, as to stated items not yet shipped or services not yet rendered and to purchase substitute items or services elsewhere and charge the Seller with all losses incurred. The City shall be entitled to recover its attorney's fees and expenses in any successful action by the City to enforce this contract.

34. GOVERNING LAW

This contract shall be governed by and construed according to the laws of the State of Illinois. In the event of litigation, the venue will be Cook County, Illinois.

35. EQUAL EMPLOYMENT OPPORTUNITY

- A. In the event of the contractor's noncompliance with any provision of the Illinois Human Rights Act or Section 1-12-5 of the Evanston City Code, the contractor may be declared non-responsible and therefore ineligible for future contracts or sub-contracts with the City of Evanston, and the contract may be canceled 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.
- B. During the performance of this contract, the contractor agrees as follows:
 - 1. That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin or ancestry, or age or physical or mental handicap that does not impair ability to work, 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. Contractor shall comply with all requirements of City of Evanston Code Section 1-12-5.
 - 2. 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, national origin or ancestry.

3. That, if it hires additional employees in order to perform this contract, or any portion hereof, it will determine that availability (in accordance with the Fair Employment Commission's Rules and Regulations for Public Contracts) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.
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 Fair Employment Practices Act and the Fair Employment Practices Commission's Rules and Regulations for Public Contracts. 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 so notify the Illinois Fair Employment Practices Commission and the contracting agency and will recruit employees from other sources when necessary to fulfill its obligations hereunder.
5. That it will submit reports as required by the Illinois Fair Employment Practices Commission's Rules and Regulations for Public Contracts, furnish all relevant information as may from time to time be requested by the Fair Employment Practices Commission or the contracting agency, and in all respects comply with the Illinois Fair Employment Practices Commission's Rules and regulations for Public Contracts.
6. That it will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency, the City Manager, the Commission and the Illinois Fair Employment Practices Commission for purposes of investigation to ascertain compliance with the Illinois Fair Employment Practices Act and the Fair Employment Practices Act and the Fair Employment Practices Commission's Rules and Regulations for Public Contract.
7. That it will include verbatim or by reference the provisions of subsections (A) through (G) of this clause in every performance sub-contract as defined in Section 2.10(b) of the Fair Employment Practices Commission's Rules and Regulations for Public Contracts so that such provisions will be binding upon every such sub-contractor; and that it will also include the provisions of subsections (A), (E), (F), and (G) in every supply sub-contract as defined in Section 2.10(a) of the Fair Employment Practices Commission's Rules and Regulations for Public Contracts so that such provisions will be binding upon every such sub-contractor. 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 all its sub-contractors; and further it will promptly notify the

contracting agency and the Illinois Fair Employment Practices Commission in the event any sub-contractor fails or refuses to comply therewith. In addition, no contractor will utilize any sub-contractor declared by the Fair Employment Practices Commission to be non-responsible and therefore ineligible for contracts or sub-contracts with the State of Illinois or any of its political subdivisions or municipal corporations.

36. M/W/D/EBE GOAL

The City of Evanston has a goal of awarding 25% of its contracts to Minority-Owned, Women-Owned, and Evanston-based businesses (M/W/D/EBEs). All Bidders must state the proposed involvement of M/W/D/EBEs in completing a portion of the services required by the City by completing the attached M/W/D/EBE forms. Any questions regarding M/W/D/EBE compliance should be submitted in writing to Tammi Nunez, Purchasing Manager at tnunez@cityofevanston.org.

37. LOCAL EMPLOYMENT PROGRAM REQUIREMENTS

In an effort to increase hiring of economically disadvantaged Evanston residents on certain City construction projects, the contractor shall comply with the provisions of the City of Evanston's Local Employment Program Ordinance (LEP) set forth in Section 1-17-1 (C) of the Evanston City Code. The intent of the LEP is to have Evanston residents employed at the construction site as laborers, apprentices and journeymen in such trades as electrical, HVAC, carpenters, masonry, concrete finishers, truck drivers and other construction occupations necessary for the project. Any questions regarding LEP compliance should be submitted in writing to Nathan Norman, Youth/Young Adult Program Supervisor at nnorman@cityofevanston.org or Tammi Nunez Purchasing Manager at tnunez@cityofevanston.org.

[NOTE: CITY OF EVANSTON ORDINANCE 60-O-14 AMENDMENT LOCAL EMPLOYMENT PROGRAM \(LEP\) available on the City website at: Ordinance 60-O-14 Amendment LEP](#)

38. Questions

All questions related to this bid document should be submitted in writing to Linda Thomas, Purchasing Specialist at liethomas@cityofevanston.org with a copy to Stefanie Levine, Senior Project Manager, at slevine@cityofevanston.org. Only inquiries received a minimum of seven (7) working days prior to the date set for the opening of bids, will be given any consideration.

39. COORDINATION OF EXISTING SITE WITH DRAWINGS

- A. Before submitting a bid, bidders shall carefully examine the drawings and specifications, visit the site, and fully inform themselves as to all conditions and limitations.
- B. Should a bidder find discrepancies in, or omissions from the drawings or specifications, or should be in doubt as to their meaning, the bidder should at once notify the Purchasing Specialist, who will issue necessary instructions to all bidders

in the form of an addendum.

40. AFFIRMATIVE ACTION IN SUB-CONTRACTING (EXCERPT FROM RESOLUTION 59-R-73)

“Contractor agrees that he shall actively solicit bids for the sub-contracting of goods or services from qualified minority businesses. At the request of the City, Contractor shall furnish evidence of his compliance with this requirement of minority solicitation.

Contractor further agrees to consider the grant of sub-contracts to said minority bidders on the basis of substantially equal bids in the light most favorable to said minority businesses. Contractor further affirms that in obtaining his performance and bid bonds, he will seek out and use companies who have records of, and/or who will make commitments to, the bonding of minority contractors on a rate basis comparable to their bonding of similar non-minority contractors. The contractor may be required to submit this evidence as part of the bid or subsequent to it.”

41. COMPLIANCE WITH LAWS

- A. The bidder shall at all times observe and comply with all laws, ordinances and regulations of the Federal, State, Local and City Governments, which may in any manner affect the preparation of bids or the performance of the contract.

42. QUALIFICATION OF BIDDERS

- A. All bidders must be qualified in accordance with the instructions, procedures and methods set forth in this specification.
- B. In awarding contract, City may take into consideration, skill, facilities, capacity, experience, ability, responsibility, previous work, financial standing of bidder, amount of work being carried on by bidder, quality and efficiency of construction equipment proposed to be furnished, period of time within which proposed equipment is furnished and delivered, necessity of prompt and efficient completion of work herein described. Inability of any bidder to meet requirements mentioned above may be cause for rejection of the bid. In addition, if the project covered by this contract is a minority set-aside project, the contractor's qualifications as a minority firm will determine the eligibility of the contractor to bid.

43. COMPETENCY OF BIDDER

- A. No bid will be accepted from or contract awarded to any person, firm or corporation that is in arrears or is in default to the City of Evanston upon any debt or contract, or that is a defaulter, as surety or otherwise, upon any obligation to said City, or had failed to perform faithfully any previous contract with the City.
- B. The bidder, if requested, must present within forty eight (48) hours evidence satisfactory to the Purchasing Manager of performance ability and possession of necessary facilities, pecuniary resources and adequate insurance to comply with the terms of these specifications and contract documents.

44. PREFERENCE TO CITIZENS

The Contractor shall abide by the Illinois Preference Act, 30 ILCS 570 et seq., which stipulates that whenever there is a period of excessive unemployment in Illinois, defined as any month immediately following two (2) consecutive 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 project engineer.

GENERAL CONDITIONS

1. BASIS OF AWARD

The City of Evanston reserves the right to award a contract to a responsive and responsible Bidder(s) who submits the lowest total bid, or to reject any or all bids and bidding, when in its opinion the best interest of the City will be served by such action. The City reserves the right to consider the specified alternates in its evaluation of the bids.

2. BIDS

A. LUMP SUM BID

1. The bidder is to submit a lump sum bid for each bid line on the Bid Form which includes all costs incidental to performing the specified work. It is understood and agreed that the unit quantities given in the supporting pages are approximate only and the bidder shall verify these quantities before bidding as no claim shall be made against the City on account of any excess or deficiency in the same.

2. Unit prices given in the supporting pages shall be used by the City and the Contractor for any subsequent changes in the contract.

3. QUANTITIES

Any quantities shown on the Bid Form are estimated only for bid canvassing purposes, the City has made a good faith effort to estimate the quantity requirements for the Contract term. The City reserves the right to increase or decrease quantities ordered under this contract.

4. CONTRACT TERM

Bidder must fully complete the work within the period specified herein after award of the contract by the City.

5. NOTICE TO PROCEED/ PURCHASE ORDER/ CONTRACT

A. The City issued Purchase Order serves as the City official Notice to Proceed. No work will be allowed prior to Contractor receipt of the City issued Purchase Order.

B. Upon approval of the required bonds and insurance documents, the City will issue a Purchase Order to the Contractor for the contract amount. All Applications for Payment must reference the Purchase Order number.

C. When it is necessary to issue a Change Order that increases/decreases the contract amount, a Change Order form will be issued and a modified Purchase Order will be issued reflecting the revised contract amount.

D. When it is necessary to issue a Change Order that only increases/decreases the contract period, only a Change Order form will be issued establishing the revised

contract period.

- E. Upon Award the contractor shall execute the Contractor Services Agreement.

6. PAYMENT

- A. Progress payments will be made in accordance with “Applications for Payment” and “Project Closeout” sections of the specifications, less a 10% retainage for each payment, which will be held until final acceptance of the work by the City. Certification of each Application for Payment will be made by the City’s representative.
- B. All payments will be made in accordance with *Illinois Local Government Prompt Payment Act*.

7. DECISIONS TO WITHHOLD CERTIFICATION FOR PAYMENT

- A. The City may not certify payment and may withhold payment in whole or in part, to the extent reasonably necessary to protect the City, if the quality of the work is not in accordance with the contract documents. If the City is unable to certify payment in the amount of the invoice, the City will promptly issue payment for the amount of the Work completed in accordance with the contract documents. The City may not certify payment due to any contractor negligence or contract non-compliance.
 - a. Defective work not remedied
 - b. Third party claims filed or reasonable evidence indicating probable filing of such claims
 - c. Failure of Contractor to make payments properly to Sub-contractors for labor, materials or equipment
 - d. Reasonable evidence that the work cannot be completed for the unpaid balance of the Contract Sum
 - e. Damage to the City or another contractor
 - f. Reasonable evidence that the work will not be completed within the Contract period and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay
 - g. Persistent failure to carry out work in accordance with the Contract Documents.

8. CHANGES IN WORK

- A. The City reserves the right to make changes in the plans and specifications by altering, adding to, or deducting from the work, without invalidating the contract. All such changes shall be executed under the conditions of the original contract, except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.
- B. No change shall be made unless a written Change Order and/or modified Purchase Order is issued by the City stating that the City has authorized the change, and no claim for an addition to the contract shall be valid unless so ordered.

- C. If such changes diminish the quantity of work to be done they shall not constitute a claim for damage or anticipated profits on the work, such increase shall be paid in one or more of the following ways:
 - 1. by estimate and acceptance in lump sum
 - 2. by unit prices named in the contract's bid form or subsequently agreed upon

9. DEDUCTION FOR UNCORRECTED WORK

If the City deems it expedient to correct work damaged or not done in accordance with the contract, the difference in value, together with a fair allowance for damage shall be deducted from the contract amount due. The value of such deduction shall be determined by the City.

10. CITY'S RIGHT TO TERMINATE CONTRACT

The City reserves the right, in addition to other rights to termination, to terminate the contracts in accordance with all provisions of the executed contract.

11. LIENS

- A. Neither the final payment nor any part of any retained percentages, shall become due until the contractor, if required, delivers to the City, a complete release of all liens arising out of this contract, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as it has knowledge or information the releases and receipts include all the labor and material for which a lien could be filed. If any lien remains unsatisfied after all payments are made the contractor shall refund to the City all moneys that the latter may be compelled to pay in discharging such a lien, including all costs and attorney's fees.

12. SEPARATE CONTRACTS

- A. The City reserves the right to let other contracts in connection with this work. The contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate his or her work with theirs. If any part of the contractor's work depends on proper execution or results upon the work of any other contractor, the contractor shall inspect and promptly report to the City any defects in such work that render it unsuitable for such proper execution and results. His or her failure to so inspect and report shall constitute an acceptance of other contractor's work as fit and proper.
- B. To insure the proper execution of his or her subsequent work, the contractor shall measure work already in place and shall at once report to the City any discrepancy between the executed work and the drawings which will affect his or her work.

13. PROTECTION & SAFEGUARDS

- A. Unless otherwise specified, the contractor, as a part of this contract, shall provide, erect and maintain temporary roads, fences, bracing, lights, warning signs,

barricades, etc. necessary for the protection of the construction materials, adjacent property and the public.

- B. The contractor shall contact all utilities which will be affected by its operations and notify the owners of the utilities of its operations and their limits within forty-eight (48) hours prior to beginning construction. The contractor shall be responsible for damage to utilities and shall, at his or her own expense, restore such property to a condition equal to that which existed before its work, as may be directed by the owners.
- C. The contractor shall protect all work and unused materials of this contract from any and all damage and shall be solely responsible for the condition of such work and materials.

14. MATERIAL STORAGE

- A. On-site areas may be designated for material/equipment storage. The contractor will assume all risk and liability associated with the storage of material/equipment at on-site locations.

15. CLEANING UP

- A. The contractor shall at all time keep the premises free from accumulation of waste material or rubbish caused by its employees or work and at the completion of the work it shall remove all its rubbish, tools, and surplus materials from the premises, leaving the area in a neat and workmanlike condition. In case of dispute, the City may remove the rubbish and charge the cost to the contractor.
- B. Contractor recognizes that proper cleanup and removal of construction debris is an important safety consideration. The Contractor shall be solely responsible for daily construction site/area cleanup and removal of all construction debris in accordance with City-approved disposal practices. Contractor shall be solely responsible for identifying and removing at its expense all hazardous material and waste which it uses and generates.

16. RESTORATION OF SITE

- A. Prior to final payment, contractor shall fully restore all property disturbed or damaged during the course of this work. This includes, but is not limited to public property, (walks, curbs, roadways, trees, etc.) private property, and utilities. This shall also include removal of temporary facilities erected during the course of this contract and restoration of these areas.
- B. All restoration work shall be subject to the approval of the City and shall restore the property to a condition at least equal to that existing prior to the start of this contract.
- C. All restoration work of property damaged by contractor shall be accomplished at the sole expense of the contractor.

17. PREVAILING WAGE

- A. Prospective Bidders shall thoroughly familiarize themselves with the provisions of the above-mentioned Act and shall prepare any and all bids/bids in strict compliance therewith.
- B. **Effective September 1st - All work performed on new and existing projects must be submitted to Illinois Department of Labor through the certified transcript of payroll portal.** You may access the portal here: [Certified Transcript of Payroll Portal](#)
-

All contractors and sub-contractors on public works projects **must submit and upload certified payrolls** on a monthly basis to the **IDOL** online portal, provide a pdf copy to the City's project manager and business work force development coordinator, along with a statement affirming that such records are true and accurate, that the wages paid to each worker are not less than the required prevailing rate and that the contractor is aware that filing records her or she knows to be false is a Class B misdemeanor.

- C. The certified payroll record must include for every worker employed on the public works project the name, address, telephone number, social security number, job classification, hourly wages paid in each pay period, number of hours worked each day, and starting and ending time of work each day. These certified payroll records are considered public records and public bodies must make these records available to the public under the Freedom of Information Act, with the exception of the employee's address, telephone number and social security number. Any contractor who fails to submit a certified payroll or knowingly files a false certified payroll is guilty of a Class B misdemeanor.
- D. All certified payrolls shall be submitted in electronic format, preferably a PDF file.
- E. As a condition of receiving payment, Contractor must (i) be in compliance with the Agreement, (ii) pay its employees prevailing wages when required by law (Examples of prevailing wage categories include public works, printing, janitorial, window washing, building and grounds services, site technician services, natural resource services, security guard and food services). Contractor is responsible for contacting the Illinois Dept. of Labor 217-782-1710; <https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/prevailing-wage-act.aspx> compliance with prevailing wage requirements), (iii) pay its suppliers and sub-contractors according to the terms of their respective contracts, and (iv) provide lien waivers to the City upon request.

18. CONTRACTOR REQUIREMENTS

- A. The Contractor shall abide by and comply with all local, State and federal laws and regulations relating to contracts involving public funds and the development/construction of public works, buildings, or facilities. The scale of wages to be paid shall be obtained from Illinois Department of Labor and posted by the

Contractor in a prominent and accessible place at the project work site.

- B. The Contractor certifies it has not been barred from being awarded a contract with a unit of State or local government as a result of bid rigging or bid rotating or any similar offense (720 ILCS 5/33 E-3, E-4).
- C. The Contractor certifies, pursuant to the Illinois Human Rights Act (775 ILCS 5/2-105), that it has a written sexual harassment policy that includes, at a minimum, the following information: (1) the illegality of sexual harassment, (2) the definition of sexual harassment under State law, (3) a description of sexual harassment utilizing examples, (4) the Contractor's internal complaint process including penalties, (5) legal recourse, investigation and complaint process available through the Illinois Department of Human Rights and the Human Rights Commission and directions on how to contact both; and (6) protection against retaliation as provided by Section 6-101 of the Illinois Human Rights Act.
- D. The Contractor shall abide by the "Illinois Preference Act" which stipulates that whenever there is a period of excessive unemployment in Illinois, defined as any month immediately following two (2) consecutive 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 project engineer.

19. SUB-CONTRACTORS

- A. The term "sub-contract" means any agreement, arrangement or understanding, written or otherwise between a Contractor and any person (in which the parties do not stand in the relationship of an employer or an employee) for the furnishing of supplies or services or for the use of real or personal property, including lease arrangements, which, in whole or in part, is utilized in the performance of any one or more Contracts under which any portion of the Contractor's obligation under any one or more Contracts is performed, undertaken or assumed.
- B. The Bidder is specifically advised that any person, firm or party, to whom it is proposed to award a sub-contract under this contract must be acceptable to the City. Approval for the proposed sub-contract Award cannot be given by the City until the proposed Sub-contractor has submitted evidence showing that it has fully complied with any reporting requirements to which it is, or was, subject.
- C. The contractor, shall, within ten (10) days after award of the Contract, submit to the City in writing, names and addresses and respective amounts of money for proposed contracts with Sub-contractors/major suppliers. The City will review and

may direct the Contractor that they shall not employ any that are not acceptable as provided above.

- D. The sub-contractor shall abide by and comply with all local, State and federal laws and regulations relating to contracts involving public funds and the development/construction of public works, buildings, or facilities.

20. PAYMENTS TO SUB-CONTRACTORS

- A. Within seven days after the receipt of amounts paid by the City for work performed by a sub-contractor under this contract, the Contractor shall either:
 - 1. Pay the sub-contractor for the proportionate share of the total payment received from the City attributable to the work performed by the sub-contractor under this contract; or,
 - 2. Notify the City and sub-contractor, in writing, of his intention to withhold all or a part of the sub-contractor's payment and the reason for non-payment.
- B. The Contractor shall pay interest to the sub-contractor on all amounts owed that remain unpaid beyond the seven day period except for amounts withheld as allowed in item 2 above.
- C. Unless otherwise provided under the terms of this contract, interest shall accrue at the rate of one percent per month.
- D. The Contractor shall include in each of its sub-contracts a provision requiring each Sub-contractor to include or otherwise be subject to the same payment and interest requirements as set forth above with respect to each lower-tier sub-contractor.
- E. The Contractor's obligation to pay an interest charge to a sub-contractor pursuant to this provision may not be construed to be an obligation of the City.

21. BOND – PERFORMANCE, MATERIAL, & LABOR

- A. When required by the specifications herein, the successful Bidder or Bidders shall, within ten (10) calendar days after acceptance of the Bidder's bid by the City, furnish a performance bond for 100% of the full amount of the contract from insurance companies having not less than A+ Policyholders Rating from the most recent Alfred M. Best and Co., Inc. listing available. Certification of the insurance company's rating shall be provided prior to contract implementation and quarterly thereafter until contract completion. Should such rating fall below the required A+ level during performance of the contract, it will be the contractor's responsibility to notify the City and provide a new bond from an insurance company whose rating meets the City's requirements.
- B. When required by the specifications herein, all Bidders shall submit with the bid a

bid bond. A letter of credit may be furnished in lieu of a bid bond only if the following conditions are met: 1) An irrevocable letter of credit must be obtained from an accredited bank which shall include an agreement that the bank will honor a demand by the City for payment due to Plaintiff failure to complete the project. 2) An irrevocable letter of credit must be in writing and signed by an authorized representative of the bank. 3) The irrevocable letter of credit must expressly state that it is irrevocable until the bid has been awarded. 4) The letter of credit must be for the percentage specified in the bid documents.

- C. The City may reject the use of an irrevocable letter of credit if the financial soundness of the issuing bank is found to be unacceptable.
- D. In the event that the Bidder fails to furnish a performance bond in said period of ten (10) calendar days after acceptance of the Bidder's bid by the City, the City may withdraw its acceptance of the bid and retain the Bidder's deposit as liquidated damages and not as a penalty.
- E. If the contractor has more than one project for which there is a contract with the City of Evanston the contractor shall provide a separate Performance Bond for each project.

22. INDEMNITY

- A. The Contractor shall defend, indemnify and hold harmless the City and its officers, elected and appointed officials, agents, and employees from any and all liability, losses, or damages as a result of claims, demands, suits, actions, or proceedings of any kind or nature, including but not limited to costs, and fees, including attorney's fees, judgments or settlements, resulting from or arising out of any negligent or willful act or omission on the part of the Contractor or Contractor's sub-contractors, employees, agents or sub-contractors during the performance of this Agreement. Such indemnification shall not be limited by reason of the enumeration of any insurance coverage herein provided. This provision shall survive completion, expiration, or termination of this Agreement.
- B. Nothing contained herein shall be construed as prohibiting the City, or its officers, agents, or employees, from defending through the selection and use of their own agents, attorneys, and experts, any claims, actions or suits brought against them. The Contractor shall be liable for the reasonable costs, fees, and expenses incurred in the defense of any such claims, actions, or suits. Nothing herein shall be construed as a limitation or waiver of defenses available to the City and employees and agents, including but not limited to the Illinois Local Governmental and Governmental Employees Tort Immunity Act, 745 ILCS 10/1-101 *et seq.*
- C. At the City Corporation Counsel's option, Contractor must defend all suits brought upon all such Losses and must pay all costs and expenses incidental to them, but the City has the right, at its option, to participate, at its own cost, in the defense of any suit, without relieving Contractor of any of its obligations under this Agreement.

Any settlement of any claim or suit related to this Project by Contractor must be made only with the prior written consent of the City Corporation Counsel, if the settlement requires any action on the part of the City.

- D. To the extent permissible by law, Contractor waives any limits to the amount of its obligations to indemnify, defend, or contribute to any sums due under any Losses, including any claim by any employee of Contractor that may be subject to the Illinois Workers Compensation Act, 820 ILCS 305/1 et seq. or any other related law or judicial decision, including but not limited to, Kotecki v. Cyclops Welding Corporation, 146 Ill. 2d 155 (1991). The City, however, does not waive any limitations it may have on its liability under the Illinois Worker Compensation Act, the Illinois Pension Code or any other statute.
- E. The Contractor shall be responsible for any losses and costs to repair or remedy work performed under this Agreement resulting from or arising out of any act or omission, neglect, or misconduct in the performance of its Work or its sub-contractors' work. Acceptance of the work by the City will not relieve the Contractor of the responsibility for subsequent correction of any such error, omissions and/or negligent acts or of its liability for loss or damage resulting therefrom.

23. CONTRACTOR'S LIABILITY INSURANCE

- A. THE CONTRACTOR SHALL NOT COMMENCE WORK UNDER THIS CONTRACT UNTIL THEY HAVE OBTAINED ALL INSURANCE REQUIRED HEREIN AND SUCH INSURANCE HAS BEEN APPROVED BY THE CITY. Nor shall the contractor allow any sub-contractor to commence work until all similar insurance required of the sub-contractor has been so obtained.
- B. The City of Evanston shall be named as an additional insured on the policy of the contractor for whatever the policy limits are for the contractor, but in no event shall the Comprehensive General Liability limits be less than \$3,000,000.00.
- C. If the contractor has more than one project for which he has a contract with the City of Evanston there shall be separate Certificates of Insurance naming the City as an additional insured on each separate policy.
- D. In the event of accidents, injuries, or unusual events, whether or not any injury occurred, the contractor shall promptly furnish the City with copies of all reports of such incidents.
- E. The contractor shall furnish one (1) copy of a certificate, with the City named as an additional insured, showing the following minimum coverage with insurance company acceptable to the City.

24. PRE-CONSTRUCTION MEETING

- A. A pre-construction meeting will be scheduled for the successful Contractor at a

date immediately following awarding of the Contracts.

25. LIQUIDATED DAMAGES

- A. The Contractor shall, and agrees to pay, per calendar day, the amount listed in the Schedule of Deductions presented in Article 108.09 of the Standard Specifications (based upon the total Contract Price) as liquidated damages for failure to meet the completion deadlines identified below:

Substantial Completion Deadline: April 26, 2024
Final Completion Deadline: May 31, 2024

- B. Substantial Completion shall be defined as 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 City can occupy or utilize the work for its intended use. Substantial Completion will be certified by the issuance of a Certificate of Substantial Completion, to be issued by the City's representative, when the Contractor has satisfied the above statement.
- C. Final Completion shall be defined as the stage in the progress of the work when all work on site is fully complete, including punch list work, with the exception of restoration grass establishment.

26. EXTENSION OF TIME

- A. Delays due to causes beyond the control of the contractor other than such as reasonable would be expected to occur in connection with or during the performance of the work, may entitle the contractor to an extension of time for completing the work sufficient to compensate for such delay. No extension of time shall be granted, however, unless the contractor shall notify the City in writing thereof, within ten (10) days from the initiation of the delay and unless he shall, within ten (10) days after the expiration of the delay, notify the City in writing of the extension of time claimed on account thereof and then only to the extent, if any, allowed by the City.

27. DEFAULT

- A. The City may, subject to the provisions of this section, by written notice of default to Contractor, terminate the whole or any part of this contract in any one of the following circumstances:
1. if the Contractor fails to perform the services within the time specified herein, or any extension thereof; or
 2. if the contractor fails to perform any of the other provisions of this contract, or so fails to make progress as to endanger performance of this contract in accordance with its terms, and in either of these two circumstances does not cure failure within a period of 10 days (or such other extended period as the City may authorize in writing) after receipt of notice from the City specifying such failure

- B. In the event the City terminates this contract in whole or in part as provided in this section, the City may procure, upon such terms and in such manner as the City may deem appropriate, services similar to those so terminated, and the Contractor will be liable to the City for any excess costs for such similar services.
- C. The Contractor will not be liable for any excess of costs if acceptable evidence has been submitted to the City that the failure to perform the contract was due to causes beyond the control and without fault or negligence of the Contractor.
- D. Contractors who default may not be considered for awards of future City contracts.

28. USE OF PREMISES

- A. The contractor shall confine his apparatus, the storage of materials and the operations of his workers, to limits indicated by law, ordinances, permits or directions of the City.

29. DISCLOSURES AND POTENTIAL CONFLICTS OF INTEREST (30 ILCS 500/50-35)

- A. The City of Evanston's Code of Ethics prohibits public officials or employees from performing or participating in an official act or action with regard to a transaction in which he has or knows he will thereafter acquire an interest for profit, without full public disclosure of such interest. This disclosure requirement extends to the spouse, children and grandchildren, and their spouses, parents and the parents of a spouse, and brothers and sisters and their spouses.

To ensure full and fair consideration of all bids, the City of Evanston requires all Bidders including owners or employees to investigate whether a potential or actual conflict of interest exists between the Bidder and the City of Evanston, its officials, and/or employees. If the Bidder discovers a potential or actual conflict of interest, the Bidder must disclose the conflict of interest in its bid, identifying the name of the City of Evanston official or employee with whom the conflict may exist, the nature of the conflict of interest, and any other relevant information. The existence of a potential or actual conflict of interest does NOT, on its own, disqualify the disclosing Bidder from consideration. Information provided by Bidders in this regard will allow the City of Evanston to take appropriate measures to ensure the fairness of the bidding process.

The City of Evanston requires all bidders to submit a certification, enclosed with this bid packet, that the bidder has conducted the appropriate investigation and disclosed all potential or actual conflicts of interest.

By submitting a bid, all Bidders acknowledge and accept that if the City of Evanston discovers an undisclosed potential or actual conflict of interest, the City of Evanston may disqualify the Bidder and/or refer the matter to the appropriate authorities for investigation and prosecution.

INSURANCE REQUIREMENTS

<u>TYPE OF INSURANCE</u>	<u>MINIMUM</u>	<u>INSURANCE</u>	<u>COVERAGE</u>
	Consequent Death		Bodily Injury and Property Damage
	Each Occurrence		Aggregate
Commercial General Liability including:	\$3,000,000		\$3,000,000
1. Comprehensive form			
2. Premises - Operations			
3. Explosion & Collapse Hazard			
4. Underground Hazard			
5. Products/Completed Operations Hazard			
6. Contractual Insurance – With an endorsement on the face of the certificate that it includes the "Indemnity" paragraph of the specifications.		<u>Insurance Certificate Must State: The City Of Evanston is Named as Additional Insured</u>	
7. Broad Form Property Damage - construction projects only			
8. Independent contractors			
9. Personal Injury			
Automobile Liability Owned, Non-owned or Rented	\$ 1,000,000		\$1,000,000
Workmen's Compensation and Occupational Diseases As required by applicable laws. Employer's Liability			\$ 500,000

Thirty day notice of cancellation required on all certificates.

EXHIBIT A – BID FORM
For
James Park Athletic Lighting

(BID #23-39)

1.01 BID TO:

THE CITY OF EVANSTON

2100 Ridge Avenue
Evanston, Illinois 60201

Hereinafter called "OWNER".

1.02 BID FROM:

(Hereinafter call "BIDDER")

Address

Telephone Number

Fax Number

1.03 BID FOR: **JAMES PARK ATHLETIC LIGHTING**

1.04 ACKNOWLEDGEMENT:

A. The Bidder, in compliance with the Invitation for Bids, having carefully examined the Drawings and Project Manual with related documents and having visited the site of the proposed Work, and being familiar with all of the existing conditions and limitations surrounding the construction of the proposed project, including the structure of the ground, subsurface conditions, the obstacles which may be encountered, local restrictions, and all other relevant matters concerning the Work to be performed, hereby **PROPOSES** to perform everything required to be performed, and to provide all labor, materials, necessary tools and equipment, expendable equipment, all applicable permits and taxes and fees, and provide all utility and transportation services necessary to perform and complete in a workmanlike

manner the Project in accordance with all the plans, specifications and related Contract Documents as prepared by the City of Evanston.

- B. The undersigned hereby acknowledges receipt of Invitation of Bids, Instruction to Bidder, the Project Manual, Drawings, and other Contract Documents and acknowledges receipt of the following Addenda:

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

1.05 GENERAL STATEMENTS

- A. The undersigned has checked all of the figures contained in this proposal and further understands that the Owner will not be responsible for any errors or omissions made therein by the undersigned.
- B. It is understood that the right is reserved by the Owner to reject any or all proposals, to waive all informality in connection therewith and to award a Contract for any part of the work or the Project as a whole.
- C. The undersigned declares that the person(s) signing this proposal is/are fully authorized to sign on behalf of the named firm and to fully bind the named firm to all the conditions and provisions thereof.
- D. It is agreed that no person(s) or company other than the firm listed below or as otherwise indicated hereinafter has any interest whatsoever in this proposal or the Contract that may be entered into as a result thereof, and that in all respects the proposal is legal and fair, submitted in good faith, without collusion or fraud.
- E. It is agreed that the undersigned has complied and/or will comply with all requirements concerning licensing and with all other local, state and national laws, and that no legal requirement has been or will be violated in making or accepting this proposal, in awarding the Contract to him, and/or in the prosecution of the Work required hereunder.
- F. To be considered a bona fide offer, this proposal must be completed in full and accompanied by a bid deposit or a bid bond when required by Contract Documents or Addenda.

1.06 ALTERNATES

- A. When alternate proposals are required by Contract Documents or Addenda thereto, the undersigned proposes to perform alternates for herein stated additions to or deductions from hereinbefore stated Base Bid. Additions and deductions include all modifications of Work or additional Work that the undersigned may be required to perform by reason of the acceptance of alternates.

1.07 ALLOWANCE

- A. The allowance is intended to address items not able to be precisely determined prior to bidding including unforeseen conditions that are discovered during the course of construction. At the end of the project, unspent allowance shall be credited to owner via change order. See Section 01 21 00 – Allowances for additional information.

1.08 AGREEMENT

- A. In submitting this Bid, the undersigned agrees:
 - 1. To hold this Bid open for sixty (60) days from submittal date.
 - 2. To enter into and execute a Contract with the Owner within ten (10) days after receiving Notice of Award from the Owner.
 - 3. To accomplish the work in accordance with the Contract Documents.
 - 4. To complete the work by the time stipulated in the General Conditions
- B. The Owner reserves the right to reject any and all Bids and to waive any informalities in Bidding.

1.09 SCHEDULE

- A. See General Conditions for required schedule of completion dates.

1.10 PROPOSED PRICES

- A. The Bidder hereby proposes to furnish all labor, materials, equipment, transportation, construction plant and facilities necessary to complete, in a workmanlike manner and in accordance with the contract documents, the contract of work bid upon herein for compensation in accordance with the following prices:

BASE BID AMOUNT: \$ _____

ALLOWANCE (ADDITIONAL WORK – GENERAL): \$ _____ +30,000

TOTAL BASE BID AMOUNT: \$ _____

ALTERNATE 1 – TENNIS COURT LIGHTING SYSTEM

This work includes the complete installation of athletic and security lighting at James Park’s six tennis courts as described in the bid documents. The ADD/DEDUCT LUMP SUM PRICE, if awarded to the undersigned, shall be:

ALTERNATE 1 AMOUNT: \$ _____

ALTERNATE 2 – DIRECTIONAL BORING

This work includes the installation of all underground conduit via directional boring in lieu of open trenching as described in the bid documents. The ADD/DEDUCT LUMP SUM PRICE, if awarded to the undersigned, shall be:

ALTERNATE 2 AMOUNT: \$ _____

1.11 BID SECURITY

If required by the bid documents, a scanned copy of the bid bond must be included with the bid electronic submission. The City is currently not able to accept a certified check, bank cashier's check or electronic bid bond at this time.

- A. The City of Evanston Civic Center is unable to receive in person drop-off and it is closed to the public. The original bid bond must be mailed within ten (10) days after the due date, to the City of Evanston Purchasing Department, 2100 Ridge Avenue - Room 4200 Evanston, Illinois 60201 Attention Purchasing Manager using the USPS (certified or priority), UPS or FedEx mail options in order to have a tracking number.
- B. Accompanying this electronic submittal is a scanned copy of a bank draft, bid bond, Cashier's check or Certified check as surety in the amount of not less than five percent (5%) of the Total Bid payable to the City of Evanston.

The amount of the check or draft is: \$ _____

If this bid is accepted and the undersigned shall fail to execute a contract and contract bond as required it is hereby agreed that the amount of the check or draft or bidder's bond substituted in lieu thereof, shall become the property of the City and shall be considered as payment of damages due to delay and other causes suffered by the City because of the failure to execute said contract and contract bond; otherwise said check or draft shall be returned to the undersigned.

In the event that one check or draft is intended to cover two or more bids, the amount must be equal to the sum of the project proposal guarantees of the individual sections covered.

If the check or draft is placed on another project proposal, state below where it may be found, as follows: The check or draft will be found in the project proposal for:

_____.

1.12 PERFORMANCE/PAYMENT BOND

The undersigned bidder agrees to provide Performance Bond and Payment Bond executed in accordance with Contract Performance Bond form furnished by and acceptable to the Owner written with _____

_____ in the amount of 100% of the Contract Sum (Total Base Bid and all accepted alternatives and adjustments) the cost of which is included in the Bid.

Cost of bond for change order is _____ percent of change order cost.

1.13 LIQUIDATED DAMAGES

The undersigned Bidder understands and agrees to the provisions stated under "LIQUIDATED DAMAGES" in the General Conditions and shall be assessed at the specified daily rate for each calendar day or partial calendar day until completion as defined herein.

1.14 MATERIAL SUBSTITUTION SHEET

The following is a schedule of substitute materials I propose to furnish on this job, with the difference in price being added to or deducted from the Base Bid. The Base Bid is understood to include only those items which are definitely specified by trade names or otherwise.

I understand that if no price difference is indicated, then the selection of materials is optional with the Owner, and approval or rejection of the substitution below will be indicated prior to signing of Contracts.

<u>PRODUCT NAME AND/OR MANUFACTURER</u>	<u>ADD</u>	<u>DEDUCT</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

1.15 PROPOSAL SIGNATURE (REQUIRED)

A. SOLE PROPRIETOR

Signature of Bidder: _____

SUBSCRIBED AND SWORN to before me this ____ day of _____, 20__

Notary Public

Commission Expires: _____

B. PARTNERSHIP

Signature of All Partners: _____

Name (typed or printed)

Name (typed or printed)

SUBSCRIBED AND SWORN to before me this ____ day of _____, 20__

Commission Expires: _____

Notary Public

C. CORPORATION

Signature of Authorized Official: _____

Title: _____

Name above (typed or printed): _____

(If other than the president, attach a certified copy of that section of corporate by-laws or other authorization by the Corporation which permits the person to execute the offer for the Corporation.)

(Corporate Seal)

Attest: _____
Secretary

SUBSCRIBED AND SWORN to before me this ____ day of _____, 20__

Commission Expires: _____

Notary Public

1.16 DISCLOSURE

- A. The undersigned duly sworn deposes and says on oath that the bidder has withheld no disclosures of ownership interest and the information provided herein to the best of its knowledge is current and said undersigned has not entered into any agreement with any other bidder or prospective bidder or with any other person, firm or corporation relating to the price named in said proposal or any other proposal, nor any agreement or arrangement under which any person, firm or corporation is to refrain from bidding, nor any agreement or arrangement for any act or omission in restraint of free competition among bidders and has not disclosed to any person, firm or corporation the terms of this bid or the price named herein.

Bidder: _____

Business Address: _____

Telephone Number: _____

1.17 CONTACTS

- A. In the event the Evanston City Council approves this bid response, list the name, address, telephone, and fax number of the person to be contacted:

Bidder: _____

Address: _____

Telephone Number: _____

Fax Number: _____

1.18 REFERENCES

A. Provide three (3) references for which your firm has completed work of a similar scope in the past.

1. Name: _____

Address: _____

Contact Person: _____

Phone: _____

Contract Value: _____

Contract Dates: _____

2. Name: _____

Address: _____

Contact Person: _____

Phone: _____

Contract Value: _____

Contract Dates: _____

3. Name: _____

Address: _____

Contact Person: _____

Phone: _____

Contract Value: _____

Contract Dates: _____

EXHIBIT B

City of Evanston M/W/D/EBE Policy

A City of Evanston goal is to provide contracting and sub-contracting opportunities to Minority Business Enterprises, Women Business Enterprises, Disadvantaged and Evanston Business Enterprises. The goal of the Minority, Women, Disadvantaged and Evanston Business Enterprise Program (M/W/D/EBE) is to assist such businesses with opportunities to grow. To assist such growth, the City's goal is to have general contractors utilize M/W/D/EBEs to perform no less than 25% of the awarded contract.

Firms bidding on projects with the City must work to meet the 25% goal or request a waiver from participation. It is advised that bidders place advertisements requesting sub-contractors and that they email or contact individual firms that would be appropriate to partner in response to the project. For samples of possible advertisements, see the City of Evanston's Business Diversity Section <http://www.cityofevanston.org/business/business-diversity/> ([Sample Advertisement](#)). If you request a paper copy of the additional documents, it will be available free of charge from the Purchasing Office, 2100 Ridge Road Suite 4200, Evanston, IL 60201.

If a bidder is unable to meet the required M/W/D/EBE goal, the Bidder must seek a waiver or modification of the goal on the attached forms. Bidder must include:

1. A narrative describing the Bidder's efforts to secure M/W/D/EBE participation prior to the bid opening.
2. Documentation of each of the assist agencies that were contacted, the date and individual who was contacted, and the result of the conversation (see form)
3. A letter attesting to instances where the bidder has not received inquiries/proposals from qualified M/W/D/EBEs
4. Names of owners, addresses, telephone numbers, date and time and method of contact of qualified M/W/D/EBE who submitted a proposal but was not found acceptable.
5. Names of owners, addresses, telephone numbers, date and time of contact of at least 15 qualified M/W/D/EBEs the bidder solicited for proposals for work directly related to the Bid prior to the bid opening (copies must be attached).

If a bidder is selected with a Sub-contractor listed to meet the M/W/D/EBE goal, a "monthly utilization report" will be due to the City prior to each payment being issued to the Contractor. This report will include documentation of the name of the firm hired, the type of work that firm performed, etc. Should the M/W/D/EBE not be paid according to the schedule proposed in this document, the City reserves the right to cancel the contract. Examples of this monthly form can be found on the City's website: <http://www.cityofevanston.org/business/business-diversity/> ([MWDEBE Monthly Utilization Report](#)).

EXHIBIT C

M/W/D/EBE PARTICIPATION COMPLIANCE FORM

I do hereby certify that

_____ (Name of firm) intends to participate as a Subcontractor or General Contractor on the project referenced above.

This firm is a (check only one):

- _____ Minority Business Enterprise (MBE), a firm that is at least 51% managed and controlled by a minority, certified by a certifying agency within Illinois.
- _____ Women's Business Enterprise (WBE), a firm that is at least 51% managed and controlled by a woman, certified by a certifying agency within Illinois.
- _____ Disadvantaged Business Enterprise (DBE), a firm that is at least 51% managed and controlled by a disadvantaged, certified by a certifying agency within Illinois.
- _____ Evanston Based Enterprise (EBE), a firm located in Evanston for a minimum of one year and which performs a "commercially useful function".

Total proposed price of response \$ _____

Amount to be performed by a M/W/D/EBE \$ _____

Percentage of work to be performed by a M/W/D/EBE _____%

Information on the M/W/D/EBE Utilized:

Name _____

Address _____

Phone Number _____

Signature of firm attesting to participation _____

Title and Date _____

Type of work to be performed _____

Please attach:

1. Proper certification documentation if applying as a M/W/DBE and check the appropriate box below. This M/W/DBE will be applying with documentation from:

- | | |
|--|--|
| <input type="checkbox"/> Cook County | <input type="checkbox"/> State Certification |
| <input type="checkbox"/> Federal Certification | <input type="checkbox"/> Women's Business Enterprise National Council |
| <input type="checkbox"/> City of Chicago | <input type="checkbox"/> Chicago Minority Supplier Development Council |

2. Attach business license if applying as an EBE

EXHIBIT C

M/W/D/EBE UTILIZATION SUMMARY REPORT

The following Schedule accurately reflects the value of each MBE/WBE/DBE/EBE sub-agreement, the amounts of money paid to each to date, and this Pay Request. The total proposed price of response submitted is _____.

MBE/WBE/DBE/EBE FIRM NAME	FIRM TYPE (MBE/WBE/ DBE/EBE)	SERVICES PERFORMED	AMOUNT OF SUB- CONTRACT	PERCENT OF TOTAL CONTRACT AMOUNT
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
			\$	
TOTAL			\$	

EXHIBIT D

M/W/D/EBE PARTICIPATION WAIVER REQUEST

I am _____ of _____, and I have authority to
(Title) (Name of Firm)

execute this certification on behalf of the firm. I _____ do
(Name)

hereby certify that this firm seeks to waive all or part of this M/W/D/EBE participation goal for the following reason(s):

(CHECK ALL THAT APPLY. SPECIFIC SUPPORTING DOCUMENTATION MUST BE ATTACHED.)

_____ 1. No M/W/D/EBEs responded to our invitation to bid.

_____ 2. An insufficient number of firms responded to our invitation to bid.

For #1 & 2, please provide a narrative describing the outreach efforts from your firm and proof of contacting at least 15 qualified M/W/D/EBEs prior to the bid opening. Also, please attach the accompanying form with notes regarding contacting the Assist Agencies.

_____ 3. No sub-contracting opportunities exist.

Please provide a written explanation of why sub-contracting is not feasible.

_____ 4. M/W/D/EBE participation is impracticable.

Please provide a written explanation of why M/W/D/EBE participation is impracticable.

Therefore, we request to waive _____ of the 25% utilization goal for a revised goal of _____%.

Signature: _____
(Signature)

Date: _____

EXHIBIT E

Construction Contractors' Assistance Organizations (“Assist Agencies”) Form

AGENCY	DATE CONTACTED	CONTACT PERSON	RESULT OF CONVERSATION
Association of Asian Construction Enterprises (AACE) 5500 Touhy Ave., Unit K Skokie, IL. 60077 Phone: 847-5259693 Perry Nakachii, President			
Black Contractors United (BCU) 400 W. 76th Street Chicago, IL 60620 Phone: 773-483-4000; Fax: 773-483-4150 Email: bcunewera@ameritech.net			
Chicago Minority Business Development Council 105 West Adams Street Chicago, Illinois 60603 Phone: 312-755-8880; Fax: 312-755-8890 Email: info@chicagomsdc.org Shelia Hill, President			
Evanston Minority Business Consortium, Inc. P.O. Box 5683 Evanston, Illinois 60204 Phone: 847-492-0177 Email: embcinc@aol.com			
Federation of Women Contractors 5650 S. Archer Avenue Chicago, Illinois 60638 Phone: 312-360-1122; Fax: 312-360-0239 Email: FWCChicago@aol.com Contact Person: Beth Doria Maureen Jung, President			
Hispanic American Construction Industry (HACIA) 901 W. Jackson, Suite 205 Chicago, IL 60607 Phone: 312-666-5910; Fax: 312-666-5692 Email: info@haciaworks.org			
Women’s Business Development Ctr. 8 S. Michigan Ave, Suite 400 Chicago, Illinois 60603 Phone: 312-853-3477 X220; Fax: 312-853-0145 Email: wbdc@wbdc.org Carol Dougal, Director			

PLEASE NOTE: Use of Construction Contractor’s Assistance Organization (Assist Agencies”) Form and agencies are for use as a resource only. The agencies and or vendors listed are not referrals or recommendations by the City of Evanston.

EXHIBIT F

CITY OF EVANSTON LOCAL EMPLOYMENT PROGRAM (LEP) COMPLIANCE

Effective Date January 1, 2015

City of Evanston Ordinance 60-O-14, Local Employment Program (LEP) New Penalties:

- **Ordinance 60-O-14**, Amendment to the MWDEBE/LEP revising the penalty section from a \$100/per day to a 1.0% of total project value penalty can be found at: Ordinance 60-O-14 Amendment MWEDBE LEP of the Evanston City Code Section 1-17-1 (C) can be found at Municode Library. The following are excerpts from Ordinance 60-O-14, Amending City Code Section 1-17-1(C) (11): Penalty.

If the contactor or sub-contractor fails to comply: The City may impose a fine up to one percent (1.0%) of the approved project price in total. Contractors or sub-contractors that are out of compliance due to a resident termination or resignation shall immediately notify the Business Workforce Compliance Coordinator of this occurrence within two (2) business days. Subsequently, the contractor or sub-contractor shall have five (5) additional business days to replace a terminated or resigned worker with another resident.

If the contactor or sub-contractor fails to comply: If the contractor or sub-contractor fails to make the replacement or to notify the Business Workforce Compliance Coordinator of this occurrence, the offending party will also be subject to a penalty up to one percent (1.0%) of the approved project price. If the noncompliant contractor makes a good faith effort to replace the resident, the fine may be waived.

If the contactor or sub-contractor fails to comply: At the sole discretion of the City, a contractor or sub-contractor that has violated the terms of the Local Employment Program within a three-year period may be determined a non-responsible bidder and excluded from bidding on future projects for a period of not less than one year.

If the employee (LEP Evanston resident) fails to comply: At the sole discretion of the City, an employee that has been hired through the LEP may be removed from the program for a period of not less than one year for failing to adhere to program guidelines or due to termination by the contractor for cause. Such termination process will be reviewed by the Business Workforce Compliance Coordinator.

****Detailed Local Employment Program Instructions “How to Comply” can be found at: [Local Employment Program Detailed Instructions](#)**

Local Employment Program or Exhibit F Questions: City staff is available for assistance to help with compliance. Submit questions in writing to Nathan Norman, Youth/Young Adult Program Supervisor at nnorman@cityofevanston.org or Tammi Nunez, Purchasing Manager at tnunez@cityofevanston.org.

EXHIBIT F
LOCAL EMPLOYMENT PROGRAM COMPLIANCE
CITY CODE SECTION 1-17-1(C): LOCAL EMPLOYMENT PROGRAM

I have read and understood the requirements of the City of Evanston Local Employment Program (“LEP”) as set forth in City of Evanston Code Section 1-17-1(C): Local Employment Program. I intend to comply with the program as follows:

Estimated total labor cost = \$ _____ 15% of total labor cost = \$ _____

- _____ My total bid, including all alternates, is under \$250,000, and the LEP does not apply.
- _____ My total bid, including all alternates, is equal to or greater than \$250,000, and I already employ, and will continue to employ for the duration of the contract for which I am submitting this bid, Evanston residents (residing in zip codes 60201 or 60202) for at least 15% of all hours worked at the construction site by construction trade workers.
- _____ My total bid, including all alternates, is equal to or greater than \$250,000, and I will employ, for the duration of the contract for which I am submitting this bid, through use of the City of Evanston database or otherwise, Evanston residents (residing in zip codes 60201 or 60202) for at least 15% of all hours worked at the construction site by construction trade workers.
- _____ My total bid, including all alternates, is equal to or greater than \$250,000, and I have been unable to comply with the LEP requirements but am willing to work with the City to achieve compliance.
- _____ My total bid, including all alternates, is equal to or greater than \$250,000, and after having made sincere attempt to comply as noted below, I seek a waiver on a portion or all of the LEP requirements on this contract. Complete next section “Reasons for Waiver Request” below.

I UNDERSTAND THAT FAILURE TO COMPLY WITH THE LEP, REGARDLESS OF INTENT, MAY RESULT IN MAXIMUM PENALTY AS SET FORTH IN CITY CODE SECTION 1-17-1(C)(11), AS AMENDED.

WAIVER WILL BE GRANTED ONLY AFTER SINCERE ATTEMPT TO COMPLY*

REASONS FOR WAIVER REQUEST: PLEASE CHECK ALL THAT APPLY AND COMPLETE INFORMATION REQUESTED:

1. I have made sincere attempt as otherwise indicated below, but have nonetheless been unable to comply.
- a. I do or will employ Evanston residents for the project, but such employment amounts to ____% of total labor cost.
2. The nature of the job is so technical that after having made sincere attempt as otherwise indicated below, I have been unable to locate any Evanston residents qualified to perform any aspects of the work. Please describe applicable job requirements/qualifications. Attach separate sheet if necessary:

***THE FOLLOWING DEMONSTRATE SINCERE ATTEMPT TO COMPLY: PLEASE CHECK EACH BOX COMPLETED, AS APPLICABLE:**

3. I have utilized the local resident database and otherwise worked with the City in attempt to hire Evanston residents in compliance with LEP on this project, and have nonetheless been unable to comply;
4. I have placed one or more ads in a local newspaper seeking to hire Evanston residents in compliance with LEP on this project, and have nonetheless been unable to comply; and
5. If I am utilizing union labor, I have contacted Chicagoland labor unions to request Evanston residents for employment in compliance with LEP on this project and have nonetheless been unable to comply.

I have read The City of Evanston, Local Employment Program (LEP) requirements as set forth in City Code Section 1-17-1(C): Local Employment Program. I understand and will comply with the LEP requirements for this project with respect to the job and/or any waiver, as applicable. **I UNDERSTAND THAT IF MY APPLICATION IS NOT COMPLETE, MY BID MUST BE REJECTED.**

SIGNED:

 Signature Printed Name and Title Date
 On behalf of Company: _____

 Signature Printed Name and Title Date
 On behalf of Company: _____

EXHIBIT H

DISCLOSURE OF OWNERSHIP INTERESTS

City of Evanston Ordinance 15-0-78 requires all persons (APPLICANT) seeking to do business with the City to provide the following information with their bid. Every question must be answered. If the question is not applicable, answer with "NA".

APPLICANT NAME: _____

APPLICANT ADDRESS: _____

TELEPHONE NUMBER: _____

FAX NUMBER: _____

APPLICANT is (**Check One**)

- 1. Corporation () 2. Partnership () 3. Sole Owner () 4. Association ()
- 5. Other () _____

Please answer the following questions on a separate attached sheet if necessary.

SECTION I - CORPORATION

1a. Names and addresses of all Officers and Directors of Corporation.

1b. (Answer only if corporation has 33 or more shareholders.) Names and addresses of all those shareholders owning shares equal to or in excess of 3% of the proportionate ownership interest and the percentage of shareholder interest. (Note: Corporations which submit S.E.C. form 10K may substitute that statement for the material required herein.)

1c. (Answer only if corporation has fewer than 33 shareholders.) Names and addresses of all shareholders and percentage of interest of each herein. (Note: Corporations which submit S.E.C. form 10K may substitute that statement for the material requested herein.)

SECTION 2 - PARTNERSHIP/ASSOCIATION/JOINT VENTURE

2a. The name, address, and percentage of interest of each partner whose interests therein, whether limited or general is equal to or in excess of 3%.

2b. Associations: The name and address of all officers, directors, and other members with 3% or greater interest.

SECTION 3 - TRUSTS

3a. Trust number and institution.

3b. Name and address of trustee or estate administrator.

3c. Trust or estate beneficiaries: Name, address, and percentage of interest in total entity.

SECTION 4 - ALL APPLICANTS - ADDITIONAL DISCLOSURE

4a. Specify which, if any, interests disclosed in Section 1, 2, or 3 are being held by an agent or nominee, and give the name and address of principal.

4b. If any interest named in Section 1, 2, or 3 is being held by a "holding" corporation or other "holding" entity not an individual, state the names and addresses of all parties holding more than a 3% interest in that "holding" corporation or entity as required in 1(a), 1(b), 1(c), 2(a), and 2(b).

4c. If "constructive control" of any interest named in Sections 1, 2, 3, or 4 is held by another party, give name and address of party with constructive control. ("Constructive control" refers to control established through voting trusts, proxies, or special terms of venture of partnership agreements.)

I have not withheld disclosure of any interest known to me. Information provided is accurate and current.

Date

Signature of Person Preparing Statement

Title

ATTEST: _____
Notary Public

(Notary Seal)

Commission Expires: _____

EXHIBIT I

ADDITIONAL INFORMATION SHEET

Bid/Proposal Name: _____

Bid/Proposal Number #: _____

Company Name: _____

Contact Name: _____

Address: _____

City, State, Zip: _____

Telephone/FAX: # _____

E-mail: _____

Comments: _____

EXHIBIT J

**CERTIFICATE OF COMPLIANCE
WITH PREVAILING WAGE RATE ACT**

The undersigned, upon being first duly sworn, hereby certifies to the City of Evanston, Cook, County, Illinois, that all work under this contract shall comply with the Prevailing Wage Rate Act of the State of Illinois, 820 ILCS 130 *et seq*, and as amended by Public Acts 86-799 and 86-693 and current City of Evanston Resolution, with rates to be paid in effect at time work is performed. Contractors shall submit monthly certified payroll records to the city.

Name of Contractor: _____

By: _____

By: State of _____, County of _____

Subscribed and sworn to before me this _____ day
of _____, _____.

Notary Public

EXHIBIT L

CONFLICT OF INTEREST

_____, hereby certifies that it has conducted an investigation into whether an actual or potential conflict of interest exists between the Bidder, its owners and employees and any official or employee of the City of Evanston.

Bidder further certifies that it has disclosed any such actual or potential conflict of interest and acknowledges if Bidder/proposer has not disclosed any actual or potential conflict of interest, the City of Evanston may disqualify the bid/proposal.

(Name of Bidder/proposer if the Bidder/proposer is an Individual)
(Name of Partner if the Bidder/proposer is a Partnership)
(Name of Officer if the Bidder/proposer is a Corporation)

The above statements must be subscribed and sworn to before a notary public.
Subscribed and Sworn to this _____ day of _____, 20

Notary Public

(Notary Seal)

Commission Expires: _____

EXHIBIT M

SIGNATURE FORM

THE SECTION BELOW MUST BE COMPLETED IN FULL AND SIGNED

The undersigned hereby certifies that they have read and understand the contents of this solicitation and attached service agreements, and agree to furnish at the prices shown any or all of the items above, subject to all instructions, conditions, specifications and attachments hereto. Failure to have read all the provisions of this solicitation shall not be cause to alter any resulting contract or to accept any request for additional compensation. By signing this document, the proposer hereby certifies that they are not barred from bidding on this contract as a result bid rigging or bid rotating or any similar offense (720 ILCS 5/33 E-3, E-4).

Authorized Signature: _____

Company Name: _____

Typed/Printed Name: _____

Date: _____

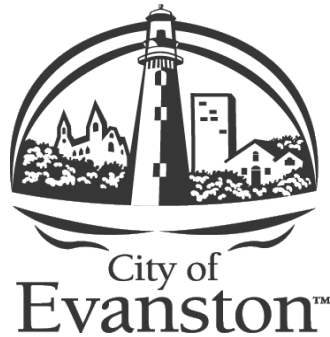
Title: _____

Telephone Number: _____

E-mail _____

Fax Number: _____

Exhibit N



CONTRACTOR SERVICES AGREEMENT

The parties referenced herein desire to enter into an agreement for professional services for

James Park Athletic Lighting
(BID #23-39)

THIS AGREEMENT (hereinafter referred to as the “Agreement”) is entered into between the City of Evanston, an Illinois municipal corporation with offices located at 2100 Ridge Avenue, Evanston Illinois 60201 (hereinafter referred to as the “City”), and *[Insert Contractor name here]*, with offices located at *[Insert Contractor address here]*, (hereinafter referred to as the “Contractor”). Compensation (the “Compensation”) for all basic services provided by the Contractor pursuant to the terms of this Agreement shall not exceed *[\$Insert fee here]*.

Revision March 2020

TABLE OF CONTENTS

1	Services and Duties of the Contractor.....	1
2	Standard Certifications.....	4
3	Additional Services/Change Orders.....	7
4	Bonds	9
5	Liquidated Damages in the Event Contractor Fails to Complete the Work.....	10
6	The City’s Responsibilities	10
7	Period of Service.....	10
8	Payment for Services and Reimbursements	11
9	Notice and Cure/Termination	12
10	Insurance	13
11	Indemnification	14
12	Drawings and Documents	15
13	Successors and Assigns.....	16
14	Force Majeure	16
15	Amendments and Modifications.....	17
16	Standard of Care & Warranty	17
17	Savings Clause	18
18	Non-Waiver of Rights.....	18
19	Entire Agreement	18
20	Governing Law	19
21	Ownership of Contract Documents.....	19
22	Notice.....	19
23	Severability	19
24	Execution of Agreement	20
25	Counterparts	20
26	Authorizations.....	20
27	Time of Essence.....	20

RECITALS

WHEREAS, the City intends to retain the services of a qualified and experienced contractor for the following:

[Insert whatever project specific background and language is appropriate]

WHEREAS, this Agreement shall include the following documents which are attached hereto:

- a) City of Evanston Bid 23-39, attached as Exhibit A.
- b) Contractor's response to Bid 23-39, attached as Exhibit B.
- c) Any sub-contractor sub-contracts related to this Agreement, attached as Exhibit C.
- d) Project Fee Schedule and hourly rates, attached as Exhibit D (*if appropriate*).

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth, the parties agree as follows:

1 Services and Duties of the Contractor

1.1 The Contractor shall perform professional services and provide equipment (the "Work") in accordance with Exhibits A, B, C and D. The Contractor retains the right to control the manner of performance of the services provided for in this Agreement and is an independent contractor and not agent or an employee of the City. All employees and sub-contractors of the Contractor shall likewise not be considered to be employees of the City. Contractor is solely responsible for the means and methods of all work performed under the terms of this Agreement for this Project ("the Project"). Contractor is an independent Contractor and is solely responsible for all taxes, withholdings, and other statutory or contractual obligations of any sort, including but not limited to, Worker's Compensation Insurance. Nothing in this Agreement accords any third-party beneficiary rights whatsoever to any non-party to this Agreement that any non-party may seek to enforce. Contractor acknowledges and agrees that should Contractor or its sub-contractors provide false information, or fail to be or remain in compliance with this Agreement; the City may void this Agreement.

1.2 The Contractor warrants and states that it has read the Contract Documents, and agrees to be bound thereby, including all performance guarantees as respects Contractor's work and all indemnity and insurance requirements. Contractor further affirms that it has visited the Project site and has become familiar with all special conditions, if any, at the Project site. Contractor shall perform the Work and its obligations under this Agreement in accordance with and subject to the Contract Documents to the full extent that each such provision is applicable to the Work. Contractor shall take necessary precautions to properly protect the Work of others, if any, from damage caused by operations under this Agreement. In addition, Contractor shall protect the work during normal and adverse weather conditions until the Project is complete and accepted by the City, or until the Contractor has fully completed its work under this Agreement. Contractor's obligations include, but

EXHIBIT N

are not limited to, placing and adequately maintaining at or about all locations of Project work, sufficient guards, barricades, lights, and enclosures to protect the Work.

1.3 The Contractor shall not have any public or private interest and shall not acquire directly or indirectly any such interest which conflicts in any manner with the performance of its services under this Agreement.

1.4 The Contractor shall designate, in writing, a person to act as its Project Manager for the work to be performed under this Agreement. Such person shall have complete authority to transmit instructions, receive information, interpret and define the Contractor's policies and decisions with respect to the work covered by this Agreement.

1.5 The Contractor shall employ only persons duly licensed by the State of Illinois to perform the professional services required under this Agreement for which applicable Illinois law requires a license, subject to prior approval of the City. The Contractor shall employ only well qualified persons to perform any of the remaining services required under this Agreement, also subject to prior approval of the City. The City reserves the right to require replacement of Contractor, sub-contractor, or supplier personnel for any reason. Contractor will replace the unacceptable personnel at no charge to the City. For all solicitations or advertisements placed by or on behalf of Contractor for employees for this Project it will state that the Contractor is an Equal Opportunity Employer.

1.6 Pursuant to the Illinois Freedom of Information Act, 5 ILCS 140/7(2), records in the possession of others whom the City has contracted with to perform a governmental function are covered by the Act and subject to disclosure within limited statutory timeframes (five (5) working days with a possible five (5) working day extension). Upon notification from the City that it has received a Freedom of Information Act request that calls for records within the Contractor's control, the Contractor shall promptly provide all requested records to the City so that the City may comply with the request within the required timeframe. The City and the Contractor shall cooperate to determine what records are subject to such a request and whether or not any exemption to the disclosure of such records, or part thereof, is applicable. Contractor shall indemnify and defend the City from and against all claims arising from the City's exceptions to disclosing certain records which Contractor may designate as proprietary or confidential. Compliance by the City with an opinion or a directive from the Illinois Public Access Counselor or the Attorney General under FOIA, or with a decision or order of Court with jurisdiction over the City, shall not be a violation of this Section.

1.7 The Contractor shall obtain prior approval from the City prior to sub-contracting with any entity or person to perform any of the work required under this Agreement. The Contractor may, upon request of the City, submit to the City a draft sub-contractor agreement for City review and approval prior to the execution of such an agreement. Any previously entered into sub-contractor agreement(s) are attached as Exhibit C. If the Contractor sub-contracts any of the services to be performed under this Agreement, the sub-contractor agreement shall provide that the services to be performed under any such agreement shall not be sublet, sold, transferred, assigned or otherwise disposed of to another entity or person without the City's prior written consent. The Contractor shall

be responsible for the accuracy and quality of any sub-contractor's work.

1.8 The Contractor shall cooperate fully with the City, other City contractors, other municipalities and local government officials, public utility companies, and others, as may be directed by the City. This shall include attendance at meetings, discussions and hearings as requested by the City. This cooperation shall extend to any investigation, hearings or meetings convened or instituted by OSHA relative to this Project, as necessary. Contractor shall cooperate with the City in scheduling and performing its Work to avoid conflict, delay in or interference with the work of others, if any, at the Project.

1.9 The Contractor acknowledges that it shall enforce and comply with all applicable Occupational Safety and Health Administration standards (OSHA) for this Project in effect as of the date of the execution of this Agreement, or as otherwise promulgated by OSHA in the future taking effect during the pendency of this Project. Contractor shall enforce all such standards and ensure compliance thereto as to its own agents and employees, and as to the agents and employees of any sub-contractor throughout the course of this Project. Contractor is solely responsible for enforcing and complying with all applicable safety standards and requirements on this Project, and is solely responsible for correcting any practices or procedures which do not comply with the applicable safety standards and requirements for this Project. Any Project specific safety requirements applicable to this Project must be followed by Contractor and any sub-contractor(s) on the Project. Additionally, all such safety requirements shall be made a part of any sub-contractor agreement.

1.10 The Contractor shall submit to the City a progress report each month this Agreement is in effect. The report shall include the following items:

- a) A summary of the Contractor's project activities, and any sub-contractor project activities that have taken place during the invoice period;
- b) A summary of the Contractor's project activities and any sub-contractor project activities, that shall take place during the next invoice period;
- c) A list of outstanding items due to or from the City; and
- d) A status of the Project schedule.

1.11 The Contractor shall perform the work required under this Agreement pursuant to high quality industry standards expected by the City. The Contractor shall apply for and receive all appropriate permits before performing any work in the City. The Contractor shall also provide the appropriate permit drawings for Building Permits to be issued for the Project, if said permits are obligated by the Project. The City will assist the Contractor with obtaining the appropriate building and right-of-way permits.

1.12 The Contractor shall provide drawings of record, in the following 3 electronic formats for all locations where equipment has been installed and/or work has been performed. The electronic formats required by this Section 1.12 are Auto Cad Version 2007, ArcView and PDF.

1.13 Contractor recognizes that proper cleanup and removal of construction debris is an

important safety consideration. The Contractor shall be solely responsible for daily construction site/area cleanup and removal of all construction debris in accordance with City-approved disposal practices. Contractor shall be solely responsible for identifying and removing at its expense all hazardous material and waste which it uses and generates.

1.14 To the extent that there is any conflict between a provision specified in this Agreement, with a provision specified in any of the other Contract Documents, as defined in Section 1.15, this Agreement shall control. The City and the Contractor may amend this Section 1.14 as provided by Section 15 herein.

The Contractor acknowledges and agrees that the City has no retained control over any of the Work done pursuant to this Agreement, and that the City is expressly exempt from the retained control exception as defined in the Restatement of Torts, Second, Section 414. This provision shall survive completion, expiration, or termination of this Agreement.

1.15 The Contract Documents for this Project consist of:

- a) This Agreement;
- b) The City's RFP/RFQ, and the plans, specifications, general conditions, drawings addenda, and modifications thereto;
- c) The Contractor's response to the RFP/RFQ/Bid;
- d) Other exhibits and schedules, if any, listed in this Agreement;
- e) Amendments or Other Contract Documents, if any; and
- f) Amendments/Modifications to this Agreement issued after execution thereof.

1.16 As a condition of receiving payment, Contractor must (i) be in compliance with the Agreement, (ii) pay its employees prevailing wages when required by law (Examples of prevailing wage categories include public works, printing, janitorial, window washing, building and grounds services, site technician services, natural resource services, security guard and food services). Contractor is responsible for contacting the Illinois Dept. of Labor 217-782-6206; <http://www.illinois.gov/idol/Laws-Rules/CONMED/Pages/Rates.aspx> to ensure compliance with prevailing wage requirements), (iii) pay its suppliers and sub-contractors according to the terms of their respective contracts, and (iv) provide lien waivers to the City upon request.

2 Standard Certifications

Contractor acknowledges and agrees that compliance with this section and each subsection for the term of the Agreement is a material requirement and condition of this Agreement. By executing this Agreement, Contractor certifies compliance with this section and each subsection and is under a continuing obligation to remain in compliance and report any non-compliance.

This section, and each subsection, applies to sub-contractors used on this Agreement. Contractor shall include these Standard Certifications in any sub-contract used in the performance of the Agreement.

If this Agreement extends over multiple fiscal years, Contractor and its sub-contractors shall confirm compliance with this section in the manner and format determined by the City by the date specified by the City and in no event later than January 1 of each year that this Agreement remains in effect.

If the City determines that any certification in this section is not applicable to this Agreement, it may be stricken, subject to sole approval by the City, without affecting the remaining subsections.

2.1 As part of each certification, Contractor acknowledges and agrees that should Contractor or its sub-contractors provide false information, or fail to be or remain in compliance with the Standard Certification requirements, one or more of the following sanctions will apply:

- the Agreement may be void by operation of law,
- the City may void the Agreement, and
- Contractor and its sub-contractors may be subject to one or more of the following: suspension, debarment, denial of payment, civil fine, or criminal penalty.

2.2 By signing this Agreement, the Contractor certifies that it has not been barred from being awarded a contract with a unit of State or local Government as a result of bid rigging or bid rotating or similar offense, nor has it made any admission of guilt of such conduct that is a matter of public record. (720 ILCS 5/33 E-3, E-4).

2.3 In the event of the Contractor's noncompliance with any provision of Section 1-12-5 of the Evanston City Code, the Illinois Human Rights Act or any other applicable law, the Consultant may be declared non-responsible and therefore ineligible for future contracts or sub-contracts with the City, 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.

2.4 During the term of this Agreement, the Contractor agrees as follows:

- a) 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, or age or physical or mental disabilities that do not impair ability to work, 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. Consultant shall comply with all requirements of City of Evanston Code Section 1-12-5.
- b) That, in all solicitations or advertisements for employees placed by it 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, ancestry, or disability.

2.5 The Contractor certifies pursuant to the Illinois Human Rights Act (775 ILCS 5/2105 *et. seq.*), that it has a written sexual harassment policy that includes, at a minimum, the following

EXHIBIT N

information:

- a) The illegality of sexual harassment;
- b) The definition of sexual harassment under State law;
- c) A description of sexual harassment utilizing examples;
- d) The Contractor's internal complaint process including penalties;
- e) Legal recourse, investigation and complaint process available through the Illinois Department of Human Rights and the Human Rights Commission, and directions on how to contact both; and
- f) Protection against retaliation as provided to the Department of Human Rights.

2.6 In accordance with the Steel Products Procurement Act (30 ILCS 565), Contractor certifies steel products used or supplied in the performance of a contract for public works shall be manufactured or produced in the U.S. unless the City grants an exemption.

2.7 Contractor certifies that it is properly formed and existing legal entity and as applicable has obtained an assumed name certificate from the appropriate authority, or has registered to conduct business in Illinois and is in good standing with the Illinois Secretary of State.

2.8 If Contractor, or any officer, director, partner, or other managerial agent of Contractor, has been convicted of a felony under the Sarbanes-Oxley Act of 2002, or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953, Contractor certifies at least five years have passed since the date of the conviction.

2.9 Contractor certifies that if more favorable terms are granted by Contractor to any similar governmental entity in any state in a contemporaneous agreement let under the same or similar financial terms and circumstances for comparable supplies or services, the more favorable terms will be applicable under this Agreement.

2.10 Contractor certifies that it is not delinquent in the payment of any fees, fines, damages, or debts to the City of Evanston.

2.11 The Contractor certifies that all Design Professionals performing the Work under this Agreement will ensure that the Project shall be designed in conformance with the Americans with Disabilities Act of 1990, 42 U.S.C. Section 12101, *et seq.*, and all regulations promulgated thereunder. Design Professional means any individual, sole proprietorship, firm, partnership, joint venture, corporation, professional corporation, or other entity that offers services under the Illinois Architecture Practice Act of 1989 (225 ILCS 305/), the Professional Engineering Practice Act of 1989 (225 ILCS 325/), the Structural Engineering Licensing Act of 1989 (225 ILCS 340/), or the Illinois Professional Land Surveyor Act of 1989 (225 ILCS 330/).

2.12 The Contractor shall comply with all federal, state and local laws, statutes, ordinances, rules, regulations, orders or other legal requirements now in force or which may be in force during the term of this Agreement. The Contractor shall comply with the Illinois Human Rights Act, 775 ILCS 5/1-101 *et. seq.*, Title VII of the Civil Rights Act of 1964, and the Illinois Prevailing

EXHIBIT N

Wage Act, 820 ILCS 130/0.01 *et. seq.*

3 Additional Services/Change Orders

3.1 If the representative of the City responsible for the Project verbally requests the Contractor to perform additional services, the Contractor shall confirm in writing that the services have been requested and that such services are additional services. Failure of the City to respond to the Contractor's confirmation of said services within thirty (30) calendar days of receipt of the notice shall be deemed a rejection of, and refusal to pay for the additional services. Contractor shall not perform any additional services until City has confirmed approval of said additional services in writing. If authorized in writing by the City, the Contractor shall furnish, or obtain from others, additional services of the following types, which shall be paid for by the City as set forth in Section 9 of this Agreement:

- a) Additional Services due to significant changes in scope of the Project or its design, including, but not limited to, changes in size, complexity or character of construction, or time delays for completion of work when such delays are beyond the control of the Contractor;
- b) Revisions of previously approved studies, reports, design documents, drawings or specifications;
- c) Preparation of detailed renderings, exhibits or scale models for the Project;
- d) Investigations involving detailed consideration of operations, maintenance and overhead expenses for the preparation of rate schedules, earnings and expense statements, feasibility studies, appraisals and valuations, detailed quantity surveys of material and labor, and material audits or inventories required for certification of force account construction performed by the City;
- e) Services not otherwise provided for in this Agreement.

3.2 The City may, upon written notice, and without invalidating this Agreement, require changes resulting in the revision or abandonment of work already performed by the Contractor, or require other elements of the work not originally contemplated and for which full compensation is not provided in any portion of this Agreement. Any additional services, abandonment of services which were authorized by the City, or changes in services directed by the City which result in the revision of the scope of services provided for in Exhibits A, B, C, and D that cause the total Compensation due Contractor under this Agreement to exceed \$25,000 or more, or increase or decrease the contract duration by more than 30 days are subject to approval by the Evanston City Council. These actions must be addressed either in a written Change Order or in a written amendment to this Agreement approved by both parties.

3.3 Contractor acknowledges and agrees that the Public Works Construction Change Order Act, 50 ILCS 525/1 *et seq.* shall apply to all Change Orders for the Project. It is expressly understood and agreed to by Contractor that it shall not be entitled to any damages or Compensation from the City on account of delay or suspension of all or any part of the Work. Contractor acknowledges that delays are inherent in construction projects and Contractor assessed that risk and fully included that risk assessment within its contract sum specified in its Response to the City Bid

EXHIBIT N

for this Project. The City shall not compensate Contractor for work that is more difficult than the contract sum specified in its Response would reflect. Delays to minor portions of the Work will not be eligible for extensions of time.

Delays to the Project caused by labor disputes or strikes involving trades not directly related to the Project, or involving trades not affecting the Project as a whole will not be eligible for an extension of time.

The City will not grant an extension of time for a delay by the Contractor's inability to obtain materials unless the Contractor first furnishes to the City documentary proof. The proof must be provided in a timely manner in accordance with the sequence of the Contractor's operations and accepted construction schedule.

In addition to any other changes requested by City (as described in Sections 3.1 and 3.2), the Company shall be entitled to request (and the City may grant) Change Orders with respect to:

- (a) The City-caused delays;
- (b) Change in Law;
- (c) Force Majeure Events.

The foregoing events shall entitle the Contractor to a change in the Compensation for this Project, if the Contractor demonstrates that it will unavoidably incur reasonable costs as a result thereof and the Contractor provides reasonable and detailed documentary support with respect to any such price impact.

The parties agree to reasonably confer regarding any such disputes with respect to the issuance of a Change Order.

Any payment for compensable delay will only be based upon actual costs excluding, without limitation, what damages, if any, the Contractor may have reasonably avoided. The Contractor understands that this is the sole basis for recovering delay damages and explicitly waives any right to calculate daily damages for office overhead, profit, or other purported loss.

All Contractor Change Orders authorized under this Section 3 shall be made in writing. In remitting a Change Order, the Contractor must first show in writing that:

- (a) The work was outside the scope of this Agreement,
- (b) The extra work was not made necessary due to any fault of Contractor;
- (c) The circumstances said to necessitate the change in performance were not reasonably foreseeable at the time the Agreement was signed;
- (d) The change is germane to the original Agreement; and
- (e) The Change Order is in the best interest of the City and authorized by law.

Any person who fails to first obtain the City's written authorization for a Change Order commits a Class 4 felony. The written determination and the written Change Order resulting from

that determination shall be preserved in the contract's file which shall be open to the public for inspection.

The City reserves all rights and causes of action, at law or equity, to seek redress against entities or persons who violate the requirements of this Section 3. By initialing below, Contractor hereby acknowledges that it is bound by this Section 3.

Contractor's Initials: _____

3.4 The Contractor is required to include the City of Evanston as a reference whenever and wherever the Contractor provides references for similar projects for a period of one (1) year from the date of Final Acceptance by the City of the Work for this Project.

4 Bonds

4.1 Before the Scheduled Construction Commencement Date, the Contractor is required to furnish unconditional performance and payment bonds in the amount of 100% of the Compensation as security for the faithful performance and completion of all the Contractor's obligations under the Contract Documents and covering the payment of all materials used in the performance of this Agreement and for all labor and services performed under this Agreement. All Bonds shall be issued on a form acceptable to the City. The bonds must be for the entire term of the Agreement. Failure to provide these bonds shall constitute a breach of Contractor's obligations under this Agreement. Each surety providing the Bonds must have a Best's rating not less than A/X and be licensed in Illinois and shall be named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 as published in the Federal Register and available on the website of the U.S. Department of the Treasury, Financial Management Service, at www.fms.treas.gov/c570/c570.html. All Bonds signed by an agent must be accompanied by a certified copy of his or her authority to act. It shall be the duty of the Contractor to advise the surety or sureties of any Change Orders that result in an increase to the Compensation and to ensure that the amounts of the Bonds are updated to reflect and cover any such increases throughout the course of the Project. The cost of such Bonds shall be included within the Compensation.

4.2 If the surety behind any Bond furnished by the Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in the State or it ceases to meet any of the requirements of this Contract, the Contractor shall, within [5] five days thereafter, substitute another Bond of equivalent value and surety, both of which must be acceptable to the City. In addition, no further progress payments under the Agreement will be made by the City until the Contractor complies with the provisions of this Agreement. The Contractor shall furnish to the City proof of any required bonds and proof of required insurance as one of the conditions precedent to payment under the Agreement. Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment or performance of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or authorize a copy to be furnished. All surety Bonds provided for in this Section shall incorporate by reference this Agreement, and any language that may be in any such surety Bond which conflicts with the provisions of this Agreement that define the

scope of the surety('s) duty(ies) shall be of no force and effect.

5 Liquidated Damages in the Event Contractor Fails to Complete the Work

5.1 The parties agree that failure of Contractor to timely complete the Work required by this Agreement constitutes a default. The parties agree that this default will result in damage and injury to City. The parties further agree, however, that actual damages incurred by City as result of such default is difficult if not impossible to ascertain with any degree of certainty or accuracy. Accordingly, the parties have negotiated and have agreed that for each calendar day after written notice is delivered to Contractor and Contractor fails to cure such default, that Contractor will pay City, as and for liquidated damages, and not as a penalty, a sum in the amount as specified in Section 108.09 of the IDOT Standard Specifications per calendar day. Contractor shall reimburse the City for all costs, expenses and fees (including, without limitation, attorneys' fees), if any, paid by the City in connection with such written demand by City. Contractor stipulates and agrees that the sums payable by Contractor under this Section are reasonable under the circumstances existing as of the execution of this Agreement. This Section 5.1 is not intended to limit any direct damages that may be recoverable by City related to the Contractor's failure to complete the Work in accordance with this Agreement. There shall be no early completion bonus if the Work is completed before the contract's deadlines. The City, at its option, may withhold liquidated damages from progress payments payable to Contractor before project completion.

6 The City's Responsibilities

6.1 The City may evaluate the Contractor's and any sub-contractor's performance (interim and final). Timeliness in meeting the Project schedule and the overall relationship with the Contractor are factors that will be considered in the Contractor's performance rating. An unfavorable performance rating may be a factor when future assignments are being considered.

6.2 The City makes no representation or warranty of any nature whatsoever as to the accuracy of information or documentation provided by the City to the Contractor which were generated or provided by third parties.

7 Period of Service

7.1 The Contractor shall commence work on the Project after supplying the City with the Contractor's performance and payment bonds and all required insurance documents before starting its Work on this Project. The City shall determine when the Contractor has completed the Work required pursuant to this Agreement, and shall determine the date of Final Acceptance. Contractor recognizes time is of the essence regarding its performance on this Project. Contractor shall continue to perform its obligations while any dispute concerning the Agreement is being resolved, unless otherwise directed by the City.

7.2 Each phase of the project shall be completed in accordance with the activities outlined in the City's Bid 23-39, Exhibit A.

8 Payment for Services and Reimbursements

8.1 Within the first five (5) business days of each month, the Contractor shall invoice the City for Work completed during the previous month. The Contractor shall provide a detailed invoice that relates invoiced items to the Contractor's response to Bid 23-39 in both quantity and unit cost. Any discrepancies in the monthly invoice shall be promptly brought to the attention of the Contractor by the City Project Manager and efforts shall be made to promptly resolve said discrepancies between the City and Contractor. In the event the City and Contractor cannot resolve invoice discrepancies, items in dispute will be removed from the invoice and the City shall approve the remainder of the invoice. Payment will be made as soon as possible following the City Council meeting in which the item appeared on the bills list, and in accordance with all applicable laws and rules of the City of Evanston and the State of Illinois.

8.2 In the event of termination by the City of this Agreement pursuant to paragraph 9.1 after completion of any phase of the basic services, fees due the Contractor for services rendered through such phase shall constitute final payment for such services, and no further fees shall be due to the Contractor. In the event of such termination by the City during any phase of the basic services, the Contractor shall be paid for services rendered on the basis of the proportion of work completed on the phase to date of termination.

8.3 The City shall have the right to withhold payment to the Contractor due to the quality of a portion or all of the work performed hereunder which is not in accordance with the requirements of this Agreement, or which is unsatisfactory, or is due to the Contractor's failure or refusal to perform any of its obligations hereunder. Compensation in excess of the total contract amount specified in this Agreement will not be allowed unless justified in the City's sole judgment and authorized in advance as provided for in Section 3 of this Agreement. Compensation for improper performance by the Contractor is disallowed.

8.4 Upon completion of the Work performed by the Contractor, prior to the submission of a request for final payment, the City and Contractor shall perform a final acceptance test and review of the Work performed and/or equipment installed pursuant to the Agreement. A punch list of items outstanding will be jointly developed by the City and Contractor. In addition, the Contractor shall submit drawings of record for the Project for the City to approve. The Contractor shall promptly resolve all punch list items to the satisfaction of the City, and shall transmit to the City in writing confirmation that all punch list items have been resolved. The City will review, and the Contractor shall modify, as necessary, any drawings of record to the satisfaction of the City. Punch list items and drawings of record must be approved by the City prior to the Contractor submitting its final invoice for payment.

8.5 The Contractor shall submit an Affidavit and a final waiver of its lien, and all final waivers of liens of any sub-contractors, suppliers, and sub-sub-contractors, if applicable, with its final invoice, stating that all obligations incurred in performance of the professional services have been paid in full. The Affidavit will also include a statement stating that the professional services

were performed in compliance with the terms of the Agreement. The Affidavit and all final lien waivers shall be on a form acceptable to the City.

8.6 All Project invoices shall be sent to:

City of Evanston
Public Works Agency
2100 Ridge Avenue
Evanston, Illinois 60201

9 Notice and Cure/Termination

9.1 In furtherance of Contractor's Work on this Project, the City and the Contractor agree that the following Notice and Cure provision in this Section 9.1 shall apply during the duration of Contractor's work on this Project, in addition to the reserved rights of the City enumerated in this Agreement as follows:

- 5.1 Liquidated Damages;
- 8.3 City's right to withhold payment;
- 16.2 Contractor's duty to revise and correct errors; and
- 16.3 Contractor's duty to respond to City's notice of errors and omissions.

The City may notify Contractor of its intent to terminate this Agreement within (7) seven calendar days of issuance by the City of written notice to Contractor's Project Manager regarding defects in the Project or in Contractor's Work. The City shall specify any such nonconforming Work or defects in the Project in its notice to Contractor under this Section 9.1. Contractor will have the opportunity to cure the non-conforming Work within (7) seven calendar days after receipt of the written notice issued by the City. All such curative work done shall be performed and completed to the City's satisfaction. Nothing in this Section 9.1 shall otherwise affect the City's right to exercise its rights in Section 9.2.

9.2 The City shall have the right to terminate this Agreement upon fifteen (15) days written notice for any reason. Mailing of such notice shall be equivalent to personal notice and shall be deemed to have been given at the time of receipt.

Payments made by the City pursuant to this Agreement are subject to sufficient appropriations made by the City of Evanston City Council. In the event of termination resulting from non-appropriation or insufficient appropriation by the City Council, the City's obligations hereunder shall cease and there shall be no penalty or further payment required.

9.3 Within thirty (30) days of termination of this Agreement, the Contractor shall turn over to the City any documents, drafts, and materials, including but not limited to, outstanding work product, data, studies, test results, source documents, AutoCAD Version 2007, ArcView, PDF, Word, Excel spreadsheets, technical specifications and calculations, and any other such items specifically identified by the City related to the Work herein. Upon receipt of said items, the

EXHIBIT N

Contractor shall be paid for labor and expenses incurred to the date of termination as provided in Section 8.2. This Agreement is subject to termination by either party if either party is restrained by a state or federal court of competent jurisdiction from performing the provisions of this Agreement. Upon such termination, the liabilities of the parties to this Agreement shall cease, but they shall not be relieved of the duty to perform their obligations through the date of termination. No lien shall be filed by the Contractor in the event of a termination of this Agreement by the City.

9.4 If, because of death or any other occurrence, including, but not limited to, Contractor becoming insolvent, it becomes impossible for any principal or principals of the Contractor to render the services set forth in this Agreement, neither the Contractor, nor its surviving principals shall be relieved of their obligations to complete the professional services. However, in the event of such an occurrence, the City at its own option may terminate this Agreement if it is not furnished evidence that competent professional services can still be furnished as scheduled.

9.5 In the event of an emergency or threat to the life, safety or welfare of the citizens of the City, the City shall have the right to terminate this Agreement without prior written notice.

10 Insurance

10.1 The Contractor shall, at its own expense, secure and maintain in effect throughout the duration of this contract, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Work hereunder by the Contractor, its agents, representatives, employees or sub-contractors. Contractor acknowledges and agrees that if it fails to comply with all requirements of this Section 10, the City may void the Agreement.

The Contractor must give to the City Certificates of Insurance identifying the City to be an Additional Insured for all Work done pursuant to this Agreement before City staff recommends award of the contract to City Council. Any limitations or modifications on the Certificate(s) of Insurance issued to the City in compliance with this Section that conflict with the provisions of this Section 10 shall have no force and effect.

After award of the Contract to Contractor (contracts over \$500,000 in value or if the project is deemed high risk) the Contractor **shall** give the City a certified copy (ies) of the insurance policy (ies) evidencing the amounts set forth in Section 10.2, and copies of the Additional Insured endorsement to such policy (ies) which name the City as an Additional Insured for all Work done pursuant to this Agreement before Contractor does any Work pursuant to this Agreement. Contractor's certificate of insurance shall contain a provision that the coverage afforded under the policy(s) will not be canceled or reduced without thirty (30) days prior written notice (hand delivered or registered mail) to the City. Contractor shall promptly forward new certificate(s) of insurance evidencing the coverage(s) required herein upon annual renewal of the subject policies.

The policies and the Additional Insured endorsement must be delivered to the City within two (2) weeks of the request. All insurance policies shall be written with insurance companies licensed or authorized to do business in the State of Illinois and having a rating of not less than A-VII

EXHIBIT N

according to the A.M. Best Company. Should any of the insurance policies be canceled before the expiration date, the issuing company will mail thirty (30) days written notice to the City. The Contractor shall require and verify that all sub-contractors maintain insurance meeting all of the requirements stated herein.

Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its officers, officials, employees and volunteers; or the Contractor shall provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration and defense expenses.

10.2 Contractor shall carry and maintain at its own cost with such companies as are reasonably acceptable to City all necessary liability insurance (which shall include as a minimum the requirements set forth below) during the term of this Agreement, for damages caused or contributed to by Contractor, and insuring Contractor against claims which may arise out of or result from Contractor's performance or failure to perform the Services hereunder:

- a) Worker's compensation in statutory limits and employer's liability insurance in the amount of at least five hundred thousand dollars (\$500,000);
- b) Comprehensive general liability coverage which designates the City as an additional insured for not less than three million dollars (\$3,000,000) combined single limit for bodily injury, death and property damage, per occurrence;
- c) Comprehensive automobile liability insurance covering owned, non-owned, and leased vehicles for not less than one million dollars (\$1,000,000) combined single limit for bodily injury, death, or property damage, per occurrence; and

Contractor understands that the acceptance of Certificates of Insurance, policies, and any other documents by the City in no way releases the Contractor and its sub-contractors from the requirements set forth herein.

Contractor expressly agrees to waive its rights, benefits and entitlements under the "Other Insurance" clause of its commercial general liability insurance policy as respects the City. Contractor expressly agrees that its insurance coverage is required to be primary by this Agreement, that its insurance coverage shall be on a primary and non-contributory basis, and that it and its insurance carrier are estopped from denying such coverage is primary. In the event Contractor fails to purchase or procure insurance as required above, the parties expressly agree that Contractor shall be in default under this Agreement, and that the City may recover all losses, attorney's fees and costs expended in pursuing a remedy, or reimbursement, at law or in equity, against Contractor.

11 Indemnification

11.1 The Contractor shall defend, indemnify and hold harmless the City and its officers, elected and appointed officials, agents, and employees from any and all liability, losses, or damages as a result of claims, demands, suits, actions, or proceedings of any kind or nature, including but not limited to costs, and fees, including attorney's fees, judgments or settlements, resulting from or

arising out of any negligent or willful act or omission on the part of the Contractor or Contractor's sub-contractors, employees, agents or sub-contractors during the performance of this Agreement. Such indemnification shall not be limited by reason of the enumeration of any insurance coverage herein provided. This provision shall survive completion, expiration, or termination of this Agreement.

11.2 Nothing contained herein shall be construed as prohibiting the City, or its officers, agents, or employees, from defending through the selection and use of their own agents, attorneys, and experts, any claims, actions or suits brought against them. The Contractor shall be liable for the costs, fees, and expenses incurred in the defense of any such claims, actions, or suits. Nothing herein shall be construed as a limitation or waiver of defenses available to the City and employees and agents, including but not limited to the Illinois Local Governmental and Governmental Employees Tort Immunity Act, 745 ILCS 10/1-101 *et seq.*

At the City Corporation Counsel's option, Contractor must defend all suits brought upon all such Losses and must pay all costs and expenses incidental to them, but the City has the right, at its option, to participate, at its own cost, in the defense of any suit, without relieving Contractor of any of its obligations under this Agreement. Any settlement of any claim or suit related to this Project by Contractor must be made only with the prior written consent of the City Corporation Counsel, if the settlement requires any action on the part of the City.

To the extent permissible by law, Contractor waives any limits to the amount of its obligations to indemnify, defend, or contribute to any sums due under any Losses, including any claim by any employee of Contractor that may be subject to the Illinois Workers Compensation Act, 820 ILCS 305/1 *et seq.* or any other related law or judicial decision, including but not limited to, *Kotecki v. Cyclops Welding Corporation*, 146 Ill. 2d 155 (1991). The City, however, does not waive any limitations it may have on its liability under the Illinois Workers Compensation Act, the Illinois Pension Code or any other statute.

11.3 The Contractor shall be responsible for any losses and costs to repair or remedy work performed under this Agreement resulting from or arising out of any act or omission, neglect, or misconduct in the performance of its Work or its sub-contractors' work. Acceptance of the work by the City will not relieve the Contractor of the responsibility for subsequent correction of any such error, omissions and/or negligent acts or of its liability for loss or damage resulting therefrom.

11.4 All provisions of this Section 11 shall survive completion, expiration, or termination of this Agreement.

12 Drawings and Documents

12.1 Any drawings, survey data, reports, studies, specifications, estimates, maps, plans, computations, and other documents required to be prepared by the Contractor for the Project shall be considered Works for Hire and the sole property of the City.

12.2 The Contractor and its sub-contractor shall maintain for a minimum of three (3) years

after the completion of this Agreement, or for three (3) years after the termination of this Agreement, whichever comes later, adequate books, records and supporting documents to verify the amounts, recipients and uses of all disbursements of funds passing in conjunction with the Agreement. The Agreement and all books, records and supporting documents related to the Agreement shall be available for review and audit by the City and the federal funding entity, if applicable, and the Contractor agrees to cooperate fully with any audit conducted by the City and to provide full access to all materials. Failure to maintain the books, records and supporting documents required by this Subsection shall establish a presumption in favor of the City for recovery of any funds paid by the City under the Agreement for which adequate books, records, and supporting documentation are not available to support their purported disbursement.

13 Successors and Assigns

13.1 The City and the Contractor each bind themselves and their partners, successors, executors, administrators, and assigns to the other party of the Agreement and to the partners, successors, executors, administrators, and assigns of such other party in respect to all covenants of this Agreement. Neither the City nor the Contractor shall assign, sublet, or transfer its interest in this Agreement without the written consent of the other. Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of any public body, which may be a party hereto, nor shall it be construed as giving any right or benefits hereunder to anyone other than the City and the Contractor.

14 Force Majeure

14.1 Whenever a period of time is provided for in this Agreement for the Contractor or the City to do or perform any act or obligation, neither party shall be liable for any delays or inability to perform if such delay is due to a cause beyond its control and without its fault or negligence including, without limitation:

- a) Acts of nature;
- b) Acts or failure to act on the part of any governmental authority other than the City or Contractor, including, but not limited to, enactment of laws, rules, regulations, codes or ordinances subsequent to the date of this Agreement;
- c) Acts of war;
- d) Acts of civil or military authority;
- e) Embargoes;
- f) Work stoppages, strikes, lockouts, or labor disputes;
- g) Public disorders, civil violence, or disobedience;
- h) Riots, blockades, sabotage, insurrection, or rebellion;
- i) Epidemics or pandemics;
- j) Terrorist acts;
- k) Fires or explosions;
- l) Nuclear accidents;
- m) Earthquakes, floods, hurricanes, tornadoes, or other similar calamities;
- n) Major environmental disturbances; or
- o) Vandalism.

If a delay is caused by any of the *force majeure* circumstances set forth above, the time period shall be extended for only the actual amount of time said party is so delayed. Further, either party claiming a delay due to an event of *force majeure* shall give the other party written notice of such event within three (3) business days of its occurrence or it shall be deemed to be waived.

15 Amendments and Modifications

15.1 Except as otherwise provided herein, the nature and scope of Work specified in this Agreement may only be modified by a written Change Order, or a written amendment to this Agreement, approved by both parties. This Agreement may be modified or amended from time to time provided, however, that no such amendment or modifications shall be effective unless reduced to writing and duly authorized and signed by the authorized representatives of the parties.

16 Standard of Care & Warranty

16.1 The Contractor shall perform all of the provisions of this Agreement to the satisfaction of the City. The City shall base its determination of the Contractor's fulfillment of the scope of the work in accordance with generally accepted professional standards applicable to the Work for this Project. The Contractor shall perform all of the provisions of this Agreement with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar conditions.

16.2 The Contractor shall be responsible for the accuracy of its professional services under this Agreement and shall promptly make revisions or corrections resulting from its errors, omissions, or negligent acts without additional compensation. The City's acceptance of any of the Contractor's professional services shall not relieve the Contractor of its responsibility to subsequently correct any such errors or omissions. If a Contractor has provided the City with specifications for this Project which are determined to be incorrect or which require revision during the solicitation process (including but not limited to Requests for Proposals, Requests for Qualifications, or bids), the Contractor shall make such corrections or revisions to the specifications at no cost to the City. Further, upon receipt of an invoice from the City, the Contractor shall promptly reimburse the City for the reasonable costs associated with the preparation and dissemination of said corrections or revisions to appropriate parties, including but not limited to preparation of the corrected or revised documents, and printing and distribution costs.

16.3 During the pendency of its Work on this Project, the Contractor shall respond to the City's notice of any errors or omissions within twenty-four (24) hours. The Contractor shall be required to promptly visit the Project site(s) if directed to by the City.

16.4 The Contractor shall comply with all federal, state, and local statutes, regulations, rules, ordinances, judicial decisions, and administrative rulings applicable to its performance under this Agreement.

16.5 Contractor guarantees and warrants to the City that:

- a) All materials and equipment furnished under this Agreement shall be of good quality and new, unless otherwise required or permitted by the Contract Documents;
- b) The Work of this Agreement shall be free from defects which are not inherent in the quality required; and
- c) The Work shall comply with the requirements set forth in the Contract Documents.

This warranty and guarantee shall be for a period of one (1) year from the date of completion and Final Acceptance of the Work by the City, or as otherwise provided in the Contract Documents.

If, within the one year warranty period, after the Contractor has received a final payment under this Agreement, any of the Work is found to be not be in accordance with the requirements of this Agreement, or where defects in materials or workmanship may appear, or be in need of repair, the Contractor shall correct non-conforming and/or defective work or materials promptly after receipt of written notice from the City. Contractor shall immediately at its own expense repair, replace, restore, or rebuild any such Work. This remedy is in addition to any other legal or equitable remedies the City may have under this Agreement or the law.

This guarantee and warranty shall not relieve Contractor of liability for latent defects, and shall be in addition to the City's rights under the law or other guarantees or warranties, express or implied.

16.6 The provisions of this Section 16 shall survive the completion, expiration or termination of this Agreement.

17 Savings Clause

17.1 If any provision of this Agreement, or the application of such provision, shall be rendered or declared invalid by a court of competent jurisdiction, or by reason of its requiring any steps, actions, or results, the remaining parts or portions of this Agreement shall remain in full force and effect.

18 Non-Waiver of Rights

18.1 No failure or delay by the City to exercise any power given to it hereunder or to insist upon strict compliance by Contractor with its obligations hereunder, nor any payment made by the City under this Agreement, shall constitute a waiver of the City's right to demand strict compliance with the terms hereof, unless such waiver is in writing and signed by the City.

19 Entire Agreement

19.1 This Agreement sets forth all the covenants, conditions and promises between the parties with regard to the subject matter set forth herein. There are no covenants, promises, agreements, conditions or understandings between the parties, either oral or written, other than those

contained in this Agreement. This Agreement has been negotiated and entered into by each party with the opportunity to consult with its counsel regarding the terms therein. No portion of the Agreement shall be construed against a party due to the fact that one party drafted that particular portion as the rule of *contra proferentem* shall not apply.

20 Governing Law

20.1 This Agreement shall be construed in accordance with and subject to the laws and rules of the City of Evanston and the State of Illinois both as to interpretation and performance. Venue for any action arising out of or due to this Agreement shall be in Cook County, Illinois. The City shall not enter into binding arbitration to resolve any dispute related to this Agreement. The City does not waive tort immunity by entering into this Agreement.

21 Ownership of Contract Documents

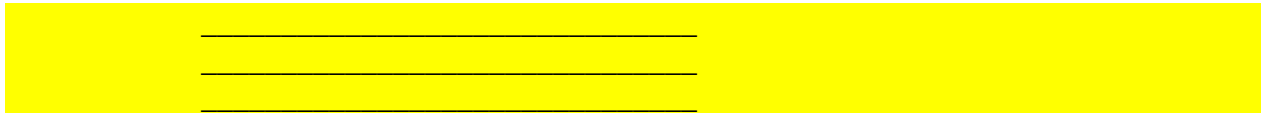
21.1 Contractor is specifically prohibited from using in any form or medium, the name or logo of the City for public advertisement, unless expressly granted written permission by the City. Submission or distribution of documents to meet official regulatory requirements or for similar purposes in connection with this Project is not to be construed as publication in derogation of the City's reserved rights.

22 Notice

22.1 Any notice required to be given by this Agreement shall be deemed sufficient if made in writing and sent by certified mail, return receipt requested, or by personal service, to the persons and addresses indicated below or to such other addresses as either party hereto shall notify the other party of in writing pursuant to the provisions of this Subsection:

City of Evanston Project Manager, Bid 23-39
2100 Ridge Avenue
Evanston, Illinois 60201

if to the Contractor:

A large rectangular area of the document is redacted with a solid yellow background. Within this redacted area, there are three horizontal lines, suggesting a redacted address or contact information for the contractor.

22.2 Mailing of such notice as and when provided above shall be equivalent to personal notice and shall be deemed to have been given at the time of mailing.

23 Severability

23.1 Except as otherwise provided herein, the invalidity or unenforceability of any particular provision, or part thereof, of this Agreement shall not affect the other provisions, and this Agreement shall continue in all respects as if such invalid or unenforceable provision had not been

EXHIBIT N

contained herein.

24 Execution of Agreement

24.1 This Agreement shall be signed last by the City Manager.

25 Counterparts

25.1 For convenience, this Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original.

26 Authorizations

26.1 The Contractor's authorized representatives who have executed this Agreement warrant that they have been lawfully authorized by the Contractor's board of directors or its bylaws to execute this Agreement on its behalf. The City Manager affirms that he/she has been lawfully authorized to execute this Agreement. The Contractor and the City shall deliver upon request to each other copies of all articles of incorporation, bylaws, resolutions, ordinances, or other documents which evidence their legal authority to execute this Agreement on behalf of their respective parties.

27 Time of Essence

27.1 Time is of the essence with respect to each provision hereof in which time is a factor.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be signed by their duly authorized representatives. The effective date of this Agreement will be the date this Agreement is signed by the City Manager.

CONTRACTOR

By: _____

Name: _____

Its: _____

Date: _____

CITY OF EVANSTON

By: _____

Luke Stowe

Its: City Manager

Date: _____

Approved as to form:

By: _____

Nicholas E. Cummings

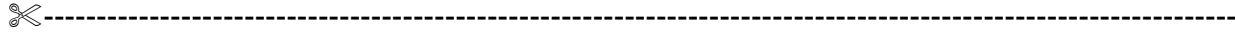
Its: Corporation Counsel

Revision: April 2021

EXHIBIT O

BID BOND SUBMITTAL LABEL

CUT AND ATTACH LABEL ON OUTSIDE OF SEALED BID BOND SUBMITTAL



BID SUBMITTAL NUMBER: _____

BID SUBMITTAL NAME: _____

BID SUBMITTAL DUE DATE/TIME: _____

COMPANY NAME: _____

COMPANY ADDRESS: _____

COMPANY TELEPHONE #: _____



If required by the bid documents, a scanned copy of the bid bond must be included with the bid electronic submission. The City is currently not able to accept a certified check, bank cashier's check or electronic bid bond at this time.

The original bid bond (in the amount of 5% of the original bid amount) must be mailed within ten (10) days after the bid due date, to the City of Evanston Purchasing Department, 2100 Ridge Avenue - Room 4200 Evanston, Illinois 60201 Attention Purchasing Manager using the USPS (certified or priority), UPS or FedEx mail options in order to have a tracking number; which sum shall be forfeited in case the successful bidder fails to enter into a binding contract and provide a properly executed contract and surety bond within 15 days after the date the contract is awarded by the City.

SECTION 01 00 00

PROJECT REQUIREMENTS

PART 1 – GENERAL

1.1 GENERAL NOTE

- A. The following requirements are a component part of all contract divisions and form a part of each specification section in so far as they may be in any way applicable thereto.

1.2 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this section.

1.3 SCHEDULE OF DRAWINGS

- A. The following drawings form a component part of all contract documents for this project.

Title of the Drawings:

<u>Sheet No.</u>	<u>Drawing Title</u>
E001	COVER SHEET
E100	ELECTRICAL SYMBOLS & GENERAL NOTES
ES100	ELECTRICAL SITE PLAN
E200	ELECTRICAL SITE LIGHTING PLAN
E300	ELECTRICAL RISER DIAGRAM
E400	ELECTRICAL SCHEDULES
C1	POLE AND FOUNDATION
C2	POLE AND FOUNDATION
---	MUSCO PROJECT SUMMARY
---	MUSCO ILLUMINATION SUMMARY (BASEBALL)
---	MUSCO ILLUMINATION SUMMARY (TENNIS – WEST)
---	MUSCO ILLUMINATION SUMMARY (TENNIS – EAST)
---	MUSCO ILLUMINATION SUMMARY (SOCCER)
---	MUSCO ILLUMINATION SUMMARY (NON PLAY AREAS)
---	MUSCO ILLUMINATION SUMMARY (SECURITY)
---	MUSCO EQUIPMENT LAYOUT
---	MUSCO ENVIRONMENTAL GLARE IMPACT

1.4 PROJECT SUMMARY

- A. Work on this project includes the base bid installation of new athletic and security lighting at one baseball field and one soccer field as well as the alternate bid installation of new athletic and security lighting at six tennis courts. Work includes modifications to an existing electrical service to provide power for the athletic and security lighting systems.

1.5 SPECIAL PROCEDURES AND REQUIREMENTS

- A. Fire Protection

1. Regulations: The Contractor shall comply with all federal, state and local fire regulations.
2. Fires: The Contractor shall prohibit the lighting of fires about the premises and use due diligence to see that such prohibition is enforced. Debris and waste

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

materials shall not be burned at the construction site but shall be promptly removed to prevent the accumulation of combustibles on the site.

3. Smoking: Smoking shall be restricted to designated exterior locations. The Contractor shall furnish and post "NO SMOKING" signs at appropriate locations throughout the site where operations are conducted.
4. Flammables: Gasoline and other fuels shall be kept and handled from National Board of Fire underwriter's approved safety cans and shall be stored away from hazardous work areas.

B. Limit of Contractor's Operations

1. Work Areas: Work areas shall be confined to the limits of the construction site. The allotment of work areas within the site to Subcontractors shall be made by the Contractor. The general scheme of operations, work area assignments and use of the job site shall be subject to the Owner's approval.
2. Site Access: Uncontrolled or unrestricted site access will not be permitted for materials, debris or equipment. All access routes and methods shall be controlled by the Contractor so as to minimize the disruption of the Owner's operations and shall be subject to approval by the Owner. Walks, roads and other existing site features used in moving materials shall be properly protected to prevent damage thereto.

C. Hoists, Scaffolds and Ladders

1. Hoists: The Contractor shall furnish, erect, operate and maintain suitable hoisting equipment as may be necessary for constructing the work. Material hoists shall be constructed and maintained in accordance with all applicable federal, state and local laws, regulations and ordinances. Location of hoists shall be subject to approval by the Owner's representative.
2. Scaffolds and Ladders: The Contractor shall furnish, erect, maintain and move all scaffold and ladders required for his work. Scaffolds shall be constructed and maintained in accordance with all applicable federal, state and local laws, regulations and ordinances. Scaffolds and ladders shall be promptly removed after their purpose has been served.

D. Documentation of Existing Conditions

1. Before starting any work, the Contractor shall examine the site to be worked on and the grounds in the staging area and areas adjacent to the site that will be worked on for any existing damage. The Contractor should notify the City's representative of any damage found immediately. The City will photograph and note any existing damage that has been brought to his attention by the Contractor. After the Work has been completed the City will inspect the area used by the Contractor. If any damage is found that was not reported previously, this damage would be considered to have been done by the Contractor. The cost to repair said damage shall be solely borne by the Contractor.

1.6 TEMPORARY CONSTRUCTION FACILITIES

- A. The following temporary utilities and facilities on the construction site shall be provided by the party indicated below:

<u>ITEM</u>	<u>PROVIDER</u>
Telephone	General Contractor
Electricity	General Contractor
Water	General Contractor

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

Toilets	General Contractor
Parking spaces for Contractor vehicles	Within job site only, no street parking
Parking spaces for workmen	Within job site only, no street parking
Storage areas & facilities	Limited unsecured space within job site
Temporary heat	General Contractor
Job-site trailers & offices	General Contractor

**PART 2 – PRODUCTS
(NOT APPLICABLE)**

**PART 3 – EXECUTION
(NOT APPLICABLE)**

END OF SECTION 01 00 00

SECTION 01 01 00

SUMMARY OF WORK

PART 1 – GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Project Manual and accompanying drawings are intended to cover the work necessary to construct the various headings of work as described in detail herein.
- B. The work to be performed under this contract shall consist of the furnishing of all materials, equipment, supplies, labor and transportation, and performing all work as required to strictly conform to the provisions of the specifications, schedules and drawings, all of which are made a part herein, together with such detail drawings as may be furnished by the Owner from time to time during the prosecution of the work in amplification of said drawings and specifications.

1.2 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this section.

1.3 CONTRACT ORGANIZATION

- A. This Construction Project is organized under a single contract between the Owner and the Contractor. The Contractor is responsible for all plans and specification sections as presented in this project manual.

1.4 WORK SEQUENCE

- A. All work and sequence of operations shall be as scheduled in conjunction with all subcontractors, and the Owner in such a manner as not to hinder or delay any other contractors in the progress of their work, and to an end that will expedite the work to completion at the earliest possible date.
- B. Both Contractor and Subcontractor shall cooperate to execute their work as scheduled to minimize the delays to each other and to cause the least inconvenience to the Owner and the public.

1.5 CONTRACTORS' USE OF PREMISES

- A. The Contract shall limit his use of the premises for work and for storage to allow for:
 - 1. Work by other contractors
 - 2. Owner occupancy
 - 3. Public use
- B. Coordinate the use of the premises under direction of the Owner. Stage work so as to avoid disruption to Owner's operation.
- C. Assume full responsibility for the protection and safekeeping of products under this Contract, which are stored at the project site or on the Contractor's property.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

- D. Move any stored products, under Contractor's control, which interfere with operation of the Owner or separate contractor.
- E. Obtain and pay for the use of additional storage or work areas needed for operations.

1.6 OWNER OCCUPANCY

- A. The City and the public will maintain 24 hour access to all areas of the property at all times.
- B. Contractor shall not utilize or prevent access to existing utility easement areas during the entire construction period.

1.7 LINES, LEVELS AND LAYOUT OF WORK

- A. The Contractor shall establish and guarantee all lines, levels, etc. called for on the drawings, including the lines, levels, etc. of all Subcontractors.

1.8 DESCRIPTION OF SITE

- A. The 45 acre site is a City of Evanston public park bounded by Oakton Street to the north, Dodge Avenue to the east, the CTA Yellow Line tracks to the south and a Pace Bus facility to the west.

1.9 WORK HOURS

- A. Work hours are 7:00 am to 7:00 pm, Monday through Friday and 8:00 am to 5:00 pm on Saturday. No work is allowed on Sundays. Access to the site will not be allowed outside of normal work hours.

1.10 CONTRACTOR'S DUTIES

- A. Except as specifically noted, provide and pay for:
 - 1. Labor, materials and equipment.
 - 2. Tools, construction equipment and machinery
 - 3. Water, heat, and utilities required for construction or the Contractor's operations.
 - 4. Other facilities and services necessary for proper execution and completion of work, including traffic control and temporary work.
- B. Promptly submit written notice to the Architect of any observed variance of the Contract Documents from legal requirements. It is not the Contractor's responsibility to make certain that the Drawings and Specifications comply with codes and regulations.
 - 1. Appropriate modifications to the Contract Documents will adjust the necessary changes.
 - 2. The Contractor shall assume responsibility for work known to be contrary to such requirements, and performed without such notice.
- C. Enforce strict discipline and good order among employees. Do not employ on work:

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

1. Unfit persons
 2. Persons not skilled in assigned task
- D. Existing Conditions
1. The Contractor shall be responsible for obtaining and verifying all dimensions. Any dimension give in the Drawings referring to existing construction were taken from the original construction documents and are provided for information only.
 2. Where conditions are uncovered that are not anticipated by the Drawings and Specifications, the Contractor shall notify the Engineer and Owner's Representative immediately, before any modification or other work is initiated.

**PART 2 – PRODUCTS
(NOT APPLICABLE)**

**PART 3 – EXECUTION
(NOT APPLICABLE)**

END OF SECTION 01 01 00

SECTION 01 02 70

APPLICATIONS FOR PAYMENT

PART 1 – GENERAL

1.1 SUMMARY

- A. Contractor shall comply with procedures described in this Section when applying for progress payments and final payment under the Contract.

1.2 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.
- B. Payments upon Substantial Completion and Completion of the Work are described in Section 01 70 00 – PROJECT CLOSEOUT.
- C. The Owner's approval of applications for progress payment and final payment may be contingent upon the Owner's approval of status of Project Record Documents as described in Section 01 72 00 – PROJECT RECORD DOCUMENTS of these Specifications.

1.3 QUALITY ASSURANCE

- A. Prior to start of construction, secure the Owner's approval of the schedule of values required to be submitted as specified below.
- B. During progress of the Work, modify the schedule of values as approved by the Owner to reflect changes in the Contract Sum due to Change Orders or other modifications of the Contract.
- C. All requests for payment shall be based on the approved Schedule of Values for the project.
- D. All modifications to the contract shall be based on the approved Schedule of Values for the project.

1.4 SCHEDULE OF VALUES

- A. Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
 - a. Contractor's construction schedule.
 - b. Application for Payment forms.
 - c. List of subcontractors.
 - d. Schedule of alternates.
 - e. List of products.
 - f. List of principal suppliers and fabricators.

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

B. Formal submittal

1. Make formal submittal of request for payment by filling in the agreed data, by typewriter or neat lettering in ink, on AIA Document G702, "Application and Certification for Payment," plus continuation sheet(s) of AIA Document G703.
2. Sign and notarize the Application and Certificate for Payment.
3. Reference Purchase Order number on Application for Payment
4. Secure and file with submittal progress waivers for all materials incorporated into and labor and equipment employed on the work before payment requests are processed.
 - a. Initial payment will be processed without progress waivers. Subsequent requests will require progress waivers for previous payment.
5. Submit the original of the Application and Certificate for Payment and the continuation sheet or sheets to the Architect and Owner for approval.
6. The Architect and Owner will compare the formal submittal with the approved informal submittal and, when approved, will sign the Application and Certificate for Payment, will make and distribute required copies. The Owner will disburse directly to the Contractor the amount certified less 10% retainage.
7. Approved formal submittals must be received by the Owner in accordance with the Owner's payment schedule.
8. Certified payroll records must be submitted along with the formal submittal as described in the General Conditions.

PART 2 – PRODUCTS

(NOT APPLICABLE)

PART 3 – EXECUTION

(NOT APPLICABLE)

END OF SECTION 01 02 70

SECTION 01 04 50
CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section establishes general requirements pertaining to cutting (including excavation), fitting and patching of the Work required.

1.2 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.
- B. Execute cutting (including excavation), filling or patching of work, required to:
 - 1. Make several parts fit properly.
 - 2. Uncover work to provide for installation of ill-timed work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to the Contract requirements.
 - 5. Remove samples of installed work as specified for testing.
 - 6. Install specified work in existing construction.
- C. In addition to Contract requirements, upon written instruction of the Owner:
 - 1. Uncover work to provide for observation of covered work.
 - 2. Remove samples of installed materials for testing.
 - 3. Remove work to provide for alteration of existing work.
- D. Do not cut or alter work of another contractor without written consent of the Owner.

1.3 SUBMITTALS

- A. Prior to cutting which affects structural safety of Project, or work of another contractor, submit written notice to the Owner requesting consent to proceed with cutting.
- B. Include the following:
 - 1. Project identification.
 - 2. Description of affected work.
 - 3. Necessity for cutting.
 - 4. Effect on other work and on structural integrity of Project.
 - 5. Description of proposed work. Designate:
 - a. Scope of cutting and patching.
 - b. Contractor and trades to execute the work.
 - c. Products proposed to be used.
 - d. Extent of refinishing.
 - 6. Alternatives to cutting and patching.
 - 7. Designation of party responsible for cost of cutting and patching.

JAMES PARK ATHLETIC LIGHTING

CITY OF EVANSTON

ISSUED FOR BID

- C. Prior to cutting and patching done by instruction of Owner, submit cost estimate.
- D. Should conditions of work or schedule indicate change of materials or methods, submit recommendations to the Owner, including:
 - 1. Conditions indicating change.
 - 2. Recommendation for alternative materials or methods.
 - 3. Submittals as required for substitutions.
- E. Submit written notice to the Owner, designating time the work will be uncovered to provide for observation.

1.4 PAYMENT FOR COSTS

- A. Costs caused by ill-timed or defective work, or work not conforming to Contract Documents: Party responsible for ill-timed, rejected or non-conforming work.
- B. Work done on instruction of the Owner (by Change Order), other than defective or non-conforming work shall be paid for by the Owner.

1.5 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. For replacement of work removed, comply with Specifications for type of work to be performed.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect existing conditions of work, including elements subject to movement or damage during:
 - 1. Cutting and patching.
 - 2. Excavating and backfilling
- B. After uncovering work, inspect conditions affecting installation of new products.

3.2 PREPARATION

- A. Prior to cutting:
 - 1. Provide shoring, bracing and support as required to maintain structural integrity of project.
 - 2. Provide protection for other portions of the project.
 - 3. Provide protection from the elements.

3.3 PERFORMANCE

- A. Execute fitting and adjustment or provide finished installation to comply with specified tolerances and finishes.

JAMES PARK ATHLETIC LIGHTING

CITY OF EVANSTON

ISSUED FOR BID

- B. Execute cutting and demolition by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs and new work.

- C. Execute excavating and backfilling by methods which will prevent damage to other work, and will prevent settlement.

- D. Restore work which has been cut or removed; install new products to provide complete work in accordance with contract requirements.

- E. Refinish entire surfaces as necessary to provide an even finish.
 - 1. Continuous surfaces: to nearest intersection (s).
 - 2. Assembly: entire refinishing.

END OF SECTION

SECTION 01 05 10

GRADES, LINES AND LEVELS

PART 1 – GENERAL

1.1 SUMMARY

- A. Provide such field engineering services as are required for proper completion of the Work including, but not necessarily limited to:
 - 1. Establishing and maintaining grades, lines and levels;
 - 2. Structural design of shores, forms and similar items provided by the Contractor as part of the means and methods of establishing and maintaining grades lines and levels.

1.2 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.3 OWNER WILL FURNISH

- A. A topographic map of the site as part of the Construction Documents, providing the following locations, dimensions and data:
 - 1. Grades, contours and lines of pavements and ground conditions.
 - 2. Above ground utility locations.
 - 3. Trees and vegetation.

1.4 SUBMITTALS

- A. Submit a record of Work performed and record survey data as required under provisions of Section 01 30 00 – SUBMITTALS and Section 01 72 00 – PROJECT RECORD DOCUMENTS.
- B. Comply with pertinent provisions of Section 01 30 00 – SUBMITTALS.
- C. Upon written request of the Owner, submit:
 - 1. Data demonstrating qualifications of persons proposed to be engaged for field engineering services.
 - 2. Documentation verifying accuracy of field engineering work.
 - 3. Certification, signed by the contractor's retained field engineer, certifying that elevations and locations of improvements are in conformance or nonconformance with requirements of the Contract Documents.

1.5 CONSTRUCTION SURVEYS

- A. The Contractor shall employ a land surveyor, registered in the state of Illinois and acceptable to the Owner for verification of existing conditions and for layout of its own work including all lines, elevations and measurements of all site improvements, utilities and other work executed by it under the Contract.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

- B. The Contractor shall immediately upon entering the site for purpose of beginning work locate general reference points and take such action as is necessary to prevent their destruction. The Contractor must exercise proper precaution to verify figures on the drawings before laying out work and will be held responsible for any error resulting from its failure to exercise such precaution.
- C. The Contractor shall make provision to preserve property line stakes, benchmarks or datum points. If any are lost, displaced or disturbed through neglect of the Contractor, its agents, or employees, the Contractor shall pay the cost of restoration.

PART 2 – PRODUCTS

(NOT APPLICABLE)

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify layout information shown on the Drawings, in relation to the plans before proceeding to layout the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.
- B. Do not change or relocate benchmarks or control points without prior written approval. Promptly report lost or destroyed reference points, or requirements to relocate reference points because of necessary changes in grades or locations.
 - 1. Promptly replace lost or destroyed project control points. Base replacements on original survey control points.
 - 2. Establish and maintain a minimum of two permanent benchmarks on the site or reference to data established by survey control points.
 - 3. Record benchmark locations with horizontal and vertical data on Project Record Documents.
- C. The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site-work, investigate and verify the existence and location of underground utilities and other construction.
- D. Prior to construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas and water service piping.

3.2 PERFORMANCE

- A. Working from lines and levels established by the plans, establish benchmarks and markers to set lines and levels as needed to properly locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.
- B. Advise entities engaged in construction activities, of marked lines and levels provided for their use.
- C. As construction proceeds, check every major element for line, level and plumb.

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

- D. Maintain a surveyor's log of control and other survey work. Make this log available at the job site for reference.
- E. Record deviations from required lines and levels and advise the Owner when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.
- F. On completion of any work requiring field engineering services, prepare a certified survey showing dimensions, locations, angles and elevations of construction and site-work. Deliver this certified survey to the Owner in hardcopy and electronic format (AutoCAD).
- G. Locate and layout site improvements, including pavements, stakes for grading, fill and topsoil placement, utility slopes and invert elevations by instrumentation and similar appropriate means.
- H. Furnish information necessary to adjust, move or relocate existing structures, utility poles, lines, services or other appurtenances located in or affected by construction. Coordinate with local authorities having jurisdiction.

END OF SECTION 01 05 10

SECTION 01 06 00

REGULATORY REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

- A. Contractors shall comply with all laws, rules and regulations governing the Work.
 - 1. When Contractor observes that Contract Documents are in variance with specified codes, notify the Owner in writing immediately. The Owner will issue all changes in accord with the General Conditions.
 - 2. When Contractor performs any Work knowing or having reason to know that the Work is contrary to such laws, rules and regulations and fails to so notify the Owner, the Contractor shall pay all costs arising therefrom. However, it will not be the Contractor's primary responsibility to make certain that the Contract Documents are in accord with such laws, rules and regulations.

1.2 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.3 DEFINITIONS AND ABBREVIATIONS

- A. Definitions
 - 1. "Codes" means rules, regulations or statutory requirements of government agencies.
 - 2. "Standards" means requirements set by authorities, custom or general consent and establish accepted criteria.
- B. Abbreviations
 - 1. ADA Americans with Disabilities Act
 - 2. AGCI Associated General Contractors in Illinois
 - 3. ANSI American National Standards Institute
 - 4. ASHRAE American Society of Heating, Refrigeration and Air Conditioning Engineers
 - 5. ASTM American Society of Testing and Materials
 - 7. COE City of Evanston
 - 8. CPSC Consumer Product Safety Commission (Federal)
 - 9. FM Factory Mutual Engineering Corp.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

9.	IBC	International Building Code
10.	IDOL	Illinois Department of Labor
11.	IDOT	Illinois Department of Transportation
12.	IDPH	Illinois Department of Public Health
13.	IEPA	Illinois Environmental Protection Agency
14.	IECC	International Energy Conservation Code
14.	ISPE	Illinois Society of Professional Engineers
15.	NFPA	National Fire Protection Association
16.	SFM	Office of State Fire Marshall
17.	UL	Underwriters Laboratories, Inc.

1.4 QUALITY ASSURANCE

A. Contractor shall:

1. Ensure that copies of specified codes and standards are readily available to Contractor's personnel. Copies are available at Contractor's expense from source or publisher.
2. Ensure that Contractor's personnel are familiar with workmanship and installation requirements of specified codes and standards.

1.5 REFERENCE SPECIFICATIONS

A. The Specifications referred to herein shall be interpreted to mean the following and shall include all addenda, changes to, etc. Reference to Engineer shall mean Owner.

1. "Standard Specifications" – The Illinois Department of Transportation's (IDOT's) "Standard Specifications for Road and Bridge Construction", latest edition.
2. "Supplemental Specifications" – IDOT's "Supplemental Specifications and Recurring Special Provisions", latest edition.
3. "Traffic Specifications" – IDOT's "Standard Specifications for Traffic Control Items", latest edition.
4. "Standard Sewer Specifications" – The "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition.

1.6 REGULATORY REQUIREMENTS

A. Source and requirements:

1. EBA: "Environmental Barriers Act" Illinois Accessibility Code
2. ADA: Americans with Disabilities Act
3. ISPC: Illinois State Plumbing Code, current edition
4. IEPA: (current editions at date of bidding documents)

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

- a. Air Pollution Standards
 - b. Noise Pollution Standards
 - c. Water Pollution Standards
 - d. Public Water Supplies
 - e. Solid Waste Standards
 - f. Illinois Recommended Standards for Sewage Work
5. Illinois Purchasing Act, as amended (Illinois Compiled Statutes, 30 ILCS 505/1 et seq)
6. OSFM:
- a. Gasoline and Volatile Oils (Illinois Compiled Statutes, 430 ILCS 15/0.01 et seq)
 - b. Liquefied Petroleum Gases (Illinois Compiled Statutes, 430 ILCS 5/0.01 et seq)
 - c. Liquefied Petroleum Gas Containers (Illinois Compiled Statutes, 430 ILCS 10/0.01 et seq)
 - d. Boiler and Pressure Vessel Safety Act and Rules and Regulations (Illinois Compiled Statutes, 430 ILCS 75/1 et seq)
 - e. Illinois Rules and Regulations for Fire Prevention and Safety, as amended 24 December 1973.
7. CODES:
- a. City of Evanston "City Ordinances" and "Building Code", current editions.
 - b. Work not covered by above codes: Use NFPA National Fire Codes, current edition.
- B. The Owner may reference other codes or standards throughout the Project Manual when deemed appropriate for proper compliance with regulatory requirements.

PART 2 – PRODUCTS

(NOT APPLICABLE)

PART 3 – EXECUTION

(NOT APPLICABLE)

END OF SECTION 01 06 00

SECTION 01 09 50

REFERENCE STANDARDS AND DEFINITIONS

PART 1 – GENERAL

1.1 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.2 DEFINITIONS

- A. General: basic contract definitions are included in the General Conditions.
- B. Indicated: the term “indicated” refers to graphic representations, notes or schedules on the Drawings, other paragraphs or schedules in the Specifications, and similar requirements in the Contract Documents. Where terms such as “shown,” “noted,” “scheduled” and “specified” are used, it is to help the reader locate the reference; no limitation on location is intended.
- C. Directed: terms such as “directed,” “requested,” “authorized,” “selected,” “approved,” “required” and “permitted” mean “directed by the Owner,” “requested by the Owner” and similar phrases.
- D. Approve: the term “approved,” where used in conjunction with the Owner action on the Contractor’s submittals, applications and requests, is limited to the Owner’s duties and responsibilities as stated in the General Conditions.
- E. Regulation: the term “regulations” includes laws, ordinances, statutes and lawful orders issued by authorities having jurisdiction, as well as rules, conventions and agreements within the construction industry that control performance of the Work.
- F. Furnish: the term “furnish” is used to mean “supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation and similar operations.”
- G. Install: the term “install” is used to describe operations at project site including the actual “unloading, unpacking, assembly, installation, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations.”
- H. Provide: the term “provide” means “to furnish and install, complete and ready for the intended use.
- I. Installer: an “installer” is the Contractor or an entity engaged by the Contractor, either as an employee, subcontractor or sub-subcontractor, for performance of a particular construction activity, including installation, erection, application and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

as if bound or copied directly into the Contract Documents. Such standards are made a part of the Contract Documents by reference.

- B. Publication Dates: where the date of issue of a referenced standard is not specified, comply with the standard in effect as of date of Contract Documents.
- C. Conflicting Requirements: where compliance with two or more standards is specified, and the standards establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different, but apparently equal, and uncertainties to the Owner for a decision before proceeding.
 - 1. Minimum Quality or Quantity Levels: the quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate for the context of the requirements. Refer uncertainties to the Owner for a decision before proceeding.
- D. Copies of Standards: each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.
 - 2. Although copies of standards needed for enforcement of requirements may be included as part of required submittals, the Owner reserves the right to require the Contractor to submit additional copies as necessary for enforcement of requirements.
- E. Abbreviations and Names: trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries. The following acronyms or abbreviations as referenced in Contract Documents are defined to mean the associated names. Names and addresses are subject to change and are believed to be but are not assured to be accurate and up to date as of date of Contract Documents.

AA	Aluminum Assoc. 900 19 th St, NW, Suite 300 Washington, DC 20006 (202) 862-5100	AAMA	American Architectural Manufacturer's Assoc. 1540 E. Dundee Rd, Suite 310 Palatine, IL 60067 (708) 202-1350	AAN	American Assoc. of Nurserymen 1250 Eye St, NW, Suite 500 Washington, DC 20005 (202) 789-2900
AASH TO	American Assoc. of State Highway and Transportation Officials	ACI	American Concrete Institute PO Box 19150 Detroit, MI 48219-	ACIL	American Council of Independent Laboratories 1725 K St, NW

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

	444 N. Capitol St, Suite 225 Washington, DC 20001 (202) 624-5800		0150 (313) 532-2600		Washington, DC 20006 (202) 887-5872
ACPA	American Concrete Pipe Assoc. 8320 Old Courthouse Rd. Vienna, VA 22180 (703) 821-1990	AGA	American Gas Assoc. 1515 Wilson Blvd. Arlington, VA 22209 (703) 841-8400	AHA	American Hardboard Assoc. 520 N. Hicks Rd. Palatine, IL 60067- 3609 (708) 934-8800
AI	Asphalt Institute Research Park Drive PO Box 14052 Lexington, KY 40512- 4052 (606) 288-4960	AIA	American Institute of Architects 1735 New York Ave, NW Washington, DC 20006 (202) 626-7300	A.I.A.	American Insurance Assoc. 1130 Connecticut Ave, NW Washington, DC 20036 (202) 828-7100
AISC	American Institute of Steel Construction 1 E. Wacker Dr, Suite 3100 Chicago, IL 60601- 2001 (312) 670-2400	AISI	American Iron and Steel Institute 1101 17 th St. NW, Suite 1300 Washington, DC 20005-2701 (202) 452-7100	AITC	American Institute of Timber Construction 11818 SE Mill Plain Blvd, Ste.415 Vancouver, WA 98684-5092 (206) 254-9132
ALI	Associated Laboratories 641 S. Vermont St. Palatine, IL 60067 (708) 358-7400	ALSC	American Lumber Standards Committee PO Box 210 Germantown, MD 20874 (301) 972-1700	ANSI	American National Standards Institute 11 W. 42 nd Street New York, NY 10036 (212) 354-3300
AOSA	Assoc. of Official Seed Analysts C/o Jim Lair Illinois Dept. of Agriculture Seed Lab Box 19281 Springfield, IL 62794 (217) 782-7655	APA	American Plywood Assoc. PO Box 11700 Tacoma, WA 98411 (206) 565-6600	API	American Petroleum Institute 1220 L St, NW Washington, DC 20005 (202) 682-8000
ASC	Adhesive and Sealant Council 1627 K Street, NW, Suite 1000 Washington, DC 20006 (202) 452-1500	ASHRAE	American Society of Heating, Refrigerating and Air-conditioning Engineers, Inc. 1791 Tullie Circle, NE Atlanta GA 30329- 2305	ASME	American Society of Mechanical Engineers 345 East 47 th Street New York, NY 10017
ASPE	American Society of Plumbing Engineers 3617 Thousand Oaks Blvd, Suite 210 Westlake, CA 91362 (805) 495-7120	ASSE	American Society of Sanitary Engineers PO Box 40362 Bay Village, OH 44140	ASTM	American Society for Testing and Materials 1916 Race St Philadelphia, PA 19103 (215) 299-5400

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

			(216) 835-3040		
AWI	Architectural Woodwork Institute 2310 S. Walter Reed Dr. Arlington, VA 22206 (703) 671-9100	AWPA	American Wood Preservers Assoc. PO Box 286 Woodstock, MD 21163 (410) 465-3169	AWPB	American Wood Preservers Bureau PO Box 5283 Springfield, VA 22150 (703) 339-6660
AWS	American Welding Society PO Box 351040 550 LeJeune Road, NW Miami, FL 33135 (305) 443-9353	AWW A	American Water Works Assoc. 6666 W Quincy Ave Denver, CO 80235 (303) 794-7711	BANC	Brick Assoc. of North Carolina PO Box 13290 Greensboro, NC 27415 (919) 273-5566
BHMA	Builders Hardware Manufacturers Assoc. 355 Lexington Ave, 17 th Floor New York, NY 10017 (212) 661-4261	BIA	Brick Institute of America 11490 Commerce Park Dr. Suite 300 Reston, VA 22091 (703) 620-0010	CISPI	Cast Iron Soil Pipe Institute 5959 Shallowford Rd, Ste 419 Chattanooga, TN 37421 (615) 892-0137
CRSI	Concrete Reinforcing Steel Institute 933 Plumb Grove Rd. Schaumburg, IL 60195 (708) 517-1200	EJMA	Expansion Joint Manufacturers Assoc. 25 N. Broadway Tarrytown, NY 10591 (914) 332-0040	ETL	ETL Testing Laboratories Inc. PO Box 2040 Route 11, Industrial Park Cortland, NY 13045 (607) 753-6711
HMA	Hardwood Manufacturers Assoc. 2831 Airways Blvd., Ste 205, Bldg. B Memphis, TN 38132 (901) 346-2222	HPMA	Hardwood Plywood Manufacturers Assoc. 1825 Michael Farraday Dr PO Box 2789 Reston, VA 22090- 2789 (703) 435-2900	ICEA	Insulated Cable Engineers Assoc. Inc. PO Box 440 South Yarmouth, MA 02664 (617) 394-4424
IEEE	Institute of Electrical and Electronic Engineers 345 E. 47 th Street New York, NY 10017 (212) 705-7900	IESN A	Illuminating Engineering Society of North America 345 E 47 th Street New York, NY 10017 (212) 705-7926	ILI	Indiana Limestone Institute of America Stone City Bank Bldg, Ste 400 Bedford, IN 47421 (812) 275-4426
IMSA	International Municipal Signal Assoc. PO Box 539 1115 N. Main Street Newark, NY 14513 (315) 331-2182	IRI	Industrial Risk Insurers 85 Woodland St Hartford, CT 06102 (203) 520-7300	LPI	Lightning Protection Institute PO Box 1029 Woodstock, IL 60098 (815) 337-0277
MBMA	Metal Building Manufacturers Assoc. 1230 Keith Building	MCAA	Mechanical Contractors Assoc. of America	NAAM M	National Assoc. of Architectural Metal Manufacturers

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

	Cleveland, OH 44115-2180		5410 Grosvenor Lane, Ste 120 Bethesda, MD 20814 (301) 897-0770		600 S. Federal St, Ste 400 Chicago, IL 60605 (312) 922-6222
NAPA	National Asphalt Pavement Assoc. Calvert Building, Suite 620 6811 Kenilworth Ave. Riverdale, MD 20737 (301) 779-4880	NAPF	National Assoc. of Plastic Fabricators (Now DLPA)	NBGQ A	National Building Granite Quarries Assoc. PO Box 482 Barre, VT 05641 (802) 476-3115
NBHA	National Builders hardware Assoc. (Now DHI)	NCMA	National Concrete Masonry Assoc. 2302 Horse Pen Rd PO Box 781 Herndon, VA 22070-3406 (703) 435-4900	NEC	National Electric Code (Now NfiPA)
NECA	National Electrical Contractors Assoc. 7315 Wisconsin Ave Bethesda, MD 20814 (301) 657-3110	NEMA	National Electrical Manufacturers Assoc. 2101 L St, NW, Ste 300 Washington, DC 20037 (202) 457-8400	NFiPA	National Fire Protection Assoc. 1 Batterymarch Park Quincy, MA 02269 (617) 770-3000
NFoP A	National Forest Products Assoc. 1250 Connecticut Ave, NW, Suite 200 Washington DC 20036 (202) 463-2700	NHLA	National Hardwood Lumber Assoc. PO Box 34518 Memphis, TN 38184 (901) 377-1818	NLGA	National Lumber Grades Authority 1055 W Hastings St. Ste 260 Vancouver, British Columbia Canada V6E 2H1 (604) 687-2171
NPA	National Particleboard Assoc. 18928 Premiere Court Gaithersburg, MD 20879-1569 (301) 670-0604	NPCA	National Paint and Coatings Assoc. 1500 Rhode Island Ave, NW Washington, DC 20005 (202) 462-6272	NSF	National Sanitation Foundation PO Box 1468 3475 Plymouth Rd Ann Arbor, MI 48106 (313) 769-8010
NWM A	National Woodwork Manufacturers Assoc. (Now NWWDA)	PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077- 4321 (847) 966-6200	PCI	Prestressed Concrete Institute 175 W Jackson Blvd Chicago, IL 60604- 9773 (312) 786-0300
PDI	Plumbing and Drainage Institute C/o Saul Baker 1106 W. 77 th Street, South Dr. Indianapolis, IN 4626	RIS	Redwood Inspection Service 405 Enfrente Dr, Suite 300 Novato, CA 94949 (415) 382-0662	RMA	Rubber Manufacturers Assoc. 1400 K St, NW Washington, DC 20005 (202) 682-4800

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

	(317) 251-6970				
SHLM A	Southern Hardwood Lumber Manufacturers Assoc. (Now HMA)	SJI	Steel Joist Institute Suite A 1205 48 th Ave North Myrtle Beach, SC 29577	SPIB	Southern Pine Inspection Bureau 4709 Scenic Highway Pensacola, FL 32504 (904) 434-2611

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

SSPC	Steel Structures Painting Council 4400 Fifth Ave. Pittsburgh, PA 15213 (412) 268-3327	SSPM A	Sump and Sewage Pump Manufacturers Assoc. 560 W Washington St, Ste 301 Chicago IL, 60606 (312) 332-4146	TPI	Truss Plate Institute 583 D'Onofrio Drive Suite 200 Madison, WI 53719
UL	Underwriters Laboratories 333 Pfingsten Rd. Northbrook, IL 60062 (847) 272-8800	WCLI B	West Coast Lumber Inspection Bureau PO Box 23145 Portland, OR 97223 (503) 639-0651	WIC	Woodwork Institute of California PO Box 11428 Fresno, CA 93773 (209) 233-9035
WRI	Wire Reinforcement Institute 1101 Connecticut Ave, NW Washington, DC 20036-4303 (703) 790-9790	WWP A	Western Wood Products Assoc. 522 SW 5 th Ave, Yeon Bldg. Portland,OR 97204-2122 (503) 224-3930	W.W.P. A.	Woven Wire Products Assoc. 2515 N. Nordica Ave. Chicago, IL 60635 (312) 637-1359

- F. Federal Government Agencies: names and titles of federal government standard or specification producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard or specification producing agencies of the federal government. Names and addresses are subject to change; they are believed to be but are not assured to be accurate and up to date as of the date of the Contract Documents.

CE	Corps of Engineers (US Dept of the Army) Chief of Engineers – Referral Washington, DC 20314 (202) 272-0660	CFR	Code of Federal Regulations Available from the Government Printing Office N. Capitol St between G and H St, NW Washington, DC 20402 (202) 783-3238 (Material is usually first published in the Federal Register)	CPSC	Consumer Product Safety Commission 5401 Westbard Ave, Room 700 Washington, DC 20816 (800) 638-2772
CS	Commercial Standard (US Dept of Commerce) Government Printing Office Washington, DC 20402 (202) 377-2000	DOC	Department of Commerce 14 th St and Constitution Ave, NW Washington, DC 20230 (202) 377-2000	DOT	Department of Transportation 400 7 th St, SW Washington, DC 20590 (202) 366-4000
EPA	Environmental Protection Agency	FAA	Federal Aviation Administration	FCC	Federal Communications

REFERENCE STANDARDS
AND DEFINITIONS
SECTION

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

	401 M St, SW Washington, DC 20460 (202) 382-2090		(US Dept of Transportation) 800 Independence Ave, SW Washington, DC 20590 (202) 366-4000		Commission 1919 M St, NW Washington, DC 20554 (202) 632-7000
FHA	Federal Housing Administration (US Dept of Housing and Urban Development) Director Manufactured Housing and Construction Standards Division 451 7 th St, SW, Room 9158 Washington, DC 20201 (202) 755-5210	FS	Federal Specification (from GSA) Supt. Of Documents, Government Printing Office 7 th and D St, SW Washington, DC 20234 (202) 472-2205 or 472-2140	GSA	General Services Administration F St and 18 th St, NW Washington, DC 20405 (202) 472-1082
MIL	Military Standardization Documents (US Dept of Defense) Naval Publications and Forms Center 5801 Tabor Ave Philadelphia, PA 19120	NIST	National Institute of Standards and Technology (US Dept of Commerce) Gaithersburg, MD 20899 (301) 975-2000	OSHA	Occupational Safety and Health Administration (US Dept of Labor) Government Printing Office Washington, DC 20402 (202) 523-6091
PS	Product Standard of NBS National Institute of Standards and (DOC) Technology Standards Management Program A 625 Administration Gaithersburg, MD 20899 (202) 783-3238	USDA	US Dept of Agriculture Independence Ave btwn. 12 th and 14 th St, SW Washington, DC 20250 (202) 447-8732	USPS	US Postal Service 475 L'Enfant Plaza, SW Washington, DC 20260 (202) 268-2000

1.4 GOVERNING REGULATIONS/AUTHORITIES

- A. The Owner has contacted authorities having jurisdiction where necessary to obtain information necessary for preparation of Contract Documents; that information may or may not be of significance to the Contractor. Contact authorities having jurisdiction directly for information and decisions having a bearing on the Work.
- B. Copies of Regulations: Obtain copies of the applicable regulations and retain at the Project site, available for reference by parties who have a reasonable need for such reference.

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

1.5 SUBMITTALS

- A. Permits, Licenses and Certificates: for the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional, settlements, notices, receipts for fee payments, judgements and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

PART 2 – PRODUCTS

(NOT APPLICABLE)

PART 3 – EXECUTION

(NOT APPLICABLE)

END OF SECTION 01 09 50

SECTION 01 10 50

EXISTING UTILITY PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

- A. Perform the work associated with existing utilities, including removal, relocation, interruption and protection, meeting requirements of this section.

1.2 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this section.

1.3 GENERAL

- A. Notification: before beginning any work, the Contractor shall notify all utility companies, public and private as applicable and any other party owning, operating or maintaining utility facilities on or in vicinity of project site in accordance with notification procedures of each utility company or any other party.
- B. Protection:
 - 1. Before beginning any work, the Contractor shall investigate and inform himself of locations and extent of all utilities on and in vicinity of project site which may be encountered in performing the work and shall take suitable care to protect and prevent damage and cessation of operation to such utilities from his operations.
 - 2. When performing adjacent to existing sewers, drains, water and gas lines; electric, telephone or telegraph conduit or cable; pole lines or poles, or other utility facilities, equipment or structures, which are to remain in operation, contractor shall maintain such utility facilities, equipment and structures in place and protect from damage and cessation of operation and shall cooperate with applicable utility company and any other party owning, operating or maintaining such utility facilities, equipment or structures.
 - 3. Methods of protection shall be subject to approval of utility company and any other party owning, operating or maintaining such utility, equipment or structure.
- C. Damages:
 - 1. Should existing utilities which are to remain in operation be damaged during construction operations, the Contractor shall immediately notify utility company, Owner and any other party owning, operating or maintaining such utility.
 - 2. The Contractor shall be responsible for and shall repair or replace at the Contractor's expense, as applicable, damages to any such utility facilities, equipment or structures caused by his acts, whether negligent or otherwise, or his omission to act, whether negligent or otherwise, and shall leave such utility facilities, equipment or structures in as good condition as existed prior to commencement of his operations as approved by utility company and any other party owning, operating or maintaining such utility. In addition, the Contractor shall be responsible for any damages or liability which the Owner may be held liable. Materials and methods of repair or replacement shall be subject to

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

approval of utility company and other party owning, operating or maintaining such utility.

3. However, any such utility equipment or structures damaged as a result of any act, or omission to act, of the Contractor, may, at option of applicable utility company and any other party owning, operating or maintaining such utility facilities, equipment or structures damaged, be repaired or replaced by such applicable utility company or other party. In such event cost of repairs or replacement shall be the responsibility of the Contractor at no addition to the Contract Sum.

1.4 PROCEDURES

A. Locations:

1. Request all utility companies and any other party owning, operating or maintaining utility facilities on or in vicinity of project site as applicable, to locate or stakeout locations, extent, alignment and elevation of such utility facilities.
2. Approximate locations and extent of known existing utility facilities, equipment and structures may be determined by examining documents of utility companies and any other party owning, operating or maintaining such utility facilities, and available information documents and Drawings for the work.
3. Should uncharted or incorrectly charted existing utility facilities, equipment and structures be encountered during performance of the Work, consult utility companies and other party owning, operating or maintaining such utility facilities for directions.
4. After such utilities have been uncovered and their actual locations and extent determined, the Owner will furnish additional Drawings, if relocation is required, subject to approval of utility companies and any other parties owning, operating or maintaining such utility facilities.
5. Submit record drawings showing locations and extent discrepancies of utilities those indicated in available reference documents or Drawings for the Work, regardless of cause of location or extent discrepancy, meeting, requirements of the general conditions.

B. Scheduling:

1. General: existing utilities shall not be disturbed until utility companies and any other party owning, operating or maintaining such utility facilities and users of such utilities have been notified in accordance with notification procedure of such utility companies or any other parties. Contractor shall conduct work so that utility may be removed, relocated or supported during construction operations and maintained in service until the work to be provided under Contract is completed.
2. Any existing utility should be relocated only as approved by utility companies and any other parties owning, operating or maintaining such utility facilities. Contractor shall cooperate with utility companies and any other parties in performance of this work.
3. Interruptions: when Contractor desires to take an existing utility service out of operation, notify Owner at least 72 hours in advance of such time and obtain written permission of utility company or other parties owning, operating or maintaining such utility facilities prior to interrupting service. Interruption of service shall be kept to an absolute minimum.
 - a. Utility company and any or other parties owning, operating or maintaining such utility facilities shall have right to require Contractor to perform work which requires such interruptions in stages and during non-standard

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

working hours to reduce time of each interruption, at no addition to Contract Sum.

- b. When necessary, provide acceptable temporary utility services during such interruptions, before taking utility service out of operation, at no addition to Contract Sum.

PART 2 – PRODUCTS

(NOT APPLICABLE)

PART 3 – EXECUTION

(NOT APPLICABLE)

END OF SECTION 011050

SECTION 01 20 00

PROJECT MEETINGS

PART 1 – GENERAL

1.1 SUMMARY

- A. This section specifies administrative and procedural requirements for project meetings including but not limited to:
 - 1. Pre-construction Conference
 - 2. Pre-installation Conferences
 - 3. Coordination Meetings
 - 4. Progress Meetings
- B. Construction schedules are specified in Section 01 30 00 – SUBMITTALS.

1.2 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.3 PRE-CONSTRUCTION CONFERENCE

- A. The Owner shall schedule a pre-construction conference and organizational meeting at the Project site or other convenient location no later than 15 days after execution of the Agreement and prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.
- B. Attendees: The Owner, the Contractor and its superintendent, major subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conduct matters relating to the Work.
- C. Agenda: Discuss items of significance that could affect progress including such topics as:
 - 1. Tentative construction schedule
 - 2. Critical Work sequencing
 - 3. Designation of responsible personnel
 - 4. Procedures for processing field decisions and Change Orders
 - 5. Procedures for processing Applications for Payment
 - 6. Distribution of Contract Documents
 - 7. Submittal of Shop Drawings, Product Data and Samples
 - 8. Preparation of record documents
 - 9. Use of the premises
 - 10. Office, Work and storage areas
 - 11. Equipment deliveries and priorities
 - 12. Safety procedures
 - 13. First aid
 - 14. Security
 - 15. Housekeeping
 - 16. Construction activity policies and working hours

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

17. MBE/WBE/EBE and LEP requirements
18. Coordination with affected utilities and governing jurisdictions

1.4 PRE-INSTALLATION CONFERENCE

- A. Conduct a pre-installation conference at the site before each construction activity that requires coordination with other construction. The installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Owner of scheduled meeting dates.
- B. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for:
 1. Contract Documents
 2. Options
 3. Related Change Orders
 4. Purchases
 5. Deliveries
 6. Shop Drawings, Product Data and quality control samples
 7. Possible conflicts
 8. Compatibility problems
 9. Time schedules
 10. Weather limitations
 11. Manufacturer's recommendations
 12. Compatibility of materials
 13. Acceptability of substrates
 14. Temporary facilities
 15. Space and access limitations
 16. Governing regulations
 17. Safety
 18. Inspection and testing requirements
 19. Required performance results
 20. Recording requirements
 21. Protection
- C. Record significant discussions and agreements and disagreements of each conference, along with the approved schedule. Distribute the record of the meeting to everyone concerned, promptly, including the Owner.
- D. Do not proceed if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

1.5 PROGRESS MEETINGS

- A. Conduct progress meetings at the Project site at regularly scheduled intervals. Notify the Owner of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment requests.
- B. Attendees: in addition to the Owner, each subcontractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress.

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

- C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the Project.
- D. Contractor's Construction Schedule: review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time, ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Period.
- E. Review the present and future needs of each entity present, including such items as:
 - 1. Interface requirements
 - 2. Time
 - 3. Sequences
 - 4. Deliveries
 - 5. Off-site fabrication problems
 - 6. Access
 - 7. Site utilization
 - 8. Temporary facilities and services
 - 9. Hours of Work
 - 10. Hazards and risks
 - 11. Housekeeping
 - 12. Quality and Work standards
 - 13. Change Orders
 - 14. Documentation of information for payment requests.
- F. Reporting: no later than three (3) days after each progress meeting date, distribute copies of minutes of the meeting to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
- G. Schedule Updating: revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

PART 2 – PRODUCTS

(NOT APPLICABLE)

PART 3 – EXECUTION

(NOT APPLICABLE)

END OF SECTION 01 20 00

SECTION 01 21 00

ALLOWANCES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Other provisions concerning Allowances also may be stated in other Sections of these Specifications.

1.2 SUMMARY

- A. The allowance is general and is to be used to provide adequate budget and bonding to cover items not able to be precisely determined by the Owner prior to bidding including any unforeseen conditions that are discovered. Allow within the proposed Total Base Bid Amount the amounts described in this Section.
- B. Allowance work shall be pre-approved prior to the start of and during the Construction with Proposals documenting the work to be performed, with clearly stated not-to-exceed costs and step by step method of procedures for the proposed work stated. Proposals must be submitted and accepted by the Owner prior to starting any allowance work. After discovering an unforeseen condition, the contractor shall submit a Proposal that includes a report summarizing the found condition. The Consultant and Owner will view the unforeseen condition to determine if the work will be authorized. Allowance work shall only be authorized by written Allowance Authorization. Under no circumstances shall the Contractor move forward with the work in question nor shall the contractor expend allowance without an approved Allowance Authorization.

1.3 ALLOWANCE RESPONSIBILITIES

- A. Consultant Responsibilities:
 - 1. Consult with Contractor in consideration and selection of products, suppliers and installers.
 - 2. Select products or services in consultation with Owner.
 - 3. Review method of procedure and costs documented on Proposals submitted by the Contractor and transmit Owner's decision to Contractor. Owner approved Allowance Authorizations are required prior to proceeding with Allowance Work.
 - 4. Review, recommend and transmit Allowance Authorization to Owner for approval.
 - 5. Transmit Owner's decision to the Contractor.
- B. Contractor's Responsibilities:
 - 1. Assist Consultant in selection of products, suppliers and installers.
 - 2. Obtain proposals from suppliers and installers and offer recommendations and review of proposals submitted. Transmit to Consultant on Proposal forms, attaching all supporting documentation. Include any bond cost adjustments with

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

the proposal. Include scheduling information and assessment of impact of other work.

3. On notification of selection by Consultant, execute purchase agreement with designated supplier and installer.
4. Arrange for and process shop drawings, product data and samples. Arrange for delivery.
5. Promptly inspect products upon delivery for completeness, damage and defects. Submit claims for transportation damage.
6. Document thoroughly all costs related to the work.
7. Provide the Consultant with fully documented Proposals detailing all allowance work to be performed.

1.4 ALLOWANCE DOCUMENTATION

A. All work covered by Allowances must be thoroughly documented as follows:

1. Upon encountering any field conditions which is not as shown in Construction Documents, the Contractor shall immediately notify the Consultant and develop a written Proposal detailing any additional work required. Proposals shall include a report summarizing the found condition to the Consultant. Contractor work initiated without submitting a completed Proposal and obtaining the Owner's written approval by Allowance Authorization is performed entirely at Contractor's own risk and cost, regardless of any prior verbal approval.
2. The Consultant shall review the Proposal and provide the Owner with a written recommendation regarding the proposed work.
3. The Owner shall review the Contractor's Proposal and the Consultant's recommendation and, if appropriate, provide written approval via Allowance Authorization for use of the Allowance.

1.5 SCHEDULE OF ALLOWANCES

Allowance Number 1, Additional Work General: \$30,000.00

1.6 ALLOWANCE EXCLUSIONS

A. General

1. Additional costs related to improper scheduling, sequencing or coordination will not be covered within the Allowance, as determined solely by the Owner.

B. Existing Building Component Exclusions

1. All work required to protect existing building surfaces and components is included in the Base Bid and will not be covered within the Allowance.

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

(Not Used)

END OF SECTION 01 21 00

SECTION 01 30 00

SUBMITTALS

PART 1 – GENERAL

1.01 SUMMARY

- A. This section specifies administrative and procedural requirements for submittals required for performance of the Work, including:
 - 1. Contractor's construction schedule
 - 2. Submittal schedule
 - 3. Daily construction reports
 - 4. Shop Drawings
 - 5. Product Data
 - 6. Samples
- B. Administrative Submittals: refer to other Division 0 and 1 sections and other Contract Documents for requirements for administrative submittals. Such submittals include but are not limited to:
 - 1. Permits
 - 2. Applications for payment
 - 3. Performance and payment bonds
 - 4. Insurance certificates
 - 5. List of subcontractors
- C. The Schedule of Values submittal is included in Section 01 02 70 – APPLICATION FOR PAYMENT.

1.02 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.03 SUBMITTAL PROCEDURES

- A. Coordination: coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Owner reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

3. Processing: allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for re-submittals.
 - a. Allow two weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Owner will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow two weeks for re-processing each submittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Owner sufficiently in advance of the Work to permit processing.

- B. Submittal Preparation: place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
 1. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 2. Include the following information on the label for processing and recording action taken.
 - a. Project name
 - b. Date
 - c. Name and address of Owner
 - d. Name and address of Contractor
 - e. Name and address of subcontractor
 - f. Name and address of supplier
 - g. Name of manufacturer
 - h. Number and title of appropriate Specification Section
 - i. Drawing number and detail reference, as appropriate

- C. Submittal Transmittal: package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Owner using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
 1. On the transmittal record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.
 2. Transmittal Form: use AIA Document G 810.

1.04 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: prepare a fully developed, horizontal bar-chart type Contractor's construction schedule. Submit within 30 days of the date established for "Commencement of the Work".
 1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values".

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

2. Within each time bar indicate estimated completion percentage in 10 percent increments. As Work progresses, place a contrasting mark in each bar to indicate Actual Completion.
 3. Prepare a schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
 4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the Work.
 5. Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress report, payment requests and other schedules.
 6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for Owner's procedures necessary for certification of Substantial Completion.
- B. Phasing: Provide notations on the schedule to show how the sequence of the Work is affected by requirements for phased completion to permit Work by separate Contractors and partial occupancy by the Owner prior to Substantial Completion.
- C. Work Stages: Indicate important stages of construction for each major portion of the Work, including testing and installation.
- D. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the Work. Indicate where each element in an area must be sequenced or integrated with other activities.
- E. Cost Correlation: At the head of the schedule, provide a two item cost correlation line, indicating "pre-calculated" and "actual" costs. On the line show dollar-volume of Work performed as of the dates used for preparation of payment requests.
1. Refer to Section 01 02 70 - APPLICATION FOR PAYMENT for cost reporting and payment procedures.
- F. Distribution: Following response to the initial submittal, print and distribute copies to the Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- G. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.05 SUBMITTAL SCHEDULE

- A. After development and acceptance of the Contractor's construction schedule, prepare a complete schedule of submittals. Submit the schedule within 10 days of the date required for establishment of the Contractor's construction schedule.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

1. Coordinate submittal schedule with the list of subcontracts, schedule of values and the list of products as well as the Contractor's construction schedule.
2. Prepare the schedule in chronological order; include submittals required during the first 90 days of construction. Provide the following information:
 1. Scheduled date for the first submittal.
 2. Related Section number.
 3. Submittal category.
 4. Name of subcontractor.
 5. Description of the part of the Work covered.
 6. Scheduled date for resubmittal.
 7. Scheduled date of the Owner's final release or approval.
- B. Distribution: Following response to initial submittal, print and distribute copies to the Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office
 1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- C. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.06 DAILY CONSTRUCTION REPORTS

- A. Prepare a daily construction report, recording the following information concerning events at the site; and submit duplicate copies to the Owner at weekly intervals:
 1. List of subcontractors at the site.
 2. Approximate count of personnel at the site.
 3. High and low temperatures, general weather conditions.
 4. Accidents and unusual events.
 5. Meetings and significant decisions.
 6. Stoppages, delays, shortages, losses.
 7. Meter readings and similar recordings.
 8. Emergency procedures.
 9. Orders and requests of governing authorities.
 10. Change Orders received, implemented.
 11. Services connected, disconnected.
 12. Equipment or system tests and start-ups.
 13. Partial Completions, occupancies.
 14. Substantial Completions authorized.

1.07 SHOP DRAWINGS

- A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.
- B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

1. Dimensions.
 2. Identification of products and materials included.
 3. Compliance with specified standards.
 4. Notation of coordination requirements.
 5. Notation of dimensions established by field measurement.
 6. Sheet Size: Except for templates, patterns and similar full- size Drawings, submit Shop Drawings on sheets at least 8-1/2" x 11" but no larger than 36" x 48".
 7. Submit one correctable translucent reproducible print and three blue- or black-line print for the Owner's review; the reproducible print will be returned.
- C. One of the prints returned shall be marked-up and maintained as a "Record Document".
- D. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.
- E. Coordination drawings are a special type of Shop Drawing that show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or function as intended.
1. Submit coordination Drawings for integration of different construction elements. Show sequences and relationships of separate components to avoid conflicts in use of space.

1.08 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."
1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with recognized trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
 2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
 3. Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.
 4. Submittals: Submit 2 copies of each required submittal; submit 4 copies where required for maintenance manuals. The Owner will retain one, and will return the other marked with action taken and corrections or modifications required.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
 - a. Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.
 - b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.09 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.
 1. Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Prepare Samples to match the Owner's Sample. Include the following:
 - a. Generic description of the Sample.
 - b. Sample source.
 - c. Product name or name of manufacturer.
 - d. Compliance with recognized standards.
 - e. Availability and delivery time.
 2. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
 - a. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3), that show approximate limits of the variations.
 - b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
 - c. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
 3. Preliminary submittals: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.
 - a. Preliminary submittals will be reviewed and returned with the Owner's mark indicating selection and other action.
 4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 3 sets; one will be returned marked with the action taken.
 5. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of construction.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

- a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 - b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.
- C. Mock ups specified in individual Sections are special types of Samples. Mock ups are full-size examples erected on site to illustrate finishes, coatings, or finish materials and to establish the standard by which the Work will be judged.
- D. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

1.10 CONTRACTOR'S RESPONSIBILITIES

- A. Review shop drawings, product data and samples prior to submission.
- B. Verify:
- 1. Field dimensions
 - 2. Field construction criteria
 - 3. Catalog numbers and similar data
- C. Coordinate each submittal with requirements of Work and of Contract Documents.
- D. Contractor's responsibility for errors and omissions in submittals is not relieved by Owner's review of submittals.
- E. Contractor's responsibility for deviations in submittals from Contract Document requirements is not relieved by Owner's review of submittals.
- F. Notify Owner in writing at time of submission, of deviations in submittals from contract requirements.
- G. Do not begin any work which requires submittals without having Owner's stamp and initials or signature indicating review.
- H. After Owner's review, make response required by Owner, stamp and distribute copies.

1.11 SUBMISSION REQUIREMENTS

- A. Make all submissions within 35 business days after date of Notice to Proceed.
- B. Submit number of copies of shop drawings, project data and samples which Contractor requires for distribution plus 3 copies which will be retained by the Owner.
- C. Submit number of samples specified in each of specification sections.
- D. Accompany submittals with transmittal letter, in duplicate, containing:
- 1. Date
 - 2. Project title and number

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

3. Contractor's name and address
4. The number of each shop drawing, product datum and sample submitted
5. Notification of deviations from contract
6. Other pertinent data

E. Submittals shall include:

1. Date and revision dates
2. Project title and number
3. Names of:
 - a. Contractor
 - b. Subcontractor
 - c. Supplier
 - d. Manufacturer
 - e. Separate detailer when pertinent
4. Identification of product or material
5. Relation to adjacent structure or material
6. Field dimensions, clearly identified as such
7. Specification Section and page number
8. Applicable standards, such as ASTM number or federal specification
9. Identification of deviation(s) from Contract Documents
10. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of field measurements, and compliance with Contract.

1.12 RESUBMISSION REQUIREMENTS

A. Shop drawings:

Revise initial drawings as required and resubmit as specified for initial submittal. Indicate on drawings all changes which have been made other than those requested by Owner.

B. Product Data and Samples:

Submit new datum and samples as required for initial submittal.

C. Make all resubmittals within 10 business days after date on Owner's stamp.

1.13 DISTRIBUTION OF SUBMITTALS AFTER REVIEW

A. Distribute copies of shop drawings and project datum which carry Owner's stamp:

1. Contractor's file
2. Job site file
3. Record documents file
4. Subcontractors
5. Supplier
6. Fabricator

B. Distribute samples as directed.

1.14 OWNER'S ACTION

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Owner will review each submittal, mark to indicate action taken, and return promptly.
 - 1. Compliance with specified characteristics is the Contractor's responsibility.

- B. Action Stamp: The Owner will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
 - 1. Final Unrestricted Release: Where submittals are marked "Furnish as Submitted," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
 - 2. Final-But-Restricted Release: When submittals are marked "Furnish as Corrected," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
 - 3. Returned for Resubmittal: When submittal is marked "Revise and Resubmit", do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
 - 4. Returned, Improper Submittal: When submittal is marked "Rejected" do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication delivery or other activity. The submittal does not conform with project requirements. Prepare a new submittal without delay.
 - 5. Do not permit submittals marked "Rejected, Revise and Resubmit" to be used at the Project site, or elsewhere where Work is in progress.
 - 6. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action Not Required".

PART 2 – PRODUCTS

(NOT APPLICABLE)

PART 3 – EXECUTION

(NOT APPLICABLE)

END OF SECTION 01 30 00

SECTION 01 35 62

EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Erosion and Sedimentation Control Program for the Project.

1.2 SUBMITTALS

- A. Erosion and Sediment Control Plan

1. Submit erosion and sediment control drawings specific to the site within ten (10) days of Notice To Proceed (NTP). Show locations, types and details of erosion and sediment control features and construction.
2. Show the schedule of implementation coordinated with the construction schedule.
3. Include a narrative describing the program and maintenance.

- B. Product Data

1. Silt Fence Geotextile Filter Fabric
2. Filter Baskets

- C. Documentation Log

1. Provide weekly inspection logs of inspection and maintenance of all erosion control procedures.
 - a. Include additional inspections for rainfalls over ½".
2. Provide photographs during construction illustrating implementation of erosion control measures and on-going repairs/maintenance to these measures. At minimum photographs should be documented for:
 - a. Before Construction
 - b. During Construction
 - c. After Construction

1.3 QUALITY ASSURANCE

- A. Requirements: Create and implement an Erosion and Sedimentation Control plan, specific to the site, which conforms to the erosion and sedimentation requirements of the 2003 United States Environmental Protection Agency (EPA) Construction General Permit, OR local erosion and sedimentation control standards and codes, whichever is more stringent. The Construction General Permit outlines the provisions necessary to comply with Phase I and Phase II Of the National Pollution Discharge Elimination (NPDES) program.
- B. Objectives:

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUE FOR BID**

1. Prevent loss of soil during construction by storm water runoff and/or wind erosion, including protecting stock pits for reuse.
2. Prevent sedimentation of storm sewer or receiving streams.
3. Prevent polluting the air with dust and particulate matter.

PART 2 - PRODUCTS

2.1 Silt Fence:

- A. Geotextile Filter Fabric: A nonwoven fabric consisting of previous sheets of propylene, nylon, polyester, or ethylene yarn. Certify material by manufacturer to meet the following requirements. Pre-assembled silt fencing may be substituted if it meets the above requirements.

<u>Property</u>	<u>Test Method</u>	<u>Requirements</u>
Minimum Tensile Strength	ASTM D4632	90 lb
Maximum Elongation at 45 lb	ASTM D4632	50% Max
Apparent Opening Size	ASTM D4751	AOS<60 mm
Minimum Permittivity	ASTM D4491	$1 \times 10^{-2} \text{ SEC}^{-1}$
Ultraviolet Exposure Strength Retention	ASTM D4355	70% @ 500h

- B. Posts: Wood or steel and a minimum 5 ft long. Wood posts shall be at least 4 in. dia. Or nominal 2 x 2 in. Steel posts shall be round, or "U", "T", or "C" shaped with a minimum weight of 1.33 lb/ft and projections for fastening wire to fence. Wire Staples: 9 gage and minimum 1 in. long.

2.2 INLET FILTER

A. FILTER BASKETS

1. CATCH –ALL (or equal)
As manufactured by:
METRO DETROIT
Price and Company, Inc.
29165 Wall Street
Wixom, MI 48393-3525
Toll Free: 866.960.4300
Local T: 248.596.4300
F: 248.596.4301
E: geopro@priceandcompany.com

2.3 CONSTRUCTION ENTRANCE

- A. Aggregate size: CA-1 or CA-4

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUE FOR BID

- B. Geotextile fabric: shall meet the requirements of specification 592 Geotextile table 1 or 2, class I, II or IV of the Illinois Urban Manual.

2.4 TEMPORARY SEEDING PLANTS

- A. Shall be selected from the following:

TEMPORARY SEEDING SPECIES, RATES AND DATES

Species	Lbs/Acre	Lbs/1000 sf	Seeding dates
Oats	90	2	Early spring-July 1
Cereal Rye	90	2	Early spring-Sept. 30
Wheat	90	2	Early spring-Sept. 30
Perennial Ryegrass	25	0.6	Early spring-Sept. 30

PART 3 - EXECUTION

3.1 GENERAL

- A. Do not start operations until the erosion and sediment control plan has been submitted and features are in place.
- B. Comply with "Quality Assurance" provisions of these specifications and the erosion and sediment control plan.
- C. Schedule the Work in start to finish phases to minimize exposing the site to erosion.
- D. Install erosion and sediment control features before site disturbance begins and immediately after new inlets are installed.
- E. Do not allow storm water to flow into excavations and disturbed areas.
- F. Do not discharge water into sanitary sewers, watercourses or offsite.
- G. Do not discharge water-containing sediment in accordance with "Quality Assurance" requirements and as presented in the erosion and sediment control plan submittal or a maximum retained as 30 milligrams of sediment per liter of water. Conduct continuous monitoring of sediment.
- H. Maintain sediment control features. Inspect weekly and after every rain. Repair damaged bales, end runs and undercutting beneath bales. Repair breaks in diversion dams and damage down streams of the break. Replace damaged and deteriorated filter fabric and fences. Remove sediment which deposits fill 1/3 of the fabric surface area.
- I. Do not allow sediment to flow into vegetated areas.
- J. Retain all sediment on the site. Provide temporary stone roadways at exits from the site to ensure mud run-off of tires before exiting.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUE FOR BID

- K. Utilize the sizes of equipment appropriate to the task to minimize exhaust, noise and vibration.
- L. Mist or provide other means to keep dust from being scattered to the air.
- M. All sediment that gets onto public right-of-way must be removed immediately.
- N. During dewatering operations, water will be pumped into sediment basins or silt traps. Dewatering directly to field tiles or storm sewer is prohibited.
- O. Stockpile must be kept covered and watered for dust control.

INSTALLATION/APPLICATION/ERECTION

- P. General: Control surface water runoff on-site and provide temporary soil stabilization measures as required to prevent erosion of soil by action of water. Protect storm sewers adjacent to work site from sedimentation by installation of erosion and sediment control measures. Provide, as a first step in construction operations, barriers, and other measures intended to deter erosion and transport of sediment associated with construction activities before construction starts or as it progresses.
- Q. Silt Fences: Space posts 6 ft maximum for non-reinforced or 10 ft maximum for reinforced and securely install with at least 2 feet of post in the ground. Excavate trench approximately 4 in. wide and 4 in. deep along line of posts and upslope side of posts using wire staples, tie wires, or hog rings. Extend wire and fence into trench a minimum of 4 in. Attach geo-textile filter fabric directly to posts and wire reinforcement fence as required by wire, staples, or other means. Install filter fabric in a manner such that fabric height above grade is 2 to 3 ft. Do not staple fabric to trees. Do not use fabric with defects or other damage. For manholes, the filter fabric can be placed around the lid and secured by the lid weight.
- R. Construction Entrance: Construct with minimum dimensions of 14' wide, 70' length and 6" thickness of CA-1 or CA-4. Filter fabric shall be used under the aggregate to minimize the migration of stone into the underlying soil by heavy vehicle loads. See plans for location.
- S. Temporary Seeding: Remove large rocks or other debris that may interfere with seedbed preparation or seeding operations. Prepare seedbed of 3 to 4 inches loose soil. If rainfall has caused the surface to become sealed or crusted, loosen, by suitable method, it just prior to seeding. Where pH is below 5.5 and seeding will not take place within 30 days, apply one and one half to two tons per acre of finely ground agricultural limestone. Seeding shall be evenly applied with a cyclone seeder, drill, culti-packer seeder or hydroseeder. Small grains shall be planted no more than one inch deep. Grasses shall be planted no more than one half inch deep.

END OF SECTION

SECTION 01 40 00

QUALITY CONTROL SERVICES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for quality control services.
- B. Quality control services include inspections and tests and related actions including reports, performed by independent agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by the Owner.
- C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.
- D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
 - 1. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures.
 - 2. Inspections, test and related actions specified are not intended to limit the Contractor's quality control procedures that facilitate compliance with Contract Document requirements.
 - 3. Requirements for the Contractor to provide quality control services required by the Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.3 RESPONSIBILITIES

- A. The Contractor shall provide inspections, tests and similar quality control services, specified in individual Specification Sections and required by governing authorities, except where they are specifically indicated to be the Owner's responsibility, or are provided by another identified entity; these services include those specified to be performed by an independent agency and not by the Contractor. Costs for these services shall be included in the Contract Sum.
 - 1. The Owner will select and the Contractor shall employ and pay an independent agency, to perform specified quality control services.
 - a. Where the Owner has engaged a testing agency or other entity for testing and inspection of a part of the Work, and the Contractor is also required to engage an entity for the same or related element, the Contractor shall

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

not employ the entity engaged by the Owner, unless otherwise agreed in writing with the Owner.

2. Re-testing: The Contractor is responsible for re-testing where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance with Contract Document requirements, regardless of whether the original test was the Contractor's responsibility.
 - a. Cost of re-testing construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.
 3. Associated Services: The Contractor shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include but are not limited to:
 - a. Providing access to the Work and furnishing incidental labor and facilities necessary to facilitate inspections and tests.
 - b. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.
 - c. Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.
 - d. Providing the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
 - e. Security and protection of samples and test equipment at the Project site.
- B. Duties of the Testing Agency: The independent testing agency engaged to perform inspections, sampling and testing of materials and construction specified in individual Specification Sections shall cooperate with the Owner and Contractor in performance of its duties, and shall provide qualified personnel to perform required inspections and tests.
1. The agency shall notify the Owner and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.
 3. The agency shall not perform any duties of the Contractor.
- C. Coordination: The Contractor and each agency engaged to perform inspections, tests and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition the Contractor and each agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
1. The Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

1.4 SUBMITTALS

- A. The independent testing agency shall submit a certified written report of each inspection, test or similar service, to the Owner, in duplicate, and a copy to the Contractor.
1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

2. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to:
 - a. Date of issue.
 - b. Project title and number.
 - c. Name, address and telephone number of testing agency.
 - d. Dates and locations of samples and tests or inspections.
 - e. Names of individuals making the inspection or test.
 - f. Designation of the Work and test method.
 - g. Identification of product and Specification Section.
 - h. Complete inspection or test data.
 - i. Test results and an interpretations of test results.
 - j. Ambient conditions at the time of sample-taking and testing.
 - k. Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.
 - l. Name and signature of laboratory inspector.
 - m. Recommendations on re-testing.

1.5 QUALITY ASSURANCE

- A. Qualification for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.
 1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State of Illinois.
- B. Meet basic requirements of ASTM E329 Standard of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel Used in Construction."
- C. Submit copy of report of inspection of facilities made by Materials Reference Laboratory of National Bureau of Standards during most recent tour of inspection; with memorandum of remedies of all deficiencies reported by inspection.
- D. Testing Equipment:
 1. Calibrated at maximum 12-month intervals by devices of accuracy traceable to either:
 - a. National Bureau of Standards
 - b. Accepted values of natural physical constants.
 2. Submit copy of certificate of calibration, made by accredited calibration agency.

1.6 LABORATORY DUTIES: LIMITS OF AUTHORITY

- A. Cooperate with Owner and Contractor; provide qualified personnel promptly on notice.
- B. Perform specified inspections, sampling and testing of materials and construction methods.
 1. Comply with specified Standards: ASTM, other recognized authorities, and as specified.
 2. Ascertain compliance with Contract requirements.

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

- C. Promptly notify Owner and Contractor of irregularities or deficiencies of work which are observed during performance of services.

- D. Promptly submit 5 copies of reports of inspections and tests to Owner including:
 - 1. Date issued
 - 2. Project title and number
 - 3. Testing Laboratory name and address
 - 4. Name and signature of Inspector
 - 5. Date of inspection and sampling
 - 6. Record of temperature and weather
 - 7. Date of test
 - 8. Identification of product and Specification Section
 - 9. Location in project
 - 10. Type of inspection or test
 - 11. Observations regarding compliance with Contract Documents

- E. Perform additional services as required by Owner.

- F. Laboratory is not authorized to:
 - 1. Release, revoke, alter or enlarge on, Contract requirements.
 - 2. Approve or accept any portion of work.
 - 3. Perform any duties of the Contractor.

1.7 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with Laboratory personnel, provide access to work, to manufacturer's operations.

- B. Provide Laboratory, preliminary representative samples of materials for testing, in required quantities.

- C. Furnish copies of mill test reports.

- D. Furnish casual labor and facilities:
 - 1. To provide access to work to be tested.
 - 2. To obtain and handle samples at site.
 - 3. To facilitate inspections and tests.
 - 4. For Laboratory's exclusive use for storage and curing of test samples.

- E. Notify Laboratory sufficiently in advance of operations to allow for personnel assignment of test scheduling.

- F. Employ, and pay for, services of a separate, equally qualified, Independent Testing Laboratory to perform additional inspections, sampling and testing required.
 - 1. For Contractor's convenience.
 - 2. When initial tests indicate work does not comply with Contract.

PART 2 - PRODUCTS

(Not Applicable)

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes. Comply with Contract Document requirements for "Cutting and Patching."
- B. Protect construction exposed by or for quality control services, and protect repaired construction.
- C. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION 01 40 00

SECTION 01 50 00

TEMPORARY FACILITIES

PART 1 - GENERAL

1.1 SUMMARY

- A. This section specifies administrative and procedural requirements for temporary services and facilities, including utilities, construction and support facilities, and security and protection.
 - 1. Contractor shall be solely responsible for adequacy of temporary facilities, including design and engineering thereof.
- B. Construction and support facilities required include but are not limited to:
 - 1. Temporary roadway paving and/or steel plates.
 - 2. Field offices and/or storage sheds.
 - 3. Sanitary facilities, including toilets and drinking water.
 - 4. Dewatering facilities and drains.
 - 5. Temporary enclosures.
 - 6. Waste disposal services.
 - 7. Rodent and pest control.
 - 8. Construction aids and miscellaneous general services and facilities.
- C. Security and protection facilities and services required include but are not limited to:
 - 1. Barricades, warning signs and lights.
 - 2. Enclosure fences.
 - 3. Environmental protection.

1.2 RELATED WORK

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.3 QUALITY ASSURANCE

- A. Regulations: comply with local codes and ordinances of governing authorities having jurisdiction.
- B. Standards: contractor determines and complies with applicable standards for temporary and construction facilities.
- C. Inspections: arrange for authorities having jurisdiction to inspect and test each utility before use. Obtain required certification and permits.

1.4 PROJECT CONDITIONS

- A. Conditions of use: keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Do not overload temporary services or facilities, or permit them to interfere with construction progress. Do not allow hazardous, dangerous or unsanitary conditions or public nuisances to develop or persist on the site.

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

- B. Easements: obtain necessary easements for temporary facilities when required.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. General: provide new materials and equipment or undamaged previously used materials and equipment in serviceable condition. Provide materials and equipment suitable for the use intended.
- B. Water: provide potable water approved by local health authorities.
- C. First aid supplies: comply with governing regulations.
- D. Fire extinguishers: provide hand-carried, portable UL-rated, class "A" fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable UL-rated, class "ABC" dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.
 - 1. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.
- E. Work zone traffic control: comply with IDOT 701 and 702.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Locate facilities where they will best serve the Project and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY INSTALLATION

- A. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

3.3 TEMPORARY CONSTRUCTION AND SUPPORT FACILITY INSTALLATION

- A. Storage and fabrication sheds (optional): install storage and fabrication sheds, sized, furnished and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces on the site.
- B. Sanitary facilities: comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
 - 1. Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

2. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
- C. Temporary enclosures: provide temporary enclosure for protection of construction in progress and completed from exposure, foul weather, other construction operations and similar activities.
1. Where heat is needed, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and materials drying or curing requirements to avoid dangerous conditions and effects.
- D. Temporary signs: prepare and install signs to inform the public and persons seeking entrance to the Project. Support on the posts or framing of preservative treated wood or steel. Do not permit installation of unauthorized signs.
- E. Collection of disposal of waste: collect waste from project site daily. Comply with requirements of NFPA 241 for removal of combustible waste materials and debris. Enforce requirements strictly. Do not hold materials more than seven days during normal weather and three days when the temperature is expected to rise above 80 degrees Fahrenheit. Handle hazardous, dangerous or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.
- 3.4 SHORING, BRACING AND UNDERPINNING (as required)
- A. Provide shoring and bracing necessary to protect existing buildings, streets, walkways, utilities and other improvements and excavation against loss of ground or caving embankments. Maintain shoring and bracing. Remove temporary shoring and bracing when no longer required.
 - B. Whenever shoring is required, locate the system to clear permanent construction and to permit forming and finishing of concrete surfaces. Provide shoring system, adequately anchored and braced to resist earth and hydrostatic pressures.
 - C. Shoring systems retaining earth on which the support or stability of existing structure is dependent must be left in place at completion of work.
 - D. Maintain bracing until structural elements are rebraced by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.
 - E. Remove sheeting, shoring and bracing in stages to avoid disturbance to underlying soils and damage to structures, pavements, facilities and utilities.
 - F. Repair or replace as acceptable by Owner, adjacent work damaged or displaced through the installation or removal of shoring and bracing work.
- 3.5 SECURITY AND PROTECTION FACILITIES
- A. Barricades, warning signs and lights: Comply with IDOT 701,702 and local code requirements. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
 - B. Environmental protection: provide environmental protection as outlined in Section 01 56 00 – TEMPORARY ENVIRONMENTAL CONTROLS.
 - C. Site security to be provided by the Contractor as required.

JAMES PARK ATHLETIC LIGHTING

CITY OF EVANSTON

ISSUED FOR BID

3.6 OPERATION, TERMINATION AND REMOVAL

- A. Supervision: enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: maintain facilities in good operating condition until removal.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation and similar facilities on a 24-hour a day basis where required to achieve indicated results and to avoid the possibility of damage.
- C. Termination and removal: remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.
- D. Materials and facilities that constitute temporary facilities are the property of the Contractor.

END OF SECTION 01 50 00

SECTION 01 56 00

TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

1.1 WORK INCLUDES

A. Contractors shall:

1. Provide controls over environmental conditions at the construction site and related areas under the Contractor's control.
2. Remove physical evidence of temporary controls at completion of work or as directed.

1.2 RELATED WORK

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.3 QUALITY CONTROL

- A. Illinois Procedures and Standards for Urban Soil Erosion and Sedimentation Control - "Green Book"

1.4 DUST CONTROL

- A. Provide dust control materials to minimize dust from construction operations. Prevent air-borne dust from dispersing into the atmosphere.
- B. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:
1. Locations of dust-control partitions at each phase of work.
 2. HVAC system isolation schematic drawing.
 3. Location of proposed air-filtration system discharge.
 4. Waste-handling procedures.
 5. Other dust-control measures.

1.5 WATER CONTROL

- A. Control surface water to prevent damage to the project, the site or adjoining properties.
1. Control fill, grading and ditching to direct surface drainage away from excavations, pits, tunnels, and other construction areas; direct drainage to proper runoff.
- B. Provide, operate and maintain hydraulic equipment of adequate capacity to control surface water.
- C. Dispose of drainage water in a manner to prevent flooding, erosion sitting or runoff of silt or sediment or other damage to all portions of the site or to adjoining areas.

JAMES PARK ATHLETIC LIGHTING

CITY OF EVANSTON

ISSUED FOR BID

1.6 RODENT CONTROL

- A. Provide rodent control to prevent infestation of construction or storage areas.
 - 1. Use methods and materials, which will not adversely affect conditions at the site or on adjoining properties.
 - 2. Maintain site in clean condition.
 - a. Dispose of garbage and debris.
 - b. Do not keep items on site which attract rodents.
 - 3. When the use of rodenticides is deemed necessary, submit a copy of proposed program to the Owner. Clearly indicate:
 - a. Areas to be treated.
 - b. Rodenticides to be used, with copy of manufacturer's current printed instructions.
 - c. Pollution preventative measures to be employed.
 - d. Illinois licensed pesticides applicator.

1.7 DEBRIS CONTROL

- A. Maintain all areas under Contractor's control free of extraneous debris.
- B. Initiate and maintain a specific program to prevent accumulation of debris at construction site, storage and parking areas or along access roads and haul routes.
 - 1. Provide containers specified in SECTION 01 71 00 - CLEANING for deposit of debris.
 - 2. Prohibit overloading of trucks to prevent spillages on access and haul routes.
 - a. Provide daily inspection of traffic areas to enforce requirements.
- C. Schedule collection and disposal of debris is specified in SECTION 01 71 00 - CLEANING.
 - 1. Provide additional collections and disposals of debris whenever regular schedule is inadequate to prevent accumulation.

1.8 POLLUTION CONTROL

- A. Prevent contamination of soil, water or atmosphere by the discharge of noxious substances from construction operations.
- B. Provide equipment and personnel, perform emergency measures to contain all spillages, and to remove contaminated soils or liquids. Excavate and dispose of all contaminated earth off-site. Replace with suitable compacted fill and topsoil.
- C. Take special measures to prevent harmful substances from entering public waters or spilling onto the ground. Prevent disposal of wastes, effluents, chemicals or other such substances adjacent to streams, or in sanitary or storm sewers, including waste from portable toilets.
- D. Provide systems for control of atmospheric pollutants.
 - 1. Prevent toxic concentrations of chemicals.
 - 2. Prevent harmful dispersal of pollutants into the atmosphere.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID
1.9 EROSION CONTROL

- A. Plan and execute construction and earthwork in a manner to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation.
 - 1. Minimize the areas of bare soil exposed at one time.
 - 2. Provide temporary control measures such as berms, dikes and drains.
 - 3. Provide temporary control measures to prevent silting or runoff of silt or sediment from site.
- B. Construct fills and waste areas by selective placement to eliminate surface silts or clays which will erode.
- C. Periodically inspect earthwork to detect evidence of the start of erosion. Apply corrective measures to control erosion.

PART 2 - PRODUCTS

(NOT APPLICABLE)

PART 3 - EXECUTION

(NOT APPLICABLE)

END OF SECTION 01 56 00

SECTION 01 60 00

MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
- B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section 01 30 00 - SUBMITTALS.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.3 DEFINITIONS

- A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms such are self-explanatory and have well recognized meanings in the construction industry.
 - 1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 2. "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.

1.4 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
 - 1. When specified products are available only from sources that do not or cannot produce a quantity adequate to complete project requirements in a timely manner, consult with the Owner for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources that produce products that possess these qualities, to the fullest extent possible.
- B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
 - 1. The Contractor is responsible for providing products and construction methods that are compatible with products and construction methods of subcontractors.
 - 2. If a dispute arises between the general Contractor and subcontractors over concurrently selectable, but incompatible products, the Owner will determine

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

which products shall be retained and which are incompatible and must be replaced.

- C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view.
 - 1. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface that is not conspicuous.
- D. Manufacturer's Instructions
 - 1. When contract documents specify that installation shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to all parties involved in the installation, including the Owner.
 - 2. Maintain one set of complete instructions with the Project Record Documents at the job site during installation and until completion.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
 - 1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, or theft.
 - 3. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 - 4. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.
 - 5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 - 6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
 - 7. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.
- B. Arrange for transportation and deliveries of materials and equipment in accord with approved current construction schedules and in ample time to facilitate inspection prior to installation.
- C. Coordinate deliveries to avoid conflict with work and conditions at site:
 - 1. Work of other contractors or Owner, or their use of premises.
 - 2. Limitations of storage space.
 - 3. Availability of equipment and personnel for handling products.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Comply with size, make, type and quality specified.
 4. Manufactured and fabricated products:
 - a. Design, fabricate and assemble in accord with best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standard interchangeable sizes.
 - c. Two or more items of the same kind shall be identical from the same manufacturer.
 - d. All system parts shall be from the same manufacturer to the greatest extent practical.
 - e. Adhere to equipment capacities, sizes and dimensions shown or specified unless variations are specifically approved by Change Order.
- B. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:
1. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. No substitutions will be permitted.
 2. Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.
 - a. Where products or manufacturers are specified by name, accompanied by the term "or equal," or "or approved equal" comply with the Contract's provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 3. Non-Proprietary Specifications: When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 4. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
 5. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
 - a. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

6. Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.
 7. Visual Matching: Where Specifications require matching an established Sample, the Owner's decision will be final on whether a proposed product matches satisfactorily.
 - a. Where no product available within the specified category matches satisfactorily and also complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category, or for noncompliance with specified requirements.
 8. Visual Selection: Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Owner will select the color, pattern and texture from the product line selected.
- C. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible.
- D. Clearly mark partial deliveries of component parts or assemblies or equipment to permit easy identification of parts and to facilitate assembly.
- E. Immediately on delivery, inspect shipment to assure:
1. Product complies with contract documents and Owner
 2. Quantities are correct.
 3. Containers and packages are intact and labels are legible.
 4. Products are properly protected and undamaged.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS:

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
 1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- B. Provide equipment and personnel to handle products and equipment, including those furnished by the Owner. Prevent damage to products or packaging.
- C. Provide additional protection during handling to prevent scraping, marring or otherwise damaging products, equipment or surrounding surfaces.
- D. Handle products and equipment in manner to prevent bending or overstressing.
- E. Lift packages, equipment or components only at designated lift points.

END OF SECTION 01 60 00

SECTION 01 63 00

SUBSTITUTIONS AND PRODUCT OPTIONS

PART 1 - GENERAL

1.1 WORK INCLUDES

- A. Base all bids on providing all products exactly as specified.
- B. For products specified only by reference or performance standards, select any product which meets or exceeds standards, by any manufacturer, subject to the Owner's approval.
- C. For products specified by naming several products or manufacturers, select any product and manufacturer named.

1.2 RELATED WORK

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions, Special Provisions and all other Divisions of the Project Manual, apply to this Section.

1.3 SUBSTITUTIONS, BIDDER/CONTRACTOR OPTIONS

- A. Prior to Bid Opening: The Owner will consider written requests to amend the bidding documents to add products not specified provided such requests are received at least 10 calendar days prior to bid opening date. Requests received after that time will not be considered. When a request is approved, the Owner will issue an appropriate addendum not less than three (3) calendar days prior to bid opening date.
- B. With Bid: A bidder may propose substitutions with his bid by completing the Product Substitution List in the Bid Form, subject to the provisions stated thereon. The Owner will review Proposed Product Substitution List of low bidder and recommend approval or rejection by the Owner prior to award of contract.
- C. After Award of Contract: No substitutions will be considered after Notice of Award except under one or more of the following conditions:
 - 1. Substitution required for compliance with final interpretations of code requirement or insurance regulations.
 - 2. Unavailability of specified products, through no fault of the Contractor.
 - 3. Subsequent information discloses inability of specified product to perform properly or to fit in designated space.
 - 4. Manufacturer/fabricator refusal to certify or guarantee performance of specified product as specified.
 - 5. When a substitution would be substantially to Owner's best interest.

1.4 SUBSTITUTION REQUIREMENTS

- A. Submit three (3) copies of each request for substitution. Include in request:
 - 1. Complete data substantiating compliance of proposed substitution with contract documents.
 - 2. For products:

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

- a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's literature:
 - 1) Product description
 - 2) Performance and test data
 - 3) Reference standards
 - c. Samples
 - d. Name and address of similar projects on which product was used and dates of installation.
3. For construction methods:
- a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
4. Itemized comparison of proposed substitution with product or method specified.
5. Data relating to changes in construction schedule.
6. Identify:
- a. Changes or coordination required.
 - b. Other contracts affected.
7. Accurate cost data on proposed substitution in comparison with product or method specified.
- B. In making request for substitution, bidder/contractor represents:
1. He has personally investigated proposed product or method and determined that it is equal or superior in all respects to that specified.
 2. He will provide the same guarantee for substitution as for product or method specified.
 3. He will coordinate installation of accepted substitutions into the work, making all changes for work to be complete in all respects.
 4. Cost data is complete and includes all related costs under his contract, but excludes:
 - a. Owner's redesign.
 - b. Administrative costs of Owner.
 - c. Costs under separate contracts.
 5. He will pay all additional costs and expenses for Owner and other contractors.
- C. Substitutions will not be considered when:
1. They are indicated or implied on shop drawings or product data submittals without formal request submitted in accordance with this Section.
 2. Acceptance will require substantial revision of contract documents.

PART 2 – PRODUCTS

(NOT APPLICABLE)

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

PART 3 – EXECUTION

(NOT APPLICABLE)

END OF SECTION 01 63 00

SECTION 01 70 00

PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 WORK INCLUDES

- A. Substantial completion, final completion, closeout submittals, and application for final payment.
- B. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
 - 1. Inspection procedures.
 - 2. Project record document submittal.
 - 3. Operating and maintenance manual submittal.
 - 4. Submittal of warranties.
 - 5. Final cleaning.
 - 6. Final payment.

1.2 RELATED WORK

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.3 SUBSTANTIAL COMPLETION

- A. When the Contractor considers the work substantially complete, Contractor shall submit written declaration to the Owner that the work, or designated portion thereof, is substantially complete. Include list of items to be completed or corrected.
- B. Owner and Contractor will make an inspection within seven days after receipt of certification.
- C. Should the Owner consider that the work is substantially complete:
 - 1. The Owner will prepare and issue a Certificate of Substantial Completion, containing:
 - a. Date of Substantial Completion.
 - b. Punch list of items to be completed or corrected.
 - c. The time within which Contractor shall complete or correct work of listed items. All punch list items must be completed within 30 days of substantial completion.
 - d. Date and time Owner will assume possession of work or designated portion thereof.
 - e. Responsibilities of Owner and Contractor for:
 - (1.) Insurance
 - (2.) Utilities
 - (3.) Operation of mechanical, electrical and other systems.
 - (4.) Maintenance and cleaning.
 - (5.) Security

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

f. Signatures of Owner and Contractor

D. Should the Owner consider that work is not substantially completed:

1. The Owner shall immediately notify Contractor, in writing, stating reasons.
2. The Contractor shall complete work and send a second written notice to Owner, certifying that project, or designated portion of project, is substantially complete.
3. The Owner will re-inspect work.

1.4 FINAL INSPECTION

A. When the Contractor considers the work complete, the Contractor shall submit written declaration to the Owner that the work is complete. Contractor shall submit written certification that:

1. Contract documents have been reviewed.
2. Project has been inspected for compliance with contract.
3. Work has been completed in accord with contract.
4. Equipment and systems have been tested in the Owner's presence and are operational.
5. Project is completed, ready for final inspection.

B. The Owner will make final inspection within seven days after receipt of certification.

C. Should the Owner consider that work is finally complete in accord with Contract Document requirements, he shall request contractor to make project closeout submittals.

D. Should the Owner consider that work is not finally complete:

1. The Owner shall notify the Contractor, in writing, stating reasons.
2. The Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to the Owner certifying that the work is complete.
3. The Owner will re-inspect work.

1.6 CLOSEOUT SUBMITTALS

A. Project Record Documents: In accordance with requirements of SECTION 01 72 00 - PROJECT RECORD DOCUMENTS.

B. Deliver evidence of compliance with requirements of governing authorities.

C. Deliver Certificate of Insurance for products and completed operations. Certificate shall include a evidence 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 notice has been given to the Contractor. Contractor shall include a written statement that Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents.

D. Evidence of payments, release of liens

1. Consent of Surety to Final Payment.
2. Other data establishing payment or satisfaction of obligations including receipts, Contractor's releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and form as required by the City.
3. Separate releases of waivers of liens for subcontractors, suppliers and others with lien rights against property of Owner together with list of those parties.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

4. Paid utility bills, if any.
5. An affidavit that payrolls, bills for materials and equipment and other indebtedness connected to the work for which the City or the City's property might be responsible or encumbered (less any amounts withheld by City) have been paid or otherwise satisfied.

1.7 INSTRUCTION

- A. Instruct Owner's personnel in operation of all systems, mechanical, electrical and other equipment.

1.8 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit final statement of accounting to Owner.
- B. Statement shall reflect all adjustments.
 1. Original contract sum.
 2. Additions and deductions resulting from:
 - a. Previous change orders.
 - b. Cash allowances.
 - c. Unit prices.
 - d. Other adjustments.
 - e. Deductions for uncorrected work.
 - f. Deductions for re-inspection payments.
 3. Total contract sum, as adjusted.
 4. Previous payments.
 5. Sum remaining due.
- C. The Owner will prepare final change order, reflecting approved adjustments to contract sum not previously made by change orders.

1.9 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit final application in accord with requirements of Conditions of Contract.

1.10 FINAL CERTIFICATE FOR PAYMENT

- A. The Owner will issue final certificate in accord with provisions of Conditions of contract.
- B. Should final completion be materially delayed through no fault of the Contractor, the Owner may issue a Semi-Final Certificate of Payment, in accord with provisions of Conditions of Contract.

PART 2 – PRODUCTS

(NOT APPLICABLE)

PART 3 – EXECUTION

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

(NOT APPLICABLE)

END OF SECTION 01 70 00

SECTION 01 71 00

CLEANING

PART 1 - GENERAL

1.1 WORK INCLUDES

- A. Contractor shall maintain premises and public properties free from accumulations of waste, debris, and rubbish, caused by construction operations.
- B. At completion of work, Contractor shall remove waste materials, rubbish, tools, equipment, machinery and surplus materials, clean all sight-exposed surfaces and leave project clean and ready for occupancy.

1.2 RELATED WORK

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.3 SAFETY REQUIREMENTS

- A. Standards: Maintain project in accord with following safety and insurance standards.
 - 1. Occupational Safety and Health Administration (OSHA).
- B. Hazards Control:
 - 1. Store volatile wastes in covered metal containers and remove from premises daily.
 - 2. Prevent accumulation of wastes which create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.
- C. Conduct cleaning and disposal operations to comply with Federal, State and local ordinances and anti-pollution laws.
 - 1. Do not burn or bury debris, rubbish or other waste materials on project site.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.
 - 3. Do not dispose of wastes into streams or waterways.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Select and use all cleaning materials and equipment with care to avoid scratching, marring, defacing, staining or discoloring surfaces cleaned.
- B. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

3.1 DURING CONSTRUCTION

- A. Execute cleaning to ensure that grounds and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down materials and rubbish to lay dust and to prevent blowing dust.
- C. At reasonable intervals during progress of work, clean site and public properties, and dispose of waste materials, debris and rubbish.
- D. Provide on-site metal containers for collection of waste materials, debris and rubbish.
- E. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.
- F. Handle waste materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- G. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

3.2 FINAL CLEANING

- A. General: Provide final cleaning operations when indicated. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of Work to the condition expected from a commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
- B. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
- C. Clean the Project site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste materials, litter and foreign substances. Sweep paved areas broom clean. Remove petro-chemical spills, stains and other foreign deposits. Rake grounds that are neither planted nor paved, to a smooth even-textured surface.
 - 1. Remove tools, construction equipment, machinery and surplus material from the site.
 - 2. Clean exposed exterior hard-surfaced finishes to a dirt-free condition, free of stains, films and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - 3. Remove debris and surface dust from limited access spaces.
 - 4. Remove labels that are not permanent labels.
 - 5. Touch-up and otherwise repair and restore marred exposed finishes and surfaces. Replace finishes and surfaces that can not be satisfactorily repaired or restored, or that show evidence of repair or restoration. Do not paint over "UL" and similar labels, including mechanical and electrical name plates.
 - 6. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - 7. Leave the Project clean and ready for occupancy.
- E. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
- F. Broom clean paved surfaces; rake clean other surfaces on grounds.

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

- G. Maintain cleaning until project, or designated portion thereof, is occupied by Owner.

END OF SECTION 01 71 00

SECTION 01 72 00

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 WORK INCLUDES

- A. Maintenance of Documents
- B. Contractor shall:
 - 1. At project site, maintain one (1) copy of:
 - (a.) Contract drawings.
 - (b.) Project Manual.
 - (c.) Interpretations and supplemental instructions.
 - (d.) Addenda.
 - (e.) Reviewed, approved shop drawings and product data.
 - (f.) Other modifications to contract.
 - (g.) Field test records.
 - (h.) All schedules.
 - (i.) Correspondence file.
 - (j.) Change Orders
 - 2. Provide files and racks for document storage.
 - 3. File documents in format in accord with Project Manual Table of Contents.
 - 4. Maintain documents in clean, dry, legible condition.
 - 5. Do not use record documents for field construction purposes.
 - 6. Make documents available at all times for inspection by Owner.
 - 7. Furnish one (1) additional as-built record set of contract documents at the completion of the project. This set is not to be the set kept and updated periodically at the job site, but a clean set free of extraneous markings, notations, and erasures showing on a record of final conditions. Provide as-built record set in both PDF and AutoCAD formats.

1.2 RELATED REQUIREMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.3 MARKING DEVICES

- A. Provide ballpoint pens, red color.

1.4 RECORDING

- A. Label each document "PROJECT RECORD DOCUMENTS" in 2" high printed letters.
- B. Keep record documents current, updated not less often than monthly.
- C. Do not permanently conceal any work until specified information has been recorded.
- D. Contract drawings: Legibly mark to record actual construction:

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

1. Depths of various elements of foundation in relation to adjacent ground elevations.
 2. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 3. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 4. Field changes of dimension and detail.
 5. Changes made by change order.
 6. Details not on original contract drawings.
- E. Specifications and addenda: Legibly mark-up each section to record:
1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
 2. Changes made by change order or field order.
 3. Other matters not originally specified.
- F. Shop drawings: Maintain as record documents; legibly annotate drawings to record changes made after review.

1.5 SUBMITTAL

- A. At completion of project, deliver record documents to Owner.
- B. Accompany submittal with transmittal letter, in duplicate, containing:
1. Date.
 2. Project title and number.
 3. Contractor's name and address.
 4. Title and number of each record document.
 5. Certification that each document submitted is complete and accurate.
 6. Signature of contractor, or his authorized representative.

PART 2 - PRODUCTS

(NOT APPLICABLE)

PART 3 - EXECUTION

(NOT APPLICABLE)

END OF SECTION 01 72 00

SECTION 01 73 00

OPERATING AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 WORK INCLUDES

A. Contractor shall:

1. Compile product data and related information appropriate for Owner's maintenance and operation of products and equipment provided under the Contract.
2. Instruct Owner's personnel in operation and maintenance of products, equipment and systems.

1.2 RELATED REQUIREMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.**

1.3 QUALITY ASSURANCE

- A. Maintenance Manual Preparation:** In preparation of Maintenance Manuals, use personnel thoroughly trained and experienced in operation and maintenance of the equipment or system involved.

1. Where written instructions are required, use personnel skilled in technical writing to the extent necessary for communication of essential data.
2. Where Drawings or diagrams are required, use draftsmen capable of preparing Drawings clearly in an understandable format.

- B. Instructions for the Owner's Personnel:** For instruction of the Owner's operating and maintenance personnel, use experienced instructors thoroughly trained and experienced in the operation and maintenance of the equipment or system involved.

1.4 SUBMITTALS

- A. Form:** Manufacturer's standard product or equipment data of same type and form furnished to manufacturer's maintenance personnel.

- B. Provide sturdy manila or kraft envelope, properly labelled, of sufficient size to contain all submittals.**

- C. Submit one copy of data in final form at least fifteen days before final inspection. This copy will be returned within fifteen days after final inspection, with comments.**

1. After final inspection make corrections or modifications to comply with the Owner's comments. Submit the specified number of copies of each approved manual to the Owner within fifteen days of receipt of the Owner's comments.

- D. Form of Submittal:** Prepare operating and maintenance manuals in the form of an instructional manual for use by the Owner's operating personnel. Organize into suitable

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

sets of manageable size. Where possible, assemble instructions for similar equipment into a single binder.

- E. Binders: For each manual, provide heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, in thickness necessary to accommodate contents, sized to receive 8-1/2" by 11" paper. Provide a clear plastic sleeve on the spine, to hold labels describing the contents. Provide pockets in the covers to receive folded sheets.
- F. Text Material: Where written material is required as part of the manual use the manufacturer's standard printed material, or if it is not available, specially prepared data, neatly typewritten, on 8-1/2" by 11", 20 pound white bond paper.
- G. Drawings: Where drawings or diagrams are required as part of the manual, provide reinforced punched binder tabs on the drawings and bind in with the text.

1.5 MANUAL CONTENT

- A. Neatly typewritten table of contents for each volume, arranged in systematic order. Follow Project Manual format.
- B. In each manual include information specified in the individual Specification Section, and the following information for each major component of equipment and its controls:
 - 1. General system or equipment description.
 - 2. Design factors and assumptions.
 - 3. Copies of applicable Shop Drawings and Product Data.
 - 4. System or equipment identification, including:
 - a. Name of manufacturer.
 - b. Model number.
 - c. Serial number of each component.
 - 5. Operating instructions.
 - 6. Emergency instructions.
 - 7. Wiring diagrams.
 - 8. Inspection and test procedures.
 - 9. Maintenance procedures and schedules.
 - 10. Precautions against improper use and maintenance.
 - 11. Copies of warranties.
 - 12. Repair instructions including spare parts listing.
 - 13. Sources of required maintenance materials and related services.
 - 14. Manual Index.
 - 15. Contractor, name of responsible principal, address and telephone number
 - 16. List with each product, the name, address and telephone number of:
 - a. Subcontractor
 - b. Maintenance contractor, as appropriate.
 - c. Identify area of responsibility of each
 - d. Local supply source for parts and replacement.
- C. Organize each manual into separate Sections for each piece of related equipment. As a minimum each manual shall contain a title page, a table of contents, copies of Product Data, supplemented by drawings and written text, and copies of each warranty, bond and service Contract issued.
- D. General Information: Provide a general information Section immediately following the Table of Contents, listing each product included in the manual, identified by product

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

name. Under each product, list the name, address, and telephone number of the Subcontractor or installer, and the maintenance contractor. Clearly delineate the extent of responsibility of each of these entities. In addition, list a local source for replacement parts and equipment.

- E. Product Data: Where manufacturer's standard printed data is included in the manuals, include only sheets that are pertinent to the part or product installed. Mark each sheet to identify each part or product included in the installation. Where more than one item in a tabular format is included, identify each item, using appropriate references from the Contract Documents. Identify data that is applicable to the installation and delete references to information that is not applicable.
- F. Written Text: Where manufacturer's standard printed data is not available, and information is necessary for proper operation and maintenance of equipment or systems, or it is necessary to provide additional information to supplement data included in the manual, prepare written text to provide necessary information. Organize the text in a consistent format under separate headings for different procedures. Where necessary, provide a logical sequence of instruction for each operating or maintenance procedure.
- G. Drawings: Provide specially prepared drawings where necessary to supplement manufacturer's printed data to illustrate the relationship of component parts of equipment or systems, or to provide control or flow diagrams. Coordinate these drawings with information contained in Project Record Drawings to assure correct illustration of the completed installation.
- H. Do not use original Project Record Documents as part of the Operating and Maintenance Manuals.
- I. Warranties, Bonds and Service Contracts: Provide a copy of each warranty, bond or service contract in the appropriate manual for the information of the Owner's operating personnel. Provide written data outlining procedures to be followed in the event of product failure. List circumstances and conditions that would affect validity of the warranty or bond.
 - 1. Contractor, name of responsible principal, address and telephone number.
 - 2. List of each product specified to be included, indexed to volume content.
 - 3. List with each product, the name, address and telephone number of:
 - a. Subcontractor.
 - b. Maintenance contractor, as appropriate.
 - c. Identify area of responsibility of each.
 - d. Local supply source for parts and replacement.
- J. Product Data:
 - 1. Include only sheets pertinent to specific product.
 - 2. Annotate each sheet to:
 - a. Clearly identify specific product or part installed.
 - b. Clearly identify data applicable to installation.
 - c. Delete references to inapplicable installation.
- K. Drawings:
 - 1. Supplement product data with drawings to clearly illustrate relationship of component parts of equipment and systems and control and flow diagrams.

JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID

2. Coordinate drawings with information in Product Record Documents to assure correct illustration of completed installation.
 3. Do not use Project Record Documents as maintenance drawings.
- L. Written text to supplement product data for particular installation:
1. Organize in consistent format under separate headings for different procedures.
 2. Provide logical sequence of instructions for each procedure.
- M. Copy of each warranty, bond and service contract issued.
1. Provide information sheet for Owner personnel. Give:
 - a. Proper procedures in event of failure.
 - b. Instances which might affect validity of warranties or bonds.

1.6 MANUAL FOR MATERIALS AND FINISHES

- A. Submit two (2) copies of complete manual in final form.
- B. Refer to individual Specification Sections for additional requirements on care and maintenance of materials and finishes.
- C. Content for products, applied materials and finishes:
1. Manufacturer's data, giving full information on products.
 - a. Catalog number, size, composition.
 - b. Color and texture designations.
 - c. Information for re-ordering special-manufactured products.
 2. Instructions for care and maintenance.
 - a. Manufacturer's recommendations for types of cleaning agents and methods.
 - b. Cautions against cleaning agents and methods detrimental to product.
 - c. Recommended cleaning and maintenance schedule.
- D. Moisture-Protection and Weather-Exposed Products: Provide complete manufacturer's data with instructions on inspection, maintenance and repair of products exposed to the weather or designed for moisture-protection purposes.
- E. Manufacturer's Data: Provide manufacturer's data giving detailed information, including the following, as applicable:
1. Applicable standards.
 2. Chemical composition.
 3. Installation details.
 4. Inspection procedures.
 5. Maintenance information.
 6. Repair procedures.

PART 2 - PRODUCTS

(NOT APPLICABLE)

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

PART 3 - EXECUTION

(NOT APPLICABLE)

END OF SECTION 01 73 00

SECTION 01 74 00

WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.
 - 1. Warranties for the Work and products and installations of each Contractor shall be one (1) year unless specified otherwise on the Drawings or in the individual Sections of Divisions 2 through 16.
- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and Contractors required to countersign special warranties with the Contractor.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

1.3 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requires of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights or remedies.
 - 1. Rejection of Warranties: The Owner reserves the rights to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- E. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the

**JAMES PARK ATHLETIC LIGHTING
CITY OF EVANSTON
ISSUED FOR BID**

Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

- F. For specific warranty requirements related to landscape materials, refer to the applicable Section.

1.4 SUBMITTALS

- A. Submit written warranties to the Owner prior to the date certified for Substantial Completion. If the Owner's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Owner.
 - 1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Owner within fifteen days of completion of that designated portion of the Work.
- B. Form of Submittal: At Final Completion, compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, Subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
- C. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.
 - 1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the installer.
 - 2. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS", the project title or name, and the name of the Contractor.
 - 3. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS

(NOT APPLICABLE)

PART 3 - EXECUTION

(NOT APPLICABLE)

END OF SECTION 01 74 00

**SECTION 02 06 40
CONTAMINATED SOIL REMOVAL AND DISPOSAL**

PART 1 - GENERAL

1.01 SUMMARY

- A. Related Documents: all terms and conditions of the Contract apply to this section.
- B. Work included: this specification is for the permitting, excavation, loading, hauling and manifesting of any contaminated soil present on site. The Contractor shall perform the work under this section in accordance with all local, county, City of Evanston, IEPA, USEPA, OSFM and OSHA regulations and shall perform the following:
 - 1. Obtain a waste stream authorization for the special waste disposal at an approved landfill and/or treatment facility.
 - 2. Prepare manifest forms prior to starting any excavation activities.
 - 3. Excavate special waste to the extent outlined in the specifications and contract documents.
 - 4. Stockpile contaminated soil on site prior to disposal as required by applicable regulations.
 - 5. Load contaminated soil into licensed special waste trucks and dispose of at the approved landfill/treatment facility.
 - 6. Perform ambient air monitoring for the above activities as required by applicable regulations.
- C. All existing soils on site shall be classified as special non-hazardous waste. Contractors shall include pricing for any and all soils that must be removed from the site during the course of construction in accordance with this specification, IDOT Standard Specification Section 669 and applicable law.

1.02 DEFINITIONS

- A. IDOT: Illinois Department of Transportation
- B. IEPA: Illinois Environmental Protection Agency
- C. Hazardous Waste: means any waste that poses a substantial danger immediately or over a period of time to humans, plants or animals. A waste is classified as hazardous if it exhibits any of the following characteristics: 1) ignitability, 2) corrosivity, 3) reactivity, or 4) toxicity and as defined in Section 721.103 of Title 35 of the Illinois Administrative Code.
- D. Manifest: means the form provided or prescribed by the IEPA and used for identifying name, quality, routing and destination of special waste during its transportation from point of generation to the point of disposal, treatment or storage.
- E. MSDS: means Material Safety Data Sheet, required by OSHA for any substances which are toxic, caustic or otherwise hazardous to workers.
- F. Remediation Area: means any area on site where contaminated soil is present.
- G. Special Waste: means any industrial process waste or pollution control waste, except as may be determined pursuant to Section 22.9 of the Illinois Environmental Protection Act.

1.03 SUBMITTALS

- A. The Contractor shall provide the Owner with copies of the following submittals:
 - 1. Contractor's Site Health and Safety Plan, IDOT Section 669
 - 2. Contractor's Site Contamination Operation Plan, IDOT Section 669
 - 3. Contractor's Erosion Control Plan, IDOT Section 669
 - 4. Proof of OSHA training in compliance with the Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120) for applicable workers.
 - 5. Operating licenses and permits for each proposed transporter. Details of haul routes from site to the disposal facilities.
 - 6. Copies of all daily reports, State certified transport manifests and weight tickets must be submitted to the Owner with ten (10) working days of off-site disposal.
 - 7. Air sampling data collected during the course of the Work, including OSHA compliance monitoring.
- B. Submittal Review: review of submittals or any comments made do not relieve the Contractor from compliance with the requirements of the drawings and specifications. The purpose of this check is to review for general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor is responsible for confirming

and correlating all quantities and dimensions, electing techniques of construction, coordinating the Work and performing the Work in a safe and satisfactory manner.

1.04 NOTIFICATIONS

A. The Contractor shall notify the Owner no less than forty-eight (48) business hours prior to excavating, loading and transporting contaminated soils.

1.05 RECORD KEEPING

A. The Contractor shall provide the Owner with documentation of labor, equipment, materials and laboratory analysis used for the removal and disposal of contaminated soils.

PART 2 - PRODUCTS

2.01 REMOVAL AND DISPOSAL OF CONTAMINATED SOILS

A. The Contractor shall furnish all necessary means, products, tools and equipment required to fulfill the scope of work described in the Specifications and Drawings for this Project.

PART 3 - EXECUTION

3.01 PERMITTING

A. The Contractor shall obtain a waste stream authorization from a licensed landfill/disposal facility. Contractor shall submit copies of the landfill/treatment facility waste stream authorization form to the Owner for review and approval and securing Owner signature.

B. Haulers for transportation of non-hazardous special waste shall hold a current valid hauling permit pursuant to Title 35 of the Illinois Administrative Code (IAC) Parts 723 and 809, respectively.

3.02 MATERIAL SAMPLING AND MONITORING

A. The Contractor shall collect sufficient amounts of representative soil from the Remediation Area for analysis by an independent laboratory to obtain a waste stream authorization from the landfill/treatment facility. The Contractor is responsible for acquisition of the required disposal permits and payment of all landfill fees.

B. The Contractor shall submit the soil samples to the laboratory and pay for the cost of analyzing the constituents required by the disposal facility.

C. The Contractor shall immediately notify the Owner if contaminated materials are encountered on-site.

D. The Contractor shall perform and pay for ambient air monitoring as required by IDOT and to evaluate the appropriate level of worker personal protective equipment. Air monitoring shall be performed as often as required to ensure the safety of both workers and the public.

E. All material sampling and monitoring activities shall be performed by an environmental engineer licensed in the State of Illinois and shall meet or exceed all regulatory standards and/or requirements. The contractor shall include all costs for these services in their base bid price.

3.03 EXCAVATION

A. If contaminated soil is identified on-site, the Contractor shall perform the following:

1. In mass grading and/or paved areas, the Contractor shall excavate contaminated soil to the depth required for the construction of final grades, paved surfaces and foundations.

2. In the proposed new underground utility areas, the Contractor shall excavate contaminated soil to the extent required to install the new underground utility.

B. Excavation shall be performed in accordance with OSHA requirements and guidelines.

C. All workers in the vicinity of the contaminated soil area must have completed 40-hours Hazardous Waste Site Workers OSHA Training in accordance with 29 CFR 1910.120.

3.04 DECONTAMINATION

A. The Contractor shall remove soil, dust, rocks, etc from the exterior of trucks, trailers or other heavy equipment leaving the site.

B. The Contractor shall clean the tractor-trailers or trucks which are loaded with materials for disposal by removing clinging soil and rocks from the exterior of the tractor-trailers or trucks.

C. The Contractor shall not allow equipment or trucks to leave the site with water leaking or mud dripping or caked to the equipment or trucks.

D. The Contractor shall clean excavation equipment (tools, shovels, backhoes, etc) with a jet washer or steam cleaner after completing excavation work in the contaminated soil areas and prior to start working in the clean soil areas.

- 3.05 STOCKPILING
- A. The Contractor may stockpile contaminated soil on site for a maximum of five (5) working days. The Contractor shall be responsible for keeping the contaminated soil separated from the clean soil. If the contaminated soil comes in contact with the clean soil, the Contractor shall dispose of the clean soil as contaminated soil at his own expense.
 - B. Stockpile contaminated soil on 6-mil polyethylene visqueen. The location of the stockpile area shall be coordinated with the Owner. The Contractor shall keep contaminated soils covered with 6-mil polyethylene visqueen until subsequent loading, transportation and disposal. Provide a 12" to 18" berm around the stockpile(s).
- 3.06 LOADING
- A. The contractor shall load contaminated soils directly from the Remediation Area or from temporary stockpiles into hauling trucks for subsequent transportation and disposal.
- 3.07 TRANSPORTATION
- A. Contaminated soil shall be transported by a licensed special waste hauler in the State of Illinois.
 - B. The Contractor shall provide, complete and sign manifests required for transportation and disposal of the contaminated soils.
- 3.08 DISPOSAL
- A. The Contractor shall provide copies of weight tickets from the landfill to the Owner.
 - B. The Contractor shall provide copies of completed manifests executed by the transporter and the landfill to the Owner.
- 3.09 BACKFILL
- A. Topsoil and Fill Material Data
 - 1. The Contractor shall provide to the Owner the location(s) and name(s) of topsoil and clean fill sources from which backfill materials are to be obtained for the project, approximate quantities obtained at each site, depth at which soil was taken and indicate whether crops had grown on site(s).
 - B. Soil Testing
 - 1. The Contractor shall submit the following information to the Owner for every source of backfill material:
 - a. A report defining the current and historic uses of the clean soil source material to determine if the potential for any source contamination is present.
 - b. Laboratory analysis of in-situ soil to be used on site to determine that all constituents meet the applicable objectives. The source location should be surveyed and sampled at a frequency of one (1) sample per 1,000 cubic yards if there is a known or suspected source of contamination. The analyses shall be performed to the acceptable method detection limits for each chemical. At a minimum, the source soil should be sampled for the Target Compound List, found in Title 35 Illinois Administrative Code 740, Appendix A, using the applicable EPA SW 846 methods. If historical records indicated that potential sources of contamination do not exist, one (1) sample will be collected and analyzed to characterize the clean soil source material.
 - c. A summary of the sample collection and data analysis. The report should include a tabulation of sampling results compared to applicable Tier 1 remediation objectives for residential properties.
 - C. The Contractor shall not backfill excavation areas without approval of the Owner. If the Contractor backfills the excavation area without obtaining approval from the Owner, the backfill materials shall be excavated, if required, at the Contractor's expense.
- 3.10 DUST CONTROL
- A. The Contractor shall control dust by all necessary means, including but not limited to covering trucks, stockpiles and open materials, watering haul roads, sweeping paved roads and limiting the speed of all on-site vehicles.
- 3.11 QUALITY CONTROL
- A. Visual inspection and damage repairs shall be made daily by the Contractor and/or as directed by the Owner or designated representative to assure that erosion, drainage and containment control measures are functioning properly.

END OF SECTION 02064

SECTION 26 0100
GENERAL ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. All work associated with Division 26 requirements is also subject to all provisions of the Contract Documents, include but not limited to applicable portions of Division 0 and Division 1.

1.02 DESCRIPTION OF WORK

- A. Contractor shall furnish all labor, materials, tools, equipment and miscellaneous general conditions work as required to complete, in a workmanlike manor, all Work as indicated and inferred on the Contract Drawings and associated Specifications. Contract Drawings and Specifications are intended to schematically define the quality, type and configurations of the electrical systems to be installed by the Contractor in compliance with Code. Contract drawings should be considered diagrammatic in nature and are not intended to detail every required item necessary for proper completion of the Scope of Work. All systems installed by the Contractor shall be complete and fully functional.
- B. Scope of work includes, but is not limited to;
1. Field verification of existing site conditions as required to properly and accurately bid and perform the scope of work.
 2. Processing paperwork and obtaining approvals for all installation activities requiring permits or other similar approval processes. Contractor shall pay for all fees and charges related to the scope of work including but not limited to insurance, permits, inspections, etc.
 3. Coordination with other trades to ensure completeness and timely execution of the Scope of Work.
 4. Preparation of equipment/material submittals and shop drawings.
 5. Demolition and removal work of electrical infrastructure and equipment in the area of work not reused as part of this project.
 6. Excavation and landscaping as required for installation of new lighting with associated conduit raceway system.
 7. Directional boring for installation of underground conduit raceway systems where directed or inferred by the Owner.
 8. Concrete work as required for new light pole bases.
 9. Furnish and install new light poles and light fixtures as indicated on the plans.
 10. Furnish and install new automated site lighting control system as indicated on the Drawings.
 11. Branch circuit and control wiring as required for connection of electrical equipment and devices.
 12. Modifications to existing electrical distribution system as required for connection of new lighting and controls.
 13. Restoration/weatherproofing to like new condition of any building surfaces, foundations, etc. affected by installation work.
 14. Correction of any installation deficiencies as required to obtain final acceptance by the Authority Having Jurisdiction, Owner, Owner's Insurance Underwriter and Engineer. Contractor is responsible for his respective systems until final formal acceptance is obtained.
 15. Preparation of As-built record documents.
 16. On-site Testing/Commissioning and Training in proper use and maintenance of installed systems and equipment.

1.03 REFERENCE STANDARDS

- A. The City of Evanston Building Code

- B. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. OSHA - Occupational Safety and Health Act

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Pre-bid Scope Verification;
 - 1. The Contractor responsible for the execution of this work shall become thoroughly familiar with the project specifications and drawings before submitting a bid.
 - 2. The contractor shall carefully review all construction drawings and specifications that are part of this project to insure that devices, materials or any other work that is required for properly completion of the project is not omitted. No extra charges shall be accepted by the Owner after bidding for such equipment and labor omissions.
 - 3. Contractor shall visit and survey the site as required to understand any site specific issues that may affect the difficulty or otherwise impact the his ability to properly execute the scope of work. All such considerations shall be properly factored into the Contractor's bid.
 - 4. Where the Contractor is unable to determine the Engineer's design intent or where these verification activities have identified discrepancies in the Contract Documents, the Contractor shall submit a formal request for information prior to submitting a bid. Requests for information shall be submitted in a timely manner in accordance with the Owner's requirements.
 - 5. Requests for additional compensations caused by failure to properly perform this verification will be rejected.
- B. Coordination of Work
 - 1. Construction Coordinator shall be defined as the Construction Manager.
 - 2. Contractor shall consult all other trades furnishing equipment or working in the same areas to ensure proper coordination, scheduling and execution of the full scope of work. Claims for additional compensation due to failure to comply with this requirement will be denied.
 - 3. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.
 - 4. Cooperate with the Owner's Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for backhoes and similar large motorized equipment access, traffic, and parking facilities.
 - 5. During construction, coordinate use of site and facilities through the Project Coordinator.
 - 6. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
 - 7. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
 - 8. Coordinate field engineering and layout work under instructions of the Project Coordinator.
 - 9. Make the following types of submittals to Engineer through the Project Coordinator:
 - a. Requests for interpretation.
 - b. Requests for substitution.
 - c. Shop drawings, product data, and samples.
 - d. Test and inspection reports.
 - e. Design data and calculations.
 - f. Manufacturer's instructions and field reports.
 - g. Applications for payment and change order requests.
 - h. Progress schedules.
 - i. Coordination drawings.
 - j. Closeout submittals.
 - 10. Attended construction coordination meetings as directed by the Construction Coordinator.

1.05 CONTRACTOR USE OF SITE AND PREMISE

- A. Arrange use of site and premise to allow;
 - 1. Owner occupancy.
 - 2. Work by Others
 - 3. Use of site and premises by the public.
- B. Provide access to and from the site as required by law and by Owner. Do not obstruct roadways, sidewalks or other public ways without permit.
- C. Existing building spaces may not be used for storage.
- D. Time Restrictions:
 - 1. Limit conduct of especially noisy exterior work to the hours of 8AM to 5PM, monday to friday if not otherwise defined by the Owner.
- E. Utility Outages and Shutdowns:
 - 1. All outages shall be coordinated and approved of in advance by the Owner.
 - 2. Limit disruption of any utility services to hours that the building is unoccupied.
 - 3. Prevent accidental disruption of utility services to other facilities.
 - 4. Contractor shall be responsible for the timely restoration of service following any outage or shutdown. Contractor may not leave site until services have been restored unless an extended outage has been formally approved of in advance by the Owner.

END OF SECTION

SECTION 26 0501
MINOR ELECTRICAL DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical demolition.

1.02 SUBMITTALS

- A. Sustainable Design Documentation: Submit certification of removal and appropriate disposal of abandoned cables containing lead stabilizers.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. Materials and equipment for patching and extending work: As specified in individual sections.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that abandoned wiring and equipment serve only abandoned facilities.
- B. Demolition drawings are based on casual field observation and existing record documents.
- C. Report discrepancies to Owner before disturbing existing installation.
- D. Beginning of demolition means installer accepts existing conditions.

3.02 PREPARATION

- A. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- B. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Minimize outage duration.
 - 1. Obtain permission from Owner at least 72 hours before partially or completely disabling system.
 - 2. Make temporary connections to maintain service in areas adjacent to work area.

3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Perform work for removal and disposal of equipment and materials containing toxic substances regulated under the Federal Toxic Substances Control Act (TSCA) in accordance with applicable federal, state, and local regulations. Applicable equipment and materials include, but are not limited to:
 - 1. PCB-containing electrical equipment, including transformers, capacitors, and switches.
 - 2. PCB- and DEHP-containing lighting ballasts.
 - 3. Mercury-containing lamps and tubes, including fluorescent lamps, high intensity discharge (HID), arc lamps, ultra-violet, high pressure sodium, mercury vapor, ignitron tubes, neon, and incandescent.
- B. Remove, relocate, and extend existing installations to accommodate new construction.
- C. Remove abandoned wiring to source of supply.
- D. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
- E. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.
- F. Disconnect and remove abandoned panelboards and distribution equipment.

- G. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
- H. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, concrete pole bases and other accessories.
- I. Repair adjacent construction and finishes damaged during demolition and extension work.
- J. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.
- K. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

3.04 CLEANING AND REPAIR

- A. Clean and repair existing materials and equipment that remain or that are to be reused.
- B. Panelboards: Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.

END OF SECTION

SECTION 26 0519

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Single conductor building wire.
- B. Underground feeder and branch-circuit cable.
- C. Wiring connectors.
- D. Electrical tape.
- E. Heat shrink tubing.
- F. Oxide inhibiting compound.
- G. Wire pulling lubricant.

1.02 RELATED REQUIREMENTS

- A. Section 07 8400 - Firestopping.
- B. Section 26 0526 - Grounding and Bonding for Electrical Systems: Additional requirements for grounding conductors and grounding connectors.
- C. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.
- D. Section 31 2316.13 - Trenching: Excavating, bedding, and backfilling.

1.03 REFERENCE STANDARDS

- A. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape; 2010.
- B. ASTM D4388 - Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes; 2013.
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- D. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy; National Electrical Manufacturers Association; 2009 (ANSI/NEMA WC 70/ICEA S-95-658).
- E. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; International Electrical Testing Association; 2013 (ANSI/NETA ATS).
- F. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 44 - Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.
- H. UL 83 - Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.
- I. UL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.
- J. UL 486C - Splicing Wire Connectors; Current Edition, Including All Revisions.
- K. UL 486D - Sealed Wire Connector Systems; Current Edition, Including All Revisions.
- L. UL 493 - Thermoplastic-Insulated Underground Feeder and Branch-Circuit Cables; Current Edition, Including All Revisions.
- M. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:

1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
3. Notify Engineer of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.
- B. Design Data: Indicate voltage drop and ampacity calculations for aluminum conductors substituted for copper conductors. Include proposed modifications to raceways, boxes, wiring gutters, enclosures, etc. to accommodate substituted conductors.
- C. Project Record Documents: Record actual installed circuiting arrangements. Record actual routing for underground circuits.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

1.08 FIELD CONDITIONS

- A. Do not install or otherwise handle thermoplastic-insulated conductors at temperatures lower than 14 degrees F (-10 degrees C), unless otherwise permitted by manufacturer's instructions. When installation below this temperature is unavoidable, notify Engineer and obtain direction before proceeding with work.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE APPLICATIONS

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
- B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.
- C. Nonmetallic-sheathed cable is not permitted.
- D. Underground feeder and branch-circuit cable is not permitted.
- E. Service entrance cable is not permitted.
- F. Armored cable is not permitted.
- G. Metal-clad cable is not permitted.
- H. Manufactured wiring systems are not permitted.

2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- D. Comply with NEMA WC 70.

- E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- G. Conductor Material:
 - 1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
 - 2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B 787M unless otherwise indicated.
 - 3. Tinned Copper Conductors: Comply with ASTM B33.
- H. Minimum Conductor Size:
 - 1. Branch Circuits: 12 AWG.
 - a. Exceptions:
 - 1) 20 A, 120 V circuits longer than 75 feet (23 m): 10 AWG, for voltage drop.
 - 2) 20 A, 120 V circuits longer than 150 feet (46 m): 8 AWG, for voltage drop.
- I. Conductor Color Coding:
 - 1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
 - 2. Color Coding Method: Integrally colored insulation.
 - a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
 - 3. Color Code:
 - a. 208Y/120 V, 3 Phase, 4 Wire System:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - 4) Neutral/Grounded: White.
 - b. Equipment Ground, All Systems: Green.
 - c. For modifications or additions to existing wiring systems, comply with existing color code when existing code complies with NFPA 70 and is approved by the authority having jurisdiction.
 - d. For control circuits, comply with manufacturer's recommended color code.

2.03 SINGLE CONDUCTOR BUILDING WIRE

- A. Manufacturers:
 - 1. Copper Building Wire:
 - a. Cerro Wire LLC: www.cerrowire.com.
 - b. Encore Wire Corporation: www.encorewire.com.
 - c. Southwire Company: www.southwire.com.
- B. Description: Single conductor insulated wire.
- C. Conductor Stranding:
 - 1. Feeders and Branch Circuits:
 - a. Size 10 AWG and Smaller: Solid.
 - b. Size 8 AWG and Larger: Stranded.
 - 2. Control Circuits: Stranded.
- D. Insulation Voltage Rating: 600 V.
- E. Insulation:
 - 1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
 - a. Size 4 AWG and Larger: Type XHHW-2.
 - b. Installed Underground: Type XHHW-2.
 - c. Fixture Wiring Within Luminaires: Type TFFN/TFN for luminaires with labeled maximum temperature of 90 degrees C; Approved suitable type for luminaires with labeled maximum temperature greater than 90 degrees C.

2.04 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
- B. Wiring Connectors for Splices and Taps:
 - 1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
 - 2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors or compression connectors.
- C. Wiring Connectors for Terminations:
 - 1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
 - 2. Provide compression adapters for connecting conductors to equipment furnished with mechanical lugs when only compression connectors are specified.
 - 3. Where over-sized conductors are larger than the equipment terminations can accommodate, provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the overcurrent protective device.
 - 4. Copper Conductors Size 8 AWG and Larger: Use mechanical connectors or compression connectors where connectors are required.
- D. Do not use insulation-piercing or insulation-displacement connectors designed for use with conductors without stripping insulation.
- E. Do not use push-in wire connectors as a substitute for twist-on insulated spring connectors.
- F. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F (105 degrees C) for standard applications and 302 degrees F (150 degrees C) for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
 - 1. Manufacturers:
 - a. 3M: www.3m.com.
 - b. Ideal Industries, Inc: www.idealindustries.com.
 - c. NSI Industries LLC: www.nsiindustries.com.
- G. Mechanical Connectors: Provide bolted type or set-screw type.
 - 1. Manufacturers:
 - a. Burndy: www.burndy.com.
 - b. IlSCO: www.ilSCO.com.
 - c. Thomas & Betts Corporation: www.tnb.com.
- H. Compression Connectors: Provide circumferential type or hex type crimp configuration.
 - 1. Manufacturers:
 - a. Burndy: www.burndy.com.
 - b. IlSCO: www.ilSCO.com.
 - c. Thomas & Betts Corporation: www.tnb.com.

2.05 WIRING ACCESSORIES

- A. Electrical Tape:
 - 1. Manufacturers:
 - a. 3M: www.3m.com.
 - b. Plymouth Rubber Europa: www.plymouthrubber.com.
 - 2. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil (0.18 mm); resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F (105 degrees C).
 - 3. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil (0.18 mm); resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F (-18 degrees C) and suitable for continuous temperature environment up to 221 degrees F (105 degrees C).

4. Rubber Splicing Electrical Tape: Ethylene Propylene Rubber (EPR) tape, complying with ASTM D4388; minimum thickness of 30 mil (0.76 mm); suitable for continuous temperature environment up to 194 degrees F (90 degrees C) and short-term 266 degrees F (130 degrees C) overload service.
 5. Electrical Filler Tape: Rubber-based insulating moldable putty, minimum thickness of 125 mil (3.2 mm); suitable for continuous temperature environment up to 176 degrees F (80 degrees C).
 6. Moisture Sealing Electrical Tape: Insulating mastic compound laminated to flexible, all-weather vinyl backing; minimum thickness of 90 mil (2.3 mm).
- B. Heat Shrink Tubing: Heavy-wall, split-resistant, with factory-applied adhesive; rated 600V; suitable for direct burial applications; listed as complying with UL 486D.
 - C. Oxide Inhibiting Compound: Listed; suitable for use with the conductors or cables to be installed.
 - D. Wire Pulling Lubricant: Listed; suitable for use with the conductors or cables to be installed and suitable for use at the installation temperature.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that work likely to damage wire and cable has been completed.
- B. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- C. Verify that field measurements are as shown on the drawings.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.03 INSTALLATION

- A. Circuiting Requirements:
 1. Unless dimensioned, circuit routing indicated is diagrammatic.
 2. When circuit destination is indicated and routing is not shown, determine exact routing required.
 3. Arrange circuiting to minimize splices.
 4. Include circuit lengths required to install connected devices within 10 ft (3.0 m) of location shown.
 5. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits in accordance with NFPA 70.
 6. Circuiting Adjustments: Unless otherwise indicated, when branch circuits are shown as separate, combining them together in a single raceway is not permitted.
 7. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among up to three single phase branch circuits of different phases installed in the same raceway is permitted where not otherwise prohibited, except for the following:
 - a. Branch circuits fed from ground fault circuit interrupter (GFCI) circuit breakers.
 - b. Branch circuits fed from feed-through protection of GFI receptacles.
- B. Install products in accordance with manufacturer's instructions.
- C. Install conductors and cable in a neat and workmanlike manner in accordance with NECA 1.
- D. Installation in Raceway:
 1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
 2. Pull all conductors and cables together into raceway at same time.
 3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.

4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- E. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
- F. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
- G. Install conductors with a minimum of 12 inches (300 mm) of slack at each outlet.
- H. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- I. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.
- J. Make wiring connections using specified wiring connectors.
 1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
 3. Do not remove conductor strands to facilitate insertion into connector.
 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminants. Do not use wire brush on plated connector surfaces.
 5. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
 6. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- K. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
 1. Dry Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
 - a. For taped connections, first apply adequate amount of rubber splicing electrical tape or electrical filler tape, followed by outer covering of vinyl insulating electrical tape.
 2. Damp Locations: Use insulating covers specifically designed for the connectors or electrical tape.
 - a. For connections with insulating covers, apply outer covering of moisture sealing electrical tape.
 - b. For taped connections, follow same procedure as for dry locations but apply outer covering of moisture sealing electrical tape.
 3. Wet Locations: Use heat shrink tubing.
- L. Insulate ends of spare conductors using vinyl insulating electrical tape.
- M. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.
- N. Identify conductors and cables in accordance with Section 26 0553.
- O. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- P. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

3.04 FIELD QUALITY CONTROL

- A. Perform inspection, testing, and adjusting in accordance with Section 01 4000.

- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.3.2. The insulation resistance test is required for all conductors. The resistance test for parallel conductors listed as optional is not required.
- D. Correct deficiencies and replace damaged or defective conductors and cables.

END OF SECTION

SECTION 26 0526
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.
- D. Ground rod electrodes.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor colorcoding.
 - 1. Includes oxide inhibiting compound.
- B. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.
- C. Section 26 5600 - Exterior Lighting: Additional grounding and bonding requirements for pole-mounted luminaires.

1.03 REFERENCE STANDARDS

- A. IEEE 81 - Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System; 2012.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- C. NEMA GR 1 - Grounding Rod Electrodes and Grounding Rod Electrode Couplings; National Electrical Manufacturers Association; 2007.
- D. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; International Electrical Testing Association; 2013 (ANSI/NETA ATS).
- E. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 467 - Grounding and Bonding Equipment; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Verify exact locations of underground metal water service pipe entrances to building.
 - 2. Notify Engineer of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Do not install ground rod electrodes until final backfill and compaction is complete.

1.05 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for grounding and bonding system components.
- B. Shop Drawings:
 - 1. Indicate proposed arrangement for signal reference grids. Include locations of items to be bonded and methods of connection.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- D. Field quality control test reports.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

- A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.
- B. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- E. Grounding System Resistance:
 - 1. Achieve specified grounding system resistance under normally dry conditions unless otherwise approved by Engineer. Precipitation within the previous 48 hours does not constitute normally dry conditions.
 - 2. Grounding Electrode System: Not greater than 5 ohms to ground, when tested according to IEEE 81 using "fall-of-potential" method.
 - 3. Between Grounding Electrode System and Major Electrical Equipment Frames, System Neutral, and Derived Neutral Points: Not greater than 0.5 ohms, when tested using "point-to-point" methods.
- F. Grounding Electrode System:
 - 1. Confirm that the existing grounding electrode system complies with resistance requirements above prior to submitting bid. If not compliant, provide connection to required and supplemental grounding electrodes indicated to form an effective grounding electrode system in compliance with these requirements.
 - a. Provide continuous grounding electrode conductors without splice or joint.
 - b. Install grounding electrode conductors in raceway where exposed to physical damage. Bond grounding electrode conductor to metallic raceways at each end with bonding jumper.
 - 2. Metal Underground Water Pipe(s):
 - a. Provide connection to underground metal water service pipe(s) that are in direct contact with earth for at least 10 feet (3.0 m) at an accessible location not more than 5 feet (1.5 m) from the point of entrance to the building.
 - b. Provide bonding jumper(s) around insulating joints/pipes as required to make pipe electrically continuous.
 - c. Provide bonding jumper around water meter of sufficient length to permit removal of meter without disconnecting jumper.
 - 3. Metal Building or Structure Frame:
 - a. Provide connection to metal building or structure frame effectively grounded in accordance with NFPA 70.
 - 4. Provide additional ground electrode(s) as required to achieve specified grounding electrode system resistance.
- G. Bonding and Equipment Grounding:
 - 1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and

other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.

2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.

H. Pole-Mounted Luminaires: Also comply with Section 26 5600.

2.02 GROUNDING AND BONDING COMPONENTS

A. General Requirements:

1. Provide products listed, classified, and labeled as suitable for the purpose intended.
2. Provide products listed and labeled as complying with UL 467 where applicable.

B. Conductors for Grounding and Bonding, in addition to requirements of Section 26 0519:

1. Use insulated copper conductors unless otherwise indicated.
 - a. Exceptions:
 - 1) Use bare copper conductors where installed underground in direct contact with earth.
 - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
2. Factory Pre-fabricated Bonding Jumpers: Furnished with factory-installed ferrules; size braided cables to provide equivalent gauge of specified conductors.

C. Connectors for Grounding and Bonding:

1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.
4. Manufacturers - Mechanical and Compression Connectors:
 - a. Advanced Lightning Technology (ALT): www.altfab.com.
 - b. Burndy: www.burndy.com.
 - c. Harger Lightning & Grounding: www.harger.com.
 - d. Thomas & Betts Corporation: www.tnb.com.
5. Manufacturers - Exothermic Welded Connections:
 - a. Burndy: www.burndy.com.
 - b. Cadweld, a brand of Erico International Corporation: www.erico.com.
 - c. ThermOweld, a brand of Continental Industries, Inc: www.thermoweld.com.

D. Ground Rod Electrodes:

1. Comply with NEMA GR 1.
2. Material: Copper-bonded (copper-clad) steel.
3. Size: 3/4 inch (19 mm) diameter by 10 feet (3.0 m) length, unless otherwise indicated.
4. Manufacturers:
 - a. Advanced Lightning Technology (ALT): www.altfab.com.
 - b. Erico International Corporation: www.erico.com.
 - c. Galvan Industries, Inc: www.galvanelectrical.com.
 - d. Harger Lightning & Grounding: www.harger.com.

- E. Oxide Inhibiting Compound: Comply with Section 26 0519.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as shown on the drawings.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install grounding and bonding system components in a neat and workmanlike manner in accordance with NECA 1.
- C. Ground Rod Electrodes: Unless otherwise indicated, install ground rod electrodes vertically. Where encountered rock prohibits vertical installation, install at 45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70 or provide ground plates.
 - 1. Outdoor Installations: Unless otherwise indicated, install with top of rod 6 inches (150mm) below finished grade.
- D. Make grounding and bonding connections using specified connectors.
 - 1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
 - 2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
 - 3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
 - 4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
 - 5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- E. Identify grounding and bonding system components in accordance with Section 26 0553.

3.03 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS except Section 4.
- B. Perform inspections and tests listed in NETA ATS, Section 7.13.
- C. Perform ground electrode resistance tests under normally dry conditions. Precipitation within the previous 48 hours does not constitute normally dry conditions.
- D. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

END OF SECTION

SECTION 26 0529
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Support and attachment components for equipment, conduit, cable, boxes, and other electrical work.

1.02 REFERENCE STANDARDS

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2013.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2013.
- D. MFMA-4 - Metal Framing Standards Publication; Metal Framing Manufacturers Association; 2004.
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- F. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 5B - Strut-Type Channel Raceways and Fittings; Current Edition, Including All Revisions.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate sizes and arrangement of supports and bases with the actual equipment and components to be installed.
 - 2. Coordinate the work with other trades to provide additional framing and materials required for installation.
 - 3. Coordinate compatibility of support and attachment components with mounting surfaces at the installed locations.
 - 4. Coordinate the arrangement of supports with ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
 - 5. Notify Engineer of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.

1.04 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for metal channel (strut) framing systems and post-installed concrete and masonry anchors.

1.05 QUALITY ASSURANCE

- A. Comply with NFPA 70.
- B. Comply with applicable building code.
- C. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- D. Installer Qualifications for Powder-Actuated Fasteners (when specified): Certified by fastener system manufacturer with current operator's license.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

- A. General Requirements:
 - 1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
 - 2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
 - 3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported with a minimum safety factor of 1.5. Include consideration for vibration, equipment operation, and shock loads where applicable.
 - 4. Do not use products for applications other than as permitted by NFPA 70 and product listing.
 - 5. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
 - 6. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
 - a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
 - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
 - c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
 - d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
 - 1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
 - 2. Conduit Clamps: Bolted type unless otherwise indicated.
 - 3. Manufacturers:
 - a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com.
 - b. Erico International Corporation: www.erico.com.
 - c. O-Z/Gedney, a brand of Emerson Industrial Automation: www.emersonindustrial.com.
 - d. Thomas & Betts Corporation: www.tnb.com.
- C. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.
 - 1. Manufacturers:
 - a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com.
 - b. Erico International Corporation: www.erico.com.
 - c. O-Z/Gedney, a brand of Emerson Industrial Automation: www.emersonindustrial.com.
 - d. Thomas & Betts Corporation: www.tnb.com.
- D. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
 - 1. Comply with MFMA-4.
 - 2. Channel (Strut) Used as Raceway (only where specifically indicated): Listed and labeled as complying with UL 5B.
 - 3. Channel Material:
 - a. Indoor Dry Locations: Use painted steel, zinc-plated steel, or galvanized steel.
 - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel.
 - 4. Minimum Channel Thickness: Steel sheet, 12 gage, 0.1046 inch (2.66 mm).
 - 5. Minimum Channel Dimensions: 1-5/8 inch (41 mm) width by 13/16 inch (21 mm) height.
 - 6. Manufacturers:
 - a. Cooper B-Line, a division of Eaton Corporation: www.cooperindustries.com.
 - b. Thomas & Betts Corporation: www.tnb.com.

- c. Unistrut, a brand of Atkore International Inc: www.unistrut.com.
 - d. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.
- E. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
- 1. Minimum Size, Unless Otherwise Indicated or Required:
 - a. Single Conduit up to 1 inch (27mm) trade size: 1/4 inch (6 mm) diameter.
 - b. Single Conduit larger than 1 inch (27mm) trade size: 3/8 inch (10 mm) diameter.
 - c. Trapeze Support for Multiple Conduits: 3/8 inch (10 mm) diameter.
 - d. Outlet Boxes: 1/4 inch (6 mm) diameter.
- F. Anchors and Fasteners:
- 1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
 - 2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
 - 3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
 - 4. Hollow Masonry: Use toggle bolts.
 - 5. Hollow Stud Walls: Use toggle bolts.
 - 6. Steel: Use beam clamps, machine bolts, or welded threaded studs.
 - 7. Sheet Metal: Use sheet metal screws.
 - 8. Wood: Use wood screws.
 - 9. Plastic and lead anchors are not permitted.
 - 10. Powder-actuated fasteners are not permitted.
 - 11. Hammer-driven anchors and fasteners are not permitted.
 - 12. Post-Installed Concrete and Masonry Anchors: Evaluated and recognized by ICC Evaluation Service, LLC (ICC-ES) for compliance with applicable building code.
 - 13. Manufacturers - Mechanical Anchors:
 - a. Hilti, Inc: www.us.hilti.com.
 - b. ITW Red Head, a division of Illinois Tool Works, Inc: www.itwredhead.com.
 - c. Powers Fasteners, Inc: www.powers.com.
 - d. Simpson Strong-Tie Company Inc: www.strongtie.com.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that mounting surfaces are ready to receive support and attachment components.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install support and attachment components in a neat and workmanlike manner in accordance with NECA 1.
- C. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.
- D. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- E. Unless specifically indicated or approved by Engineer, do not provide support from suspended ceiling support system or ceiling grid.
- F. Unless specifically indicated or approved by Engineer, do not provide support from roof deck.
- G. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- H. Equipment Support and Attachment:

1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
 2. Use metal channel(strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
 3. Use metal channel(strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
 4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
- I. Secure fasteners according to manufacturer's recommended torque settings.
 - J. Remove temporary supports.

3.03 FIELD QUALITY CONTROL

- A. Inspect support and attachment components for damage and defects.
- B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- C. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION

SECTION 26 0534

CONDUIT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Galvanized steel rigid metal conduit (RMC).
- B. Intermediate metal conduit (IMC).
- C. PVC-coated galvanized steel rigid metal conduit (RMC).
- D. Rigid polyvinyl chloride (PVC) conduit.
- E. Conduit fittings.
- F. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- B. Section 26 0529 - Hangers and Supports for Electrical Systems.
- C. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.
- D. Section 31 2316.13 - Trenching: Excavating, bedding, and backfilling.

1.03 REFERENCE STANDARDS

- A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC); 2005.
- B. ANSI C80.6 - American National Standard for Electrical Intermediate Metal Conduit (EIMC); 2005.
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- D. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT); National Electrical Contractors Association; 2006.
- E. NECA 102 - Standard for Installing Aluminum Rigid Metal Conduit; National Electrical Contractors Association; 2004.
- F. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC); National Electrical Contractors Association; 2003.
- G. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; National Electrical Manufacturers Association; 2012 (ANSI/NEMA FB 1).
- H. NEMA RN 1 - Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit; National Electrical Manufacturers Association; 2005.
- I. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit; National Electrical Manufacturers Association; 2013.
- J. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; National Electrical Manufacturers Association; 2013.
- K. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- L. UL 6 - Electrical Rigid Metal Conduit-Steel; Current Edition, Including All Revisions.
- M. UL 514B - Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.
- N. UL 651 - Schedule 40 and 80 Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.
- O. UL 1242 - Electrical Intermediate Metal Conduit-Steel; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate minimum sizes of conduits with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 - 2. Coordinate the arrangement of conduits with structural members, ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
 - 3. Verify exact conduit termination locations required for boxes, enclosures, and equipment installed under other sections or by others.
 - 4. Notify Engineer of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Do not begin installation of conductors and cables until installation of conduit is complete between outlet, junction and splicing points.

1.05 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.
- B. Shop Drawings:
 - 1. Indicate proposed arrangement for conduits to be installed within structural concrete slabs, where permitted.
 - 2. Include proposed locations of foundation and wall penetrations and proposed methods for sealing.
 - 3. Indicate proposed routing of underground conduits with associated pull boxes.
- C. Project Record Documents: Record actual routing for conduits installed underground, conduits embedded within concrete slabs, and conduits 2 inch (53 mm) trade size and larger.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 CONDUIT APPLICATIONS

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.
- B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.
- C. Underground:
 - 1. Under Slab on Grade: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), PVC-coated galvanized steel rigid metal conduit, or rigid PVC conduit.
 - 2. Exterior, Direct-Buried: Use PVC-coated galvanized steel rigid metal conduit or rigid PVC conduit.
 - 3. Exterior, Embedded Within Concrete: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or PVC-coated galvanized steel rigid metal conduit.
 - 4. Where rigid polyvinyl (PVC) conduit is provided, transition to galvanized steel rigid metal conduit where emerging from underground.
 - 5. Where rigid polyvinyl (PVC) conduit larger than 2 inch (53 mm) trade size is provided, use galvanized steel rigid metal conduit elbows for bends.
 - 6. Where steel conduit is installed in direct contact with earth where soil has a resistivity of less than 2000 ohm-centimeters or is characterized as severely corrosive based on soils

- report or local experience, use corrosion protection tape to provide supplementary corrosion protection or use PVC-coated galvanized steel rigid metal conduit.
7. Where steel conduit emerges from concrete into soil, use corrosion protection tape to provide supplementary corrosion protection for a minimum of 4 inches (100 mm) on either side of where conduit emerges or use PVC-coated galvanized steel rigid metal conduit.
- D. Exposed, Interior, Subject to Physical Damage: Use galvanized steel rigid metal conduit or intermediate metal conduit (IMC).
 1. Locations subject to physical damage include, but are not limited to:
 - a. Where exposed below 8 feet (2.4 m), except within electrical and communication rooms or closets.
 - E. Exposed, Exterior: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or PVC-coated galvanized steel rigid metal conduit.

2.02 CONDUIT REQUIREMENTS

- A. Existing Work: Where existing conduits are indicated to be reused, they may be reused only where they comply with specified requirements, are free from corrosion, and integrity is verified by pulling a mandrel through them.
- B. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Minimum Conduit Size, Unless Otherwise Indicated:
 1. Underground, Exterior: 1 inch (27 mm) trade size.
- E. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

- A. Manufacturers:
 1. Allied Tube & Conduit: www.alliedeg.com.
 2. Republic Conduit: www.republic-conduit.com.
 3. Wheatland Tube Company: www.wheatland.com.
- B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.
- C. Fittings:
 1. Manufacturers:
 - a. Bridgeport Fittings Inc: www.bptfittings.com.
 - b. O-Z/Gedney, a brand of Emerson Industrial Automation: www.emersonindustrial.com.
 - c. Thomas & Betts Corporation: www.tnb.com.
 2. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 3. Material: Use steel or malleable iron.
 - a. Do not use die cast zinc fittings.
 4. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

2.04 INTERMEDIATE METAL CONDUIT (IMC)

- A. Manufacturers:
 1. Republic Conduit: www.republic-conduit.com.
- B. Description: NFPA 70, Type IMC galvanized steel intermediate metal conduit complying with ANSI C80.6 and listed and labeled as complying with UL 1242.
- C. Fittings:
 1. Manufacturers:
 - a. Thomas & Betts Corporation: www.tnb.com.

2. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
3. Material: Use steel or malleable iron.
 - a. Do not use die cast zinc fittings.
4. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

2.05 PVC-COATED GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

- A. Manufacturers:
 1. Robroy Industries: www.robroy.com.
- B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit with external polyvinyl chloride (PVC) coating complying with NEMA RN 1 and listed and labeled as complying with UL 6.
- C. Exterior Coating: Polyvinyl chloride (PVC), nominal thickness of 40 mil (1.02 mm).
- D. Interior Coating: Urethane, minimum thickness of 2 mil (0.05 mm).
- E. PVC-Coated Fittings:
 1. Manufacturer: Same as manufacturer of PVC-coated conduit to be installed.
 2. Non-Hazardous Locations: Use fittings listed and labeled as complying with UL 514B.
 3. Material: Use steel or malleable iron.
 4. Exterior Coating: Polyvinyl chloride (PVC), minimum thickness of 40 mil (1.02 mm).
 5. Interior Coating: Urethane, minimum thickness of 2 mil (0.05 mm).
- F. PVC-Coated Supports: Furnish with exterior coating of polyvinyl chloride (PVC), minimum thickness of 15 mil (0.38 mm).

2.06 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

- A. Manufacturers:
 1. Cantex Inc: www.cantexinc.com.
 2. Carlon, a brand of Thomas & Betts Corporation: www.carlon.com.
 3. JM Eagle: www.jmeagle.com.
- B. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.
- C. Fittings:
 1. Manufacturer: Same as manufacturer of conduit to be connected.
 2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

2.07 ACCESSORIES

- A. Corrosion Protection Tape: PVC-based, minimum thickness of 20 mil (0.51 mm).
- B. Conduit Joint Compound: Corrosion-resistant, electrically conductive; suitable for use with the conduit to be installed.
- C. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.
- D. Pull Strings: Use nylon cord with average breaking strength of not less than 200 pound-force (890 N).
- E. Sealing Compound for Sealing Fittings: Listed for use with the particular fittings to be installed.
- F. Modular Seals for Conduit Penetrations: Rated for minimum of 40 psig; Suitable for the conduits to be installed.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on drawings.
- B. Verify that mounting surfaces are ready to receive conduits.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install conduit in a neat and workmanlike manner in accordance with NECA 1.
- C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.
- D. Install aluminum rigid metal conduit (RMC) in accordance with NECA 102.
- E. Install intermediate metal conduit (IMC) in accordance with NECA 101.
- F. Install PVC-coated galvanized steel rigid metal conduit (RMC) using only tools approved by the manufacturer.
- G. Install rigid polyvinyl chloride (PVC) conduit in accordance with NECA 111.
- H. Conduit Routing:
 - 1. Unless dimensioned, conduit routing indicated is diagrammatic.
 - 2. When conduit destination is indicated and routing is not shown, determine exact routing required.
 - 3. Conceal all conduits unless specifically indicated to be exposed.
 - 4. Conduits in the following areas may be exposed, unless otherwise indicated:
 - a. Electrical rooms.
 - b. Mechanical equipment rooms.
 - c. Within joists in areas with no ceiling.
 - 5. Unless otherwise approved, do not route conduits exposed:
 - a. Across floors.
 - b. Across roofs.
 - c. Across top of parapet walls.
 - d. Across building exterior surfaces.
 - 6. Conduits installed underground or embedded in concrete may be routed in the shortest possible manner unless otherwise indicated. Route all other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
 - 7. Arrange conduit to maintain adequate headroom, clearances, and access.
 - 8. Arrange conduit to provide no more than the equivalent of four 90 degree bends between pull points.
 - 9. Arrange conduit to provide no more than 150 feet (46 m) between pull points.
 - 10. Route conduits above water and drain piping where possible.
 - 11. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
 - 12. Maintain minimum clearance of 6 inches (150 mm) between conduits and piping for other systems.
 - 13. Maintain minimum clearance of 12 inches (300 mm) between conduits and hot surfaces.
- I. Conduit Support:
 - 1. Secure and support conduits in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
 - 2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
 - 3. Use conduit strap to support single surface-mounted conduit.
 - a. Use clamp back spacer with conduit strap for damp and wet locations to provide space between conduit and mounting surface.

4. Use metal channel (strut) with accessory conduit clamps to support multiple parallel surface-mounted conduits.
 5. Use conduit clamp to support single conduit from beam clamp or threaded rod.
 6. Use trapeze hangers assembled from threaded rods and metal channel (strut) with accessory conduit clamps to support multiple parallel suspended conduits.
 7. Use of spring steel conduit clips for support of conduits is permitted only as follows:
 - a. Support of electrical metallic tubing (EMT) up to 1 inch (27 mm) trade size concealed above accessible ceilings and within hollow stud walls.
 8. Use of wire for support of conduits is not permitted.
 9. Where conduit support intervals specified in NFPA 70 and NECA standards differ, comply with the most stringent requirements.
- J. Connections and Terminations:
1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
 2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
 3. Use suitable adapters where required to transition from one type of conduit to another.
 4. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
 5. Where spare conduits stub up through concrete floors and are not terminated in a box or enclosure, provide threaded couplings equipped with threaded plugs set flush with finished floor.
 6. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
 7. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
- K. Penetrations:
1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
 2. Make penetrations perpendicular to surfaces unless otherwise indicated.
 3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
 4. Conceal bends for conduit risers emerging above ground.
 5. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
 6. Provide suitable modular seal where conduits penetrate exterior wall below grade.
 7. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
 8. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- L. Underground Installation:
1. Provide trenching and backfilling in accordance with Section 31 2316.13 - Trenching.
 2. Provide underground warning tape in accordance with Section 26 0553 along entire conduit length.
- M. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
 2. Where calculated in accordance with NFPA 70 for rigid polyvinyl chloride (PVC) conduit installed above ground to compensate for thermal expansion and contraction.
 3. Where conduits are subject to earth movement by settlement or frost.

- N. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation. This includes, but is not limited to:
 - 1. Where conduits pass from outdoors into conditioned interior spaces.
 - 2. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
- O. Provide grounding and bonding in accordance with Section 26 0526.
- P. Identify conduits in accordance with Section 26 0553.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- C. Where coating of PVC-coated galvanized steel rigid metal conduit (RMC) contains cuts or abrasions, repair in accordance with manufacturer's instructions.
- D. Correct deficiencies and replace damaged or defective conduits.

3.04 CLEANING

- A. Clean interior of conduits to remove moisture and foreign matter.

3.05 PROTECTION

- A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

END OF SECTION

SECTION 26 0537

BOXES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Underground boxes/enclosures.

1.02 RELATED REQUIREMENTS

- A. Section 07 8400 - Firestopping.
- B. Section 08 3100 - Access Doors and Panels: Panels for maintaining access to concealed boxes.
- C. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- D. Section 26 0529 - Hangers and Supports for Electrical Systems.
- E. Section 26 0534 - Conduit:
 - 1. Conduit bodies and other fittings.
 - 2. Additional requirements for locating boxes to limit conduit length and/or number of bends between pulling points.
- F. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; National Electrical Contractors Association; 2010.
- C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); National Electrical Manufacturers Association; 2008.
- D. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- E. SCTE 77 - Specification for Underground Enclosure Integrity; Society of Cable Telecommunications Engineers; 2013 (ANSI/SCTE 77).
- F. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- G. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.

PART 2 PRODUCTS

2.01 BOXES

- A. General Requirements:
 - 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
 - 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
 - 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
 - 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
 - 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Underground Boxes/Enclosures:
 - 1. Description: In-ground, open bottom boxes furnished with flush, non-skid covers with legend indicating type of service and stainless steel tamper resistant cover bolts.

2. Depth: As required to extend below frost line to prevent frost upheaval, but not less than 12 inches (300 mm).
3. Provide logo on cover to indicate type of service.
4. Applications:
 - a. Sidewalks and Landscaped Areas Subject Only to Occasional Nondeliberate Vehicular Traffic: Use polymer concrete enclosures, with minimum SCTE 77, Tier 8 load rating.
 - b. Do not use polymer concrete enclosures in areas subject to deliberate vehicular traffic.
5. Polymer Concrete Underground Boxes/Enclosures: Comply with SCTE 77.
 - a. Manufacturers:
 - 1) Highline Products, a subsidiary of MacLean Power Systems: www.highlineproducts.com.
 - 2) Hubbell Incorporated; Quazite Products: www.hubbellpowersystems.com.
 - 3) Oldcastle Precast, Inc: www.oldcastleprecast.com.
 - 4) Substitutions: See Section 01 6000 - Product Requirements.
 - b. Combination fiberglass/polymer concrete boxes/enclosures are acceptable.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on drawings.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Box Locations:
 1. Locate boxes to be accessible. Provide access panels in accordance with Section 08 3100 as required where approved by the Architect.
 2. Locate junction and pull boxes as indicated, as required to facilitate installation of conductors, and to limit conduit length and/or number of bends between pulling points in accordance with Section 26 0534.
- E. Box Supports:
 1. Secure and support boxes in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
 2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
- F. Install boxes plumb and level.
- G. Install boxes as required to preserve insulation integrity.
- H. Underground Boxes/Enclosures:
 1. Install enclosure on gravel base, minimum 6 inches (150 mm) deep.
 2. Flush-mount enclosures located in concrete or paved areas.
 3. Install additional bracing inside enclosures in accordance with manufacturer's instructions to minimize box sidewall deflections during backfilling. Backfill with cover bolted in place.

- I. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- J. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- K. Close unused box openings.
- L. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- M. Provide grounding and bonding in accordance with Section 26 0526.
- N. Identify boxes in accordance with Section 26 0553.

3.03 CLEANING

- A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

3.04 PROTECTION

- A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

END OF SECTION

SECTION 26 0553
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Wire and cable markers.
- D. Voltage markers.
- E. Underground warning tape.
- F. Floor marking tape.
- G. Warning signs and labels.

1.02 RELATED REQUIREMENTS

- A. Section 09 9000 - Painting and Coating.
- B. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.

1.03 REFERENCE STANDARDS

- A. ANSI Z535.2 - American National Standard for Environmental and Facility Safety Signs; 2011.
- B. ANSI Z535.4 - American National Standard for Product Safety Signs and Labels; 2011.
- C. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. NFPA 70E - Standard for Electrical Safety in the Workplace; 2012.
- E. UL 969 - Marking and Labeling Systems; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Verify final designations for equipment, systems, and components to be identified prior to fabrication of identification products.
- B. Sequencing:
 - 1. Do not conceal items to be identified, in locations such as above suspended ceilings, until identification products have been installed.
 - 2. Do not install identification products until final surface finishes and painting are complete.

1.05 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.
- B. Shop Drawings: Provide schedule of items to be identified indicating proposed designations, materials, legends, and formats.
- C. Samples:
 - 1. Identification Nameplates: One of each type and color specified.
 - 2. Warning Signs and Labels: One of each type and legend specified.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

1.07 FIELD CONDITIONS

- A. Do not install adhesive products when ambient temperature is lower than recommended by manufacturer.

PART 2 PRODUCTS

2.01 IDENTIFICATION REQUIREMENTS

- A. Existing Work: Unless specifically excluded, identify existing elements to remain that are not already identified in accordance with specified requirements.
- B. Identification for Equipment:
 - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
 - a. Panelboards:
 - 1) Identify ampere rating.
 - 2) Identify voltage and phase.
 - 3) Identify power source and circuit number. Include location when not within sight of equipment.
 - 4) Use typewritten circuit directory to identify load(s) served for panelboards with a door. Identify spares and spaces using pencil.
 - 5) For power panelboards without a door, use identification nameplate to identify load(s) served for each branch device. Do not identify spares and spaces.
 - b. Time Switches:
 - 1) Identify load(s) served and associated circuits controlled. Include location.
 - 2. Use voltage marker to identify highest voltage present for each piece of electrical equipment.
 - 3. Use field-painted floor markings, floor marking tape, or warning labels to identify required equipment working clearances where indicated or where required by the authority having jurisdiction.
 - a. Field-Painted Floor Markings: Alternating black and white stripes, 3 inches (76mm) wide, painted in accordance with Section 09 9000.
 - 4. Arc Flash Hazard Warning Labels: Use warning labels to identify arc flash hazards for electrical equipment, such as switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers that are likely to require examination, adjustment, servicing, or maintenance while energized.
 - a. Legend: Include orange header that reads "WARNING", followed by the word message "Arc Flash and Shock Hazard; Appropriate PPE Required; Do not operate controls or open covers without appropriate personal protection equipment; Failure to comply may result in injury or death; Refer to NFPA 70E for minimum PPE requirements" or approved equivalent.
- C. Identification for Conductors and Cables:
 - 1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.
 - 2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
 - 3. Use wire and cable markers to identify circuit number or other designation indicated for power, control, and instrumentation conductors and cables at the following locations:
 - a. At each source and load connection.
 - b. Within boxes when more than one circuit is present.
 - c. Within equipment enclosures when conductors and cables enter or leave the enclosure.
 - 4. Use wire and cable markers to identify connected grounding electrode system components for grounding electrode conductors.
- D. Identification for Raceways:
 - 1. Use voltage markers to identify highest voltage present for accessible conduits at maximum intervals of 20 feet (6.1 m).
 - 2. Use identification labels, handwritten text using indelible marker, or plastic marker tags to identify spare conduits at each end. Identify purpose and termination location.

3. Use underground warning tape to identify underground raceways.
- E. Identification for Boxes:
1. Use identification labels or handwritten text using indelible marker to identify circuits enclosed.
 - a. For exposed boxes in public areas, use only identification labels.

2.02 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
1. Manufacturers:
 - a. Brimar Industries, Inc: www.brimar.com.
 - b. Kolbi Pipe Marker Co: www.kolbipipemarkers.com.
 - c. Seton Identification Products: www.seton.com.
 2. Materials:
 - a. Indoor Clean, Dry Locations: Use plastic nameplates.
 - b. Outdoor Locations: Use plastic, stainless steel, or aluminum nameplates suitable for exterior use.
 3. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch (1.6 mm); engraved text.
 4. Stainless Steel Nameplates: Minimum thickness of 1/32 inch (0.8 mm); engraved or laser-etched text.
 5. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch (0.8 mm); engraved or laser-etched text.
- B. Identification Labels:
1. Manufacturers:
 - a. Brady Corporation: www.bradyid.com.
 - b. Brother International Corporation: www.brother-usa.com.
 - c. Panduit Corp: www.panduit.com.
 2. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
 3. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.
- C. Format for Equipment Identification:
1. Minimum Size: 1 inch (25 mm) by 2.5 inches (64 mm).
 2. Legend:
 - a. Equipment designation or other approved description.
 3. Text: All capitalized unless otherwise indicated.
 4. Minimum Text Height:
 - a. System Designation: 1 inch (25 mm).
 - b. Equipment Designation: 1/2 inch (13 mm).
 - c. Other Information: 1/4 inch (6 mm).
 5. Color:
 - a. Normal Power System: White text on black background.
- D. Format for Caution and Warning Messages:
1. Minimum Size: 2 inches (51 mm) by 4 inches (100 mm).
 2. Legend: Include information or instructions indicated or as required for proper and safe operation and maintenance.
 3. Text: All capitalized unless otherwise indicated.
 4. Minimum Text Height: 1/2 inch (13 mm).
 5. Color: Black text on yellow background unless otherwise indicated.

2.03 WIRE AND CABLE MARKERS

- A. Manufacturers:
1. Brady Corporation: www.bradyid.com.

2. HellermannTyton: www.hellermanntyton.com.
 3. Panduit Corp: www.panduit.com.
- B. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.
 - C. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cableties.
 - D. Legend: Power source and circuit number or other designation indicated.
 - E. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.
 1. Do not use handwritten text.
 - F. Minimum Text Height: 1/8 inch (3 mm).
 - G. Color: Black text on white background unless otherwise indicated.

2.04 VOLTAGE MARKERS

- A. Manufacturers:
 1. Brady Corporation: www.bradyid.com.
 2. Seton Identification Products: www.seton.com.
- B. Markers for Conduits: Use factory pre-printed self-adhesive vinyl, self-adhesive vinyl cloth, or vinyl snap-around type markers.
- C. Markers for Boxes and Equipment Enclosures: Use factory pre-printed self-adhesive vinyl or self-adhesive vinyl cloth type markers.
- D. Minimum Size:
 1. Markers for Equipment: 1 1/8 by 4 1/2 inches (29 by 110 mm).
 2. Markers for Conduits: As recommended by manufacturer for conduit size to be identified.
- E. Legend:
 1. Markers for Voltage Identification: Highest voltage present.
- F. Color: Black text on orange background unless otherwise indicated.

2.05 UNDERGROUND WARNING TAPE

- A. Manufacturers:
 1. Brady Corporation: www.bradyid.com.
 2. Brimar Industries, Inc: www.brimar.com.
 3. Seton Identification Products: www.seton.com.
- B. Materials: Use foil-backed detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.
- C. Foil-backed Detectable Type Tape: 3 inches (76 mm) wide, with minimum thickness of 5 mil (0.1 mm), unless otherwise required for proper detection.
- D. Legend: Type of service, continuously repeated over full length of tape.
- E. Color:
 1. Tape for Buried Power Lines: Black text on red background.

2.06 FLOOR MARKING TAPE

- A. Floor Marking Tape for Equipment Working Clearance Identification: Self-adhesive vinyl or polyester tape with overlaminated, 3 inches (76 mm) wide, with alternating black and white stripes.

2.07 WARNING SIGNS AND LABELS

- A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
- B. Warning Signs:
 1. Materials:
 2. Minimum Size: 7 by 10 inches (178 by 254 mm) unless otherwise indicated.
- C. Warning Labels:

1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
3. Minimum Size: 2 by 4 inches (51 mm by 102 mm) unless otherwise indicated.

PART 3 EXECUTION

3.01 PREPARATION

- A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
 1. Surface-Mounted Equipment: Enclosure front.
 2. Flush-Mounted Equipment: Inside of equipment door.
 3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
 4. Interior Components: Legible from the point of access.
 5. Conduits: Legible from the floor.
 6. Boxes: Outside face of cover.
 7. Conductors and Cables: Legible from the point of access.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using self-adhesive backing and to interior surfaces using self-adhesive backing or epoxy cement.
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
- F. Install underground warning tape above buried lines with one tape per trench at 3 inches (75 mm) below finished grade.
- G. Mark all handwritten text, where permitted, to be neat and legible.

3.03 FIELD QUALITY CONTROL

- A. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.

END OF SECTION

SECTION 26 2726
WIRING DEVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Receptacles.

1.02 REFERENCE STANDARDS

- A. FS W-C-596 - Connector, Electrical, Power, General Specification for; Federal Specification; Revision G, 2001.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- C. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999 (R 2010).
- D. NEMA WD 6 - Wiring Device -- Dimensional Specifications; National Electrical Manufacturers Association; 2002 (R2008).
- E. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 498 - Attachment Plugs and Receptacles; Current Edition, Including All Revisions.
- G. UL 943 - Ground-Fault Circuit-Interrupters; Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.
- C. Project Record Documents: Record actual installed locations of wiring devices.

1.04 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hubbell Incorporated: www.hubbell-wiring.com.
- B. Leviton Manufacturing Company, Inc: www.leviton.com.
- C. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us
- D. Substitutions: Not permitted.

2.02 WIRING DEVICE APPLICATIONS

- A. Provide weather resistant GFI receptacles with specified weatherproof covers for all receptacles installed outdoors or in damp or wet locations.

2.03 WIRING DEVICE FINISHES:

- A. Provide wiring device finishes as described below unless otherwise indicated.
- B. Wiring Devices Installed in Wet or Damp Locations: White with specified weatherproof cover.

2.04 RECEPTACLES

- A. Manufacturers:
 - 1. Hubbell Incorporated: www.hubbell-wiring.com.
 - 2. Leviton Manufacturing Company, Inc: www.leviton.com.
 - 3. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us

4. Substitutions: Not permitted.
- B. All Receptacles: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.
 1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
 2. NEMA configurations specified are according to NEMA WD 6.
- C. GFI Receptacles:
 1. All GFI Receptacles: Provide with feed-through protection, light to indicate ground fault tripped condition and loss of protection, and list as complying with UL 943, class A.
 2. Weather Resistant GFI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations.

2.05 WALL PLATES

- A. Manufacturers:
 1. Hubbell Incorporated: www.hubbell-wiring.com.
 2. Leviton Manufacturing Company, Inc: www.leviton.com.
 3. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us
- B. All Wall Plates: Comply with UL 514D.
- C. Weatherproof Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Install wiring devices in accordance with manufacturer's instructions.
- C. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- D. Where required, connect wiring devices using pigtails not less than 6 inches (150 mm) long. Do not connect more than one conductor to wiring device terminals.
- E. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- F. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.

- G. Provide GFI receptacles with integral GFI protection at each location indicated. Do not use feed-through wiring to protect downstream devices.
- H. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- I. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.

3.04 FIELD QUALITY CONTROL

- A. Perform field inspection, testing, and adjusting in accordance with Section 01 4000.
- B. Inspect each wiring device for damage and defects.
- C. Test each receptacle to verify operation and proper polarity.
- D. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.
- E. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.05 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.

3.06 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

END OF SECTION

SECTION 26 2813

FUSES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fuses.

1.02 REFERENCE STANDARDS

- A. NEMA FU 1 - Low Voltage Cartridge Fuses; National Electrical Manufacturers Association; 2002 (R2007).
- B. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. UL 248-1 - Low-Voltage Fuses - Part 1: General Requirements; Current Edition, Including All Revisions.
- D. UL 248-4 - Low-Voltage Fuses - Part 4: Class CC Fuses; Current Edition, Including All Revisions.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate fuse clips furnished in equipment provided under other sections for compatibility with indicated fuses.
 - 2. Coordinate fuse requirements according to manufacturer's recommendations and nameplate data for actual equipment to be installed.
 - 3. Notify Engineer of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard data sheets including voltage and current ratings, interrupting ratings, time-current curves, and current limitation curves.
- C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Cooper Bussmann, a division of Cooper Industries: www.cooperindustries.com.

2.02 APPLICATIONS

- A. In-Line Protection for Pole-Mounted Luminaires: Class CC, time-delay.

2.03 FUSES

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless specifically indicated to be excluded, provide fuses for all fusible equipment as required for a complete operating system.
- C. Provide fuses of the same type, rating, and manufacturer within the same switch.
- D. Comply with UL 248-1.

- E. Unless otherwise indicated, provide cartridge type fuses complying with NEMAFU 1, Class and ratings as indicated.
- F. Voltage Rating: Suitable for circuit voltage.
- G. Class CC Fuses: Comply with UL 248-4.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that fuse ratings are consistent with circuit voltage and manufacturer's recommendations and nameplate data for equipment.
- B. Verify that mounting surfaces are ready to receive spare fuse cabinet.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Do not install fuses until circuits are ready to be energized.
- B. Install fuses with label oriented such that manufacturer, type, and size are easily read.

END OF SECTION

SECTION 26 5600
EXTERIOR LIGHTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Exterior luminaires.
- B. Poles and accessories.
- C. Luminaire accessories.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- B. Section 26 0537 - Boxes.
- C. Section 26 2726 - Wiring Devices: Receptacles for installation in poles.
- D. Section 26 2813 - Fuses.

1.03 REFERENCE STANDARDS

- A. AASHTO LTS - Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals; American Association of State Highway and Transportation Officials; 5th Edition, with 2011 Interim Revisions
- B. IEEE C2 - National Electrical Safety Code; 2012.
- C. IESNA LM-5 - Photometric Measurements of Area and Sports Lighting Installations; 2004 (Reaffirmed 2007).
- D. IES LM-79 - Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products; Illuminating Engineering Society; 2008.
- E. IES LM-80 - Approved Method: Measuring Lumen Maintenance of LED Light Sources; Illuminating Engineering Society; 2008.
- F. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- G. NECA/IESNA 501 - Recommended Practice for Installing Exterior Lighting Systems; 2006.
- H. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. UL 1598 - Luminaires; Current Edition, Including All Revisions.
- J. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate placement of poles and associated foundations with utilities, curbs, sidewalks, trees, walls, fences, striping, etc. installed under other sections or by others. Coordinate elevation to obtain specified foundation height.
 - 2. Notify Engineer of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

- A. Shop Drawings:
 - 1. Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
 - 2. Provide photometric calculations where luminaires are proposed for substitution.
 - 3. Provide structural calculations for each pole.

- B. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, weight, effective projected area (EPA), and installed accessories; include model number nomenclature clearly marked with all proposed features.
 - 1. LED Luminaires:
 - a. Include estimated useful life, calculated based on IES LM-80 test data.
 - b. Include IES LM-79 test report.
 - 2. Lamps: Include rated life and initial and mean lumen output.
 - 3. Poles: Include information on maximum supported effective projected area (EPA) and weight for the design wind speed.
- C. Sustainable Design Documentation: Submit manufacturer's product data on lamp mercury content and rated lamp life, showing compliance with specified requirements.
- D. Certificates for Poles and Accessories: Manufacturer's documentation that products are suitable for the luminaires to be installed and comply with designated structural design criteria.
- E. Field Quality Control Reports.
 - 1. Include test report indicating measured illumination levels.
- F. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.
- G. Operation and Maintenance Data: Instructions for each product including information on replacement parts.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, handle, and store products according to NECA/IESNA 501 and manufacturer's written instructions.
- B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

1.08 WARRANTY

- A. Provide twenty five-year manufacturer warranty for all LED luminaires, including drivers.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Refer to plans for manufacturer and model numbers.

2.02 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.

- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, poles, foundations, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- G. Provide luminaires listed and labeled as suitable for wet locations.
- H. LED Luminaires:
 - 1. Components: UL 8750 recognized or listed as applicable.
 - 2. Tested in accordance with IES LM-79 and IES LM-80.
 - 3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.
- I. Exposed Hardware: Stainless steel.

2.03 POLES

- A. All Poles:
 - 1. Provide poles and associated support components suitable for the luminaire(s) and associated supports and accessories to be installed.
 - 2. Structural Design Criteria:
 - a. Comply with AASHTO LTS.
 - b. Wind Load: Include effective projected area (EPA) of luminaire(s) and associated supports and accessories to be installed.
 - c. Dead Load: Include weight of proposed luminaire(s) and associated supports and accessories.
 - d. Include structural calculations demonstrating compliance with submittals.
 - 3. Mounting: Install on concrete foundation, height as indicated on the drawings, unless otherwise indicated.
 - 4. Unless otherwise indicated, provide with the following features/accessories:
 - a. Top cap.
 - b. Handhole.
 - c. Anchor bolts with leveling nuts or leveling shims.
 - d. Anchor base cover.
 - e. Provision for pole-mounted weatherproof GFI receptacle where indicated.
- B. Metal Poles: Provide ground lug, accessible from handhole.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Install products according to manufacturer's instructions.
- B. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 1 (general workmanship) and NECA/IESNA 501 (exterior lighting).

- C. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- D. Pole-Mounted Luminaires:
 - 1. Maintain the following minimum clearances:
 - a. Comply with IEEE C2.
 - 2. Foundation-Mounted Poles:
 - a. Provide sonotube formed, cast-in-place concrete foundations for all poles in accordance with manufacturers requirements and referenced standards.
 - 1) Install foundations plumb.
 - 2) Install poles plumb, using leveling nuts or shims as required to adjust to plumb.
 - 3) Tighten anchor bolt nuts to manufacturer's recommended torque.
 - 4) Install non-shrink grout between pole anchor base and concrete foundation, leaving small channel for condensation drainage.
 - 5) Install anchor base covers or anchor bolt covers as indicated.
 - 3. Embedded Poles: Install poles plumb as indicated.
 - 4. Grounding:
 - a. Bond luminaires, metal accessories, metal poles, and foundation reinforcement to branch circuit equipment grounding conductor.
 - b. Provide supplementary ground rod electrode as specified in Section 26 0526 at each pole bonded to grounding system as indicated.
 - 5. Install separate service conductors, 12 AWG copper, from each luminaire down to handhole for connection to branch circuit conductors.
 - 6. Install in-line fuse holders and fuses complying with Section 26 2813 in pole handhole or transformer base for each ungrounded conductor.
 - 7. Install weather resistant GFI duplex receptacle with weatherproof lockable-cover as specified in Section 26 2726 in designated poles.
- E. Install accessories furnished with each luminaire.
- F. Bond products and metal accessories to branch circuit equipment grounding conductor.
- G. Install lamps in each luminaire.

3.04 FIELD QUALITY CONTROL

- A. Inspect each product for damage and defects.
- B. Operate each luminaire after installation and connection to verify proper operation.
- C. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Engineer.
- D. Measure illumination levels at night with calibrated meters to verify conformance with performance requirements. Record test results in written report to be included with submittals.

3.05 ADJUSTING

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Engineer. Secure locking fittings in place.
- B. Luminaires with Field-Rotatable Optics: Position optics according to manufacturer's instructions to achieve lighting distribution as indicated or as directed by Engineer.

3.06 CLEANING

- A. Clean surfaces according to NECA/IESNA 501 and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.07 CLOSEOUT ACTIVITIES

- A. Demonstration: Demonstrate proper operation of luminaires to Engineer, and correct deficiencies or make adjustments as directed.
- B. Just prior to Substantial Completion, replace all lamps that have failed.

3.08 PROTECTION

- A. Protect installed luminaires from subsequent construction operations.

END OF SECTION

LIGHTING SPECIFICATION
PREPARED FOR

James Park Baseball Football

Baseball/Football/Tennis Lighting Project
Evanston, Illinois
August 31, 2021

Project # 141525

SUBMITTED BY:

Musco Sports Lighting, LLC

2107 Stewart Road
PO Box 260
Muscatine, Iowa 52761
Local Phone: 563/263-2281
Toll Free: 800/756-1205
Fax: 800/374-6402



SECTION 26 56 68 – EXTERIOR ATHLETIC LIGHTING

Lighting System with LED Light Source

PART 1 – GENERAL

1.1 SUMMARY

- A. Work covered by this section of the specifications shall conform to the contract documents, engineering plans as well as state and local codes.
- B. The purpose of these specifications is to define the lighting system performance and design standards for the James Park Baseball Soccer project using an LED Lighting source. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth in these specifications.
- C. The sports lighting will be for the following venues:
 - 1. Baseball
 - 2. Tennis
 - 3. Football
- D. The primary goals of this sports lighting project are:
 - 1. **Guaranteed Light Levels:** Selection of appropriate light levels impact the safety of the players and the enjoyment of spectators. Therefore light levels are guaranteed to not drop below specified target values for a period of 25 years.
 - 2. **Environmental Light Control:** It is the primary goal of this project to minimize spill light to adjoining properties and glare to the players, spectators and neighbors.
 - 3. **Cost of Ownership:** In order to reduce the operating budget, the preferred lighting system shall be energy efficient and cost effective to operate. All maintenance costs shall be eliminated for the duration of the warranty.
 - 4. **Control and Monitoring:** To allow for optimized use of labor resources and avoid unneeded operation of the facility, customer requires a remote on/off control system for the lighting system. Fields should be proactively monitored to detect luminaire outages over a 25-year life cycle. All communication and monitoring costs for 25-year period shall be included in the bid.
- E. All lighting designs shall comply with the City of Evanston, Illinois lighting ordinance.

1.2 LIGHTING PERFORMANCE

- A. **Illumination Levels and Design Factors:** Playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below. Appropriate light loss factors shall be applied and submitted for the basis of design. Average illumination level shall be measured in accordance with the IESNA LM-5-04 (IESNA Guide for Photometric Measurements of Area and Sports Lighting Installations). Illumination levels shall not to drop below desired target values in accordance to IES RP-6-15, Page 2, Maintained Average Illuminance and shall be guaranteed for the full warranty period.

Area of Lighting	Average Target Illumination Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Baseball	50 FC infield 50 FC outfield	2:1 infield 2:1 outfield	24 infield 72 outfield	30.0' x 30.0'
Tennis	30 FC	2.5:1	45	20.0' x 20.0'
Football	50 FC	2:1	66	30.0' x 30.0'

- B. **Color:** The lighting system shall have a minimum color temperature of 5700K and a CRI of 75.
- C. **Mounting Heights:** To ensure proper aiming angles for reduced glare and to provide better

playability, minimum mounting heights shall be as described below. Higher mounting heights may be required based on photometric report and ability to ensure the top of the field angle is a minimum of 10 degrees below horizontal.

# of Poles	Pole Designation	Pole Height
8	A1-A2, T1-T6	60'
2	C1, D1	70'
4	B1-B2, C2, D2	80'

1.3 ENVIRONMENTAL LIGHT CONTROL

- A. Light Control Luminaires: All luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers and external shields. No symmetrical beam patterns are accepted.
- B. Spill Light and Glare Control: To minimize impact on adjacent properties, spill light and candela values must not exceed the following levels taken at 3 feet above grade.

Typical Field Type	Maximum Candela at 150 feet
Baseball	<40,000 candela
Football	<24,000 candela
Tennis	<12,000 candela

- C. Spill Scans: Spill scans must be submitted indicating the amount of horizontal and vertical footcandles along the specified lines. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights. Illumination level shall be measured in accordance with the IESNA LM-5-04 after 1 hour warm up.
- D. The first page of a photometric report for all luminaire types proposed showing horizontal and vertical axial candle power shall be provided to demonstrate the capability of achieving the specified performance. Reports shall be certified by a qualified testing laboratory with a minimum of five years experience or by a manufacturer’s laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products. A summary of the horizontal and vertical aiming angles for each luminaire shall be included with the photometric report.

1.4 Cost of Ownership

- A. Manufacturer shall submit a 25 year Cost of Ownership summary that includes energy consumption, anticipated maintenance costs, and control costs. All costs associated with faulty luminaire replacement - equipment rentals, removal and installation labor, and shipping - are to be included in the maintenance costs.

PART 2 – PRODUCT

2.2 SPORTS LIGHTING SYSTEM CONSTRUCTION

- A. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.
- B. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM

A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arms, pole, or electrical components enclosure.

C. System Description: Lighting system shall consist of the following:

1. Galvanized steel poles and cross-arm assembly.
2. Non-approved pole technology:
 - a. Square static cast concrete poles will not be accepted.
 - b. Direct bury steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long term performance concerns.
3. Lighting systems shall use concrete foundations. See Section 2.4 for details.
 - a. For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
 - b. For anchor bolt foundations or foundations using a pre-stressed concrete base in a suspended pier or re-inforced pier design pole erection may occur after 7 days. Or after a concrete sample from the same batch achieves a certain strength.
4. Manufacturer will supply all drivers and supporting electrical equipment
 - a. Remote drivers and supporting electrical equipment shall be mounted approximately 10 feet above grade in aluminum enclosures. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per circuit for each pole structure will be located in the enclosure. Integral drivers are not allowed.
 - b. Manufacturer shall provide surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2_2002.
5. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
6. All luminaires, visors, and cross-arm assemblies shall withstand 150 mi/h winds and maintain luminaire aiming alignment.
7. Control cabinet to provide remote on-off control, monitoring, and entertainment features of the lighting system. See Section 2.3 for further details.
8. Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
 - a. Integrated grounding via concrete encased electrode grounding system.
 - b. If grounding is not integrated into the structure, the manufacturer shall supply grounding electrodes, copper down conductors, and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA 780. The grounding electrode shall be minimum size of 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.

D. Safety: All system components shall be UL listed for the appropriate application.

2.2 ELECTRICAL

- A. Electric Power Requirements for the Sports Lighting Equipment:
 - 1. Electric power: 480 Volt, 3 Phase
 - 2. Maximum total voltage drop: Voltage drop to the disconnect switch located on the poles shall not exceed three (3) percent of the rated voltage.
- B. Energy Consumption: The kW consumption for the field lighting system shall be 66.83 kW for Baseball/Football and 13.2kW for Tennis.

2.3 CONTROL

- A. Instant On/Off Capabilities: System shall provide for instant on/off of luminaires.
- B. Lighting contactor cabinet(s) constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Manual off-on-auto selector switches shall be provided.
- C. Dimming: System shall provide for 3-stage dimming (high-medium-low). Dimming will be set via scheduling options (Website, app, phone, fax, email)
- D. Remote Lighting Control System: System shall allow owner and users with a security code to schedule on/off system operation via a web site, phone, fax or email up to ten years in advance. Manufacturer shall provide and maintain a two-way TCP/IP communication link. Trained staff shall be available 24/7 to provide scheduling support and assist with reporting needs.

The owner may assign various security levels to schedulers by function and/or fields. This function must be flexible to allow a range of privileges such as full scheduling capabilities for all fields to only having permission to execute "early off" commands by phone. Scheduling tool shall be capable of setting curfew limits.

Controller shall accept and store 7-day schedules, be protected against memory loss during power outages, and shall reboot once power is regained and execute any commands that would have occurred during outage.

- E. Remote Monitoring System: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).
- F. Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports by facility and user group. Dashboard shall also show current status of luminaire outages, control operation and service. Mobile application will be provided suitable for IOS, Android and Blackberry devices.

Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.

- 1. Cumulative hours: shall be tracked to show the total hours used by the facility
 - 2. Report hours saved by using early off and push buttons by users.
- G. Communication Costs: Manufacturer shall include communication costs for operating the control and monitoring system for a period of 25 years.
- H. Communication with luminaire drivers: Control system shall interface with drivers in electrical components enclosures by means of powerline communication.

2.4 STRUCTURAL PARAMETERS

- A. Wind Loads: Wind loads shall be based on the 2015 International Building Code. Wind loads to be calculated using ASCE 7-10, an ultimate design wind speed of 115 mph and exposure category C.
- B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to 2013 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic

Signals (LTS-6).

- C. Foundation Design: The foundation design shall be based on soil parameters as outlined in the geotechnical report.
- D. Foundation Drawings: Project specific foundation drawings stamped by a registered engineer in the state where the project is located are required. The foundation drawings must list the moment, shear (horizontal) force, and axial (vertical) force at ground level for each pole. These drawings must be submitted at time of bid to allow for accurate pricing.

PART 3 – EXECUTION

3.1 SOIL QUALITY CONTROL

- A. It shall be the Contractor's responsibility to notify the Owner if soil conditions exist other than those on which the foundation design is based, or if the soil cannot be readily excavated. Contractor may issue a change order request / estimate for the Owner's approval / payment for additional costs associated with:
 - 1. Providing engineered foundation embedment design by a registered engineer in the State of Illinois for soils other than specified soil conditions
 - 2. Additional materials required to achieve alternate foundation;
 - 3. Excavation and removal of materials other than normal soils, such as rock, caliche, etc.

3.2 DELIVERY TIMING

- A. Delivery Timing Equipment On-Site: The equipment must be on-site 6-8 weeks from receipt of approved submittals and receipt of complete order information.

3.3 FIELD QUALITY CONTROL

- A. Illumination Measurements: Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA LM-5-04.
- B. Field Light Level Accountability
 - 1. Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 25 years. These levels will be specifically stated as "guaranteed" on the illumination summary provided by the manufacturer.
 - 2. The contractor/manufacturer shall be responsible for conducting initial light level testing and an additional inspection of the system, in the presence of the owner, one year from the date of commissioning of the lighting.
 - 3. The contractor/manufacturer will be held responsible for any and all changes needed to bring these fields back to compliance for light levels and uniformities. Contractor/Manufacturer will be held responsible for any damage to the fields during these repairs.
- C. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles and uniformity ratios are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to make adjustments to meet specifications and satisfy Owner.

3.4 WARRANTY AND GUARANTEE

- A. 25-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 25 years from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty does not cover weather conditions events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.
- B. Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off

status, hours of usage and luminaire outage for 25 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. Manufacturer is responsible for removal and replacement of failed luminaires, including all parts, labor, shipping, and equipment rental associated with maintenance. Owner agrees to check fuses in the event of a luminaire outage.

PART 4 – DESIGN APPROVAL

4.0 PRE-BID SUBMITTAL REQUIREMENTS (Non-Musco)

- A. Design Approval: The owner / engineer will review pre-bid submittals per section 4.0.B from all the manufacturers to ensure compliance to the specification 10 days prior to bid. If the design meets the design requirements of the specifications, a letter and/or addendum will be issued to the manufacturer indicating approval for the specific design submitted.
- B. Approved Product: Musco's Light-Structure System™ with TLC for LED™ is the approved product. All substitutions must provide a complete submittal package for approval as outlined in Submittal Information at the end of this section at least 10 days prior to bid. Special manufacturing to meet the standards of this specification may be required. An addendum will be issued prior to bid listing any other approved lighting manufacturers and designs.
- C. All listed manufacturers not pre-approved shall submit the information at the end of this section at least 10 days prior to bid. An addendum will be issued prior to bid; listing approved lighting manufacturers and the design method to be used.
- D. Bidders are required to bid only products that have been approved by this specification or addendum by the owner or owner's representative. Bids received that do not utilize an approved system/design, will be rejected.

REQUIRED SUBMITTAL INFORMATION FOR ALL MANUFACTURERS (NOT PRE-APPROVED) 10 DAYS PRIOR TO BID

*All items listed below are mandatory, shall comply with the specification and be submitted according to pre-bid submittal requirements. Complete the Yes/No column to indicate compliance (Y) or noncompliance (N) for each item. **Submit checklist below with submittal.***

Yes/ No	Tab	Item	Description
	A	Letter/ Checklist	Listing of all information being submitted must be included on the table of contents. List the name of the manufacturer's local representative and his/her phone number. Signed submittal checklist to be included.
	B	Equipment Layout	Drawing(s) showing field layouts with pole locations
	C	On Field Lighting Design	Lighting design drawing(s) showing: <ul style="list-style-type: none"> a. Field Name, date, file number, prepared by b. Outline of field(s) being lighted, as well as pole locations referenced to the center of the field (x & y), Illuminance levels at grid spacing specified c. Pole height, number of fixtures per pole, horizontal and vertical aiming angles, as well as luminaire information including wattage, lumens and optics d. Height of light test meter above field surface. e. Summary table showing the number and spacing of grid points; average, minimum and maximum illuminance levels in foot candles (fc); uniformity including maximum to minimum ratio, coefficient of variance (CV), coefficient of utilization (CU) uniformity gradient; number of luminaires, total kilowatts, average tilt factor; light loss factor.
	D	Off Field Lighting Design	Lighting design drawing showing initial spill light levels along the boundary line (defined on bid drawings) in footcandles. Lighting design showing glare along the boundary line in candela. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights.
	E	Photometric Report	Provide first page of photometric report for all luminaire types being proposed showing candela tabulations as defined by IESNA Publication LM-35-02. Photometric data shall be certified by laboratory with current National Voluntary Laboratory Accreditation Program or an independent testing facility with over 5 years experience.
	F	Performance Guarantee	Provide performance guarantee including a written commitment to undertake all corrections required to meet the performance requirements noted in these specifications at no expense to the owner. Light levels must be guaranteed to not fall below target levels for warranty period.
	G	Structural Calculations	Pole structural calculations and foundation design showing foundation shape, depth backfill requirements, rebar and anchor bolts (if required). Pole base reaction forces shall be shown on the foundation drawing along with soil bearing pressures. Design must be stamped by a structural engineer in the state of Illinois, if required by owner.
	H	Control & Monitoring System	Manufacturer of the control and monitoring system shall provide written definition and schematics for automated control system. They will also provide ten (10) references of customers currently using proposed system in the state of Illinois.
	I	Electrical Distribution Plans	Manufacturer bidding an alternate product must include a revised electrical distribution plan including changes to service entrance, panels and wire sizing, signed by a licensed Electrical Engineer in the state of Illinois.
	J	Warranty	Provide written warranty information including all terms and conditions. Provide ten (10) references of customers currently under specified warranty in the state of Illinois.
	K	Project References	Manufacturer to provide a list of 10 projects where the technology and specific fixture proposed for this project has been installed in the state of Illinois. Reference list will include project name, project city, installation date, and if requested, contact name and contact phone number.
	L	Product Information	Complete bill of material and current brochures/cut sheets for all product being provided.
	M	Delivery	Manufacturer shall supply an expected delivery timeframe from receipt of approved submittals and complete order information.

	N	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications. If in full compliance, tab may be omitted.
	O	Cost of Ownership	Document cost of ownership as defined in the specification. Identify energy costs for operating the luminaires. Maintenance cost for the system must be included. All costs should be based on 25 Years

The information supplied herein shall be used for the purpose of complying with the specifications for the James Park Baseball Football project. By signing below I agree that all requirements of the specifications have been met and that the manufacturer will be responsible for any future costs incurred to bring their equipment into compliance for all items not meeting specifications and not listed in the Non-Compliance section.

Manufacturer: _____

Signature: _____

Contact Name: _____

Date: ____/____/____

Contractor: _____

Signature: _____

SECTION 31 2316.13
TRENCHING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Backfilling and compacting for utilities outside the building.

1.02 REFERENCES

- A. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 in.) Drop; American Association of State Highway and Transportation Officials; 2010
- B. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); 2012.
- C. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method; 2007.
- D. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN m/m³)); 2012.
- E. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; 2008.
- F. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2011.
- G. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 2005.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. When necessary, store materials on site in advance of need.
- B. When fill materials need to be stored on site, locate stockpiles where indicated.
 - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
 - 2. Prevent contamination.
 - 3. Protect stockpiles from erosion and deterioration of materials.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. Per City of Evanston Requirements - coordinate with Evanston project manager.
 - 1. General Fill - Fill Type as defined by City of Evanston project requirements -verify: Subsoil excavated on-site.
 - a. Graded.
 - b. Free of lumps larger than 3 inches (75 mm), rocks larger than 2 inches (50 mm), and debris.
 - c. Conforming to ASTM D2487 Group Symbol CL.
 - 2. Structural Fill - Fill Type as defined by City of Evanston project requirements -verify: Subsoil excavated on-site.
 - a. Graded.
 - b. Free of lumps larger than 3 inches (75 mm), rocks larger than 2 inches (50 mm), and debris.
 - 3. Granular Fill - Gravel - Fill Type as defined by City of Evanston project requirements - verify: Pit run washed stone; free of shale, clay, friable material and debris.
 - a. Graded in accordance with ASTM D2487 Group Symbol GW.
 - 4. Granular Fill - Pea Gravel - Fill Type as defined by City of Evanston project requirements - verify: Natural stone; washed, free of clay, shale, organic matter.
 - a. Grade in accordance with ASTM D2487 Group Symbol GM.

5. Sand - Fill Type as defined by City of Evanston project requirements - verify: Natural river or bank sand; washed; free of silt, clay, loam, friable or soluble materials, and organic matter.
 - a. Grade in accordance with ASTM D2487 Group Symbol SW.
 6. Topsoil - Fill Type as defined by City of Evanston project requirements - verify: Topsoil excavated on-site.
 - a. Free of roots, rocks larger than 1/2 inch (12 mm), subsoil, debris, large weeds and foreign matter.
 - b. Conforming to ASTM D2487 Group Symbol OH.
- B. Fill areas (potholes, handholes, etc.) can utilize excavated material provided the top eighteen inches (18") below finished grade are backfilled with twelve inches (12") of clay below six inches (6") of topsoil.

2.02 SOURCE QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for general requirements for testing and analysis of soil material.
- B. Where fill materials are specified by reference to a specific standard, test and analyze samples for compliance before delivery to site.
- C. If tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that survey bench marks and intended elevations for the work are as indicated.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate, identify, and protect utilities that remain and protect from damage.
- C. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- D. Protect plants, lawns, rock outcroppings, and other features to remain.

3.03 TRENCHING

- A. Notify Engineer of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- B. Slope banks of excavations deeper than 4 feet (1.2 meters) to angle of repose or less until shored.
- C. Do not interfere with 45 degree bearing splay of foundations.
- D. Cut trenches wide enough to allow inspection of installed utilities.
- E. Hand trim excavations. Remove loose matter.
- F. Remove large stones and other hard matter that could damage piping or impede consistent backfilling or compaction.
- G. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd (0.25 cu m) measured by volume. See Section 31 2316.26 for removal of larger material.
- H. Remove excavated material that is unsuitable for re-use from site.
- I. Remove excess excavated material from site.

3.04 PREPARATION FOR UTILITY PLACEMENT

- A. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
- B. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- C. Until ready to backfill, maintain excavations and prevent loose soil from falling into excavation.

3.05 BACKFILLING

- A. Backfill to contours and elevations indicated using unfrozen materials.
- B. Fill up to subgrade elevations unless otherwise indicated.
- C. Employ a placement method that does not disturb or damage other work.
- D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6 inches (150 mm) compacted depth.
- G. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches (200 mm) compacted depth.
- H. Slope grade away from building minimum 2 inches in 10 ft (50 mm in 3 m), unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
- I. Correct areas that are over-excavated.
 - 1. Other areas: Use general fill, flush to required elevation, compacted to minimum 97 percent of maximum dry density.
- J. Compaction Density Unless Otherwise Specified or Indicated:
 - 1. Under paving, slabs-on-grade, and similar construction: 97 percent of maximum dry density.
 - 2. At other locations: 95 percent of maximum dry density.
- K. Reshape and re-compact fills subjected to vehicular traffic.

3.06 BEDDING AND FILL AT SPECIFIC LOCATIONS

- A. Use general fill unless otherwise specified or indicated.
- B. Utility Piping, Conduits, and Duct Bank and misc. electrical related work:
 - 1. Bedding: Use general fill.
 - 2. Cover with general fill.
 - 3. Fill up to subgrade elevation.
 - 4. Compact in maximum 8 inch (200 mm) lifts to 95 percent of maximum dry density.

3.07 TOLERANCES

- A. Top Surface of General Backfilling: Plus or minus 1 inch (25 mm) from required elevations.
- B. Top Surface of Backfilling Under Paved Areas: Plus or minus 1 inch (25 mm) from required elevations.

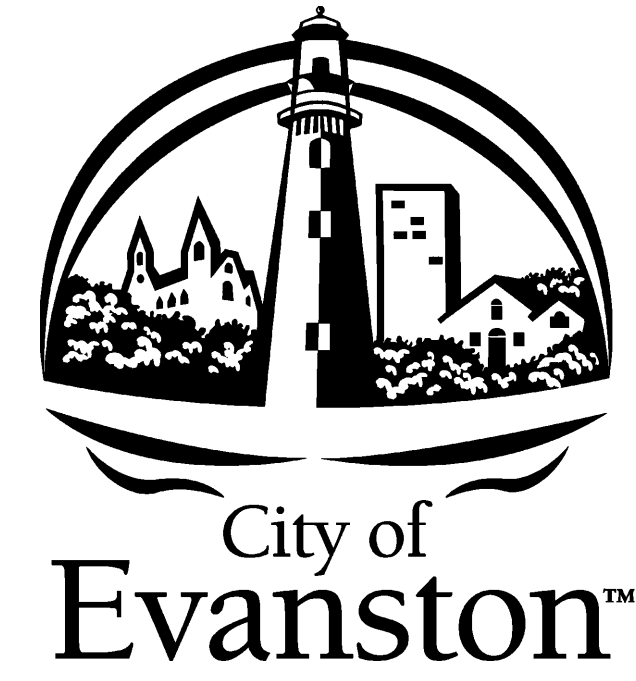
3.08 FIELD QUALITY CONTROL

- A. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, ASTM D3017, or ASTM D6938.
- B. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D698 ("standard Proctor"), ASTM D1557 ("modified Proctor"), or AASHTO T 180.
- C. If tests indicate work does not meet specified requirements, remove work, replace and retest.

3.09 CLEANING

- A. Leave unused materials in a neat, compact stockpile.
- B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.
- C. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

END OF SECTION



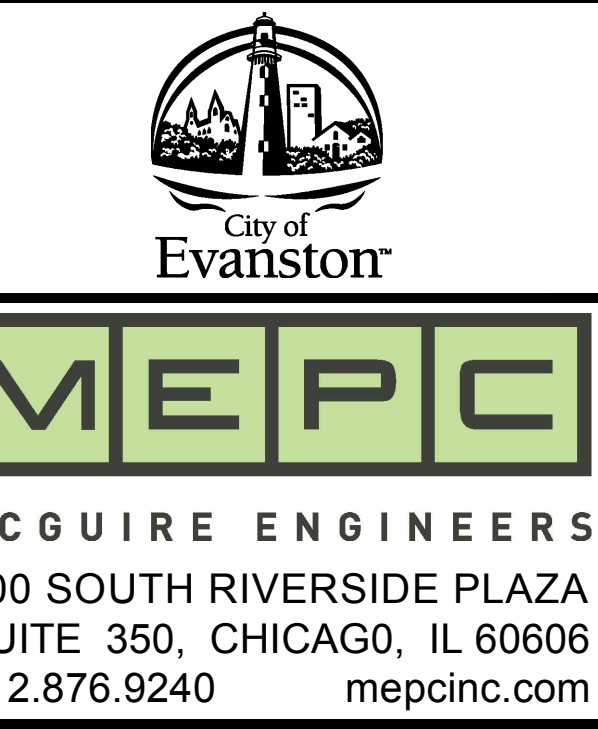
ISSUED FOR BID - JULY 27, 2023

City of Evanston

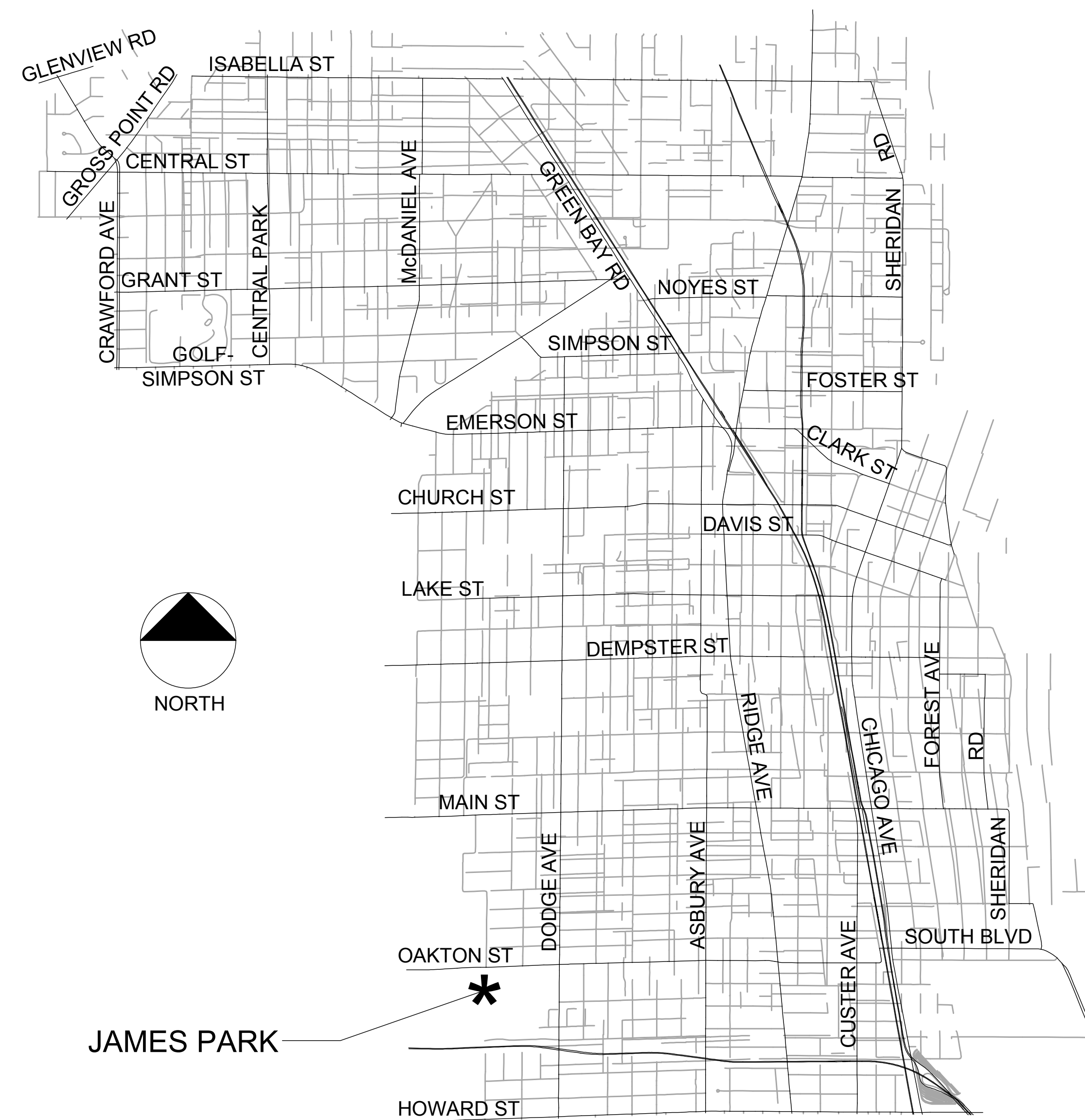
Public Works Agency

2023 James Park Athletic Lighting Project

(BID #23-39)



LOCATION MAP



ABBREVIATIONS

ALUM	ALUMINUM	LOL	LAYOUT LINE
BC	BOTTOM OF CURB	MANUF	MANUFACTURER
BEG	BEGIN	MIN	MINIMUM
BIT	BITUMINOUS	NO.	NUMBER
BOT	BOTTOM	NOM	NOMINAL
BW	BOTTOM OF WALL	NTS	NOT TO SCALE
CC	CENTER OF CURVE	OC	ON CENTER
C/L	CENTER LINE	OD	OUTSIDE DIAMETER
CLR	CLEAR	OPNG	OPENING
CONC	CONCRETE	PERF	PERFORATED
CONT	CONTINUOUS	PC	POINT OF CURVATURE
CP	CENTER POINT	PCC	POINT OF COMPOUND CURVATURE
DIA	DIAMETER	PRC	POINT OF REVERSE CURVATURE
EA	EACH	PT	POINT OF TANGENCY
EF	EACH FACE	PVMT	PAVEMENT
ELEV	ELEVATION	R	RADIUS
EQUIP	EQUIPMENT	REINF	REINFORCEMENT
EW	EACH WAY	REQD	REQUIRED
EXIST	EXISTING	RET	RETAINING
FG	FINISH GRADE	SIM	SIMILAR
GA	GAUGE	SQ	SQUARE
GALV	GALVANIZED	TC	TOP OF CURB
HT	HEIGHT	TW	TOP OF WALL
IDOT	ILLINOIS DEPARTMENT OF TRANSPORTATION	TYP	TYPICAL
INV	INVERT	VAR	VARIABLE

OWNER

CITY OF EVANSTON
PUBLIC WORKS AGENCY
CONTACT: STEFANIE LEVINE, PLA
2100 RIDGE AVENUE
EVANSTON, ILLINOIS 60201
847-448-8043 (PHONE)
stlevine@cityofevanston.org

ELECTRICAL ENGINEER

MCGUIRE ENGINEERS
CONTACT: STEVE HINZE-PROJECT MANAGER
300 SOUTH RIVERSIDE PLAZA, SUITE 350
CHICAGO, ILLINOIS 60606
312-930-2247 (PHONE)
shinze@mepcinc.com

UTILITY LOCATION NOTE

PRIOR TO STARTING UNDERGROUND CONSTRUCTION THE CONTRACTOR SHALL CALL J.U.L.I.E. AT 1-800-892-0123 FOR UNDERGROUND UTILITIES LOCATION. CONTRACTOR SHALL ALSO CONTACT CITY'S FACILITIES MANAGEMENT DIVISION FOR UNDERGROUND UTILITY LOCATES AT 847-866-2916

APPLICABLE CODES:

2011 NATIONAL ELECTRICAL CODE WITH EVANSTON AMENDMENTS

INDEX OF DRAWINGS

DRAWING NO.	DRAWING TITLE
E001	COVER SHEET
E100	ELECTRICAL SYMBOLS AND GENERAL NOTES
ES100	ELECTRICAL SITE PLAN
E200	ELECTRICAL SITE LIGHTING PLAN
E300	ELECTRICAL RISER DIAGRAM
E400	ELECTRICAL SCHEDULES
C1	POLE AND FOUNDATION
C2	POLE AND FOUNDATION
-	MUSCO LIGHTING SYSTEM DRAWINGS (9 SHEETS)

SEAL

Delta	Issue For	Date

PROJECT:

JAMES PARK ATHLETIC LIGHTING
2200 OAKTON ST
EVANSTON, IL 60202

PROJECT NO: 21-0086

DRAWN BY: SH

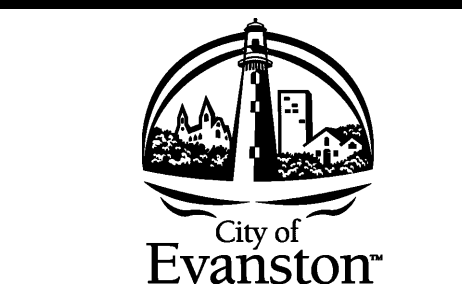
CHECKED BY: JLY

SHEET TITLE:

JAMES PARK
LIGHTING COVER
SHEET

SHEET NO:

E001



MEPC
MCGUIRE ENGINEERS
 300 SOUTH RIVERSIDE PLAZA
 SUITE 350, CHICAGO, IL 60606
 312.876.9240 mepcinc.com

Electrical Specifications and General Notes

1. General
 - 1.1. The Contractor shall provide and pay for all labor, materials and equipment necessary for a complete and functional electrical system(s). Items and accessories implied as necessary to complete the proper operation of the system(s) shall be provided.
 - 1.2. Materials and installation shall comply with codes, utility requirements, laws and ordinances of federal, state, CSHA and local governing bodies having jurisdiction. The Contractor shall familiarize himself with all the local code amendments to ensure compliance.
 - 1.3. The Contractor shall guarantee all materials and workmanship for a period of 12 months after final acceptance of the work.
 - 1.4. Clean Up: The contractor is responsible for daily cleanup of all items associated with their trade in order to maintain a "room sweep" condition.
 - 1.5. Approvals: The contractor is required to test, adjust and reset systems as required in order to obtain approvals from local jurisdictions, Owners insurance and underwriters, and Owners representatives.
 - 1.6. The contract documents are not a direction for the contractor to violate any codes or local amendments. Should the contractor believe a code violation is present in the contract documents he shall bring it to the attention of the engineer immediately with an accompanying code reference or standard. The contractor shall not proceed with any work until the potential conflict has been resolved.
2. Review of Contract Documents and Field Conditions
 - 2.1. The Contractor shall carefully examine all contract documents, visit the site, and become thoroughly familiar with the building standards and local conditions prior to the work. Failure to do so shall not relieve the Contractor of the obligations of the contract. Identify all discrepancies to the Engineer.
 - 2.2. The drawings shall serve to indicate the general layout of the various items of equipment. The layout of the equipment may not include all items required. Accessories and other components are diagrammatic unless specifically shown or dimensioned. Existing conditions are reflective of as-built-as-designed drawings and items that were visually observable during the time of the field survey. Due to occupancy and accessibility, not all areas may have been field verified. The Contractor shall review all existing conditions prior to Bid and shall identify all areas in question within his Bid. Items not identified during the bidding process will be assumed to have been field verified and no issues or conflicts exist.
 - 2.3. The Contractor shall notify the Engineer of any materials, equipment or configuration believed to be inadequate, unusable, in violation of laws, ordinances, rules or regulations of authorities having jurisdiction prior to installation.
 - 2.4. The existing power, signal and communication systems are to remain in service to provide for the Owner's function. Should it become necessary to shut down any system or portion of a system, approval in writing shall be obtained from the Owner and shall be only for the period and time agreed upon. The bid is to include the cost of any temporary wiring and premium time required for the situation.
 - 2.5. Cost Change Requests
 All cost change requests shall be submitted using the latest edition of "RSMeans Electrical Cost Data". All requests shall be submitted broken down with the following:
 Material cost per item, linear foot, etc.
 Labor cost including cost per man hour and quantity of hours
 Overhead and profit percentage
 Total cost of the change order
 All change requests shall be accompanied by initiating sketch, addenda, bulletin, directive, etc. including number for tracking. All change requirements shall include the date of documents the original, and changes were based off of.
 Any associated costs for drafting to include the document change into the "AS-BUILT" documents shall not exceed 10% of the cost of change request. This shall include three dimensional drafting or BIM implementation.
 Should the Contractor elect not to use RSMeans, this qualification must be stated in writing in the Contractors bid. Alternatives to RSMeans shall be submitted in all inclusive (material and labor) unit prices, and each unit price shall be defined in the Contractors bid. All items not defined in the bid shall be reviewed using RSMeans.
 The Contractor shall coordinate all phasing requirements with the General Contractor and/or Architect during bid. All costs to accommodate required phasing shall be included in bid.
 All projects prepared using Revit or other three dimensional design tool shall not be assumed by the Contractor to be 100% coordinated installation documents. The Contractor shall fully field survey existing conditions and prepare shop drawings coordinated with all other trades.
3. Permits and Fees
 - 3.1. The Contractor shall secure all permits and pay governmental fees, taxes, inspections and license necessary for the proper execution and completion of the work. City of Evanston will waive fees associated with the city.
4. Submittals and Shop Drawings
 - 4.1. The Contractor shall prepare and submit to governmental agencies and utility companies, the shop drawings that are required by these agencies, for their approval
 - 4.2. Contractor shall submit complete site plans drawn to the scale of 1/8" = 1'-0", showing all equipment, wireways and conduit to be installed. The complete branch wiring distribution system shall also be shown, accurately indicating power supplies, branch circuit runs, circuit designations and locations. The drawing shall also show the work coordinated with all other trades. All drawings shall be submitted prior to starting the work, and in accordance with an approved schedule, provided by the Contractor, to avoid any delay on project.
 - 4.3. Shop drawings shall include Contractor's name, job address, manufacturer's names, catalog numbers, cuts, diagrams, dimensions and maintenance clearances and other such descriptive data as may be required to identify and review the equipment. Submittals shall be in logical groups; for example, all lighting fixtures. Partial submittals shall not be reviewed. Reviewing shop drawings by MEPC is a service only and does not imply a guarantee of existing conditions or building measurements. Reviewing of the shop drawings does in no way alleviate the Contractor of his responsibilities under the contract.
 - 4.4. The shop drawing submittals shall be in electronic (PDF) format unless noted otherwise in the Architectural specifications. Where hard copies are submitted, a minimum of (6) copies will be provided. Electronic shop drawings greater than 1MB in size shall not be submitted via email, but shall be posted to MEPC's FTP site (and the Architects upon request). The following items shall be submitted for review as applicable by project:
 - 4.4.1. Lighting fixtures, lamps and ballast/drivers.
 - 4.4.2. Receptacles, switches, wiring devices, dimmers, floor fittings, relays, time switches.
 - 4.4.3. Fuses, disconnect switches, motor starters.
 - 4.4.4. Panelboards, transformers and other distribution equipment.
 - 4.5. No equipment shall be purchased or installed without an approved shop drawing submittal. The Contractor assumes all risk associated with failure to comply with this provision.
 - 4.6. Substitutions

- 4.6.1. The Contractor may substitute in accordance with the specifications. No substitutions will be accepted without prior approval of the Engineer and/or Owner.
 - 4.6.2. The Contractor is required to provide equivalent physical size, materials, weight, performance, criteria, as the product specified. In addition, any differences between the product specified and the substitution which may affect other trades IE electrical characteristics, mechanical characteristics, etc. shall be accounted for prior to suggesting the substitution. All cost impacts to all other trades shall be accounted for in the substitution. No additional costs for other trades (including any required design fees) shall be approved after the approval of the substitution.
5. Construction Requirements
 - 5.1. The Contractor shall provide and maintain any temporary power as required and shall remove all temporary services at the completion of construction.
 - 5.2. Materials and equipment shall be listed and/or labeled by UL, ETL, CSA or another nationally recognized testing laboratory and shall be rated for a minimum temperature of 70° F.
 - 5.3. All materials used shall be new, unless specifically indicated as existing to be re-used.
 - 5.4. All materials and equipment shall be stored, handled, erected, installed, connected, cleaned, adjusted, tested, conditioned and placed in service in accordance with the manufacturer's directions and recommendations.
 - 5.5. Except as noted otherwise, all work required including labor, equipment and materials shall be in strict compliance with the building standard.
 - 5.6. Where temporary power is required to maintain continuity of electrical service during construction, the Contractor shall provide any and all temporary generators, panels, connections, transfer switches, etc. as required including multiple shut downs where required for the entire construction period. All costs shall be included in the Contractor's bid.
 - 5.7. Equipment Installation/ Removal Access: Access to install or remove electrical equipment shall be identified by the Architect or Engineer. Where not indicated, all required access shall be defined by the Electrical Contractor at the time of bid.
 - 5.8. Demolition
 - 6.1. The Contractor shall review with the Owner prior to removal, all equipment, fixtures, devices, etc. which are to be salvaged. These items shall be carefully removed undamaged and shall be stored for Owner. All items that the Owner does not salvage and which are not re-used shall become the property of the Contractor and shall be removed from the site. Include in the bid, the cost of proper disposal of all debris or refuse.
 - 6.2. Confer with the manufacturers of existing equipment that is to be revised or extended and include all work necessary for the proper completion of the revisions.
 - 6.3. Where existing electrical work must be removed as a result of alterations, it shall be completely removed, back to the first outlet which is unaffected by the revision. All raceways, conduit, wire, supports, hangers, etc. shall be included under this requirement. Conduit that is embedded in concrete or otherwise in an inaccessible position, may be abandoned. In such cases, all wire shall be pulled out of the conduit and the conduit shall be itself plugged and tagged at each end.
 - 6.4. Where the work is adjacent to an existing area that is to remain, the Contractor shall maintain service to all equipment, lighting fixtures and outlets that are outside the limits of construction. Redirect circuits as required.
 - 6.5. The Contractor shall be responsible for damage caused by him to the existing conditions or other Contractor's work, including damage outside the limits of construction. Repair or replace any existing equipment that is to remain that is damaged during the work.
 - 6.6. Cap all unused raceways, boxes or knockouts.
 7. Raceways
 - 7.1. Provide complete metal raceway systems and enclosures for all lighting, power, telephone/data, and security wiring throughout the extent of the required systems.
 - 7.2. Raceways shall consist of the following:
 - 7.2.1. Rigid metallic conduit (RMC) or intermediate metal conduit (IMC) shall be used for power conduit 2 1/2" diameter or larger, or any size conduit when encased in the floor slab. RMC shall be used for rooming electrical use UNO, any size conduit routed outdoors, or where in direct contact with the earth. Where exposed to corrosive environments or liquids, conduit shall be PVC coated IMC with a zinc supplemental substrate coating. All RMC and IMC fittings and couplings shall be threaded.
 - 7.3. Minimum conduit size for live voltage installations shall be 1/2" unless otherwise indicated. Where installed outside, minimum conduit size shall be 3/4" unless otherwise indicated.
 - 7.4. Where conduit crosses expansion joints or otherwise subject to movement and/or expansion, provide UL listed expansion fittings with external ground jumpers to prevent damage to enclosed conductors or connected equipment.
 - 7.5. Provide a pull wire or rope in all empty conduit.
 - 7.6. All raceways shall be concealed. Devices shall be flush mounted, unless otherwise noted.
 - 7.7. Each switch, lighting fixture, receptacle and other miscellaneous devices shall be provided with a galvanized pressed steel outlet box of not less than No. 14 US gauge steel. Raceways shall be fastened with locknuts. All unused knockouts must be sealed. There must be sufficient volume per Code for conductors and devices - deep boxes shall be installed where required. Boxes shall be securely and adequately supported.
 - 7.8. Final connections to transformers and similar equipment that are subject to vibration or adjustment shall be made with sections of flexible metal conduit. The minimum length shall be 18" and the maximum shall be 36" long.
 - 7.9. The Contractor may reuse existing raceways wherever possible, provided they are of suitable size, cleaned, in good condition and are properly supported. All wiring shall be new. Where conduit systems are used as a ground path, continuity of ground shall be tested prior to reuse.
 8. Conductors
 - 8.1. Wire that is installed in raceways outdoors, or in damp or wet locations shall be type XHHW-2, 600 volt insulated copper. No wire smaller than no. 12 AWG shall be used for lighting or power wiring. Wire no. 10 and smaller shall be solid or stranded; wire no. 8 and larger shall be stranded. Aluminum conductors are not acceptable unless specifically called for in the design documents. Ampacity of the conductors to be installed shall be at least equal to the size of the upstream overcurrent protection device unless otherwise noted.
 - 8.2. Branch circuit homeruns for 120 volt circuits over 80' long and for 277 volt circuits over 120' long shall be minimally one standard wire size larger than what is required for the ampere rating of protective device.
 - 8.3. Branch circuit wiring consisting of one network or more shall have the neutral conductor increased to #10 AWG minimum.
 - 8.4. Isolated grounding receptacle branch circuit wiring shall consist of a dedicated phase, neutral and isolated (insulated) grounding conductors for each circuit.
 - 8.5. Wire size shown on the contract drawings is a minimum size

9. Grounding
 - 9.1. Provide dedicated ground conductor in all branch circuits and feeders.
 - 9.2. Comply with UL467 for grounding and bonding of equipment.
 - 9.3. Comply with all local jurisdictional requirements for grounding requirements.
 - 9.4. Ground all electrical devices and non-current-carrying conductive materials enclosing electrical conductors or utilization equipment, or forming part of such equipment, etc - all as in accordance with Article 250 of the Electrical Code.
10. Wiring Devices
 - 10.1. Special receptacles shall be as noted on the drawings. The Contractor shall provide all special outlet boxes that may be required to enclose receptacles.
 - 10.2. Devices with back-stab-push-in type wiring connectors are not acceptable.
 - 10.3. Faceplates shall be thermoplastic nylon type. Coordinate with Architect.
 - 10.4. Faceplates in wet locations where not provided with a weatherproof cover shall be type 302/304 stainless steel, nonmagnetic.
 - 10.5. Wiring devices shall be manufactured by Hubbell, Cooper/Arrow-Hart, -Pass & Seymour-Legrand or Leviton, receptacles installed outdoors shall be weather-resistant type (WR) in accordance with NEC section 406.9.
11. Distribution
 - 11.1. New panelboards shall utilize bolt on type branch circuit breakers, with withstand ratings exceeding the available short circuit current. Manufactured by Siemens, General Electric, Square D, Eaton, Gus Bernub, Erickson, or Peterson.
 - 11.2. Provide minimum 4" concrete housekeeping pad for all floor mounted equipment.
12. Execution
 - 12.1. The Contractor shall make every effort to minimize noise during construction. Noise shall be kept within maximum OSHA recommended levels and/or other local authorities having jurisdiction.
 - 12.2. Numbered circuits that are indicated on the plans, are for convenience of design only, field conditions may vary. Indicate the actual circuit numbers used on the "as-built" drawings.
 13. Closeout
 - 13.1. Upon completion of construction, the Contractor shall balance each panel so that there is no more than 10% difference between phases. The load shall be monitored during the peak a.m. Demand period. However, the reconfiguration of the panel shall occur after close of business. The scheduling of all work shall be in accordance with the construction manager. Submit report to Engineer.
 - 13.2. The Contractor shall provide new typewritten panel directories for all panels changed or added. Provide engraved plastic labels permanently attached (no adhesives) for all new panels and distribution equipment.
 - 13.3. Contractor shall provide all required software and/or technical labor for lighting relay panels, day light sensors, electrical demand meters, uninterruptible power supplies and other similar equipment requiring setup/programming to complete their installation. These technical startup and functional testing services shall be performed prior to occupancy and shall be subcontracted by the Contractor to the equipment manufacturer or a vendor authorized by the manufacturer to perform such services. All functional testing shall be furnished by the Contractor in accordance with the applicable Energy Code requirements. Include at least one (1) extra stop occupancy visit for each applicable system for the express purpose of adjustment and user training.
 - 13.4. Prior to final acceptance, the Contractor shall provide a written certificate that all equipment and systems have been properly installed per code, cleaned, adjusted and tested. Include in the certificate, correspondence from each equipment manufacturer's representative that the configuration of their equipment, system and the installation conform to the manufacturer's requirements. Certification shall include all operation and maintenance manuals for all equipment.
 - 13.5. The Contractor shall provide original "as-built" documents in both hard copy and AutoCAD drawing files. These drawings shall be made at the Contractor's expense on reproducible sheets of the same size as the Architectural drawings. Submit as-built drawings to Engineer.
 - 13.6. Contractor Final payment shall be withheld until the receipt of final certification of occupancy approval as-builts, and owners training and corrections of all deficiencies and punch list items have been received.
 - 13.6.1. The Engineer, at his discretion may make portions of the contract documents available in electronic format. These documents are proprietary and remain the Engineer's property and shall be used solely with respect to this project. The documents will be provided for the convenience of the user, for use in preparing shop drawings and/or coordination drawings related to the construction of this project only. The user acknowledges that neither McGuire Engineers, Inc., the Architect, Consultants, the Client or the Owner make any warranty or representation that these files reflect the contract documents in their entirety. An agreement and waiver form is available through the Engineer's office and must be signed and submitted prior to delivery of the files.
 - 13.6.2. "As-Built" documents shall include all revisions, bulletins, addenda, etc. included as a part of the project. These files in AutoCAD DWG format are available on execution of a legal waiver.
 14. Date-sensitive Components
 - 14.1. All components, either hardware or software, of any system described in these specifications, which rely upon calendar date and/or time for proper function, or which generate, calculate, measure or store calendar date and/or time for internal use, or for use by other systems or components described in these specifications shall continue to correctly and accurately represent and interpret calendar date and time substantially beyond the useful life of the component and its related systems where required by City of Evanston
 15. Additional Notes
 - 15.1. Per 2018 International Energy Conservation Code, Section C408 - System Commissioning, the general contractor shall ensure that documentation is provided as required for compliance with C408.3 - Lighting System Functional Testing. Subcontract commissioning/functional test work to the lighting control system manufacturer or a manufacturer's authorized representative as required by the City of Evanston. Submit executed copies of the functional checklists to Engineer and Owner for approval upon closeout of project.
 - 15.2. Electrical Contractor shall comply with all recommended arc flash safety practices per NFPA70E. Utilize appropriately rated personal protective equipment (PPE) as required. Where new electrical distribution equipment is being installed or existing is significantly modified, contractor shall provide updated arc flash boundary hazard warning labels. Subcontract any required arc flash study update work to the building's approved vendor.

ELECTRICAL SITE GENERAL NOTES

1. THE EXACT LOCATION OF ALL UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION ACTIVITIES. FOR UTILITY LOCATION CALL 311.11.E. AT 1-800-892-0123. ALSO CONTACT CITY'S FACILITIES MANAGEMENT DIVISION FOR UNDERGROUND UTILITY LOCATIONS AT 848-866-2916.
2. THE CONTRACTOR SHALL PROVIDE INDEPENDENT VIBRATION MONITORING DURING THE PILE FOUNDATION INSTALLATION PROCESS. VIBRATION MONITORS SHALL BE SET UP AT A MINIMUM OF THREE LOCATIONS ON THE NORTH SIDE OF OAKTON STREET FOR THE ENTIRE DURATION OF THE FOUNDATION INSTALLATION. THE MONITORS SHALL SEND ALARMS TO THE CONTRACTOR AND MONITORING CONSULTANT IF WHEN VIBRATIONS APPROACH ANY LEVEL OF CONCERN. SHOULD THIS OCCUR, THE CONTRACTOR SHALL WORK WITH THE VIBRATION MONITORING CONSULTANT TO VERIFY THE INSTALLATION METHODOLOGY AS REQUIRED TO PREVENT THOSE CONDITIONS FROM PERSISTING. THE VIBRATION MONITORING CONSULTANT SHALL PREPARE REPORTS AS REQUIRED TO SUMMARIZE THE MONITORING PROCESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO PUBLIC AND/OR PRIVATE PROPERTY AS A RESULT OF CONSTRUCTION RELATED VIBRATIONS. CONTRACTOR SHALL SUBMIT QUALIFICATIONS OF VIBRATION MONITORING CONSULTANT TO THE CITY FOR APPROVAL PRIOR TO PROCEEDING.
3. THE CONTRACTOR SHALL PROVIDE INDEPENDENT GEOTECHNICAL ENGINEERING SERVICES TO MONITOR AND VERIFY THAT THE FOUNDATION INSTALLATIONS MEET OR EXCEED THE PROJECTS STRUCTURAL REQUIREMENTS. THE GEOTECHNICAL ENGINEER SHALL BE ON SITE DURING THE ENTIRE PILE FOUNDATION INSTALLATION PROCESS AND SHALL PREPARE WRITTEN REPORTS SUMMARIZING ACTIVITIES AND THE STRUCTURAL TESTING/VERIFICATION PROCESSES IMPLEMENTED. THE CONTRACTOR SHALL SUBMIT QUALIFICATIONS OF GEOTECHNICAL ENGINEER TO CITY FOR APPROVAL PRIOR TO PROCEEDING.
4. THE CONTRACTOR SHALL PROVIDE INDEPENDENT GEOTECHNICAL ENGINEERING SERVICES TO TEST AND MANAGE ALL EXCAVATED SOILS ON SITE. ALL EXCAVATED SOILS SHALL BE CONSIDERED SPECIAL NON-HAZARDOUS WASTE AND REQUIRE TESTING, HANDLING AND DISPOSAL IN ACCORDANCE WITH SPECIFICATION SECTION 02 96.00.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL APPROPRIATE PPE (PERSONAL PROTECTION EQUIPMENT) REGARDING ALL WORK TO ELECTRICAL BUILDING EQUIPMENT & RELATED ELECTRICAL PANELS TO PROTECT FROM ARC FLASH, SHOCK HAZARDS AND RELATED EXPOSED DANGERS.
6. THE CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THIS WORK SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT SPECIFICATIONS AND DRAWINGS BEFORE COMMENCING WORK. THE PROJECT SPECIFICATIONS AND DRAWINGS FORM THE BASIS OF THE CONTRACT REQUIREMENTS AND INCLUDE THE TYPE AND GRADE OF MATERIALS TO BE INSTALLED, AND EQUIPMENT TO BE LOCATED.
7. THE ELECTRICAL CONTRACTOR SHALL CAREFULLY CHECK ALL CONSTRUCTION DRAWINGS AND SPECIFICATIONS THAT ARE PART OF THIS PROJECT TO ENSURE THAT NO FUTURE, OUTLET, CONTROL, AND POWERING WIRING IS OMITTED. IN SOME CASES, EQUIPMENT, FIXTURES, AND DEVICES SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR. ASCERTAIN AND PROVIDE THE WIRING AND CONTROL STATIONS REQUIRED FOR THE PROPER FUNCTIONING OF EQUIPMENT. NO EXTRA CHARGES SHALL BE ACCEPTED BY OWNER AFTER BIDDING FOR SUCH LABOR AND EQUIPMENT.
8. EQUIPMENT LABELS AND INSTRUCTIONS REGARDING THE APPLICATION AND INSTALLATION OF THE LISTED EQUIPMENT SHALL BE FOLLOWED TO ENSURE THAT THE EQUIPMENT IS BEING INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS LISTING INSTRUCTIONS. THE TEMPERATURE RATINGS OF THE EQUIPMENT TERMINATIONS MUST BE CAREFULLY CORRELATED WITH THE CONDUCTOR AMPACITY TO PREVENT OVERHEATING AND PREMATURE FAILURE.
9. COORDINATE AND INSTALL CONDUIT AND JUNCTION BOXES TO CLEAR ENCASED DUCTS, OPENINGS AND OTHER STRUCTURAL FEATURES.
10. ALL WORK IS TO BE COMPLETED IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE APPLICABLE CODES AND REGULATIONS.
11. CONDUIT RUNS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC. VERIFY EXACT ROUTING PRIOR TO ALL WORK.
12. FURNISH AND INSTALL EQUIPMENT DISCONNECT SWITCHES IN STRICT COMPLIANCE WITH CODE REQUIREMENTS.
13. ALL ELECTRICAL DRAWINGS ARE TO BE READ WITH PROJECT SPECIFICATIONS AND ALL OTHER DRAWINGS RELATED TO THE PROJECTS WORK.
14. THE CONTRACTOR SHALL PROVIDE NEW TYPE-WRITTEN PANEL DIRECTORIES FOR ALL PANELS CHANGED OR ADDED. PROVIDE ENGRAVED PLASTIC LABELS PERMANENTLY ATTACHED TO (NO ADHESIVES). ALL PANELS AND DISTRIBUTION EQUIPMENT.
15. BRANCH CIRCUIT AND FEEDER HOME RUNS SHALL HAVE THE VOLTAGE DROP CALCULATED FOR ALL RUNS. INCREASE WIRE AND CONDUIT SIZE APPROPRIATELY. COORDINATE IN FIELD.
16. BRANCH CIRCUIT WIRE THAT IS INSTALLED IN RACEWAYS OUTDOORS OR IN DAMP OR WET LOCATIONS SHALL BE TYPE XHHW-2, 600 VOLT INSULATED COPPER. NO WIRE SMALLER THAN NO. 10-AWG SHALL BE USED FOR LIGHTING OR POWER WIRING. MINIMUM OF 1" CONDUIT, UNLESS OTHERWISE NOTED.
17. ALL UNDERGROUND SITE WORK CONDUIT SHALL BE A MINIMUM OF 3" BELOW FINISHED GRADE.
18. ALL CUTTING, TRENCHING, CORING, BACKFILLING AND COMPACTING FOR THE ELECTRICAL INSTALLATION SHALL BE BY THE ELECTRICAL CONTRACTOR. ALL EXCESS DEBRIS FROM CUTTING, TRENCHING AND CORING SHALL BE COMPLETELY REMOVED FROM THE SITE BY THE ELECTRICAL CONTRACTOR. IF EXISTING SPILLS ARE UNSUITABLE, ELECTRICAL CONTRACTOR SHALL GAIN PERMISSION IN WRITING FROM THE ENGINEER TO REUSE EXISTING SPILLS. ALL SPILLS ON THIS SITE SHALL BE CONSIDERED SPECIAL, NON-HAZARDOUS WASTE, AND MUST BE DISPOSED OF AT A LANDFILL. CONTRACTOR SHALL BE RESPONSIBLE FOR SOIL TESTING AS REQUIRED FOR LANDFILL ACCEPTANCE AND SHALL BE REQUIRED TO MANAGE SOIL DISPOSAL PROCESS AS REQUIRED BY LAW. (SEE SPECIFICATIONS)
19. ELECTRICAL CONTRACTOR SHALL BACKFILL ALL TRENCHES IN LAYERS OF 8" TO 30% DENSITY OF SURROUNDING UNDISTURBED SOILS FOR ALL TRENCHED ELECTRICAL CONDUITS SHALL BE SURROUNDED WITH A MINIMUM OF 8" SAND.
20. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT STUBS, GROUND CONNECTIONS, ANCHOR BOLTS AND GROUND RODS. REFER TO CONCRETE BASE DETAIL FOR FURTHER REQUIREMENTS. CONCRETE BY ELECTRICAL CONTRACTOR.
21. ALL OPENINGS AND PENETRATIONS THROUGH FOUNDATION AND EXTERIOR WALL CREATED BY FIXTURES AND CONDUITS SHALL BE FILLED WITH WEATHERPROOF OR FIRE-STOP MATERIAL TO PREVENT ANY MOISTURE FROM ENTERING THROUGH THE OPENING AND TO PROTECT THE FIRE RATINGS OF THE STRUCTURE.
22. ALL OUTDOOR RECEPTACLES SHALL BE GFCI RATED AND LOCATED IN A LOCKABLE WEATHERPROOF ENCLOSURE.
23. ALL LIGHT FIXTURES SHALL BE CIRCUITED THROUGH NEW RELAY PANELS. RELAY PANEL SHALL BE NEMA 3R. LIGHTING RELAY PANELS ARE CONTROLLED BY CONTROL LINK SYSTEM AND EXTERIOR MANUAL OVERRIDE SWITCH AS SHOWN.
24. ALL FEEDERS SHALL CONTAIN A GROUND WIRE.
25. TOUCH UP PAINT/FINISH OF ALL EXTERIOR LIGHTINGS AFTER INSTALL PER MANUFACTURERS RECOMMENDATIONS.
26. THE ELECTRICAL ROOM IS INSIDE THE STORAGE BUILDING/TEMPORARY DOG SHELTER AND IMMEDIATELY ADJACENT TO THE DOG KENNEL ROOM. CONTRACTOR WILL NEED TO COORDINATE WITH THE CITY FOR ACCESS TO THE STORAGE YARD AND ELECTRICAL ROOM. THE TEMPORARY DOG SHELTER IS GENERALLY STAFFED FROM 7 AM TO 2 PM DAILY BUT THE YARD ACCESS GATE IS NOT OPEN TO THE PUBLIC. COORDINATE ACCESS WITH CITY OF EVANSTON

SYMBOLS GENERAL

- KEY NOTE TAG
 - EQUIPMENT TAG
 - NEW WORK
 - EXISTING TO REMAIN
 - TO BE REMOVED
- DEVICES**
- SINGLE-POLE SWITCH
 - MOMENTARY CONTACT SWITCH
 - PHOTOCELL
 - DUPLEX RECEPTACLE
 - QUADRUPLX RECEPTACLE
- SYMBOLS**
- NON-FUSED DISCONNECT SWITCH
 - ENCLOSED CIRCUIT BREAKER
 - FUSED DISCONNECT SWITCH
 - COMBINATION STARTER
 - CONTRACTOR
 - JUNCTION BOX
 - MOTOR (NUMBER INDICATES HORSEPOWER)
 - NON-MOTOR LOAD (NUMBER INDICATES KW)
 - GROUNDING CONNECTION
 - LIGHTING OR RECEPTACLE PANELBOARD
 - POWER OR DISTRIBUTION PANELBOARD
 - CONTROL OR MISCELLANEOUS PANEL AS NOTED
 - TRANSFORMER

RACEWAYS & WIRING

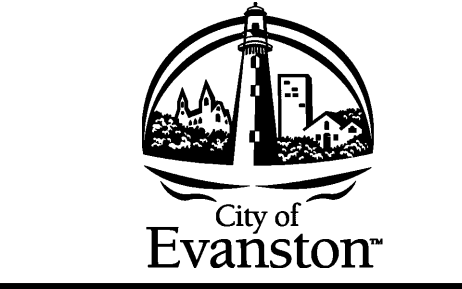
- HOMERUN TO PANEL
- ENCLOSED WIRE IN CONDUIT
- NEUTRAL WIRE IN CONDUIT
- PHASE WIRE IN CONDUIT
- EXPOSED CONDUIT
- CONCEALED CONDUIT
- FLEXIBLE CONDUIT CONNECTION
- WIREWAY

ABBREVIATIONS AND SYMBOLS ARE OFFICE STANDARD AND ARE NOT NECESSARILY USED IN THIS PROJECT

2020 NATIONAL ELECTRICAL CODE WITH EVANSTON AMENDMENTS

ABBREVIATIONS

- AFG ABOVE FINISHED GRADE
- CB CONDUIT
- CRB CIRCUIT BREAKER
- CRCT CIRCUIT
- DISC DISCONNECT
- DRM EXISTING TO REMAIN
- E EXHAUST FAN
- EMT ELECTRICAL METALLIC TUBING
- ERR EXISTING TO BE RELOCATED
- ERR EXISTING, RELOCATED
- FU FUSE
- GFL GFCI
- GRO GROUND FAULT CIRCUIT INTERRUPTOR
- GRD GROUND
- GRS GALVANIZED RIGID STEEL
- IMC INTERMEDIATE METAL CONDUIT
- JB JUNCTION BOX
- LF LOW VOLTAGE
- MANUF MANUFACTURER
- MBS MAIN CIRCUIT BREAKER
- NLC MAIN LUGS ONLY
- NTD MOUNTED
- NOT IN CONTRACT
- NLS NOT TO SCALE
- PP FULL BOX
- PANL PANEL
- R EXISTING DEVICE TO BE REMOVED
- REQD REQUIRED
- SC SEPARATE CIRCUIT
- SW SWITCH
- SWB SWITCHBOARD
- TYPICAL
- V VOLT
- WPT WEATHERPROOF
- XMR TRANSFORMER



MEPC
 MCGUIRE ENGINEERS
 300 SOUTH RIVERSIDE PLAZA
 SUITE 350, CHICAGO, IL 60606
 312.876.9240 mepcinc.com

◆ **KEYED NOTES**

1. CONTRACTOR MUST EXTEND/RELOCATE THE EXISTING UNDERDRAN AND/OR IRRIGATION LINES IN THIS AREA TO AVOID THE NEW LIGHT POLE FOUNDATION.
2. THIS LIGHT POLE TO BE INSTALLED IN EXISTING PAVO AREA. THE CONTRACTOR SHALL SANCTIFY THE EXISTING PAVING IN THIS AREA AS REQUIRED TO INSTALL POLE. PAVING MUST BE RESTORED AFTER LIGHT POLE IS INSTALLED.
3. PROVIDE TAYMAC EXTRA-DUTY METALLIC WEATHERPROOF IN-USE COVER FOR GFCI RECEPTACLES.
4. REFER TO MUSCO DRAWINGS AND SCHEDULES FOR POLE FIXTURE TYPES AND QUANTITIES. REFER TO SHEETS C1 AND C2 FOR POLE FOUNDATION DETAILS AND REQUIREMENTS.

ALTERNATE #1

PROVIDE ALTERNATE BREAKOUT FOR TENNIS COURT LIGHTING LIGHT POLES, FEEDERS, COOP WITHIN PANEL LIGHTING CONTROLS, ETC. ASSOCIATED WITH THE TENNIS COURT LIGHT POLES. ELECTRICAL DISTRIBUTION SIZE SHALL REMAIN, AS IT HAS BEEN DESIGNED FOR FUTURE EXPANSION.

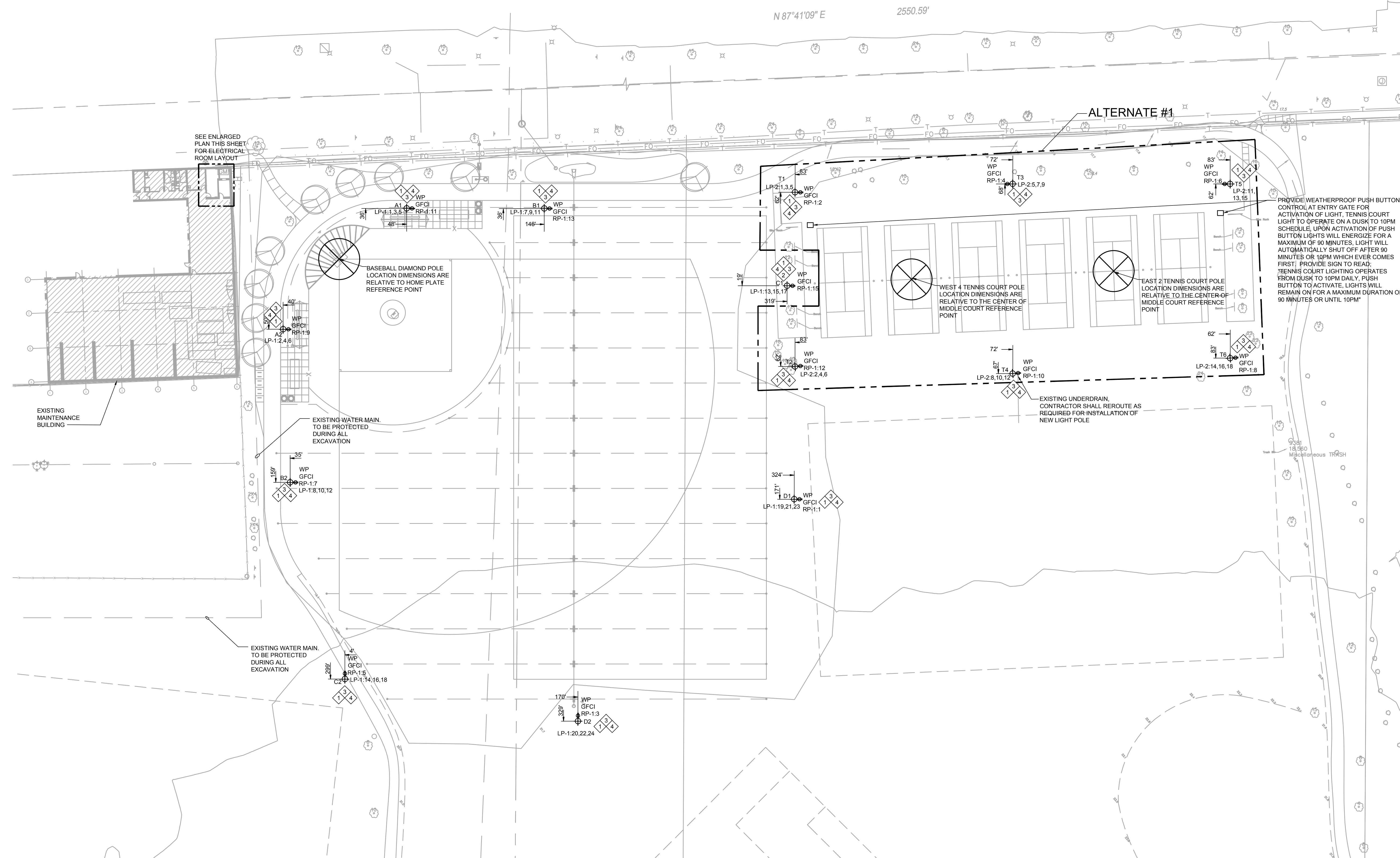
ALTERNATE #2

PROVIDE ALTERNATE BREAKOUT PRICING FOR DIRECTIONAL BORING WITH HIGH DENSITY POLYETHYLENE CONDUIT IN LIEU OF TRENCHING AND RIGID METAL CONDUIT. HOPE SHALL BE INSTALLED PER NEC ARTICLE 353. CONTRACTOR SHALL CONFIRM PRIOR TO BID WITH A GEO-TECHNICAL FIRM THAT THE EXISTING SOIL IS SUITABLE FOR DIRECTIONAL BORING.

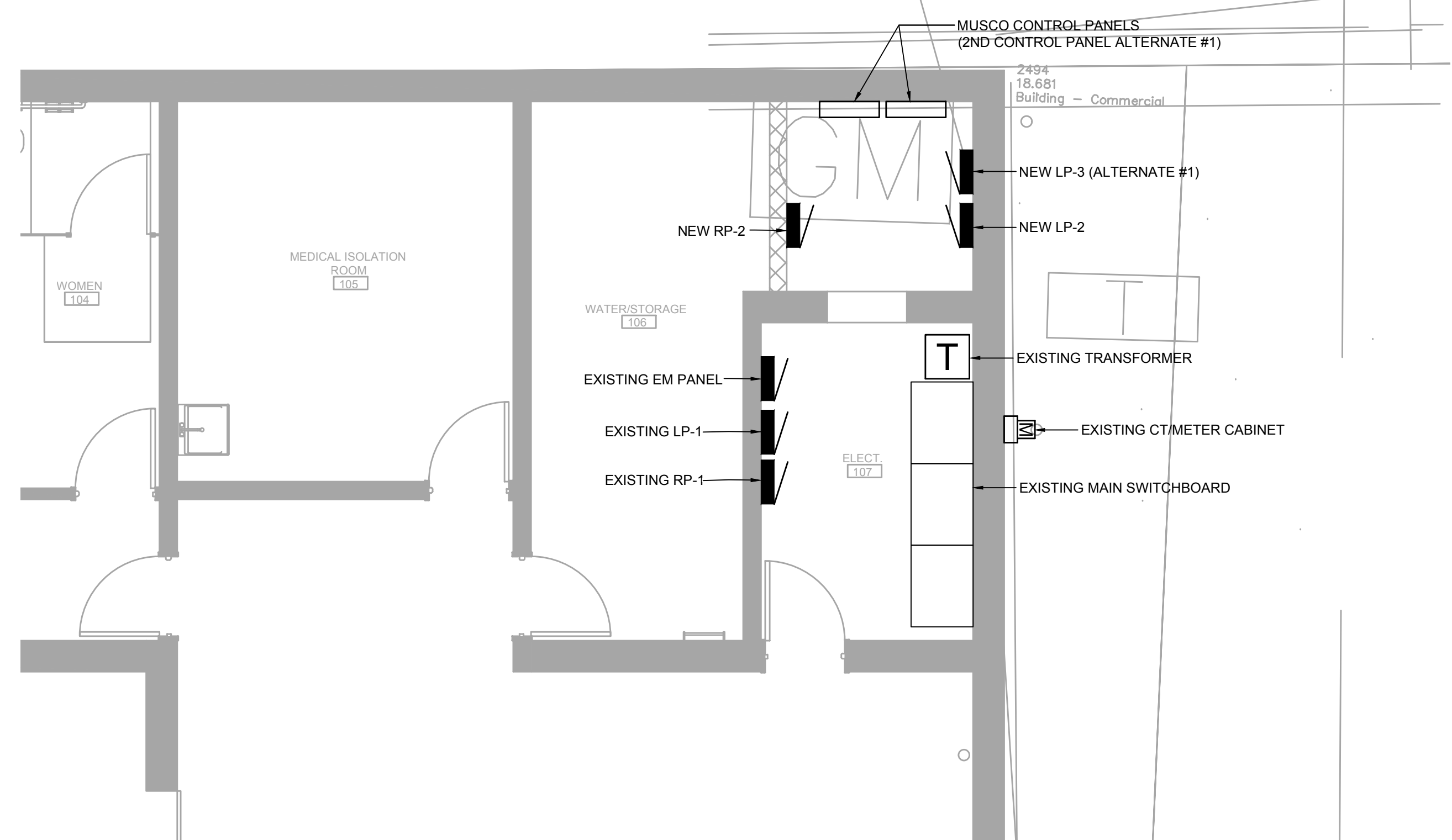
ELECTRICAL SITE AND EXCAVATION WORK NOTES

1. THE EXACT LOCATION OF ALL UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION ACTIVITIES. FOR UTILITY LOCATION CALL J.U.L.I.E. 811.
2. ALL UNDERGROUND SITE WORK CONDUIT TO BE MINIMUM 36" BELOW FINISHED GRADE AND GALVANIZED RIGID STEEL, MINIMUM OF 1" TRADE SIZE U.O.N. MINIMUM WIRE SIZE FOR ALL SITE WORK WIRING SHALL BE #10 AWG.
3. ALL CUTTING, TRENCHING, CORING, BACKFILLING AND COMPACTING FOR THE ELECTRICAL INSTALLATION IS BY THE ELECTRICAL CONTRACTOR. ALL EXCESS DEBRIS FROM CUTTING, TRENCHING AND CORING SHALL BE COMPLETELY REMOVED FROM THE SITE BY THE ELECTRICAL CONTRACTOR PER SPECIFICATIONS.
4. ELECTRICAL CONTRACTOR SHALL BACKFILL ALL TRENCHES IN LAYERS OF 8" TO 95% DENSITY OF SURROUNDING UNDISTURBED SOIL FOR ALL TRENCHES. ELECTRICAL CONDUITS SHALL BE SURROUNDED WITH A MINIMUM OF 8" OF SAND.
5. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT STUBS, GROUND CONNECTIONS, ANCHOR BOLTS AND GROUND RODS. REFER TO SHEETS C1 AND C2 FOR ADDITIONAL REQUIREMENTS. CONCRETE BY ELECTRICAL CONTRACTOR.
6. ALL OPENINGS AND PENETRATIONS THROUGH FOUNDATION AND EXTERIOR WALLS CREATED BY FIXTURES AND CONDUITS SHALL BE FILLED WITH WATERPROOF MATERIAL TO PREVENT ANY MOISTURE FROM ENTERING THROUGH THE OPENING.
7. EACH POLE SHALL HAVE BUSSMANN IN-LINE FUSES (FUSED PER MANUFACTURER'S SPECIFICATIONS) FOR EACH CIRCUIT CONDUCTOR.
8. EACH POLE SHALL BE FURNISHED WITH MINIMUM OF 4" x 6" HAND HOLE AND A GROUNDING LUG CONNECTED TO POLE FOR GROUNDING CONDUCTOR. ALL POLES SHALL BE FURNISHED WITH BOLT COVERS.
9. E.C. SHALL VERIFY STUB-UP AREA FOR ALL FIXTURES TO INSURE RACEWAY WILL FIT INSIDE CONCRETE BASES. REWORK AS REQUIRED (TYPICAL ALL BASES).
10. RIGID METALLIC CONDUIT (RMC) OR INTERMEDIATE METAL CONDUIT (IMC) SHALL BE USED FOR POWER CONDUIT 2-1/2" DIAMETER OR LARGER, OR ANY SIZE CONDUIT WHEN ENCASED IN THE FLOOR SLAB. RMC SHALL BE USED FOR INCOMING ELECTRICAL SERVICE. ANY SIZE CONDUIT ROUTED OUTDOORS, OR WHERE IN DIRECT CONTACT WITH THE EARTH, ALL RMC AND IMC FITTINGS AND COUPLINGS SHALL BE THREADED. ALL RACEWAYS SHALL BE CITY OF EVANSTON APPROVED, MINIMUM 1" TRADE SIZE.
11. WIRE THAT IS INSTALLED IN RACEWAYS OUTDOORS, OR IN DAMP OR WET LOCATIONS SHALL BE TYPE XHHW-2, 600 VOLT INSULATED COPPER. NO WIRE SMALLER THAN NO. 10 AWG SHALL BE USED FOR LIGHTING OR POWER WIRING. WIRE NO. 10 AND SMALLER SHALL BE SOLID OR STRANDED, WIRE NO. 8 AND LARGER SHALL BE STRANDED. CONTROL WIRE SHALL BE 14 AWG STRANDED. UPSIZE WIRING BASED ON VOLTAGE DROP SPECIFICATIONS.
12. BRANCH CIRCUIT HOMERUNS FOR 120 VOLT CIRCUITS OVER 80' LONG SHALL BE ONE STANDARD WIRE SIZE LARGER THAN WHAT IS REQUIRED FOR THE AMPERE RATING OF PROTECTIVE DEVICE. PROVIDE DEDICATED NEUTRAL CONDUCTOR FOR EACH PHASE. MULTI-WIRE BRANCH CIRCUITS ARE NOT ACCEPTABLE.
13. ALL REQUIRED CUTTING, TRENCHING, CORING, BACKFILLING AND COMPACTING FOR THE ELECTRICAL INSTALLATION SHALL BE BY THE ELECTRICAL CONTRACTOR. ALL EXCESS DEBRIS FROM WORK SHALL BE COMPLETELY REMOVED FROM THE SITE BY THE ELECTRICAL CONTRACTOR. IF EXISTING SPOLS ARE UNSUITABLE, E.C. SHALL GAIN PERMISSION (IN WRITING) FROM THE ENGINEER TO REUSE EXISTING SPOLS.
14. ALL OUTDOOR RECEPTACLES LOCATED & INSTALLED AT LIGHTING POLE BASE SHALL BE GFCI RATED AND ENCLOSED WITHIN WEATHER-RESISTANT WEATHERPROOF LOCKABLE COVER. COVERS SHALL HAVE PADLOCK PROVISIONS TO PREVENT UNAUTHORIZED USAGE. GFCI RECEPTACLES SHALL BE WEATHER-RESISTANT (WR) TYPE. COORDINATE EXACT NUMBER OF RECEPTACLES PER 25A CIRCUIT PRIOR TO ALL WORK. MODIFY CIRCUITING ACCORDINGLY.
15. REFER TO LIGHTING FIXTURE SCHEDULE TO REFERENCE ALL FIXTURE TYPES, LAMPS, OPTIONS AND MODEL NUMBERS. COORDINATE FINAL SELECTIONS WITH MUSCO PRIOR TO ALL WORK.
16. PROVIDE DETECTABLE UNDERGROUND ELECTRICAL WARNING TAPE 12" ABOVE ALL UNDERGROUND CONDUITS. TAPE SHALL BE 3" WIDE WITH ALUMINUM BACKING. LABELING NOMENCLATURE SHALL READ "CAUTION BURIED ELECTRIC LINE BELOW" IN BLACK LETTERING ON A RED BACKGROUND. AS MANUFACTURED BY SETON OR BURNDY.
17. 20. PERMANENTLY LABEL THE INSIDE OF EACH POLE HAND HOLE COVER WITH PANEL NAME AND CIRCUIT NUMBER FOR THE DEVICES ON THAT POLE.
18. INFORMATION REGARDING ANY EXISTING UNDERGROUND SYSTEMS (SUBSOIL DRAINAGE, IRRIGATION, ETC.) INDICATED HERE IS FROM ORIGINAL CIVIL DRAWINGS AND INCLUDED FOR COORDINATION PURPOSES ONLY. THEY MAY NOT ACCURATELY REPRESENT EXISTING CONDITIONS. PRIOR TO ANY EXCAVATION WORK, CONTRACTOR SHALL SURVEY ALL PROPOSED CONDUIT ROUTING WITH GROUND PENETRATING RADAR (GPR) TO CONFIRM THAT THERE ARE NO CONCEALED UNDERGROUND CONFLICTS.
19. CONTRACTOR SHALL AVOID ROUTING NEW CONDUIT RACEWAYS UNDER EXISTING PAVEMENT, SIDEWALKS, ETC. WHERE EXISTING PAVEMENT OR SIMILAR SURFACES MUST BE CUT TO ALLOW FOR ROUTING OF NEW CONDUIT, CONTRACTOR SHALL CAREFULLY RESTORE THOSE SURFACES TO MATCH EXISTING AFTER INSTALLATION.
20. MULTIPLE VOLTAGES WILL BE PRESENT. THE OUTER JACKET OF THE XHHW2 BRANCH CIRCUIT CONDUCTORS USED FOR THIS PROJECT SHALL BE COLORED ALONG THEIR FULL LENGTH TO IDENTIFY THE VOLTAGE AND PHASE OF EACH CONDUCTOR. TAPING AT THE TERMINATIONS ONLY TO IDENTIFY VOLTAGE IS NOT ACCEPTABLE.
21. 21. 277V AND 120V BRANCH CIRCUITS SHALL BE PROVIDED WITH SEPARATE GROUNDING CONDUCTORS. 277V GROUND SHALL BE GREEN WITH A YELLOW STRIPE. 120V GROUND SHALL BE SOLID GREEN.

REFER TO MUSCO DESIGN DRAWINGS, CONTROL SUMMERY, DETAILS, SCHEDULES, ETC. FOR EXACT REQUIREMENTS AND SPECIFICATIONS. ALL WORK INDICATED AND INFERRED ON MUSCO'S PLANS TO BE PERFORMED BY OTHERS OR BY THE ELECTRICAL CONTRACTOR SHALL BE CONSIDERED PART OF THIS SCOPE OF WORK. E.C. SHALL PROVIDE ALL ASSOCIATED WORK INCLUDING ALL GENERAL CONDITIONS (EXCAVATION, CONCRETE, LANDSCAPING RESTORATION, ETC.) AS REQUIRED TO COMPLETE THE INSTALLATION.



ELECTRICAL SITE LIGHTING PLAN
 SCALE: 1/32" = 1'-0"
 0 25ft. 50ft. 75ft.



ENLARGED ELECTRICAL POWER PLAN
 SCALE: 1/4" = 1'-0"
 0 5ft. 10ft.

Filename: X:\31\031-0086-JamesParkAthleticLighting\21-0086E200.dwg Layout: E200 Plotted on July 17, 2023 by SHINZE
 Sheet: 1 of 1
 Job: 21-0086 - James Park Athletic Lighting
 Project Manager: BH

SEAL

Delta	Issue For	Date

ISSUED FOR BID/PERMIT 07.27.2023

PROJECT:
JAMES PARK ATHLETIC LIGHTING
 2200 OAKTON ST
 EVANSTON, IL 60202

PROJECT NO: 21-0086
 DRAWN BY: SH
 CHECKED BY: JLY
 SHEET TITLE:

ELECTRICAL SITE LIGHTING PLAN

SHEET NO:
E200

CIRCUIT SUMMARY BY ZONE							
POLE	CIRCUIT DESCRIPTION	No. OF FIXTURES	No. OF DRIVERS	*FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
A1	BASEBALL	6	6	9.1	30	C1	1
A2	BASEBALL	6	6	9.1	30	C2	1
B1	BASEBALL	8	8	14.1	30	C3	1
B2	BASEBALL	8	8	14.1	30	C4	1
C1	BASEBALL	8	8	14.1	30	C5	1
C2	BASEBALL	8	8	14.1	30	C6	1
D1	BASEBALL	8	8	14.1	30	C7	1
D2	BASEBALL	9	9	17.3	30	C8	1
AL,A2,B1, B1,C1,C2, D1,D2	SECURITY	8	8	2.4	30	C9	2

*FULL LOAD AMPS BASED ON AMPS PER DRIVER

PANEL SUMMARY						
CABINET No.	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID	CB POSITION
1	1	C1	POLE A1	9.07	LP-1	1,3,5
1	1	C2	POLE A2	9.07	LP-1	2,4,6
1	1	C3	POLE B1	14.07	LP-1	7,9,11
1	1	C4	POLE B2	14.07	LP-1	8,10,12
1	1	C5	POLE C1	14.07	LP-1	13,15,17
1	1	C6	POLE C2	14.07	LP-1	14,16,18
1	1	C7	POLE D1	14.07	LP-1	19,21,23
1	1	C8	POLE D2	17.28	LP-1	20,22,24
1	1	C9	POLE A1,A2,B1,B2, C1,C2,D1,D2	2.4	RP-1	

ZONE SCHEDULE				
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	POLE ID	CONTACTOR ID
ZONE 1	1	BASEBALL	A1	C1
			A2	C2
			B1	C3
			B2	C4
			C1	C5
			C2	C6
			D1	C7
			D2	C8
ZONE 2	2	SECURITY	A1	C9
			A2	C9
			B1	C9
			B2	C9
			C1	C9
			C2	C9
			D1	C9
			D2	C9

ALTERNATE #1

CIRCUIT SUMMARY BY ZONE							
POLE	CIRCUIT DESCRIPTION	No. OF FIXTURES	No. OF DRIVERS	*FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
T1	TENNIS 1-3	3	2	3.4	30	C1	1
T2	TENNIS 1-3	3	2	3.4	30	C2	1
T3	TENNIS 1-3	3	2	3.9	30	C3	1
T4	TENNIS 1-3	3	2	3.9	30	C4	1
T5	TENNIS 4-6	3	2	3.9	30	C5	2
T6	TENNIS 4-6	3	2	3.9	30	C6	2
T7	TENNIS 4-6	3	2	3.4	30	C7	2
T8	TENNIS 4-6	3	2	3.4	30	C8	2
T1,T2,T3, T4,T5,T6	SECURITY	6	6	1.8	30	C9	2

*FULL LOAD AMPS BASED ON AMPS PER DRIVER

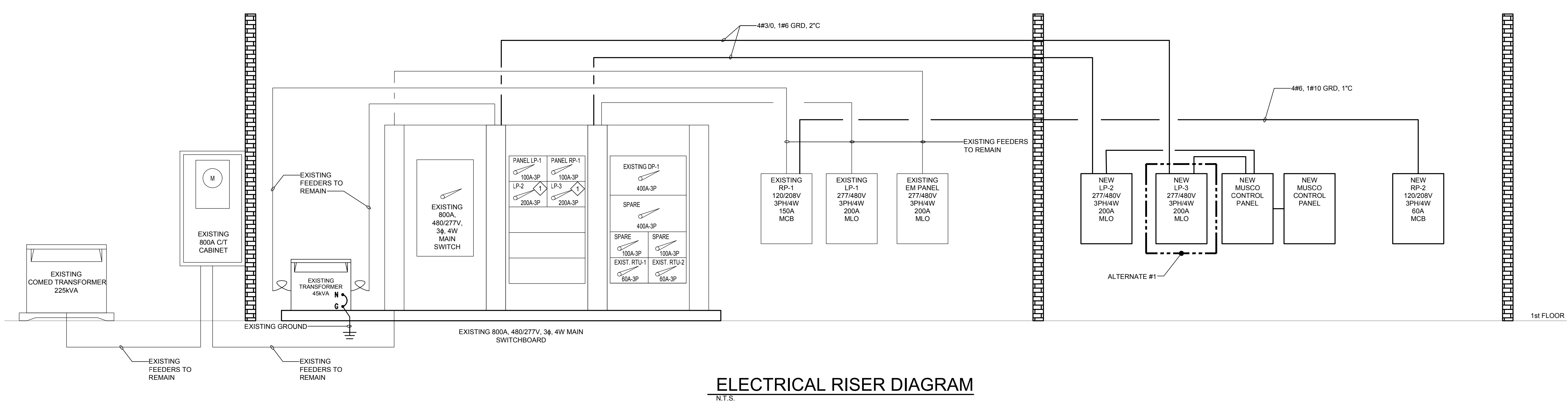
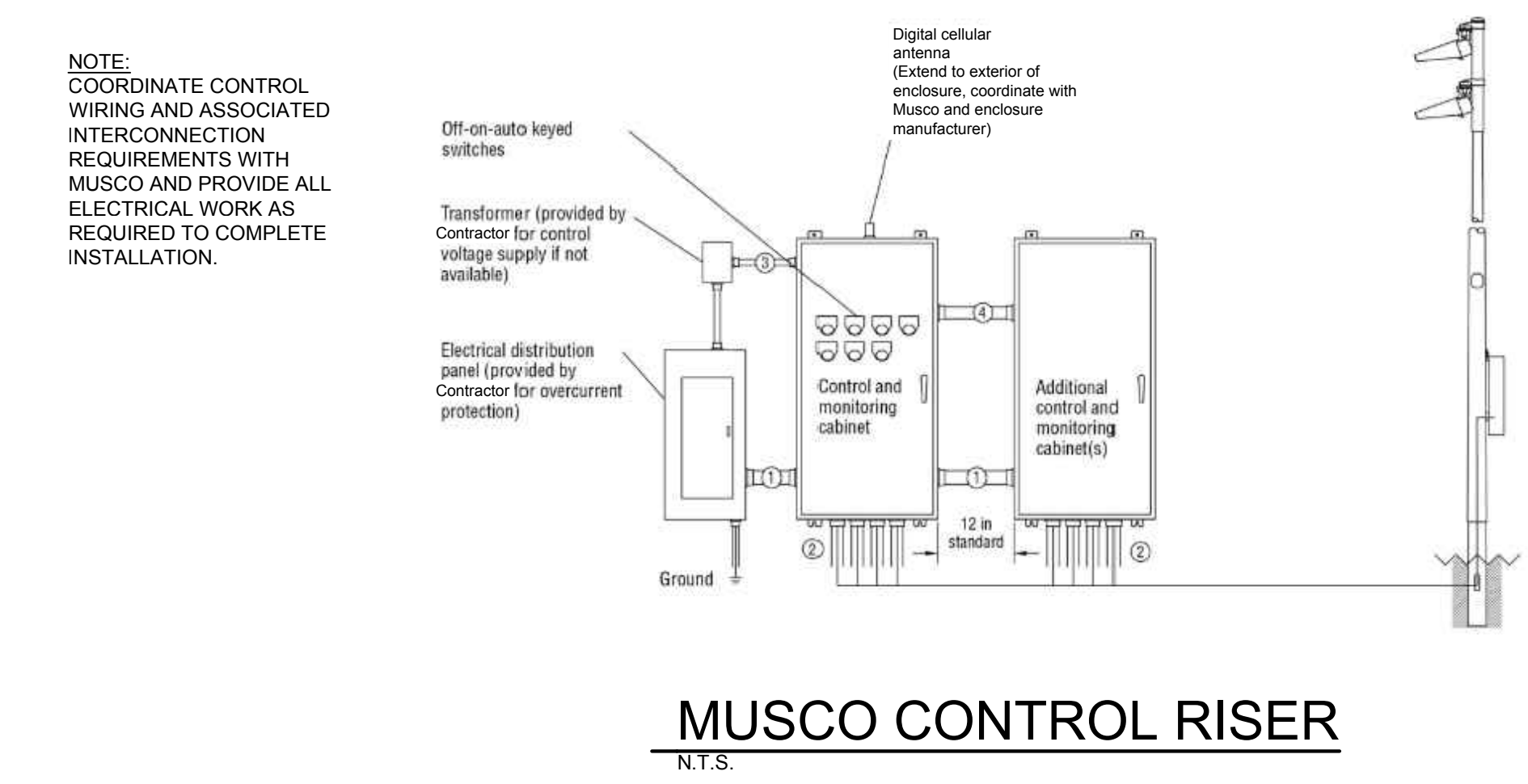
PANEL SUMMARY						
CABINET No.	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID	CB POSITION
2	2	C1	POLE T1	3.43	LP-2	1,3,5
2	2	C2	POLE T2	3.43	LP-2	2,4,6
2	2	C3	POLE T3	3.85	LP-2	7,9,11
2	2	C4	POLE T4	3.85	LP-2	8,10,12
2	2	C5	POLE T5	3.85	LP-2	7,9,11
2	2	C6	POLE T6	3.85	LP-2	8,10,12
2	2	C7	POLE T5	3.43	LP-2	13,15,17
2	2	C8	POLE T6	3.43	LP-2	14,16,18
2	2	C9	POLE T1,T2,T3,T4,T5,T6	2.4	RP-1	

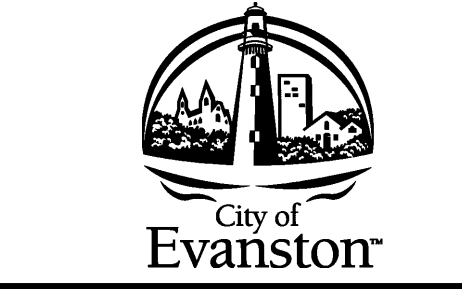
ZONE SCHEDULE				
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	POLE ID	CONTACTOR ID
ZONE 1	1	TENNIS	T1	C1
			T2	C2
			T3	C3
			T4	C4
ZONE 2	2	TENNIS	T5	C5
			T6	C6
			T7	C7
			T8	C8
ZONE 3	3	SECURITY	T1	C9
			T2	C9
			T3	C9
			T4	C9

CONTROL SYSTEM SUMMARY

- ELECTRICAL DISTRIBUTION NOTES:**
- ALL PANELBOARDS, TRANSFORMERS, ETC. INDICATED ON THE RISER ARE NEW UNLESS OTHERWISE NOTED. EXISTING EQUIPMENT SHALL BE FIELD VERIFIED BY THE CONTRACTOR. ALL EQUIPMENT SHALL BE OUTDOOR RATED.
 - ANY SHUTDOWN OF EXISTING DISTRIBUTION SHALL BE PERFORMED OUTSIDE OF NORMAL BUSINESS HOURS. INCLUDE ANY PREMIUM TIME IN BID.
 - PROVIDE ENGRAVED NAMETAGS FOR ALL NEW/REVISED PANELS.
 - PROVIDE UPDATED PANEL SCHEDULES FOR PANELS UPON CLOSEOUT OF PROJECT. CURRENT SCHEDULES ARE OUTDATED & NEED REPLACEMENT.
 - ELECTRICAL CONTRACTOR SHALL PROVIDE NEW PERMANENTLY AFFIXED NAMEPLATES FOR DISTRIBUTION PANELS AND ALL EQUIPMENT WITHIN SCOPE OF WORK. NAMEPLATES SHALL BE BLACK WITH WHITE LETTERING, MINIMUM 1/2" LETTER HEIGHT, AND SHALL INCLUDE EQUIPMENT NAME AND WHERE IT IS FED FROM.

- ELECTRICAL RISER KEYED NOTES:**
- EXISTING 100A-3P SWITCH TO BE REMOVED, REPLACE WITH NEW CUSTOM BUILT 200A-3P SWITCH. MODIFY SWITCHBOARDS AS REQUIRED TO ACCOMMODATE NEW SWITCHES. UTILIZE CUSTOM BUILDER SUCH AS CHICAGO SWITCHBOARD OR POWER DISTRIBUTIONS SYSTEMS OR EQUAL.





MEPC
 MCGUIRE ENGINEERS
 300 SOUTH RIVERSIDE PLAZA
 SUITE 350, CHICAGO, IL 60606
 312.876.9240 mepcinc.com

NEW PANELBOARD SCHEDULE												PROJECT: JAMES PARK ATHLETIC FIELD LIGHTING																																															
NAME: LP-2												MAIN: MLO												MOUNTING: SURFACE												KAIC RATING: 25K																							
VOLTAGE: 480Y/277												MAIN OPTIONS: BUS: 200A												ENCLOSURE: NEMA 1												NEUTRAL: 100%												BUSSING: COPPER											
PHASE WIRE: 3PH 4W												GROUNDING: YES												INTEGRAL SPD: NO																																			
SVC ENTRANCE NO	NO.	LOAD DESCRIPTION	OCPD AMPS	DEVICE OPTIONS	VA/PHASE			VA/PHASE			DEVICE OPTIONS	OCPD AMPS	LOAD DESCRIPTION	NO.																																													
					A	B	C	A	B	C																																																	
	1	POLE A1	20		2500			2500				20	POLE A2	2																																													
	3				2500			2500						4																																													
	5				3907			3907						6																																													
	7	POLE B1	20		3097			3907				20	POLE B2	8																																													
	9				3097			3907						10																																													
	11				3097			3907						12																																													
	13	POLE C1	20		3097			3907				20	POLE C2	14																																													
	15				3097			3907						16																																													
	17	SPARE	20		3907			4800						18																																													
	19				3907			4800						20																																													
	21	POLE D1	20		3907			4800				25	POLE D2	22																																													
	23				3907			4800						24																																													
	25	SPARE	20		665									26																																													
	27	SECURITY	15		665							20	SPARE	28																																													
	29				665									30																																													
	31	SPARE	20									20	SPARE	32																																													
	33	SPARE	20									20	SPARE	34																																													
	35	SPARE	20									20	SPARE	36																																													
	37	SPARE	20									20	SPARE	38																																													
	39	SPARE	20									20	SPARE	40																																													
	41	SPARE	20									20	SPARE	42																																													
SUB-TOTAL					14076	13266	13266	15114	15114	14304	SUB-TOTAL																																																
TOTAL A PHASE:					29190 VA			TOTAL CONNECTED LOAD:					85.14 KVA																																														
TOTAL B PHASE:					28380 VA			TOTAL DEMAND LOAD:					102.41 AMPS																																														
TOTAL C PHASE:					27570 VA			TOTAL DEMAND LOAD:					106.43 KVA																																														
REMARKS:					All branch breakers shall be switching duty (SWD) type																																																						
LEGEND:					ST = SHUNT TRIP, GFI = GROUND FAULT INTERRUPTER (PERSONNEL), DL = DOUBLE LUG, FT = FEED THRU																																																						
					6/9/2023 15:14																																																						

NEW PANELBOARD SCHEDULE												PROJECT: JAMES PARK ATHLETIC FIELD LIGHTING																																															
NAME: RP-2												MAIN: 60A MB												MOUNTING: SURFACE												KAIC RATING: 10K																							
VOLTAGE: 208Y/120												MAIN OPTIONS: BUS: 100A												ENCLOSURE: NEMA 1												NEUTRAL: 100%												BUSSING: COPPER											
PHASE WIRE: 3PH 4W												GROUNDING: YES												INTEGRAL SPD: NO																																			
SVC ENTRANCE NO	NO.	LOAD DESCRIPTION	OCPD AMPS	DEVICE OPTIONS	VA/PHASE			VA/PHASE			DEVICE OPTIONS	OCPD AMPS	LOAD DESCRIPTION	NO.																																													
					A	B	C	A	B	C																																																	
	1	POLE RECPTACLE	20		180			180				20	POLE RECPTACLE	2																																													
	3				180			180						4																																													
	5				180			180						6																																													
	7	POLE RECPTACLE	20		180			180				20	POLE RECPTACLE	8																																													
	9				180			180						10																																													
	11				180			180						12																																													
	13	POLE RECPTACLE	20		180			180				20	SPARE	14																																													
	15				180			180						16																																													
	17	SPARE	20									20	SPARE	18																																													
	19											20	SPARE	20																																													
	21	SPARE	20									20	SPARE	22																																													
	23	SPARE	20									20	SPARE	24																																													
	25	SPARE	20									20	SPARE	26																																													
	27	SPARE	20									20	SPARE	28																																													
	29	SPARE	20									20	SPARE	30																																													
	31	SPARE	20									20	SPARE	32																																													
	33	SPARE	20									20	SPARE	34																																													
	35	SPARE	20									20	SPARE	36																																													
	37	SPARE	20									20	SPARE	38																																													
	39	SPARE	20									20	SPARE	40																																													
	41	SPARE	20									20	SPARE	42																																													
SUB-TOTAL					540	540	360	360	360	360	SUB-TOTAL																																																
TOTAL A PHASE:					900 VA			TOTAL CONNECTED LOAD:					2.52 KVA																																														
TOTAL B PHASE:					900 VA			TOTAL DEMAND LOAD:					6.99 AMPS																																														
TOTAL C PHASE:					720 VA			TOTAL DEMAND LOAD:					2.52 KVA																																														
REMARKS:					All branch breakers shall be switching duty (SWD) type																																																						
LEGEND:					ST = SHUNT TRIP, GFI = GROUND FAULT INTERRUPTER (PERSONNEL), DL = DOUBLE LUG, FT = FEED THRU																																																						
					6/9/2023 15:00																																																						

ALTERNATE #1

NEW PANELBOARD SCHEDULE												PROJECT: JAMES PARK ATHLETIC FIELD LIGHTING																																															
NAME: LP-3												MAIN: MLO												MOUNTING: SURFACE												KAIC RATING: 25K																							
VOLTAGE: 480Y/277												MAIN OPTIONS: BUS: 100A												ENCLOSURE: NEMA 1												NEUTRAL: 100%												BUSSING: COPPER											
PHASE WIRE: 3PH 4W												GROUNDING: YES												INTEGRAL SPD: NO																																			
SVC ENTRANCE NO	NO.	LOAD DESCRIPTION	OCPD AMPS	DEVICE OPTIONS	VA/PHASE			VA/PHASE			DEVICE OPTIONS	OCPD AMPS	LOAD DESCRIPTION	NO.																																													
					A	B	C	A	B	C																																																	
	1	POLE T1	20		951			951				20	POLE T2	2																																													
	3				951			951						4																																													
	5				1067			1067						6																																													
	7	POLE T3	20		1067			1067				20	POLE T4	8																																													
	9				1067			1067						10																																													
	11				564			1067						12																																													
	13	POLE T5	20		564			564				20	POLE T6	14																																													
	15				564			564						16																																													
	17	SPARE	20					564				20	SPARE	18																																													
	19	SPARE	20									20	SPARE	20																																													
	21	SPARE	20									20	SPARE	22																																													
	23	SPARE	20									20	SPARE	24																																													
	25	SPARE	20									20	SPARE	26																																													
	27	SPARE	20									20	SPARE	28																																													
	29	SPARE	20									20	SPARE	30																																													
	31	SPARE	20									20	SPARE	32																																													
	33	SPARE	20									20	SPARE	34																																													
	35	SPARE	20									20	SPARE	36																																													
	37	SPARE	20									20	SPARE	38																																													
	39	SPARE	20									20	SPARE	40																																													
	41	SPARE	20									20	SPARE	42																																													
SUB-TOTAL					2582	2582	2582	3085	2582	2582	SUB-TOTAL																																																
TOTAL A PHASE:					5667 VA			TOTAL CONNECTED LOAD:					16.00 KVA																																														
TOTAL B PHASE:					5164 VA			TOTAL DEMAND LOAD:					19.24 AMPS																																														
TOTAL C PHASE:					5164 VA			TOTAL DEMAND LOAD:					19.99 KVA																																														
REMARKS:					All branch breakers shall be switching duty (SWD) type																																																						
					L: LIGHTING LOAD TYPE																																																						
					R: RECEPTACLE LOAD TYPE																																																						
LEGEND:					ST = SHUNT TRIP, GFI = GROUND FAULT INTERRUPTER (PERSONNEL), DL = DOUBLE LUG, FT = FEED THRU																																																						
					6/9/2023 15:00																																																						

SEAL

ISSUED FOR BID/PERMIT	07.27.2023
Delta	Issue For
	Date

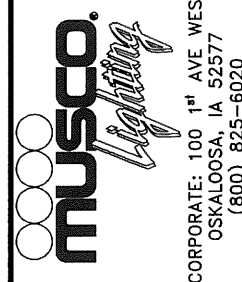
PROJECT:
JAMES PARK ATHLETIC LIGHTING
 2200 OAKTON ST
 EVANSTON, IL 60202

PROJECT NO: 21-0086
 DRAWN BY: SH
 CHECKED BY: JLY
 SHEET TITLE:

ELECTRICAL
 SCHEDULES

SHEET NO:
E400

**JAMES PARK
BASEBALL FOOTBALL
FIELD LIGHTING
EVANSTON, IL**



CORPORATE: 100 1st AVE WEST
OSKALOOSA, IA 52577
(800) 825-6020

**STRUCTURAL
ENGINEERS, P.C.**
114 NICHOLAS DRIVE
MARSHALLTOWN, IOWA 50158
PHONE NUMBER: 641-752-6334
EMAIL: MSL.INFO@SEPC.BIZ

DRAWING TITLE:
POLE AND FOUNDATION
SCALE: SEE PLAN
NOTES:
SCAN #141525F2

PROJECT NUMBER
141525

DATE
07 JULY 2023

DRAWING NUMBER
C1

OF TWO

DESIGN NOTES

DESIGN PARAMETERS:

WIND: $V_{ult} = 115$ MPH, $V_{asd} = 89$ MPH (EXPOSURE C, RISK CATEGORY II) PER INTERNATIONAL BUILDING CODE, 2015 EDITION (ASCE 7-10). DESIGN WIND PARAMETERS ARE AS NOTED, ACTUAL EXPOSURE MUST BE VERIFIED FOR THE SITE BY THE PROPER GOVERNING OFFICIAL.

GEOTECHNICAL PARAMETERS:

ALLOWABLE SKIN FRICTION: VARIES, SEE SOIL REPORT
ALLOWABLE LATERAL SOIL BEARING PRESSURE: VARIES, SEE SOIL REPORT
IN ACCORDANCE WITH THE 2015 EDITION OF THE INTERNATIONAL BUILDING CODE, CHAPTER 18.

DESIGN SOIL PARAMETERS ARE AS NOTED. ACTUAL ALLOWABLE SOIL PARAMETERS MUST BE VERIFIED ON SITE. REFERENCE SOILS AND FOUNDATION REPORT, NO. 8916, PREPARED BY INTERRA; BOLINGBROOK, IL.

A GEOTECHNICAL ENGINEER OR REPRESENTATIVE OF IS RECOMMENDED (NOT REQUIRED) TO BE AVAILABLE AT THE TIME OF THE FOUNDATION INSTALLATION TO VERIFY THE SOIL DESIGN PARAMETERS AND TO PROVIDE ASSISTANCE IF ANY PROBLEMS ARISE IN FOUNDATION INSTALLATION.

ENCOUNTERING SOIL FORMATIONS THAT WILL REQUIRE SPECIAL DESIGN CONSIDERATIONS OR EXCAVATION PROCEDURES MAY OCCUR. POLE FOUNDATIONS WILL NEED TO BE ANALYZED ACCORDING TO THE SOIL CONDITIONS THAT EXIST. IF ANY DISCREPANCIES OR INCONSISTENCIES ARISE, NOTIFY THE ENGINEER OF SUCH DISCREPANCIES. FOUNDATIONS WILL THEN BE REVISED ACCORDINGLY. REVISIONS WILL BE ANALYZED PER RECOMMENDATIONS DIRECTED BY A LICENSED ENGINEER.

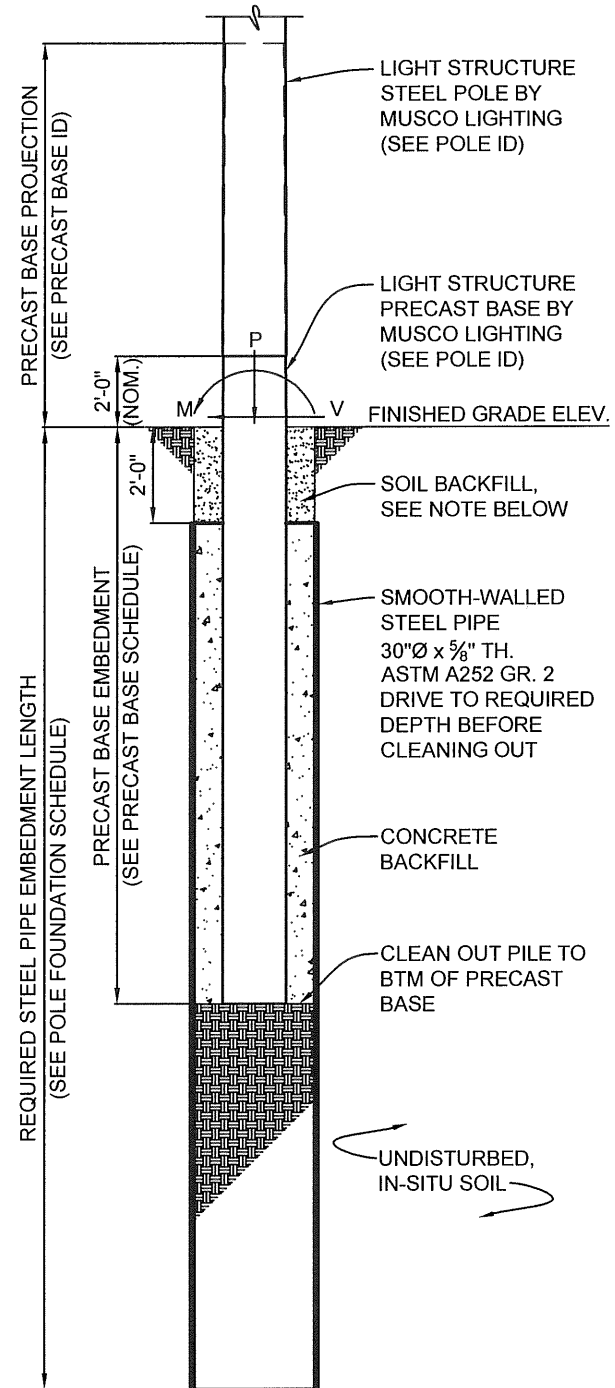
ALL EXCAVATIONS MUST BE FREE OF LOOSE SOIL AND DEBRIS PRIOR TO FOUNDATION INSTALLATION AND CONCRETE BACKFILL PLACEMENT. TEMPORARY CASINGS OR DRILLERS SLURRY MAY BE USED TO STABILIZE THE EXCAVATION DURING INSTALLATION. CASINGS MUST BE REMOVED DURING CONCRETE BACKFILL PLACEMENT. CONCRETE BACKFILL MUST BE PLACED WITH A TREMIE WHEN SLURRY OR WATER IS PRESENT WITHIN THE EXCAVATION OR WHEN THE FREE DROP EXCEEDS 6'-0". CONTRACTOR MUST BE FAMILIAR WITH THE COMPLETE SOIL INVESTIGATION REPORT AND BORINGS, AND CONTACT THE GEOTECHNICAL FIRM (IF NECESSARY) TO UNDERSTAND THE SOIL CONDITIONS AND THE POSSIBILITY OF GROUND WATER PUMPING AND EXCAVATION STABILIZATION OR BRACING DURING PRECAST BASE INSTALLATION AND PLACEMENT OF CONCRETE BACKFILL.

CONCRETE:

CONCRETE SHALL BE AIR-ENTRAINED (COMPLY WITH ASTM C-260) AND MEET THE FOLLOWING MINIMUM REQUIREMENTS; COMPRESSIVE DESIGN STRENGTH AT 28 DAYS OF 5,000 PSI, MAXIMUM WATER-CEMENT RATIO $w/cm = 0.40$, PORTLAND CEMENT ASTM C-150 TYPE V, OR AS DIRECTED BY A GEOTECHNICAL ENGINEER. CALCIUM CHLORIDE ADMIXTURES NOT PERMITTED. MAXIMUM WATER-SOLUBLE CHLORIDE ION CONTENT IN CONCRETE SHALL NOT EXCEED 0.15 PERCENT BY WEIGHT OF CEMENT. PIERS AND CONCRETE BACKFILL MUST BEAR ON AND AGAINST FIRM UNDISTURBED SOIL.

GENERAL NOTES:

FIXTURES MUST BE LOCATED TO MAINTAIN 10'-0" MINIMUM HORIZONTAL CLEARANCE FROM ANY OBSTRUCTION. ENGINEER MUST BE NOTIFIED IF FOUNDATIONS ARE NEAR ANY RETAINING WALLS OR WITHIN / NEAR ANY SLOPES STEEPER THAN 3H : 1V. POLES, FIXTURES, PRECAST BASES, ELECTRICAL ITEMS AND INSTALLATION PER MUSCO LIGHTING.



POLE FOUNDATION ELEV.

SCALE: NOT TO SCALE

SOIL BACKFILL NOTE:

THE TOP TWO FEET OF ANNULUS SHALL BE BACKFILLED WITH SOIL, WITH A CLASSIFICATION OF CLASS 5 (TABLE 1806.2) OR BETTER. COMPACTION, 95% FOR COHESIVE SOIL AND 98% FOR A COHESIONLESS SOIL BASED UPON STANDARD PROCTOR TESTING (ASTM D698).



Kyle G. Lacina
KYLE G. LACINA, S.E. - NO. 081-006181 DATE 7-7-2023
LICENSE RENEWAL DATE: NOVEMBER 30, 2022

STRUCTURAL ENGINEERS, P.C. - NO. 184-4275

PRECAST BASE IDENTIFICATION					
PRECAST BASE TYPE	PRECAST BASE WEIGHT	PRECAST BASE LENGTH	PROJECTION ABOVE GRADE	STANDARD EMBEDMENT	OUTSIDE DIAMETER
2B	1,690 LBS	17'-3"	7'-3"	10'-0"	12.00"
3B	2,470 LBS	20'-0"	8'-0"	12'-0"	13.38"
4B	3,490 LBS	22'-0"	8'-0"	14'-0"	15.75"
5B	4,580 LBS	23'-11"	7'-11"	16'-0"	18.25"

POLE IDENTIFICATION				
POLE DESIGNATION	POLE TYPE	PRECAST BASE TYPE	FIXTURE CONFIGURATION (FIX. PER XARM)	FIXTURE AND ACCESSORIES EPA (FT ²)
A1, A2	LSS60A	2B	6 (4)	13.1
B1, B2, C2	LSS80B	5B	8 (6)	21.8
C1, D1	LSS70C	4B	8 (6)	23.0
D2	LSS80B	5B	9 (7)	24.3
T1, T2, T5, T6	LSS60AA	2B	4 (3)	7.4
T3, T4	LSS60B	3B	7 (6)	14.0

- EACH POLE HAS (1) CREE OSQ FIXTURE AT 20'-0" AGL INCLUDED ABOVE.
 - EACH A, B, C, & D POLE HAS (1) MUSCO LED FIXTURE AT 15'-6" AGL INCLUDED ABOVE.

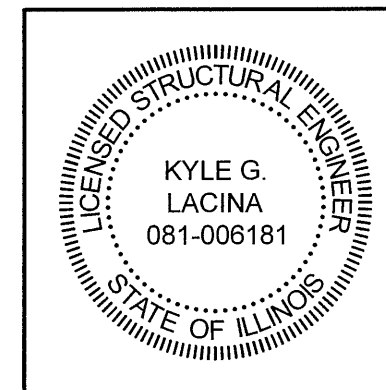
POLE DESIGNATION	FORCES (1.)			STEEL PIPE PILE	
	MOMENT (M) FT-LBS	SHEAR (V) LBS	VERTICAL (P) LBS	DIAMETER INCHES	EMBEDMENT DEPTH (3.)
A1	38,615	990	1,333	30	45'-0"
A2	38,615	990	1,333	30	30'-0"
B1	99,382	1,973	3,268	30	35'-0"
B2	99,382	1,973	3,268	30	50'-0"
C1	78,434	1,658	2,333	30	50'-0"
C2	99,382	1,973	3,268	30	70'-0"
D1	78,434	1,658	2,333	30	55'-0"
D2	106,096	2,057	3,377	30	63'-0"
T1	30,077	828	924	30	40'-0"
T2	30,077	828	924	30	40'-0"
T3	42,756	1,081	1,526	30	35'-0"
T4	42,756	1,081	1,526	30	50'-0"
T5	30,077	828	924	30	30'-0"
T6	30,077	828	924	30	37'-0"


- ASD LOAD COMBINATION D + 0.6W. VERTICAL FORCE IS WEIGHT OF DRESSED POLE (DOES NOT INCLUDE PRECAST BASE WEIGHT).
- MINIMUM CONCRETE BACKFILL VOLUME, SITE CONDITIONS MAY REQUIRE ADDITIONAL BACKFILL.
- IF SOIL PLUG FORMS DURING DRIVING, PILE SHALL BE FILLED WITH CONCRETE.

JAMES PARK
BASEBALL FOOTBALL
FIELD LIGHTING
EVANSTON, IL



STRUCTURAL ENGINEERS, P.C.
 114 NICHOLAS DRIVE
 MARSHALLTOWN, IOWA 50158
 PHONE NUMBER: 641-752-6334
 EMAIL: MSL.INFO@SEPC.BIZ




 DATE: 7-7-2023
 KYLE G. LACINA, S.E. - NO. 081-006181
 LICENSE RENEWAL DATE: NOVEMBER 30, 2022
 STRUCTURAL ENGINEERS, P.C. - NO. 184-4275

DRAWING TITLE: POLE AND FOUNDATION	DRAWING NUMBER C2
SCALE: SEE PLAN	PROJECT NUMBER 141525
NOTES: SCAN #141525F2	DATE 07 JULY 2023
OF TWO	

James Park Baseball Soccer

Evanston, IL

ATTACHMENT 1

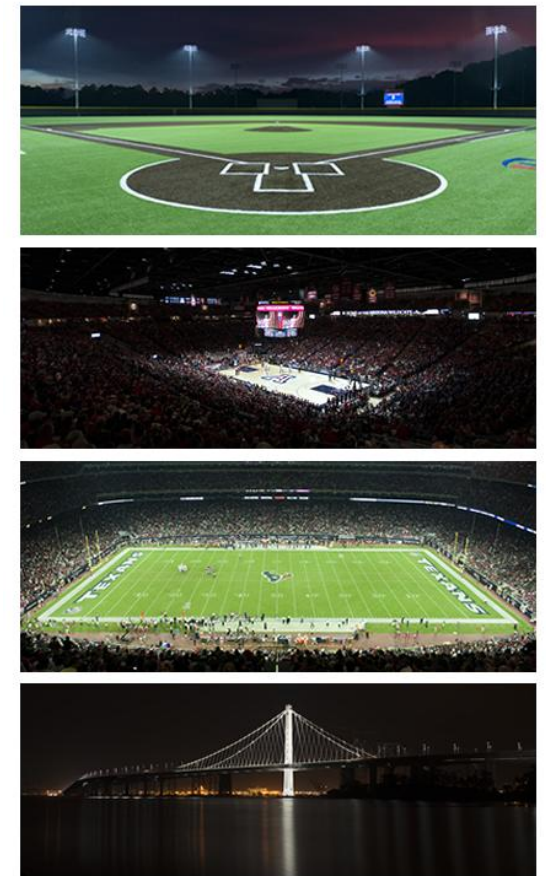
Lighting System

Pole / Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
A1-A2	60'	60'	2	TLC-LED-1200	2.34 kW	A
		60'	1	TLC-LED-1500	1.43 kW	A
		60'	1	TLC-LED-900	0.89 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		20'	1	CREE OSQ	0.10 kW	D
B1	80'	80'	2	TLC-LED-1200	2.34 kW	A
		80'	3	TLC-LED-1500	4.29 kW	A
		80'	1	TLC-LED-900	0.89 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		20'	1	CREE OSQ	0.10 kW	D
B2	80'	80'	1	TLC-LED-1200	1.17 kW	A
		80'	5	TLC-LED-1500	7.15 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		20'	1	CREE OSQ	0.10 kW	D
C1	70'	70'	5	TLC-LED-1500	7.15 kW	A
		70'	1	TLC-LED-900	0.89 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		20'	1	CREE OSQ	0.10 kW	D
C2	80'	80'	6	TLC-LED-1500	8.58 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		20'	1	CREE OSQ	0.10 kW	D
		20'	1	CREE OSQ	0.10 kW	D
D1	70'	70'	6	TLC-LED-1500	8.58 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		20'	1	CREE OSQ	0.10 kW	D
D2	80'	80'	7	TLC-LED-1500	10.01 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		20'	1	CREE OSQ	0.10 kW	D
T1-T2	60'	60'	1	TLC-LED-400	0.40 kW	B
		60'	2	TLC-LED-600	1.16 kW	B
		20'	1	CREE OSQ	0.10 kW	D
T3	60'	60'	3	TLC-LED-600	1.74 kW	B
		60'	3	TLC-LED-600	1.74 kW	C
		20'	1	CREE OSQ	0.10 kW	D
T4	60'	60'	3	TLC-LED-600	1.74 kW	C
		60'	3	TLC-LED-600	1.74 kW	B
		20'	1	CREE OSQ	0.10 kW	D
T5-T6	60'	60'	1	TLC-LED-400	0.40 kW	C
		60'	2	TLC-LED-600	1.16 kW	C
		20'	1	CREE OSQ	0.10 kW	D
14			91		79.63 kW	

Circuit Summary			
Circuit	Description	Load	Fixture Qty
A	Baseball	64.97 kW	53
B	Tennis 1-3	6.6 kW	12
C	Tennis 4-6	6.6 kW	12
D	Security	1.46 kW	14

Fixture Type Summary							
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1500	LED 5700K - 75 CRI	1430W	160,000	>120,000	>120,000	>120,000	34
TLC-LED-900	LED 5700K - 75 CRI	890W	89,600	>120,000	>120,000	>120,000	4
CREE OSQ	LED 5700K - 70 CRI	104W	15,939	--	--	--	14
TLC-LED-1200	LED 5700K - 75 CRI	1170W	136,000	>120,000	>120,000	>120,000	7
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8
TLC-LED-600	LED 5700K - 75 CRI	580W	65,600	>120,000	>120,000	>120,000	20
TLC-LED-400	LED 5700K - 75 CRI	400W	46,500	>120,000	>120,000	>120,000	4

From Hometown to Professional



James Park Baseball Soccer

Evanston, IL

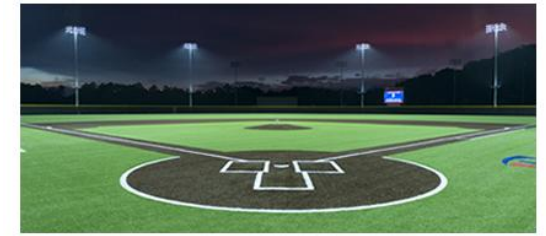
ATTACHMENT 1

Single Luminaire Amperage Draw Chart							
Driver (.90 min power factor)	Max Line Amperage Per Luminaire						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1500	8.5	8.1	7.4	6.4	5.1	4.7	3.7
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9	2.3
Cree OSQ	-	-	-	-	0.3	-	0.2
TLC-LED-1200	7.0	6.6	6.1	5.2	4.2	4.0	3.0
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-600	3.4	3.2	3.0	2.6	2.0	1.9	1.5
TLC-LED-400	2.3	2.2	2.0	1.7	1.4	1.3	1.0

Light Level Summary

Calculation Grid Summary								
Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Baseball (Infield)	Horizontal Illuminance	52.5	45	62	1.39	1.17	A	53
Baseball (Outfield)	Horizontal Illuminance	51	44	58	1.33	1.16	A	53
Blanket Grid	Horizontal	1.96	0	49	330320.00		A,B,C,D	91
Football	Horizontal Illuminance	50.4	44	57	1.30	1.15	A	53
Security	Horizontal	0.55	0	8	35310.54		D	14
Street Spill Security	Horizontal	0.10	0	0.32	796.53		D	14
Street Spill Security	Max Candela (by Fixture)	1957	141	4250	30.05	13.84	D	14
Street Spill	Horizontal	0.10	0	0.50	0.00		A,B,C	77
Street Spill	Max Candela (by Fixture)	2099	3.17	6964	2195.28	662.23	A,B,C	77
Tennis 1-3	Horizontal Illuminance	31.5	25	37	1.47	1.26	B	12
Tennis 4-6	Horizontal Illuminance	31.4	25	36	1.47	1.26	C	12

From Hometown to Professional



We Make It Happen®

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2023 Musco Sports Lighting, LLC.

EQUIPMENT LIST FOR AREAS SHOWN

Pole		Luminaires						
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	60'	-	60'	TLC-LED-1500	1	1	0
				60'	TLC-LED-900	1	1	0
				15.5'	TLC-BT-575	1	1	0
				20'	CREE OSQ	1	0	1
				60'	TLC-LED-1200	2	2	0
1	A2	60'	-	60'	TLC-LED-1200	2	2	0
				60'	TLC-LED-1500	1	1	0
				15.5'	TLC-BT-575	1	1	0
				20'	CREE OSQ	1	0	1
				60'	TLC-LED-900	1	1	0
1	B1	80'	-	80'	TLC-LED-1200	2	2	0
				80'	TLC-LED-900	1	1	0
				15.5'	TLC-BT-575	1	1	0
				20'	CREE OSQ	1	0	1
				80'	TLC-LED-1500	3	3	0
1	B2	80'	-	80'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	1	1	0
				20'	CREE OSQ	1	0	1
				80'	TLC-LED-1500	5	5	0
				70'	TLC-LED-1500	5	5	0
1	C1	70'	-	70'	TLC-LED-1500	5	5	0
				15.5'	TLC-BT-575	1	1	0
				20'	CREE OSQ	1	0	1
				70'	TLC-LED-900	1	1	0
				15.5'	TLC-BT-575	1	1	0
1	C2	80'	-	15.5'	TLC-BT-575	1	1	0
				20'	CREE OSQ	1	0	1
				80'	TLC-LED-1500	6	6	0
				15.5'	TLC-BT-575	1	1	0
				20'	CREE OSQ	1	0	1
1	D1	70'	-	15.5'	TLC-BT-575	1	1	0
				20'	CREE OSQ	1	0	1
				70'	TLC-LED-1500	6	6	0
				15.5'	TLC-BT-575	1	1	0
				20'	CREE OSQ	1	0	1
1	D2	80'	-	15.5'	TLC-BT-575	1	1	0
				20'	CREE OSQ	1	0	1
				80'	TLC-LED-1500	7	7	0
				15.5'	TLC-BT-575	1	1	0
				20'	CREE OSQ	1	0	1
8	TOTALS					61	53	8

James Park Baseball Soccer

Evanston, IL

ATTACHMENT 1

GRID SUMMARY

Name: **Baseball**
 Size: 300'/300'/300' - basepath 90'
 Spacing: 30.0' x 30.0'
 Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	50	50
Scan Average:	52.48	51.02
Maximum:	62	58
Minimum:	45	44
Avg / Min:	1.17	1.16
Guaranteed Max / Min:	2	2
Max / Min:	1.39	1.33
UG (adjacent pts):	1.29	1.23
CU:	0.62	
No. of Points:	24	72

LUMINAIRE INFORMATION

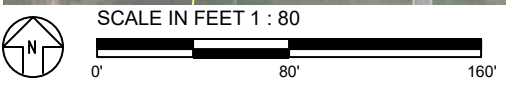
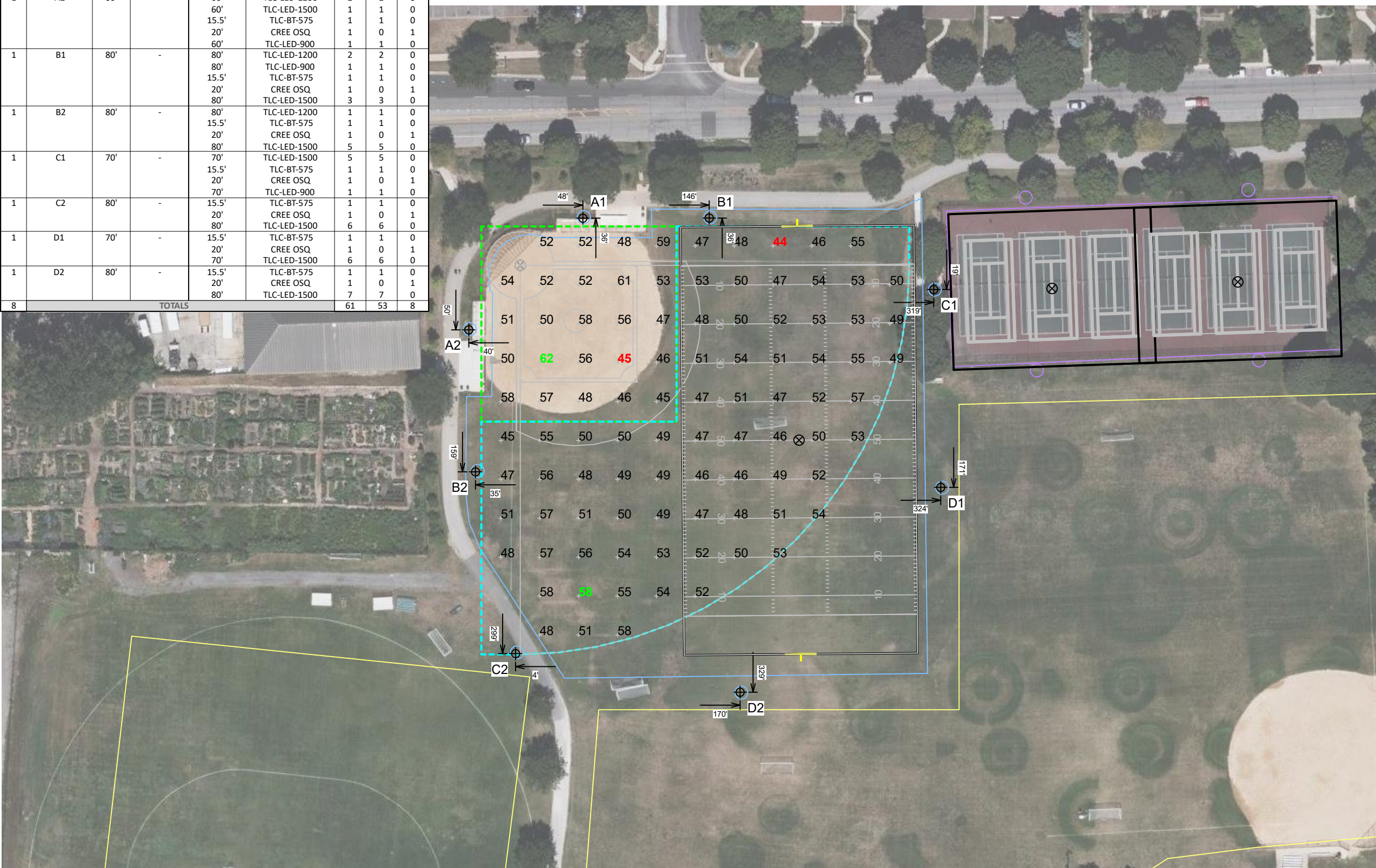
Applied Circuits: A
 No. of Luminaires: **53**
 Total Load: 64.97 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) Ⓢ dimensions are relative to 0,0 reference point(s) ⊗



Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2023 Musco Sports Lighting, LLC.

ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	T1-T2	60'	-	60'	TLC-LED-400	1	1	0
				20'	CREE OSQ	1	0	1
				60'	TLC-LED-600	2	2	0
2	T3-T4	60'	0'	20'	CREE OSQ	1	0	1
				60'	TLC-LED-600	6	3	3
				TOTALS				22

GRID SUMMARY	
Name:	Tennis 1-3
Size:	3 Court - 12' Spacing
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Guaranteed Average:	30
Scan Average:	31.50
Maximum:	37
Minimum:	25
Avg / Min:	1.25
Guaranteed Max / Min:	2.5
Max / Min:	1.47
UG (adjacent pts):	0.00
CU:	0.76
No. of Points:	45
LUMINAIRE INFORMATION	
Applied Circuits:	B
No. of Luminaires:	12
Total Load:	6.6 kW

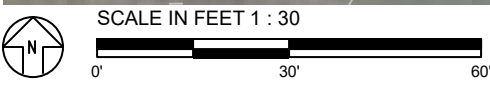


Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) Ⓧ dimensions are relative to 0,0 reference point(s) ⊗

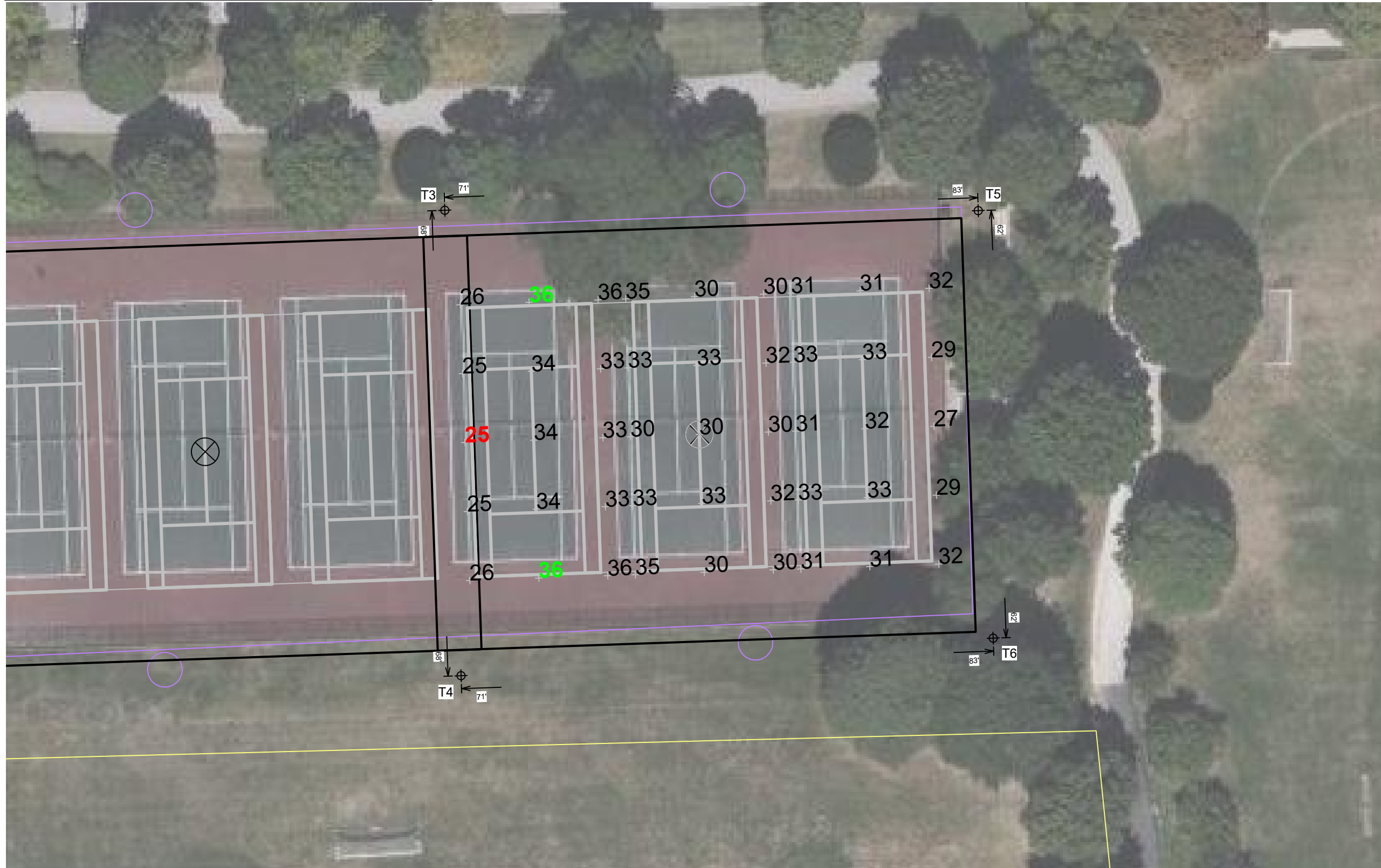


Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2023 Musco Sports Lighting, LLC.

EQUIPMENT LIST FOR AREAS SHOWN								
Pole			Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	T3-T4	60'	-	20'	CREE OSQ	1	0	1
				60'	TLC-LED-600	6	3	3
2	T5-T6	60'	-	60'	TLC-LED-400	1	1	0
				20'	CREE OSQ	1	0	1
				60'	TLC-LED-600	2	2	0
4	TOTALS					22	12	10

GRID SUMMARY	
Name:	Tennis 4-6
Size:	3 Court - 12' Spacing
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Guaranteed Average:	30
Scan Average:	31.43
Maximum:	36
Minimum:	25
Avg / Min:	1.27
Guaranteed Max / Min:	2.5
Max / Min:	1.47
UG (adjacent pts):	0.00
CU:	0.76
No. of Points:	45
LUMINAIRE INFORMATION	
Applied Circuits:	C
No. of Luminaires:	12
Total Load:	6.6 kW

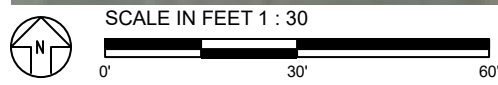


Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) Ⓢ dimensions are relative to 0,0 reference point(s) ⊗



We Make It Happen.

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID / OTHER GRIDS	
1	A1	60'	0'	60'	TLC-LED-1500	1	1 0	
				60'	TLC-LED-900	1	1 0	
				15.48'	TLC-BT-575	1	1 0	
				20'	CREE OSQ	1	0 1	
				60'	TLC-LED-1200	2	2 0	
1	A2	60'	0'	60'	TLC-LED-1200	2	2 0	
				60'	TLC-LED-1500	1	1 0	
				15.48'	TLC-BT-575	1	1 0	
				20'	CREE OSQ	1	0 1	
				60'	TLC-LED-900	1	1 0	
1	B1	80'	0'	80'	TLC-LED-1200	2	2 0	
				80'	TLC-LED-900	1	1 0	
				15.48'	TLC-BT-575	1	1 0	
				20'	CREE OSQ	1	0 1	
				80'	TLC-LED-1500	3	3 0	
1	B2	80'	0'	80'	TLC-LED-1200	1	1 0	
				15.48'	TLC-BT-575	1	1 0	
				20'	CREE OSQ	1	0 1	
				80'	TLC-LED-1500	5	5 0	
				70'	TLC-LED-900	1	1 0	
1	C1	70'	0'	70'	TLC-LED-1500	5	5 0	
				15.48'	TLC-BT-575	1	1 0	
				20'	CREE OSQ	1	0 1	
				70'	TLC-LED-900	1	1 0	
				15.48'	TLC-BT-575	1	1 0	
1	C2	80'	0'	80'	TLC-LED-1500	6	6 0	
				20'	CREE OSQ	1	0 1	
				80'	TLC-LED-1500	6	6 0	
1	D1	70'	0'	70'	TLC-LED-1500	6	6 0	
				20'	CREE OSQ	1	0 1	
				15.48'	TLC-BT-575	1	1 0	
1	D2	80'	0'	80'	TLC-LED-1500	7	7 0	
				20'	CREE OSQ	1	0 1	
				15.48'	TLC-BT-575	1	1 0	
8	TOTALS					61	53	8

GRID SUMMARY	
Name:	Football
Size:	330' x 180'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

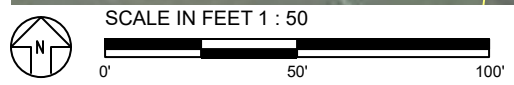
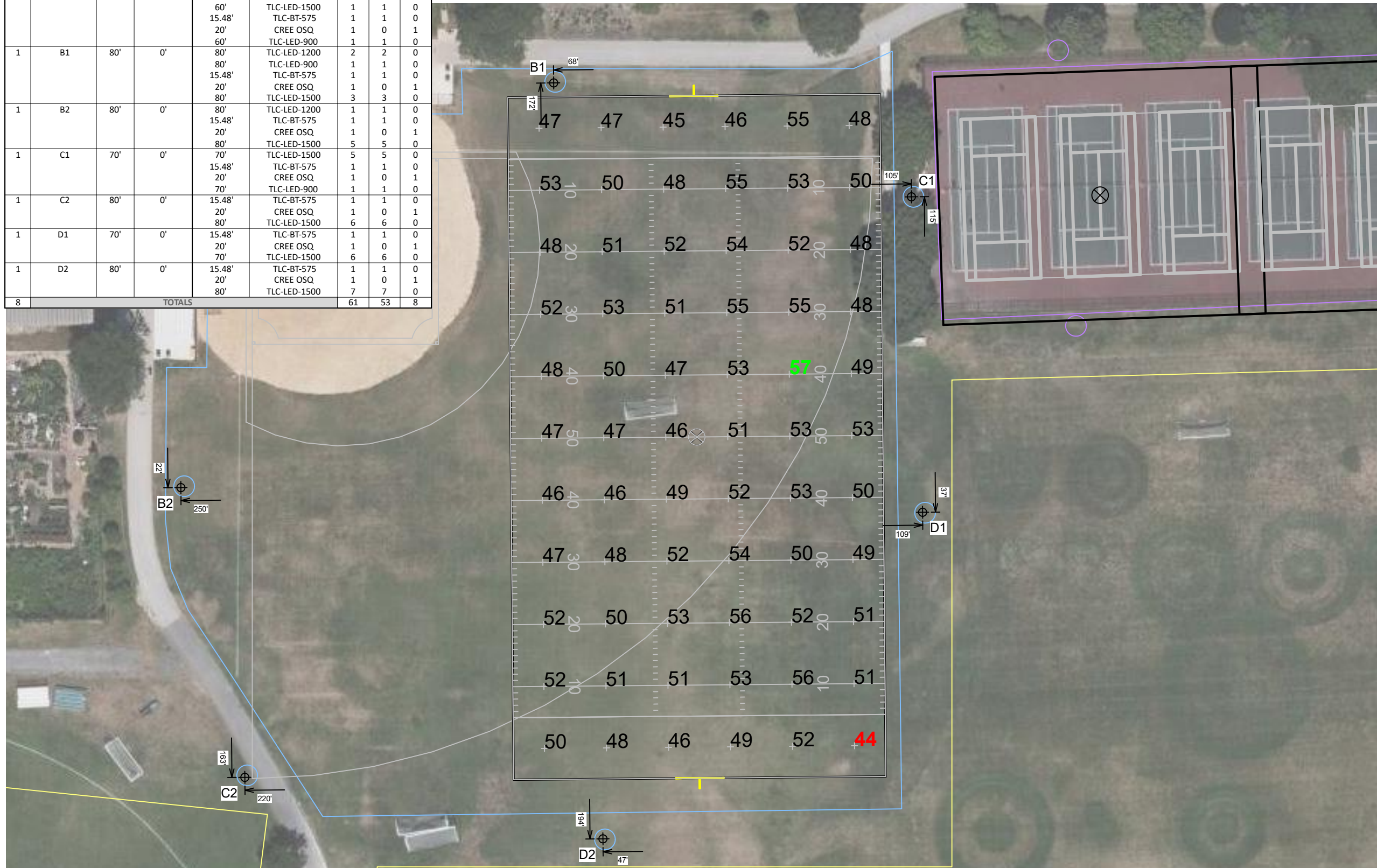
ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Guaranteed Average:	50
Scan Average:	50.42
Maximum:	57
Minimum:	44
Avg / Min:	1.15
Guaranteed Max / Min:	2
Max / Min:	1.30
UG (adjacent pts):	1.19
CU:	0.42
No. of Points:	66
LUMINAIRE INFORMATION	
Applied Circuits:	A
No. of Luminaires:	53
Total Load:	64.97 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



GRID SUMMARY	
Name:	Blanket Grid
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

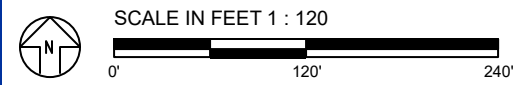
ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Scan Average:	1.96
Maximum:	49
Minimum:	0
Avg / Min:	13243.44
Max / Min:	330320.00
UG (adjacent pts):	16.75
CU:	0.11
No. of Points:	1193
LUMINAIRE INFORMATION	
Applied Circuits:	A, B, C, D
No. of Luminaires:	91
Total Load:	79.63 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



GRID SUMMARY	
Name:	Security
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

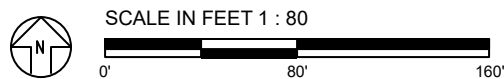
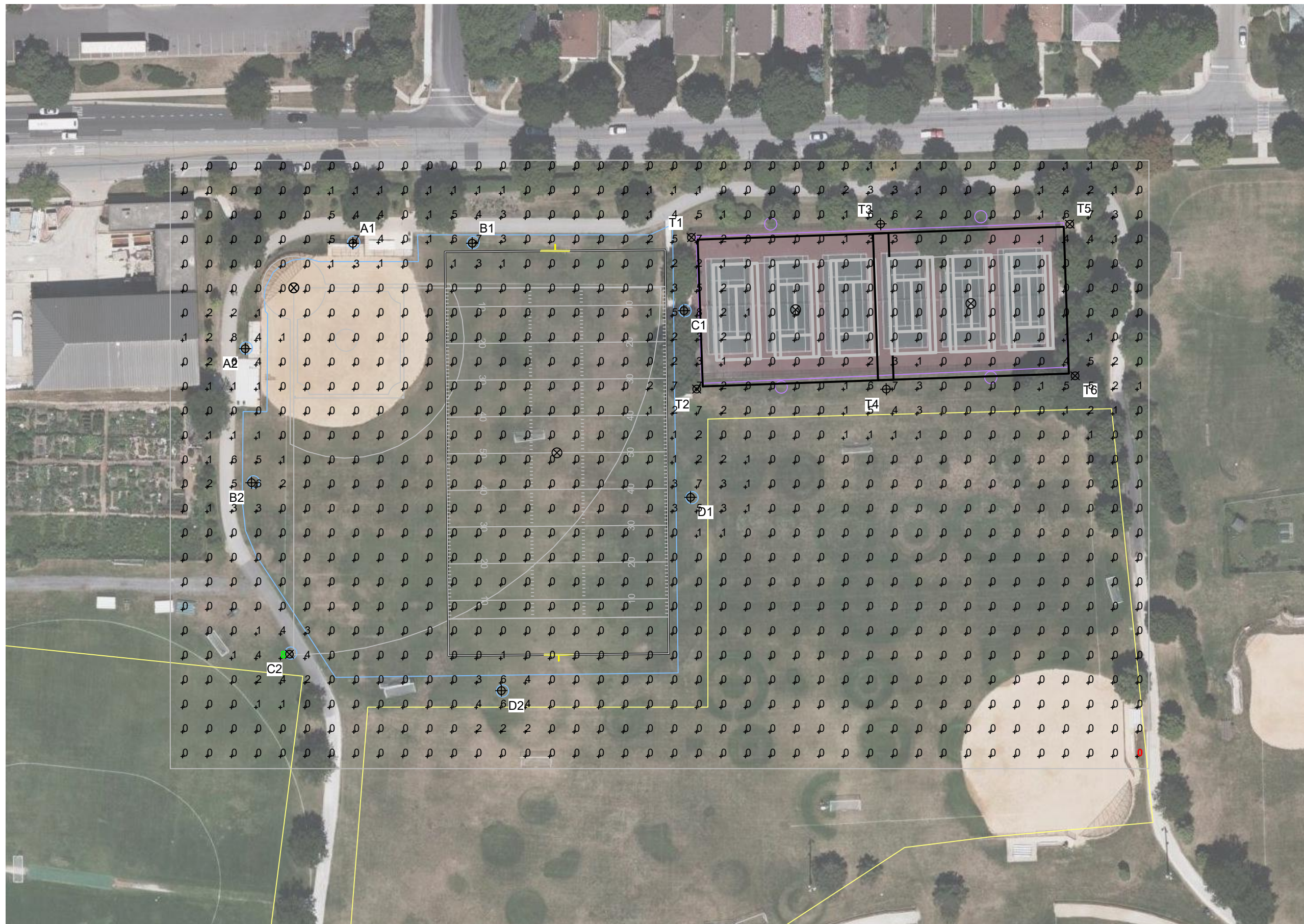
ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Scan Average:	0.55
Maximum:	8
Minimum:	0
Avg / Min:	2348.93
Max / Min:	35310.54
UG (adjacent pts):	21.91
CU:	0.97
No. of Points:	1000
LUMINAIRE INFORMATION	
Applied Circuits:	D
No. of Luminaires:	14
Total Load:	1.46 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



We Make It Happen.



GRID SUMMARY	
Name:	Street Spill
Spacing:	30.0'
Height:	3.0' above grade

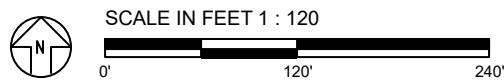
ILLUMINATION SUMMARY	
HORIZONTAL FOOTCANDLES	
Scan Average:	Entire Grid 0.1044
Maximum:	0.50
Minimum:	0.00
No. of Points:	34
LUMINAIRE INFORMATION	
Applied Circuits:	A, B, C
No. of Luminaires:	77
Total Load:	78.17 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



ENGINEERED DESIGN By: C.Lapaczonok · File #141525I · 10-Jul-23

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



We Make It Happen.

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2023 Musco Sports Lighting, LLC.

GRID SUMMARY	
Name:	Street Spill
Spacing:	30.0'
Height:	3.0' above grade

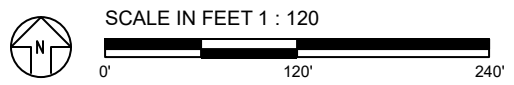
ILLUMINATION SUMMARY	
CANDELA (PER FIXTURE)	
Scan Average:	Entire Grid 2099.2715
Maximum:	6964.39
Minimum:	3.17
No. of Points:	34
LUMINAIRE INFORMATION	
Applied Circuits:	A, B, C
No. of Luminaires:	77
Total Load:	78.17 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



GRID SUMMARY	
Name:	Street Spill Security
Spacing:	30.0'
Height:	3.0' above grade

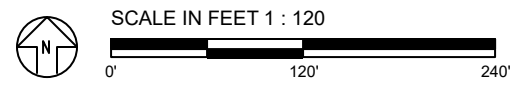
ILLUMINATION SUMMARY	
HORIZONTAL FOOTCANDLES	
Scan Average:	Entire Grid 0.0976
Maximum:	0.32
Minimum:	0.00
No. of Points:	34
LUMINAIRE INFORMATION	
Applied Circuits:	D
No. of Luminaires:	14
Total Load:	1.46 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



GRID SUMMARY	
Name:	Street Spill Security
Spacing:	30.0'
Height:	3.0' above grade

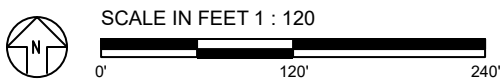
ILLUMINATION SUMMARY	
CANDELA (PER FIXTURE)	
Scan Average:	Entire Grid 1957.4833
Maximum:	4250.46
Minimum:	141.43
No. of Points:	34
LUMINAIRE INFORMATION	
Applied Circuits:	D
No. of Luminaires:	14
Total Load:	1.46 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



We Make It Happen.



EQUIPMENT LAYOUT

INCLUDES:

- Baseball
- Football
- Tennis 1-3
- Tennis 4-6

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

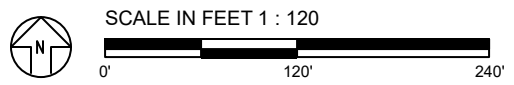
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

QTY	LOCATION	Pole		Luminaires		
		SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
1	A1	60'	-	60'	TLC-LED-1500	1
				60'	TLC-LED-900	1
				15.5'	TLC-BT-575	1
				20'	CREE OSQ	1
				60'	TLC-LED-1200	2
1	A2	60'	-	60'	TLC-LED-1200	2
				60'	TLC-LED-1500	1
				15.5'	TLC-BT-575	1
				20'	CREE OSQ	1
				60'	TLC-LED-900	1
1	B1	80'	-	80'	TLC-LED-1200	2
				80'	TLC-LED-900	1
				15.5'	TLC-BT-575	1
				20'	CREE OSQ	1
				80'	TLC-LED-1500	3
1	B2	80'	-	80'	TLC-LED-1200	1
				15.5'	TLC-BT-575	1
				20'	CREE OSQ	1
				80'	TLC-LED-1500	5
				70'	TLC-LED-1500	5
1	C1	70'	-	15.5'	TLC-BT-575	1
				20'	CREE OSQ	1
				70'	TLC-LED-900	1
				15.5'	TLC-BT-575	1
				20'	CREE OSQ	1
1	C2	80'	-	15.5'	TLC-BT-575	1
				20'	CREE OSQ	1
				80'	TLC-LED-1500	6
				15.5'	TLC-BT-575	1
				20'	CREE OSQ	1
1	D1	70'	-	15.5'	TLC-BT-575	1
				20'	CREE OSQ	1
				70'	TLC-LED-1500	6
				15.5'	TLC-BT-575	1
				20'	CREE OSQ	1
1	D2	80'	-	15.5'	TLC-BT-575	1
				20'	CREE OSQ	1
				80'	TLC-LED-1500	7
				15.5'	TLC-BT-575	1
				20'	CREE OSQ	1
4	T1-T2 T5-T6	60'	-	20'	CREE OSQ	1
				60'	TLC-LED-600	2
				60'	TLC-LED-400	1
				20'	CREE OSQ	1
2	T3-T4	60'	-	20'	CREE OSQ	1
				60'	TLC-LED-600	6
14	TOTALS					91

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Driver (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1500	8.5	8.1	7.4	6.4	5.1	4.7	3.7
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9	2.3
Cree OSQ	-	-	-	-	0.3	-	0.2
TLC-LED-1200	7.0	6.6	6.1	5.2	4.2	4.0	3.0
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-600	3.4	3.2	3.0	2.6	2.0	1.9	1.5
TLC-LED-400	2.3	2.2	2.0	1.7	1.4	1.3	1.0



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗





600 Territorial Drive, Suite G, Bolingbrook, IL 60440

Phone: 630-754-8700, Fax: 630-754-8705

www.interraservices.com

GEOTECHNICAL REPORT

James Park Athletic Fields Lighting

City of Evanston, Cook County, Illinois

Prepared for:

City of Evanston
2100 Ridge Avenue
Evanston, IL 60201



7/26/2021

Ms. Stefanie Levine, PA
Senior Project Manager
Public Works Agency
Lorraine H. Morton Civic Center
City of Evanston
2100 Ridge Avenue
Evanston, IL 60201

GEOTECHNICAL REPORT

James Park Athletic Fields Lighting
City of Evanston, Cook County, Illinois

Dear Ms. Levine:

Interra, Inc. is pleased to submit this report on subsurface soil exploration performed at the above referenced project site in Evanston, Illinois. The purpose of the investigation is to aid in the design of foundations for the proposed high mast lighting at the dual purposed baseball & football field, and two tennis courts. We understand that the height of these lighting structures varies between 60 feet and 80 feet. We also understand that James Park is a former landfill and some or all the proposed lighting structures lie within the limits of the former landfill.

Scope of Work

The scope of work included drilling a total of four (4) soil borings. The boreholes were extended to the depth of weathered bedrock which was noted between 71 feet and 73.5 feet. The location of the borings is presented in Boring Location Plan in Appendix A.

Field Work

The borings were marked in the field by INTERRA with the guidance of the client. The drilling sub-contractor Geocon Professional Services obtained underground utility clearance prior to drilling. Drilling was performed on 6/11/2021 and 6/14/21 using a track mounted D-50 drill rig. Soil sampling in the boreholes was performed in accordance with ASTM D1586 "Standard Penetration Test and Split Barrel

Sampling of Soils". A RIMAC tester was used to determine the unconfined compressive strength of the cohesive soil samples.

Observation for ground water was made during and immediately after the completion of drilling and the information was recorded on the borehole logs. In addition to groundwater information, blow-count data and soil description are also recorded on the field borehole logs. Soil samples obtained from the drilling operations were sealed immediately in the field and returned to our Bolingbrook, Illinois laboratory for further examination and testing. Upon completion of drilling, the boreholes were backfilled immediately with the soil auger cuttings and bentonite.

Laboratory Work

The laboratory work for this project consisted of performing moisture content tests on all the soil samples recovered from the boreholes. In conjunction with the laboratory testing, all the soil samples were examined and visually classified. All soil samples will be retained in our Bolingbrook, Illinois laboratory for a period of 60 days, after which they will be discarded unless other instructions as to their disposal are received. Laboratory test reports are enclosed.

Subsurface Soil Conditions

Baseball/Football Field

Boring SB-01 is located near the northwest corner of the baseball/football field. This boring encountered 0.5 feet of TOPSOIL underlain by FILL materials to a depth of 5.5 feet. The fill materials consisted of loose black and brown sandy loam with pieces of concrete and brick to a depth of 3.0 feet and loose black silt with pieces of brick to 5.5 feet. The fill materials are underlain by loose brown, gray and black SILT with trace organics to a depth of 8.0 feet. Very stiff to medium stiff gray and yellowish-brown CLAY was observed to a depth of 13.0 feet. Very loose to loose bluish gray and gay SILT was noted between 13.0 to 32.0 feet. Medium stiff to soft gray CLAY was identified up to 47.0 feet. This was followed by medium dense gray and greenish gray SANDY LOAM to a depth of 52.0 feet. Hard gray CLAY extended to a final depth of 73.0 feet. The boring was terminated on the weathered bedrock at 73.0 feet.

Boring SB-04 was drilled at the southern edge of the ball field. This boring encountered 0.42 feet of TOPSOIL at the surface, underlain by very loose to medium dense FILL materials up to a depth of 59 feet.

The fill materials consisted of silty loam, silt and sands with brick, concrete, wood and pieces of glass. The fill material is underlain by stiff to very stiff CLAY to a depth of 67 feet. This is followed by very dense SILT to a depth of 71 feet. The boring was terminated in weathered bedrock at a depth of 71 feet.

Tennis Courts

Boring SB-02 was drilled at the northwest corner of the tennis courts to a depth of 73.5 feet. TOPSOIL was encountered to 0.5 feet from the ground surface, and underlain by FILL materials up to a depth of 10.5 feet. The fill material consisted of medium dense brown silt fill with pieces of brick to 3.0 feet and very loose to medium dense brown and reddish-brown sand fill with pieces of brick and concrete to 10.5 feet. Between the depths of 10.5 feet and 47 feet, stiff to medium stiff CLAYEY soils were noted. This is followed by hard CLAY LOAM and CLAY to a depth of 63 feet. This is underlain by very dense SAND to a depth of 73.5 feet. The boring was terminated in weathered bedrock at a depth of 73.5 feet.

Boring SB-03 was drilled in the southeast corner of the tennis courts. This boring encountered 0.5 feet of TOPSOIL at the surface, underlain by very loose to loose FILL materials up to a depth of 18.0 feet. The fill materials consisted of silty loam, sandy loam and sands with brick, wood and pieces of glass. The fill material is underlain by loose SILT to a depth of 20.5 feet, followed by medium stiff to very stiff CLAY to a depth of 57 feet. This is followed by very dense SILT to a depth of 67 feet and very dense SANDY LOAM to a depth of 71 feet. The boring was terminated in weathered bedrock at a depth of 71 feet.

Please see individual boring logs in Appendix A for detailed soil stratification.

Ground Water Information

Observations for ground water were made during and immediately after the completion of drilling. Groundwater was noted between depths of 8.5 to 11.0 feet from the surface in the fill material at borings SB-02, SB-03 and SB-04. No groundwater was encountered at boring SB-01 but high moisture content was noted in soil samples from 3.5 feet to 7.5 feet and 11.0 to 12.5 feet. Since the water levels were measured in a relatively short period of time, the measured water levels may not represent true groundwater conditions. Fluctuations in water levels should be expected due to seasonal variations, precipitation and surface run-off.

Conclusions & Recommendations

Borings SB-01, SB-02 and SB-03 SB-04 all appear to be in or very closed to the former landfill. The Musco Lighting Request for Soil Report (Appendix B) lists the required soil investigation information for the design of foundations for embedment. According to this, the foundation element primarily acts as a laterally loaded pile. Their standard foundation consists of a round precast, prestressed concrete bottom pole section that is placed in the center of a 30" (minimum) diameter pier excavation and stabilized with concrete backfill in the annular area.

The subsurface materials consist of materials disposed of in the landfill in a very loose state and mostly with high moisture content. If Musco's standard foundation system were to be used, the subsurface materials are not suitable initially to develop good lateral resistance and at later times this resistance might further reduce due to the long-term decomposition of the subsurface materials. Since the mast lighting poles exert considerable lateral forces on the foundation elements and foundation soils, it is important that the long-term performance of foundation system is considered in its selection. Secondly, excavation required for the standard foundation system consisting of a pole would produce contaminated spoils that would need to be disposed of in a special waste landfill increasing the cost of the project.

For the above reasons, Musco's standard foundation system may not be suitable. We recommend a deep foundation system consisting of H-piles or metal shell piles driven into the very stiff to hard silty clay layer. The depth of embedment will depend on the lateral capacity required. We recommend that the lateral capacity and deflections be evaluated using software such as LPILE or COM624. To limit deflections and bending moments in the piles, lateral resistance of pile caps can be considered. The potential corrosive conditions in the landfill soils should be taken into consideration in selecting the pile sizes.

Report Limitations

The analysis submitted in this report is based upon the data obtained from the soil borehole performed at the location indicated on the location diagram and from any other information discussed in this report. In performing subsurface explorations, specific information is obtained at specific locations at specific times. It is a well-known fact that variations in soil and rock conditions exist on most sites between borehole locations. Also, groundwater levels vary from time to time. The nature and extent of

variations may not become evident until the course of construction. If variations then appear evident, it will be necessary for a re-evaluation of the recommendations of this report after performing on-site observations and noting the characteristics of any variations.

We appreciate the opportunity to be of service to you. If you have any questions regarding this report or if you need further clarifications please do not hesitate to call us at our office.

Very truly yours,

Interra, Inc.

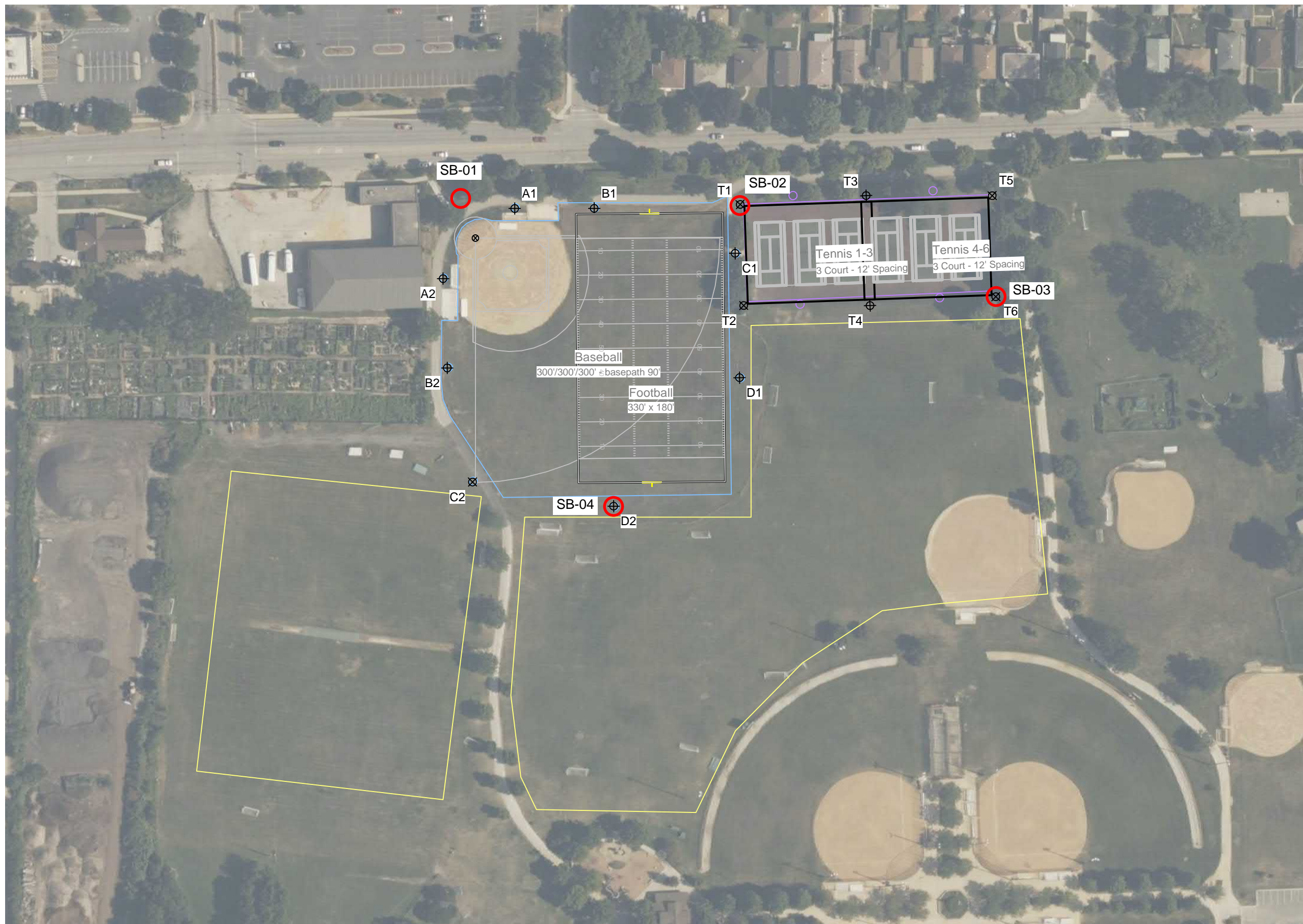


Ashok Guntaka, EI
Project Manager



Sanjeev Bandi, Ph.D., PE
Principal Engineer

Appendix A
Soil Boring Location Plan
Soil Boring Logs



EQUIPMENT LAYOUT	
INCLUDES:	
<ul style="list-style-type: none"> Baseball Football Tennis 1-3 Tennis 4-6 	
Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.	
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.	

EQUIPMENT LIST FOR AREAS SHOWN						
Pole			Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
1	A1	60'	-	60'	TLC-LED-1200	2
				60'	TLC-LED-900	1
				15.5'	TLC-BT-575	1
				60'	TLC-LED-1500	1
1	A2	60'	-	60'	TLC-LED-1200	2
				60'	TLC-LED-900	1
				15.5'	TLC-BT-575	1
				60'	TLC-LED-1500	1
2	B1-B2	80'	-	15.5'	TLC-BT-575	1
				80'	TLC-LED-1500	6
2	C1, D1	70'	-	15.5'	TLC-BT-575	1
				70'	TLC-LED-1500	6
1	C2	80'	-	15.5'	TLC-BT-575	1
1	D2	80'	-	15.5'	TLC-BT-575	1
				80'	TLC-LED-1500	7
4	T1-T2 T5-T6	60'	-	60'	TLC-LED-600	2
				60'	TLC-LED-400	1
2	T3-T4	60'	-	60'	TLC-LED-600	6
14	TOTALS					77

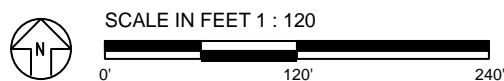
SINGLE LUMINAIRE AMPERAGE DRAW CHART							
Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1500	8.5	8.1	7.4	6.4	5.1	4.7	3.7
TLC-LED-600	3.4	3.2	3.0	2.6	2.0	1.9	1.5
TLC-LED-1200	7.0	6.6	6.1	5.2	4.2	4.0	3.0
TLC-LED-400	2.3	2.2	2.0	1.7	1.4	1.3	1.0
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9	2.3

○ Soil Boring

Soil Boring Location Map
 James Park Athletic Lighting
 INTERRA Project No. 8916
 Date: 06/31/21



Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2021 Musco Sports Lighting, LLC.



SOIL BORING LOCATION PLAN

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 6/14/21

James Park Athletic Fields Lighting, Evanston,
Illinois

ROUTE _____ DESCRIPTION _____ LOGGED BY Abdu Sellah

SECTION _____ LOCATION Northwest corner of the Baseball/Football Field. See Boring Location Plan.

COUNTY Cook County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH H	BLOW S	UCS Qu	MOIST T	Surface Water Elev. _____ ft	DEPTH H	BLOW S	UCS Qu	MOIST T
BORING NO. <u>SB-01</u> Station _____ Offset _____	(ft)	(/6")	(tsf)	(%)	Stream Bed Elev. _____ ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev. <u>0.00</u> ft					Groundwater Elev.: First Encounter _____ Dry ft Upon Completion _____ Dry ft After _____ Hrs. _____ ft				
TOPSOIL	-0.50				Very Loose to Loose, blueish gray and gray SILT, trace clay, Massive, Moist				
Loose, black and brown SANDY LOAM FILL, medium to fine, little fine gravel, brick and concrete fragments, MOIST.		5		21.0			4		20.8
		3					3		
		3			Color change to gray at 18.0 feet. (continued)		3		
	-3.00								
Loose, black SILT FILL, course to fine, little gravel, little brick fragments, trace organics, Moist		3					1		
		2		28.6			1		20.2
		3					2		
	-5.50								
Loose, brown, gray and black SILT, trace fine sand, trace organics, Moist		3					1		
		2		27.2			1		25.7
		3					2		
	-8.00								
Very Stiff to Medium Stiff, gray and yellowish brown CLAY, trace medium to fine sand, trace silt, Moist		2					1		
		3		24.5			2		24.3
		5	2.4				2		
	-10								
Color change to gray at 10.5 feet		4							
		3		32.5					
		4	0.7						
	-13.00								
Very Loose to Loose, blueish gray and gray SILT, trace clay, Massive, Moist		1					2		
		1		27.1			3		19.3
		1					3	0.7	
	-15							B	
Color change to gray at 18.0 feet.		1							
		1		17.7					
		2							
		12					3		
		4		20.1			3		18.4
	-20						4	0.5	
		2							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 6/14/21

James Park Athletic Fields Lighting, Evanston,
Illinois

ROUTE _____ DESCRIPTION _____ LOGGED BY Abdu Sellah

SECTION _____ LOCATION Northwest corner of the Baseball/Football Field. See Boring Location Plan.

COUNTY Cook County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH H	BLOWS S	UCS Qu	MOIST T	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H	BLOWS S	UCS Qu	MOIST T
BORING NO. <u>SB-01</u> Station _____ Offset _____	(ft)	(/6")	(tsf)	(%)	Groundwater Elev.: First Encounter _____ Dry ft Upon Completion _____ Dry ft After _____ Hrs. _____ ft		(ft)	(/6")	(tsf)	(%)
Medium Stiff to Soft, gray CLAY, trace fine sand, Moist (<i>continued</i>)			B		Hard, gray CLAY, trace large to fine gravel, Moist (<i>continued</i>)				B	
		3						8		
		3		18.0				10		12.5
	-45	5	1.7			-65		12	4.1	
			B						B	
	-47.00									
Medium Dense, gray and greenish gray SANDY SILT, medium to fine, Moist		15						31		
		12		16.0				50/5"		12.1
	-50	16				-70			7.0	
									B	
	-52.00									
Hard, gray CLAY, trace large to fine gravel, Moist		8			WEATHERED BEDROCK (probably DOLOMITE)	-73.00		50/2"		
		12		16.9	Auger Refusal at 73.0 feet					
	-55	18	5.8		Backfill boring with soil cuttings and bentonite chips.	-75				
			B							
		10								
		18		12.5						
	-60	24	5.3			-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 6/14/21

James Park Athletic Fields Lighting, Evanston,
Illinois

ROUTE _____ DESCRIPTION _____ LOGGED BY Abdu Sellah

SECTION _____ LOCATION Northwest corner of the Tennis Courts. See Boring Location Plan.

COUNTY Cook County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH H	BLOW S	UCS Qu	MOIST T	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H	BLOW S	UCS Qu	MOIST T
BORING NO. <u>SB-02</u> Station _____ Offset _____	(ft)	(/6")	(tsf)	(%)	Groundwater Elev.: First Encounter <u>-18.0 ft</u> ▼ Upon Completion <u>Dry ft</u> After _____ Hrs. _____ ft		(ft)	(/6")	(tsf)	(%)
TOPSOIL -0.50					Medium Stiff, greenish gray SILTY CLAY, trace fine sand, Wet (continued)				B	
Medium Dense, brown SILTY LOAM FILL, some fine gravel, pieces of brick, Moist	5			15.4			1			27.1
	6						1			
	7						2	0.7		
									B	
Very Loose to Medium Dense, brown and reddish brown SAND FILL, medium to fine, trace fine gravel, brick and concrete fragments, Moist	5			22.3			1			21.6
	2						1			
	-5						1	0.5		
									B	
Saturated at 8.5 feet	2			23.0			1			23.4
	6						1			
	4						2	0.6		
									B	
	1						2			
	1			38.4			2			24.2
	-10						1	0.7		
									B	
Stiff, gray and brown CLAY, trace fine gravel, Moist	2			24.4						
	2		1.5							
			B							
	1						2			
	2			26.8			2			21.5
	-15		1.6				4	0.9		
			B						B	
Medium Stiff, greenish gray SILTY CLAY, trace fine sand, Wet	1			26.8						
	2									
	2		0.9							
			B							
	1						2			
	1			21.3			3			19.9
	-20		0.7				3	0.9		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 6/14/21

James Park Athletic Fields Lighting, Evanston,
Illinois

ROUTE _____ DESCRIPTION _____ LOGGED BY Abdu Sellah

SECTION _____ LOCATION Northwest corner of the Tennis Courts. See Boring Location Plan.

COUNTY Cook County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)
BORING NO. <u>SB-02</u> Station _____ Offset _____ Ground Surface Elev. <u>0.00</u> ft										
Medium Stiff to Stiff, gray CLAY, trace fine sand, Moist (continued)			B		Very Stiff to hard, gray and greenish gray CLAY LOAM, trace large to fine gravel, Moist Scattered cobbles encountered based on drilling 57.0-63.0 feet (continued)				B	
		2						8		
		3		19.4				11		20.7
	-45	6	1.8		Hard, greenish gray CLAY, trace large to fine gravel, Moist Scattered cobbles encountered based on drilling 63.0-67.0 feet		-65	29	4.4	
			B						B	
	-47.00						-67.00			
Very Stiff to hard, gray and greenish gray CLAY LOAM, trace large to fine gravel, Moist Scattered cobbles encountered based on drilling 57.0-63.0 feet		7			Very Dense, gray SAND, course to fine, Moist			20		
		5		11.4				44		10.7
	-50	6	3.6				-70	50/4"		
			B							
		7			WEATHERED BEDROCK (DOLOMITE), pieces of bedrock		-73.50	50/0.5"		
		8		11.1						
	-55	13	4.4		End of Boring @ 73.5 feet. Backfill boring with soil cuttings and bentonite chips.		-75			
			B							
		14								
		18		11.1						
	-60	25	6.8				-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 6/11/21

James Park Athletic Fields Lighting, Evanston,
Illinois

ROUTE _____ DESCRIPTION _____ LOGGED BY Abdu Sellah

SECTION _____ LOCATION Southeast corner of the Tennis Courts. See Boring Location Plan.

COUNTY Cook County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH H	BLOW S	UCS Qu	MOIST T	Surface Water Elev. _____ ft	DEPTH H	BLOW S	UCS Qu	MOIST T
BORING NO. <u>SB-03</u> Station _____ Offset _____	(ft)	(/6")	(tsf)	(%)	Stream Bed Elev. _____ ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev. <u>0.00</u> ft					Groundwater Elev.: First Encounter <u>-8.5</u> ft ▼ Upon Completion <u>-12.5</u> ft ▼ After _____ Hrs. _____ ft				
TOPSOIL	-0.50					-20.50			
Loose to Very Loose, brown SILTY LOAM FILL, little brick and glass fragments, Dry		6		11.9	Medium Stiff to Very Stiff, gray, redish gray and greenish gray CLAY, trace fine sand, Moist		2		26.0
		4					2		
		3			Color change to gray at 23.0 feet		2	1.5 B	
		1					2		
		1		11.8			2		22.7
	-5	1				-25	3	1.4 B	
		3					2		
		1		28.0			2		23.9
		2					2	1.8 P	
Very Loose, black SANDY LOAM FILL, coarse to fine, trace brick, wood, and glass fragments, Saturated	-8.00	3					2		
		1		38.6			2		20.2
	-10	1				-30	2	0.9 B	
		2							
		1		54.2					
		1							
Very Loose to Loose, black SAND FILL, medium to fine, little brick, wood, and concrete fragments, Saturated	-13.00	4					4		
		3		29.3			6		19.5
	-15	1				-35	4	1.4 B	
		3							
		3		43.1					
		3							
	-18.00								
Loose, greenish gray SILT, trace sand, trace organics, Massive, Wet		1					3		
		2		33.0			4		20.4
	-20	5				-40	3	0.9	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 6/11/21

James Park Athletic Fields Lighting, Evanston,
Illinois

ROUTE _____ DESCRIPTION _____ LOGGED BY Abdu Sellah

SECTION _____ LOCATION Southeast corner of the Tennis Courts. See Boring Location Plan.

COUNTY Cook County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH H	BLOW S	UCS Qu	MOIST T	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H	BLOW S	UCS Qu	MOIST T
BORING NO. <u>SB-03</u> Station _____ Offset _____	(ft)	(/6")	(tsf)	(%)	Groundwater Elev.: First Encounter _____ -8.5 ft ▼ Upon Completion _____ -12.5 ft ▼ After _____ Hrs. _____ ft		(ft)	(/6")	(tsf)	(%)
Medium Stiff to Very Stiff, gray, redish gray and greenish gray CLAY, trace fine sand, Moist Color change to gray at 23.0 feet (continued)			B		Very Dense, gray SILT, trace fine sand, trace clay, Massive, Moist (continued)					
		3						31		
		4		16.8				29		11.2
	-45	4	1.9				-65	34		
			B							
							-67.00			
		4			Very Dense, gray SAND LOAM, medium to fine, Massive, Saturated					
		3		23.6				38		
	-50	5	1.5				-70	50/4"		9.6
			B							
							-71.00			
		8			WEATHERED BEDROCK (probably DOLOMITE)			50/0"		
		10		10.1	Auger Refusal at 71.0 feet End of Boring @ 71.0 feet. Backfill boring with soil cuttings and bentonite.					
	-55	13	3.2				-75			
			B							
	-57.00									
Very Dense, gray SILT, trace fine sand, trace clay, Massive, Moist										
		21								
		27		12.2						
	-60	37					-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 6/11/21

James Park Athletic Fields Lighting, Evanston,
Illinois

ROUTE _____ DESCRIPTION _____ LOGGED BY Abdu Sellah

SECTION _____ LOCATION Southern edge of Baseball/Football Field. See Boring Location Plan.

COUNTY Cook County DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. Station	DEPTH H (ft)	BLOW S (/6")	UCS Qu (tsf)	MOIST T (%)	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H (ft)	BLOW S (/6")	UCS Qu (tsf)	MOIST T (%)
TOPSOIL	-0.42									
Very Stiff, black SILTY CLAY FILL, trace fine gravel, little brick and concrete fragments, Moist		6						2		
		7		13.5				2		80.1
		8	2.4					1		
			B							
Very Loose, black SILTY LOAM FILL, little medium to fine sand, little brick, glass and concrete fragments, Moist	-3.00									
		5						3		
		2		18.0				2		107.1
		-5	2				-25	4		
Medium Dense to Loose, black SILT FILL, little fine sand, Moist	-5.50									
		10						3		
		10		20.1				2		48.9
		6						4		
		5						5		
		4		18.3				2		52.2
		-10	3				-30	2		
Medium Dense to Very Loose, black SILTY LOAM FILL, little large to fine gravel, Saturated at 11.0 feet	-10.50									
		4		30.9						
		4								
		8								
trace roots, wood, brick, concrete, glass and slag fragments below 13.5 feet										
		3						4		
		1		26.5				2		42.7
		-15	1				-35	2		
		7								
		4		35.2						
		4								
		3						3		
		2		58.5				2		76.3
		-20	1				-40	2		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

Soil Properties for James Park Athletic Field Lighting Foundation Design
City of Evanston, IL

Boring No.	Depth (ft)	Soil Type	Total Unit Weight (pcf)	Undrained Shear Strength(psf)	Unit skin friction (psf)	Soil Modulus, k (pci)	Angle of Internal Friction (deg)	Epsilon 50 Strain
SB-01	7-40	Fill material	90	-	-	-	15	-
	40-50	Medium Stiff clay	115	1000	750	50	-	0.01
	50-65	Hard Clay	125	4000	2000	1000	-	0.004
SB-02	7-15	Fill Material	90	-	-	-	15	-
	15-50	Medium Stiff Clay	115	1000	750	50	-	0.01
	50-65	Hard Clay	125	4000	2000	1000	1000	0.004
SB-03	7-25	Fill Material	90	-	-	-	15	-
	25-50	Stiff clay	120	1500	750	250	250	0.007
	50-70	Very Stiff Clay	120	3000	1500	500	-	0.005
SB-04	7-60	Fill Material	90	-	-	-	15	-
	60-70	Very Stiff Clay	120	3000	1500	500	-	0.005

Notes:

1. Estimated Ground Water Table elevation: 10' below ground surface
2. End bearing resistance is not considered as the driven pipe piles will be open ended and the lateral capacity and deflection are significant elements of consideration than the axial capacity.
3. These values are applicable only at the borehole locations and are subject to variation based on both depth and location as the area is a former landfill.

Appendix B

MUSCO Lighting Soil Information Request



Soil Report Information Required for Light Pole Foundation Design

These tests are being requested to provide information for the purpose of designing foundations for embedment of a laterally loaded pile to be used to support mono-pole type structures with lighting fixtures mounted at the top. The Musco standard foundation consists of a round precast, pre-stressed concrete bottom pole section centered in a 30" (minimum) diameter pier excavation, plumbed, and stabilized with concrete backfill in the annular space. These foundations will be designed using the depth of embedment formula (nonconstrained) per Chapter 18 of the International Building Code.

Please provide the following soil investigation information:

- List the boring number, location and elevation.
- Soil description and classification
- N-Value (Blow Count)
- Ground Water Conditions - depth to ground water table if applicable
- For cohesive soils:
 - Consistency
 - C, cohesion, or Qu, unconfined compressive strength
- For cohesionless soils:
 - Relative density
 - ϕ (phi), internal angle of friction, degrees
 - Kp, passive lateral pressure coefficient
 - γ , soil unit weight and (γ sat) buoyant unit weights if applicable.

During the test if there are conditions or circumstances found which would indicate that different or additional tests would be appropriate or needed, the persons conducting the tests are requested to provide such additional tests and test information for the purpose of the foundation design requirements.

Specifically, if rock is encountered, a test should be conducted to provide the designers with information as to the nature of the rock.

Structural Engineers, P.C.

Kyle Lacina, PE, SE
114 Nicholas Drive
Marshalltown, Iowa 50158

SEPC Tele No: (641)752-6334

E-Mail: Kyle Lacina – Kyle.Lacina@SEPC.biz
Rob Gray – Rob.Gray@SEPC.biz



TESTING SERVICE CORPORATION

Corporate Office

360 S. Main Place, Carol Stream, IL 60188-2404
630.462.2600 • Fax 630.653.2988

Local Offices:

457 E. Gundersen Drive, Carol Stream, IL 60188-2492
630.653.3920 • Fax 630.653.2726

650 N. Peace Road, Suite D, DeKalb, IL 60115-8401
815.748.2100 • Fax 815.748.2110

1350 TriState Parkway, Unit 122, Gurnee, IL 60031-9135
847.249.6040 • Fax 844.767.4721

2235 23RD Avenue, Rockford, IL 61104-7334
815.394.2562 • Fax 815.394.2566

203 Earl Road, Suite A, Shorewood, IL 60404-9446
815.744.1510 • Fax 815.744.1728

Geotechnical & Environmental Engineering



Construction Materials Engineering & Testing



Laboratory Testing of Soils, Concrete & Asphalt



Geo-Environmental Drilling & Sampling

Report of Soils Exploration

Light Pole Foundations

James Park

Evanston, Illinois

City of Evanston - Public Works Agency

GEOTECHNICAL GROUP




TESTING SERVICE CORPORATION
Local Office:

457 E. Gundersen Drive, Carol Stream, IL 60188-2492
630.653.3920 • Fax 630.653.2726

Corporate Office:

360 S. Main Place, Carol Stream, IL 60188-2404
630.462.2600 • Fax 630.653.2988

April 12, 2023

Ms. Stefanie Levine, PLA
Public Works Agency
Lorraine H. Morton Civic Center
City of Evanston
2100 Ridge Avenue
Evanston, IL 60201

Re: L-95,300
Light Pole Foundations
James Park
Evanston, Illinois

Dear Ms. Levine:

This report presents results of a soils exploration performed in connection with proposed light poles at the James Park in Evanston, Illinois. These geotechnical engineering services have been provided in accordance with an Agreement between the City of Evanston and Testing Service Corporation approved on 02/23/2023, which incorporates TSC Proposal No. 70,230.

James Park is located at Dodge Avenue and Oakton Street, near the south end of the City of Evanston. It lies over a former municipal landfill. The proposed project consists of a total of fourteen (14) light poles to be installed at one of the park's soccer/baseball fields and adjacent tennis courts located in the northern portion of the park. Several of the proposed light pole locations lie within the limits of the former landfill.

Four (4) soil borings were previously drilled at or near proposed light poles by INTERRA under Project No. 8916 with report dated 7/26/2021. They encountered up to about 60 feet of miscellaneous fill materials related to the former landfill, being extended to the apparent top of bedrock at about 71 to 74 feet below existing grade. Our geotechnical exploration consisted of ten (10) soil borings, located at the proposed pole locations not included in the INTERRA subsurface exploration. The intent of our geotechnical exploration was to provide separate foundation recommendations for each of the ten (10) light poles covered by our study.

The Musco Lighting sport system is planned for this project which consists of pole mounted assemblies ranging in height between 60' and 80'. The Musco standard foundation consists of a round precast, pre-stressed concrete bottom pole section centered in the upper portion of a 30" (minimum) diameter steel pipe pile, plumbed, and stabilized with concrete backfill in the annular space. Based on a design plan provided to TSC (prepared by Musco's Structural Engineer, dated 8/31/2021), the precast base embedment will be in the range of 10'-0" to 16'-0", with the proposed 30" O.D. steel pipe piles having a wall thickness of $\frac{5}{8}$ ". The open-ended pipe piles are to be driven to depths to basically provide adequate lateral load resistance as the axial loading is minimal. In this regard, they are to be subjected to small vertical (compression) loads of up to about 3.4 kips, with moments at the top of the piles of up to about 106,100 ft-lbs ($\pm 1,273,000$ in-lbs).



Field Investigation and Laboratory Testing

Borings 101 - 110 were performed by TSC as part of this geotechnical exploration at ten (10) of the proposed light pole locations, i.e. those not included in the INTERRA subsurface exploration. Reference is made to the Boring Location Plan in the Appendix for the drilling layout, ground surface elevations at the borings also being shown. The elevations were acquired by TSC using a Trimble R8s GNSS Receiver which uses the North American Vertical Datum of 1988 (NAVD88). They were converted from NAVD88 to ECD (Evanston City Datum) and rounded to the nearest 0.5 foot. For reference, the locations of the INTERRA borings are also shown on this plan.

Borings 101 - 110 were extended to depths ranging from 30 to 70 feet below existing grade, penetrating at least 12 feet below the landfill material. They were drilled and samples tested in accordance with currently recommended American Society for Testing and Materials specifications. Soil sampling was performed at 2½-foot intervals to depths of 15 to 25 feet and at 5-foot intervals thereafter. The samples were taken in conjunction with the Standard Penetration Test (SPT), for which driving resistance to a 2" split-spoon sampler (N-value in blows per foot) provides an indication of the relative density of granular materials and consistency of cohesive soils. Water level readings were taken during and following completion of drilling operations, with the boreholes then immediately backfilled for safety reasons.

Soil samples were examined in the laboratory to verify field descriptions and to classify them in accordance with the Unified Soil Classification System. Laboratory testing included water content determinations for all cohesive and intermediate (silt or loamy) soil types. An estimate of unconfined compressive strength was obtained for all cohesive soils using a calibrated pocket penetrometer (Qp), with actual measurements of unconfined compressive strength (Qu) performed on representative samples of native clay soils. Dry unit weight tests were also run on specimens of cohesive fill.

Reference is made to the boring logs included with this report indicating subsurface stratigraphy and soil descriptions, results of field and laboratory tests, as well as water level observations. Definitions of descriptive terminology are also included. While strata changes are shown as a definite line on the boring logs, the actual transition between soil layers is likely to be more gradual. Fluctuations in the groundwater table may also occur due to variations in precipitation (short-term and seasonal) as well as rises or drops in pond, lake, creek or other nearby surface water features, i.e. water levels at a future date may be higher or lower than those recorded at the time of drilling.

Discussion of Test Data

Fill materials were encountered at the surface of the borings. They extended to as shallow as approximately 3 feet below existing grade in Borings 101, 103 and 105 and 9 feet deep in B-102. These borings appear to have been drilled outside the limits or at the edge of the former landfill. Existing fill and landfill debris otherwise extended approximately 28 to 33 feet below existing grade in Borings 104 and 106 - 109 and up to about 58 feet deep in B-110. The bottom of this zone (landfill debris) correlates to elevations in the range of about -11 to -17 ECD at Borings 104 and 106 - 109, and to an elevation on the order of -38 ECD in B-110.



Topsoil fill (respread) was approximate 6 to 14 inches thick at the majority of the borings, being up to about 2.5 feet deep at B-107. The fill materials in Borings 101 -103 and 105 which extended to 3 to 9 feet deep consisted of relatively clean urban fill materials primarily composed of crushed stone and sand/silty sand and gravel with variable amounts of cinders and crushed brick. They exhibited SPT N-values ranging from 4 to 20 blows per foot (bpf), indicative of a loose to medium dense condition. Silty clay fill with variable amounts of topsoil/organic matter was encountered in the upper approximate 3 to 8 feet of Borings 104 and 108 - 110. Samples of the cohesive fill exhibited variable water content, pocket penetrometer and dry unit weight values ranging from 12 to 35 percent, 1.5 to 4.5+ tons per square foot (tsf) and 80 to 125 pounds per cubic foot (pcf), respectively.

Construction type debris and/or refuse fill materials were encountered at Borings 104 and 106 - 110. They were first met at depths of about 3 to 8 feet below existing grade. They extended approximately 28 to 33 feet below existing grade in Borings 104 and 106 - 109 and to as deep as about 58 feet in B-110. The construction debris and/or refuse included mixtures or combinations of sand, gravel, wood, cinders and brick pieces as well as inclusions of slag, plastic, wire, metal, paper and glass fragments. Concrete rubble was not encountered by the borings. Samples of the construction debris and/or refuse fill materials had water contents usually ranging from about 20 to 66 percent, being as high as about 90 percent in Boring 110. They also exhibited SPT N-values typically in the range of 1 to 9 bpf, indicative of a very loose to loose condition.

The uppermost native soils underlying the fill materials in Borings 101, 103 and 105 and extending to a depth of approximately 8 feet below existing grade consisted of strata of soft to stiff silty/very silty clay and loose silty fine sand and clayey silt. A loose native clayey silt deposit was also found underlying the fill materials in B-102, extending to a depth of about 13 feet. Samples of the cohesive soils exhibited pocket penetrometer readings (estimates of unconfined compressive strength) of 0.5 to 1.0 tsf at water contents of 26 to 27 percent. The clayey silt and silty sand deposits had SPT N-values of 4 to 6 bpf. Stiff to very stiff silty clay soils were encountered underlying the loose clayey silt and silty sand deposits in Borings 101, 103 and 105, extending to a depth of approximately 13 feet. They exhibited unconfined compressive strengths/pocket penetrometer readings ranging from 1.75 to 3.5 tsf at water contents varying from 22 to 28 percent.

Relatively soft and very moist silty clay soils were encountered underlying the stiff to very stiff native silty clay materials in Borings 101, 103 and 105 and loose clayey silt deposit in B-104, extending to a depth of about 27 feet in B-101 and to the bottom of Borings 103 - 105 at 30 feet deep. Approximately 5-foot thick layers of medium stiff and very moist clay were also found underlying stiffer native clay soils and directly below the fill materials at a depth of roughly 33 feet in Borings 106 and 107, respectively. Medium stiff to stiff and very moist silty clay soils were also encountered directly below the fill materials in B-109, extending to a depth of about 52 feet. These cohesive soils exhibited unconfined compressive strengths/pocket penetrometer readings of about 0.3 to 1.0 tsf at variable water contents between 18 and 43 percent (typically between 21 and 29 percent).

Approximate 5-foot thick deposits of medium dense silt and clayey sand were encountered at depths of about 27 and 39 feet in Borings 101 and 104, respectively. These intermediate soil types exhibited SPT N-values of 16 to 19 bpf. Native soils underlying the fill materials and relatively soft clays in Borings 101, 104 and 106 - 108 and extending to the bottom of them at 35 to 50 feet otherwise consisted of stiff to



very stiff silty/very silty clays. These low to medium plasticity native cohesive soils exhibited unconfined compressive strengths/pocket penetrometer readings ranging from 1.0 to 2.0 tsf at water contents varying from 11 to 22 percent.

The medium stiff to stiff and very moist native clay soils that were encountered underlying the existing fill materials in Boring 109 were in turn underlain by very stiff to hard silty clay soils which extended to the bottom of the borehole at 65 feet. These deeper native cohesive soils exhibited pocket penetrometer readings ranging from 3.25 to 4.5+ tsf at water contents of 10 to 13 percent. The fill materials were directly underlain by hard silty/sandy clay soils in B-110, extending to the boring completion depth of 70 feet. These "hardpan" type materials exhibited unconfined compressive strengths/pocket penetrometer readings of 4.5+ tsf at water contents of 10 to 11 percent.

Free water was first encountered while drilling and sampling in Borings 102 and 104 - 110 at depths ranging from 3 to 8 feet below existing grade, with Borings 101 and 103 noted in a dry condition (no free groundwater observed). Upon completion of drilling and sampling operations, free water was noted at depths of 21 and 23 feet below existing grade in Borings 101 and 103, respectively, with Boring 102 observed in a caved condition at a depth of 6 feet. The water levels in Borings 104 - 110 were typically within 2 feet of initial levels. The only exception was B-110 where the water level had dropped by 7 feet upon completion of field operations.

Analysis and Recommendations

Our geotechnical study consisted of ten (10) soil borings (Nos. 101 - 110) at the proposed light pole locations not covered by the previous INTERRA subsurface exploration. The intent of our geotechnical exploration was to provide separate foundation recommendations for each of the ten (10) light poles covered by our study.

As previously discussed, the Musco Lighting sport system is planned for this project which consists of pole mounted assemblies ranging in height between 60' and 80'. The Musco standard foundation consists of a round precast, pre-stressed concrete bottom pole section centered in the upper portion of a 30" (minimum) diameter steel pipe pile, plumbed, and stabilized with concrete backfill in the annular space. Based on a design plan provided to TSC (prepared by Musco's Structural Engineer, dated 8/31/2021), the precast base embedment will be in the range of 10'-0" to 16'-0" and the 30" O.D. steel pipe piles will have a wall thickness of $\frac{5}{8}$ ". The open-ended pipe piles are to be driven to depths to basically provide adequate lateral load resistance as the axial loading is minimal.

The following table summarizes the pole designation and foundation forces at the top of the pipe pile as provided by Musco's Structural Engineer:

City of Evanston
James Park Light Pole Foundations
L-95,300 - April 12, 2023



BORING NUMBER	POLE DESIGNATION	FORCES		
		MOMENT (FT-LBS)	SHEAR (LBS)	VERTICAL (LBS)
101	B1	99,382	1,973	3,268
102	T3	42,756	1,081	1,526
103	T5	30,077	828	924
104	C1	78,434	1,658	2,333
105	A2	38,615	990	1,333
106	T2	30,077	828	924
107	T4	42,756	1,081	1,526
108	B2	99,382	1,973	3,268
109	D1	78,434	1,658	2,333
110	C2	99,382	1,973	3,268

Light Pole Foundation at Boring 101

The following table summarizes the recommended soil parameters for the evaluation of the lateral resistance for the light pole foundation at B-101. They could be utilized with a computer software such as the LPILE by Ensoft, Inc. which is a commonly used program for the analysis of deep foundations under lateral loading.

Depth (feet)	Soil Description	Recommended p-y Curve Model	Effective Unit Weight* (pcf)	Cohesion (psf)	Friction Angle (deg)
0.0 - 8.0	Fill Materials/ Silty Sand/Silt	Sand (Reese)	125	--	30
8.0 - 13.0	Stiff-Very Stiff Silty Clay	Stiff Clay w/o Free Water	130	2000	--
13.0 - 18.0	Soft Silty Clay	Soft Clay (Matlock)	50	300	--
18.0 - 23.0	Soft-Med. Stiff Silty Clay	Soft Clay (Matlock)	65	500	--

City of Evanston
James Park Light Pole Foundations
L-95,300 - April 12, 2023



Depth (feet)	Soil Description	Recommended p-y Curve Model	Effective Unit Weight* (pcf)	Cohesion (psf)	Friction Angle (deg)
23.0 - 27.0	Soft-Med. Stiff Silty Clay	Soft Clay (Matlock)	50	500	
27.0 - 32.0	Med. Dense Silt	Sand (Reese)	68	--	34
32.0 - 35.0	Stiff Silty Clay	Stiff Clay w/o Free Water	68	1250	--

* Total and buoyant unit weight above and below the groundwater level, respectively.

Based on the soil stratigraphy and parameters shown on the above table and the foundation forces and moment at the top of the pile, our lateral load analysis using the LPile program indicated a minimum pipe pile embedment depth of 35 feet below existing/finished grade. This is based on a pile fixity (where the pile is fixed without lateral movement under the loads) of at least 10 feet along the bottom portion of the pile as well as to control lateral deflection at the top of it. The design/structural engineer should verify these recommendations and especially the bending moments, shear forces and compression/tension stresses induced along the pile length by performing a lateral load analysis. TSC should be contacted if additional soil parameters are required for these purposes.

Light Pole Foundation at Boring 102

The following table summarizes the recommended soil parameters for the evaluation of the lateral resistance for the light pole foundation at B-102. They could be utilized with a computer software such as the LPile by Ensoft, Inc. which is a commonly used program for the analysis of deep foundations under lateral loading.

Depth (feet)	Soil Description	Recommended p-y Curve Model	Effective Unit Weight* (pcf)	Cohesion (psf)	Friction Angle (deg)
0.0 - 8.0	Fill Materials	Sand (Reese)	120	--	30
8.0 - 13.0	Loose Clayey Silt	Sand (Reese)	63	--	30
13.0 - 15.5	Soft Silty Clay	Soft Clay (Matlock)	50	300	--
15.5 - 35.0	Soft Silty Clay	Soft Clay (Matlock)	65	500	--

* Total and buoyant unit weight above and below the groundwater level, respectively.

City of Evanston
James Park Light Pole Foundations
L-95,300 - April 12, 2023



Based on the soil stratigraphy and parameters shown on the above table and the foundation forces and moment at the top of the pile, our lateral load analysis using the LPile program indicated a minimum pipe pile embedment depth of 35 feet below existing/finished grade. This is based on a pile fixity (where the pile is fixed without lateral movement under the loads) of at least 10 feet along the bottom portion of the pile as well as to control lateral deflection at the top of it. The design/structural engineer should verify these recommendations and especially the bending moments, shear forces and compression/tension stresses induced along the pile length by performing a lateral load analysis. TSC should be contacted if additional soil parameters are required for these purposes.

Light Pole Foundation at Boring 103

The following table summarizes the recommended soil parameters for the evaluation of the lateral resistance for the light pole foundation at B-103. They could be utilized with a computer software such as the LPile by Ensoft, Inc. which is a commonly used program for the analysis of deep foundations under lateral loading.

Depth (feet)	Soil Description	Recommended p-y Curve Model	Effective Unit Weight* (pcf)	Cohesion (psf)	Friction Angle (deg)
0.0 - 3.0	Fill Materials	Sand (Reese)	120	--	30
3.0 - 5.5	Med/ Stiff-Stiff Very Silty Clay	Stiff Clay w/o Free Water	125	1000	--
5.5 - 8.0	Loose Clayey Silt	Sand (Reese)	125	--	30
8.0 - 13.0	V. Stiff-Stiff Silty Clay	Stiff Clay w/o Free Water	130/125	2500/1750	--
13.0 - 18.0	Soft Silty Clay	Soft Clay (Matlock)	50	300	
18.0 - 30.0	Soft-Med. Stiff Silty Clay	Soft Clay (Matlock)	68	500	--

* Total and buoyant unit weight above and below the groundwater level, respectively.

Based on the soil stratigraphy and parameters shown on the above table and the foundation forces provided, our lateral load analysis using the LPile program indicated a minimum pipe pile embedment depth of 30 feet below existing/finished grade. This is based on a pile fixity (where the pile is fixed without lateral movement under the loads) of at least 10 feet along the bottom portion of the pile as well as to control lateral deflection at the top of it. The design/structural engineer should verify these recommendations and especially the bending moments, shear forces and compression/tension stresses induced along the pile length by performing a lateral load analysis. TSC should be contacted if additional soil parameters are required for these purposes.

City of Evanston
James Park Light Pole Foundations
L-95,300 - April 12, 2023



Light Pole Foundation at Boring 104

The following table summarizes the recommended soil parameters for the evaluation of the lateral resistance for the light pole foundation at B-104. They could be utilized with a computer software such as the LPile by Ensoft, Inc. which is a commonly used program for the analysis of deep foundations under lateral loading.

Depth (feet)	Soil Description	Recommended p-y Curve Model	Effective Unit Weight* (pcf)	Cohesion (psf)	Friction Angle (deg)
0.0 - 5.5	Fill Materials	Sand (Reese)	120	--	30
5.5 - 33.0	Fill Materials	Sand (Reese)	30	--	10
33.0 - 37.0	Med. Stiff Silty Clay	Soft Clay (Matlock)	63	550	--
37.0 - 39.0	Stiff Silty Clay	Stiff Clay w/o Free Water	70	1000	--
39.0 - 43.0	Med. Dense Clayey Sand	Sand (Reese)	68	--	35
43.0 - 50.0	Stiff Silty Clay	Stiff Clay w/o Free Water	68	1300	--

* Total and buoyant unit weight above and below the groundwater level, respectively.

Based on the soil stratigraphy and parameters shown on the above table and the foundation forces provided, our lateral load analysis using the LPile program indicated a minimum pipe pile embedment depth of 50 feet below existing/finished grade. This is based on a pile fixity (where the pile is fixed without lateral movement under the loads) of at least 10 feet along the bottom portion of the pile as well as to control lateral deflection at the top of it. The design/structural engineer should verify these recommendations and especially the bending moments, shear forces and compression/tension stresses induced along the pile length by performing a lateral load analysis. TSC should be contacted if additional soil parameters are required for these purposes.

City of Evanston
James Park Light Pole Foundations
L-95,300 - April 12, 2023



Light Pole Foundation at Boring 105

The following table summarizes the recommended soil parameters for the evaluation of the lateral resistance for the light pole foundation at B-105. They could be utilized with a computer software such as the LPile by Ensoft, Inc. which is a commonly used program for the analysis of deep foundations under lateral loading.

Depth (feet)	Soil Description	Recommended p-y Curve Model	Effective Unit Weight* (pcf)	Cohesion (psf)	Friction Angle (deg)
0.0 - 3.0	Fill Materials	Sand (Reese)	120	--	30
3.0 - 5.5	Soft Silty Clay	Soft Clay (Matlock)	120	500	--
5.5 - 8.0	Loose Clayey Silt	Sand (Reese)	63	--	30
8.0 - 13.0	V. Stiff Silty Clay	Stiff Clay w/o Free Water	63	2000/3500	--
13.0 - 18.0	Soft Silty Clay	Soft Clay (Matlock)	50	300	--
18.0 - 30.0	Med. Stiff Silty Clay	Soft Clay (Matlock)	63	500	--

* Total and buoyant unit weight above and below the groundwater level, respectively.

Based on the soil stratigraphy and parameters shown on the above table and the foundation forces provided, our lateral load analysis using the LPile program indicated a minimum pipe pile embedment depth of 30 feet below existing/finished grade. This is based on a pile fixity (where the pile is fixed without lateral movement under the loads) of at least 10 feet along the bottom portion of the pile as well as to control lateral deflection at the top of it. The design/structural engineer should verify these recommendations and especially the bending moments, shear forces and compression/tension stresses induced along the pile length by performing a lateral load analysis. TSC should be contacted if additional soil parameters are required for these purposes.

Light Pole Foundation at Boring 106

The following table summarizes the recommended soil parameters for the evaluation of the lateral resistance for the light pole foundation at B-106. They could be utilized with a computer software such as the LPile by Ensoft, Inc. which is a commonly used program for the analysis of deep foundations under lateral loading.

City of Evanston
James Park Light Pole Foundations
L-95,300 - April 12, 2023



Depth (feet)	Soil Description	Recommended p-y Curve Model	Effective Unit Weight* (pcf)	Cohesion (psf)	Friction Angle (deg)
0.0 - 5.5	Fill Materials	Sand (Reese)	120	--	30
5.5 - 28.0	Fill Materials	Sand (Reese)	30	--	10
28.0 - 33.0	V. Stiff Silty Clay	Stiff Clay with Free Water	68	2750	--
33.0 - 38.0	Soft Silty Clay	Soft Clay (Matlock)	68	700	--
38.0 - 45.0	Stiff Silty Clay	Stiff Clay w/o Free Water	70	1500	--

* Total and buoyant unit weight above and below the groundwater level, respectively.

Based on the soil stratigraphy and parameters shown on the above table and the foundation forces provided, our lateral load analysis using the LPile program indicated a minimum pipe pile embedment depth of 40 feet below existing/finished grade. This is based on a pile fixity (where the pile is fixed without lateral movement under the loads) of at least 10 feet along the bottom portion of the pile as well as to control lateral deflection at the top of it. The design/structural engineer should verify these recommendations and especially the bending moments, shear forces and compression/tension stresses induced along the pile length by performing a lateral load analysis. TSC should be contacted if additional soil parameters are required for these purposes.

Light Pole Foundation at Boring 107

The following table summarizes the recommended soil parameters for the evaluation of the lateral resistance for the light pole foundation at B-107. They could be utilized with a computer software such as the LPile by Ensoft, Inc. which is a commonly used program for the analysis of deep foundations under lateral loading.

Depth (feet)	Soil Description	Recommended p-y Curve Model	Effective Unit Weight* (pcf)	Cohesion (psf)	Friction Angle (deg)
0.0 - 10.5	Fill Materials	Sand (Reese)	58	--	30
10.5 - 33.0	Fill Materials	Sand (Reese)	30	--	10
33.0 - 38.0	Med.Stiff Silty Clay	Stiff Clay with Free Water	63	800	--
38.0 - 50.0	Stiff Silty Clay	Stiff Clay w/o Free Water	63	1000/1500	--

City of Evanston
James Park Light Pole Foundations
L-95,300 - April 12, 2023



* Total and buoyant unit weight above and below the groundwater level, respectively.

Based on the soil stratigraphy and parameters shown on the above table and the foundation forces provided, our lateral load analysis using the LPILE program indicated a minimum pipe pile embedment depth of 50 feet below existing/finished grade. This is based on a pile fixity (where the pile is fixed without lateral movement under the loads) of at least 10 feet along the bottom portion of the pile as well as to control lateral deflection at the top of it. The design/structural engineer should verify these recommendations and especially the bending moments, shear forces and compression/tension stresses induced along the pile length by performing a lateral load analysis. TSC should be contacted if additional soil parameters are required for these purposes.

Light Pole Foundation at Boring 108

The following table summarizes the recommended soil parameters for the evaluation of the lateral resistance for the light pole foundation at B-108. They could be utilized with a computer software such as the LPILE by Ensoft, Inc. which is a commonly used program for the analysis of deep foundations under lateral loading.

Depth (feet)	Soil Description	Recommended p-y Curve Model	Effective Unit Weight* (pcf)	Cohesion (psf)	Friction Angle (deg)
0.0 - 5.5	Fill Materials	Stiff Clay w/o Free Water	125	2000	--
5.5 - 8.0	Fill Materials	Soft Clay	100	200	--
8.0 - 33.0	Fill Materials	Sand (Reese)	30	--	10
33.0 - 50.0	Stiff Silty Clay	Stiff Clay w/o Free Water	68	1750	--

* Total and buoyant unit weight above and below the groundwater level, respectively.

Based on the soil stratigraphy and parameters shown on the above table and the foundation forces provided, our lateral load analysis using the LPILE program indicated a minimum pipe pile embedment depth of 50 feet below existing/finished grade. This is based on a pile fixity (where the pile is fixed without lateral movement under the loads) of at least 10 feet along the bottom portion of the pile as well as to control lateral deflection at the top of it. The design/structural engineer should verify these recommendations and especially the bending moments, shear forces and compression/tension stresses induced along the pile length by performing a lateral load analysis. TSC should be contacted if additional soil parameters are required for these purposes.

City of Evanston
James Park Light Pole Foundations
L-95,300 - April 12, 2023



Light Pole Foundation at Boring 109

The following table summarizes the recommended soil parameters for the evaluation of the lateral resistance for the light pole foundation at B-109. They could be utilized with a computer software such as the LPile by Ensoft, Inc. which is a commonly used program for the analysis of deep foundations under lateral loading.

Depth (feet)	Soil Description	Recommended p-y Curve Model	Effective Unit Weight* (pcf)	Cohesion (psf)	Friction Angle (deg)
0.0 - 5.5	Fill Materials	Stiff Clay w/o Free Water	125	1500	--
5.5 - 8.0	Fill Materials	Stiff Clay w/o Free Water	105	1000	--
8.0 - 33.0	Fill Materials	Sand (Reese)	30	--	10
33.0 - 52.0	Med. Stiff-Stiff Silty Clay	Stiff Clay with Free Water	68	850	--
52.0 - 65.0	V. Stiff-Hard Silty Clay	Stiff Clay w/o Free Water	75	4000	--

* Total and buoyant unit weight above and below the groundwater level, respectively.

Based on the soil stratigraphy and parameters shown on the above table and the foundation forces provided, our lateral load analysis using the LPile program indicated a minimum pipe pile embedment depth of 55 feet below existing/finished grade. This is based on a pile fixity (where the pile is fixed without lateral movement under the loads) of at least 10 feet along the bottom portion of the pile as well as to control lateral deflection at the top of it. The design/structural engineer should verify these recommendations and especially the bending moments, shear forces and compression/tension stresses induced along the pile length by performing a lateral load analysis. TSC should be contacted if additional soil parameters are required for these purposes.

Light Pole Foundation at Boring 110

The following table summarizes the recommended soil parameters for the evaluation of the lateral resistance for the light pole foundation at B-110. They could be utilized with a computer software such as the LPile by Ensoft, Inc. which is a commonly used program for the analysis of deep foundations under lateral loading.

City of Evanston
James Park Light Pole Foundations
L-95,300 - April 12, 2023



Depth (feet)	Soil Description	Recommended p-y Curve Model	Effective Unit Weight* (pcf)	Cohesion (psf)	Friction Angle (deg)
0.0 - 8.0	Fill Materials	Sand (Reese)	125	--	28
8.0 - 58.0	Fill Materials	Sand (Reese)	30	--	10
58.0 - 70.0	Hard Silty Clay	Stiff Clay with Free Water	75	7000	--

* Total and buoyant unit weight above and below the groundwater level, respectively.

Based on the soil stratigraphy and parameters shown on the above table and the foundation forces provided, our lateral load analysis using the LPile program indicated a minimum pipe pile embedment depth of 70 feet below existing/finished grade. This is based on a pile fixity (where the pile is fixed without lateral movement under the loads) of at least 10 feet along the bottom portion of the pile as well as to control lateral deflection at the top of it. The design/structural engineer should verify these recommendations and especially the bending moments, shear forces and compression/tension stresses induced along the pile length by performing a lateral load analysis. TSC should be contacted if additional soil parameters are required for these purposes.

Corrosion protection for the steel pipe piles is likely to be required due to potentially high corrosive environment to be provided by the landfill materials. Methods commonly utilized to counter the anticipated effects of corrosion over the design service life of the piles include over dimensioning the cross-sectional area of the steel piles, corrosion protective coatings and cathodic protection.

Closure

The analysis and recommendations submitted in this report are based upon the data obtained from the ten (10) soil borings performed at the locations indicated on the Boring Location Plan. This report does not reflect and variations which may occur between these borings or elsewhere on the site, the nature and extent of which may not become evident until during the course of construction. If variations are then identified, recommendations contained in this report should be re-evaluated after performing on-site observations.

City of Evanston
James Park Light Pole Foundations
L-95,300 - April 12, 2023



It has been a pleasure to assist you with this work. Please call if there are any questions or if we may be of further service.

Respectfully submitted,

TESTING SERVICE CORPORATION

A handwritten signature in black ink, appearing to be "AJB", with a long horizontal line extending to the right.

Alfredo J. Bermudez
Senior Geotechnical Engineer
Registered Professional Engineer
Illinois No. 062-046608



A handwritten signature in black ink, appearing to be "SRK", with a long horizontal line extending to the right.

Steven R. Koester, P.E.
Vice President

AJB:SRK:ab

Enc.

APPENDIX

GENERAL CONDITIONS

UNIFIED CLASSIFICATION CHART

LEGEND FOR BORING LOGS

BORING LOGS

BORING LOCATION PLAN



TESTING SERVICE CORPORATION

GENERAL CONDITIONS

Geotechnical and Construction Services

1. PARTIES AND SCOPE OF WORK: If Client is ordering the services on behalf of another, Client represents and warrants that Client is the duly authorized agent of said party for the purpose of ordering and directing said services, and in such case the term "Client" shall also include the principal for whom the services are being performed. Prices quoted and charged by TSC for its services are predicated on the conditions and the allocations of risks and obligations expressed in these General Conditions. Unless otherwise stated in writing, Client assumes sole responsibility for determining whether the quantity and the nature of the services ordered by Client are adequate and sufficient for Client's intended purpose. Unless otherwise expressly assumed in writing, TSC's services are provided exclusively for client. TSC shall have no duty or obligation other than those duties and obligations expressly set forth in this Agreement. TSC shall have no duty to any third party. Client shall communicate these General Conditions to each and every party to whom the Client transmits any report prepared by TSC. Ordering services from TSC shall constitute acceptance of TSC's proposal and these General Conditions.

2. SCHEDULING OF SERVICES: The services set forth in this Agreement will be accomplished in a timely and workmanlike manner. If TSC is required to delay any part of its services to accommodate the requests or requirements of Client, regulatory agencies, or third parties, or due to any cause beyond its reasonable control, Client agrees to pay such additional charges, if any, as may be applicable.

3. ACCESS TO SITE: TSC shall take reasonable measures and precautions to minimize damage to the site and any improvements located thereon as a result of its services or the use of its equipment; however, TSC has not included in its fee the cost of restoration of damage which may occur. If Client desires or requires TSC to restore the site to its former condition, TSC will, upon written request, perform such additional work as is necessary to do so and Client agrees to pay to TSC the cost thereof plus TSC's normal markup for overhead and profit.

4. CLIENT'S DUTY TO NOTIFY ENGINEER: Client represents and warrants that Client has advised TSC of any known or suspected hazardous materials, utility lines and underground structures at any site at which TSC is to perform services under this Agreement. Unless otherwise agreed in writing, TSC's responsibility with respect to underground utility locations is to contact the Illinois Joint Utility Locating Information for Excavators for the location of public, but not private, utilities.

5. DISCOVERY OF POLLUTANTS: TSC's services shall not include investigation for hazardous materials as defined by the Resource Conservation Recovery Act, 42 U.S.C. § 6901, et, seq., as amended ("RCRA") or by any state or Federal statute or regulation. In the event that hazardous materials are discovered and identified by TSC, TSC's sole duty shall be to notify Client.

6. MONITORING: If this Agreement includes testing construction materials or observing any aspect of construction of improvements, Client's construction personnel will verify that the pad is properly located and sized to meet Client's projected building loads. Client shall cause all tests and inspections of the site, materials and work to be timely and properly performed in accordance with the plans, specifications, contract documents, and TSC's recommendations. No claims for loss, damage or injury shall be brought against TSC unless all tests and inspections have been so performed and unless TSC's recommendations have been followed.

TSC's services shall not include determining or implementing the means, methods, techniques or procedures of work done by the contractor(s) being monitored or whose work is being tested. TSC's services shall not include the authority to accept or reject work or to in any manner supervise the work of any contractor. TSC's services or failure to

perform same shall not in any way operate or excuse any contractor from the performance of its work in accordance with its contract. "Contractor" as used herein shall include subcontractors, suppliers, architects, engineers and construction managers.

Information obtained from borings, observations and analyses of sample materials shall be reported in formats considered appropriate by TSC unless directed otherwise by Client. Such information is considered evidence, but any inference or conclusion based thereon is, necessarily, an opinion also based on engineering judgment and shall not be construed as a representation of fact. Subsurface conditions may not be uniform throughout an entire site and ground water levels may fluctuate due to climatic and other variations. Construction materials may vary from the samples taken. Unless otherwise agreed in writing, the procedures employed by TSC are not designed to detect intentional concealment or misrepresentation of facts by others.

7. DOCUMENTS AND SAMPLES: Client is granted an exclusive license to use findings and reports prepared and issued by TSC and any sub-consultants pursuant to this Agreement for the purpose set forth in TSC's proposal provided that TSC has received payment in full for its services. TSC and, if applicable, its sub-consultant, retain all copyright and ownership interests in the reports, boring logs, maps, field data, field notes, laboratory test data and similar documents, and the ownership and freedom to use all data generated by it for any purpose. Unless otherwise agreed in writing, test specimens or samples will be disposed immediately upon completion of the test. All drilling samples or specimens will be disposed sixty (60) days after submission of TSC's report.

8. TERMINATION: TSC's obligation to provide services may be terminated by either party upon (7) seven days prior written notice. In the event of termination of TSC's services, TSC shall be compensated by Client for all services performed up to and including the termination date, including reimbursable expenses. The terms and conditions of these General Conditions shall survive the termination of TSC's obligation to provide services.

9. PAYMENT: Client shall be invoiced periodically for services performed. Client agrees to pay each invoice within thirty (30) days of its receipt. Client further agrees to pay interest on all amounts invoiced and not paid or objected to in writing for valid cause within sixty (60) days at the rate of twelve (12%) per annum (or the maximum interest rate permitted by applicable law, whichever is the lesser) until paid and TSC's costs of collection of such accounts, including court costs and reasonable attorney's fees.

10. WARRANTY: TSC's professional services will be performed, its findings obtained and its reports prepared in accordance with these General Conditions and with generally accepted principles and practices. In performing its professional services, TSC will use that degree of care and skill ordinarily exercised under similar circumstances by members of its profession. In performing physical work in pursuit of its professional services, TSC will use that degree of care and skill ordinarily used under similar circumstances. This warranty is in lieu of all other warranties or representations, either express or implied. Statements made in TSC reports are opinions based upon engineering judgment and are not to be construed as representations of fact.

Should TSC or any of its employees be found to have been negligent in performing professional services or to have made and breached any express or implied warranty, representation or contract, Client, all parties claiming through Client and all parties claiming to have in any way relied upon TSC's services or work agree that the maximum aggregate amount of damages for which TSC, its officers, employees and agents shall be liable is limited to \$50,000 or the total amount of the fee paid to TSC for its services performed with respect to the project, whichever amount is greater.

In the event Client is unwilling or unable to limit the damages for which TSC may be liable in accordance with the provisions set forth in the preceding paragraph, upon written request of Client received within five days of Client's acceptance of TSC's proposal together with payment of an additional fee in the amount of 5% of TSC's estimated cost for its services (to be adjusted to 5% of the amount actually billed by TSC for its services on the project at time of completion), the limit on damages shall be increased to \$500,000 or the amount of TSC's fee, whichever is the greater. This charge is not to be construed as being a charge for insurance of any type, but is increased consideration for the exposure to an award of greater damages.

11. INDEMNITY: Subject to the provisions set forth herein, TSC and Client hereby agree to indemnify and hold harmless each other and their respective shareholders, directors, officers, partners, employees, agents, subsidiaries and division (and each of their heirs, successors, and assigns) from any and all claims, demands, liabilities, suits, causes of action, judgments, costs and expenses, including reasonable attorneys' fees, arising, or allegedly arising, from personal injury, including death, property damage, including loss of use thereof, due in any manner to the negligence of either of them or their agents or employees or independent contractors. In the event both TSC and Client are found to be negligent or at fault, then any liability shall be apportioned between them pursuant to their pro rata share of negligence or fault. TSC and Client further agree that their liability to any third party shall, to the extent permitted by law, be several and not joint. The liability of TSC under this provision shall not exceed the policy limits of insurance carried by TSC. Neither TSC nor Client shall be bound under this indemnity agreement to liability determined in a proceeding in which it did not participate represented by its own independent counsel. The indemnities provided hereunder shall not terminate upon the termination or expiration of this Agreement, but may be modified to the extent of any waiver of subrogation agreed to by TSC and paid for by Client.

12. SUBPOENAS: TSC's employees shall not be retained as expert witnesses except by separate, written agreement. Client agrees to pay TSC pursuant to TSC's then current fee schedule for any TSC employee(s) subpoenaed by any party as an occurrence witness as a result of TSC's services.

13. OTHER AGREEMENTS: TSC shall not be bound by any provision or agreement (i) requiring or providing for arbitration of disputes or controversies arising out of this Agreement or its performance, (ii) wherein TSC waives any rights to a mechanics lien or surety bond claim; (iii) that conditions TSC's right to receive payment for its services upon payment to Client by any third party or (iv) that requires TSC to indemnify any party beyond its own negligence. These General Conditions are notice, where required, that TSC shall file a lien whenever necessary to collect past due amounts. This Agreement contains the entire understanding between the parties. Unless expressly accepted by TSC in writing prior to delivery of TSC's services, Client shall not add any conditions or impose conditions which are in conflict with those contained herein, and no such additional or conflicting terms shall be binding upon TSC. The unenforceability or invalidity of any provision or provisions shall not render any other provision or provisions unenforceable or invalid. This Agreement shall be construed and enforced in accordance with the laws of the State of Illinois. In the event of a dispute arising out of or relating to the performance of this Agreement, the breach thereof or TSC's services, the parties agree to try in good faith to settle the dispute by mediation under the Construction Industry Mediation Rules of the American Arbitration Association as a condition precedent to filing any demand for arbitration, or any petition or complaint with any court. Paragraph headings are for convenience only and shall not be construed as limiting the meaning of the provisions contained in these General Conditions.

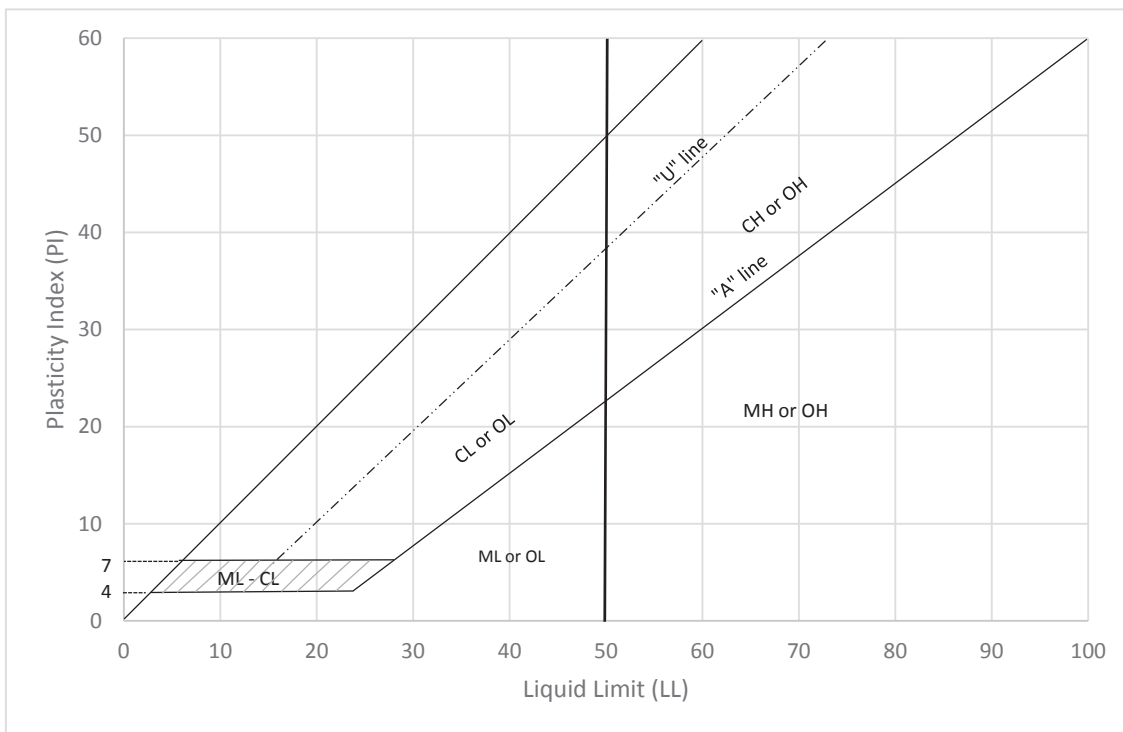
Testing Service Corporation Unified Classification Chart



CRITERIA FOR ASSIGNING GROUP SYMBOLS AND GROUP NAMES USING LABORATORY TEST °				SOIL CLASSIFICATION		
				Group Symbol	GROUP NAME ^b	
COARSE - GRAINED SOILS more than 50% retained on No. 200 sieve	GRAVELS More than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS less than 5% fines ^c	$C_u \geq 4$ and $1 \leq C_c \leq 3$ ^e	GW	Well-graded gravel ^f	
			$C_u < 4$ and/or $1 > C_c > 3$ ^e	GP	Poorly-graded gravel ^f	
		GRAVELS WITH FINES more than 12% fines ^c		Fines classify as ML or MH	GM	Silty gravel ^{f, g, h}
				Fines classify as CL or CH	GC	Clayey gravel ^{f, g, h}
	SANDS 50% or more of coarse fraction passes No. 4 sieve	CLEAN SANDS less than 5% fines ^d	$C_u \geq 6$ and $1 \leq C_c \leq 3$ ^e	SW	Well-graded sand ^l	
			$C_u < 6$ and/or $1 > C_c > 3$ ^e	SP	Poorly-graded sand ^l	
		SANDS WITH FINES more than 12% fines ^d		Fines classify as ML or MH	SM	Silty sand ^{g, h, f}
				Fines classify as CL or CH	SC	Clayey sand ^{g, h, f}
FINE - GRAINED SOILS 50% or more passed the No. 200 sieve	SILTS & CLAYS Liquid limit less than 50%	Inorganic	$PI > 7$ or plots on or above "A" line ^j	CL	Lean clay ^{k, l, m}	
			$PI < 4$ or plots below "A" line ^j	ML	Silt ^{k, l, m}	
		Organic		$\frac{\text{Liquid limit} - \text{oven dried}}{\text{Liquid limit} - \text{not dried}} < 0.75$	OL	Organic clay ^{k, l, m, n} Organic silt ^{k, l, m, o}
				PI plots on or above "A" line	CH	Fat clay ^{k, l, m}
	SILTS & CLAYS Liquid limit 50% or more	Inorganic	PI plots below "A" line	MH	Elastic silt ^{k, l, m}	
			Organic		$\frac{\text{Liquid limit} - \text{oven dried}}{\text{Liquid limit} - \text{not dried}} < 0.75$	OH
		Highly organic soils			Primarily organic matter, dark in color, and organic odor	PT

- a. Based on the material passing the 3-inch (75-mm) sieve.
 b. If field sample contained cobbles and/or boulders, add "with cobbles and/or boulders" to group name
 c. Gravels with 5 to 12% fines required dual symbols
 GW-GM well graded gravel with silt
 GW-GC well graded gravel with clay
 GP-GM poorly graded gravel with silt
 GP-GC poorly graded gravel with clay
 d. Sands with 5 to 12% fines require dual symbols
 SW-SM well graded sand with silt
 SW-SC well graded sand with clay
 SP-SM poorly graded sand with silt
 SP-SC poorly graded sand with clay
 e. $C_u = D_{60}/D_{10}$ $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$

- f. If soils contains $\geq 15\%$ sand, add "with sand" to group name.
 g. If fines classify as CL-ML, use dual symbol GC-GM, SC-SM
 h. If fines are organic, add "with organic fines" to group name
 i. If soils contains $\geq 15\%$ gravel, add "with gravel" to group name
 j. If Atterberg Limits plot in hatched area, soil is a CL - ML, silty clay
 k. If soils contains 15 to 29% plus No. 200, add "with sand" or "with gravel" whichever is predominant
 l. If soil contains $\geq 30\%$ plus No. 200, predominantly sand, add "sandy" to group name.
 m. If soils contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name
 n. $PI \geq 4$ and plots on or above "A" line
 o. $PI \geq 4$ and plots below "A" line
 p. PI plots on or above "A" line
 q. PI plots below "A" line





LEGEND FOR BORING LOGS



FILL



TOPSOIL



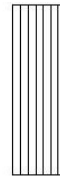
PEAT



GRAVEL



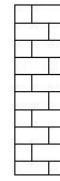
SAND



SILT



CLAY

LIMESTONE/
DOLOMITE

SAMPLE TYPE

SS	=	Split-Spoon
ST	=	Thin-Walled Tube
A	=	Auger
MC	=	Macro-Core (Geoprobe)

WATER LEVEL OBSERVATIONS

▼	While Drilling
▽	End of Boring
▼	24 Hours

FIELD AND LABORATORY TEST DATA

N	=	Standard Penetration Resistance in Blows per Foot (bpf)
WC	=	In-Situ Water Content (%)
Qu	=	Unconfined Compressive Strength in Tons per Square Foot (tsf)
*	=	Pocket Penetrometer Reading: Maximum Value = 4.5 tsf
Y _{dry}	=	Dry Unit Weight in Pounds per Cubic Foot (pcf)

SOIL DESCRIPTIONS:

MATERIAL

BOULDER
COBBLE
Large GRAVEL
Small GRAVEL
Coarse SAND
Medium SAND
Fine SAND
SILT and CLAY

PARTICLE SIZE RANGE

Over 12 inches
12 inches to 3 inches
3 inches to ¾ inch
¾ inch to No. 4 Sieve
No. 4 Sieve to No. 10 Sieve
No. 10 Sieve to No. 40 Sieve
No. 40 Sieve to No. 200 Sieve
Passing No. 200 Sieve

COHESIVE SOILS

<u>CONSISTENCY</u>	<u>Qu (tsf)</u>
Very Soft	Less than 0.25
Soft	0.25 to 0.5
Medium Stiff	0.5 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	4.0 and over

COHESIONLESS SOILS

<u>RELATIVE DENSITY</u>	<u>N (bpf)</u>
Very Loose	0 – 3
Loose	4 – 9
Medium Dense	10 – 29
Dense	30 – 49
Very Dense	50 and over

MODIFYING TERM

Trace
Little
Some

PERCENT BY WEIGHT

1 – 10
10 – 20
20 – 35

ELEVATIONS

GROUND SURFACE	18.0 ECD
END OF BORING	-17.0 ECD

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING	Dry
▽ AT END OF BORING	21.0'
▼ 24 HOURS	

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.5	17.5	FILL - Black clayey TOPSOIL
		1	SS	20	11.9			3.0	15.0	FILL - Brown SAND, little to some Crushed Stone and Crushed Brick, damp
		2	SS	6	23.0			5.5	12.5	Loose brown silty fine SAND, trace clay, moist (SM)
		3	SS	6	23.0			8.0	10.0	Loose brown trace gray clayey SILT, little sand, very moist (ML)
		4	SS	7	25.1	2.02 1.75*		13.0	5.0	Stiff to very stiff brown trace gray to brownish-gray silty CLAY, trace to little sand and gravel, moist (CL)
		5	SS	9	23.1	2.02 2.0*		15.5	2.5	Soft gray silty CLAY, little sand, very moist (CL/CH)
		6	SS	2	37.4	0.25*		18.0	0.0	Soft gray silty CLAY, little sand, trace organic, very moist (CL)
		7	SS	3	29.0	0.25*		23.0	-5.0	Soft to medium stiff gray very silty CLAY, little sand, trace gravel, very moist (CL)
		8	SS	4	17.1	0.5*		27.0	-9.0	Soft to medium stiff gray silty CLAY, little sand, trace organic, very moist (CL/CH)
		9	SS	5	18.0	0.5*		32.0	-14.0	Medium dense gray SILT, little sand, trace clay, moist (ML)
		10	SS	5	39.5	0.5*				Stiff gray silty CLAY, some sand, very moist (CL)
		11	SS	16	19.8					End of Boring at 35.0'
		12	SS	9	17.9	1.25*				* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

ELEVATIONS
 GROUND SURFACE **18.0 ECD**
 END OF BORING **-17.0 ECD**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **8.0'**
 ▽ AT END OF BORING **Caved at 6.0'**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0										FILL - Dark brown clayey TOPSOIL
1.2		1	SS	15	19.5				16.8	FILL - Dark brown silty SAND, some gravel, little Brick pieces, trace cinders, moist
3.0		2	SS	4	28.9				15.0	FILL - Reddish brown Crushed Brick, some sand, moist
5.5		3	SS	6	29.6				12.5	FILL - Brown SAND and GRAVEL with Crushed Brick, moist to wet
9.0		A 4 B	SS	4	33.3 23.0				9.0	Loose brown and gray clayey SILT, little sand, moist to very moist (ML)
13.0		5	SS	5	24.4				5.0	Soft gray silty CLAY, little sand, very moist (CL/CH)
15.5		6	SS	2	36.3	0.25*			2.5	Medium stiff gray silty CLAY, little sand, trace gravel, very moist (CL)
18.0		7	SS	4	17.9	0.75*			0.0	Soft gray silty CLAY, trace to little sand and gravel, very moist (CL)
20		8	SS	2	26.9	0.25*				
22.5		9	SS	1	28.3	0.25*				
25		10	SS	1	27.3	0.25*				
27.0									-9.0	Soft to medium stiff gray silty CLAY, little sand, trace gravel, very moist (CL)
30		11	SS	4	22.5	0.5*				
35		12	SS	4	21.9	0.5*				CME Automatic Hammer used for SPTs
35.0										End of Boring at 35.0'

TSC 95300.GPJ TSC_ALL.GDT 4/12/23

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

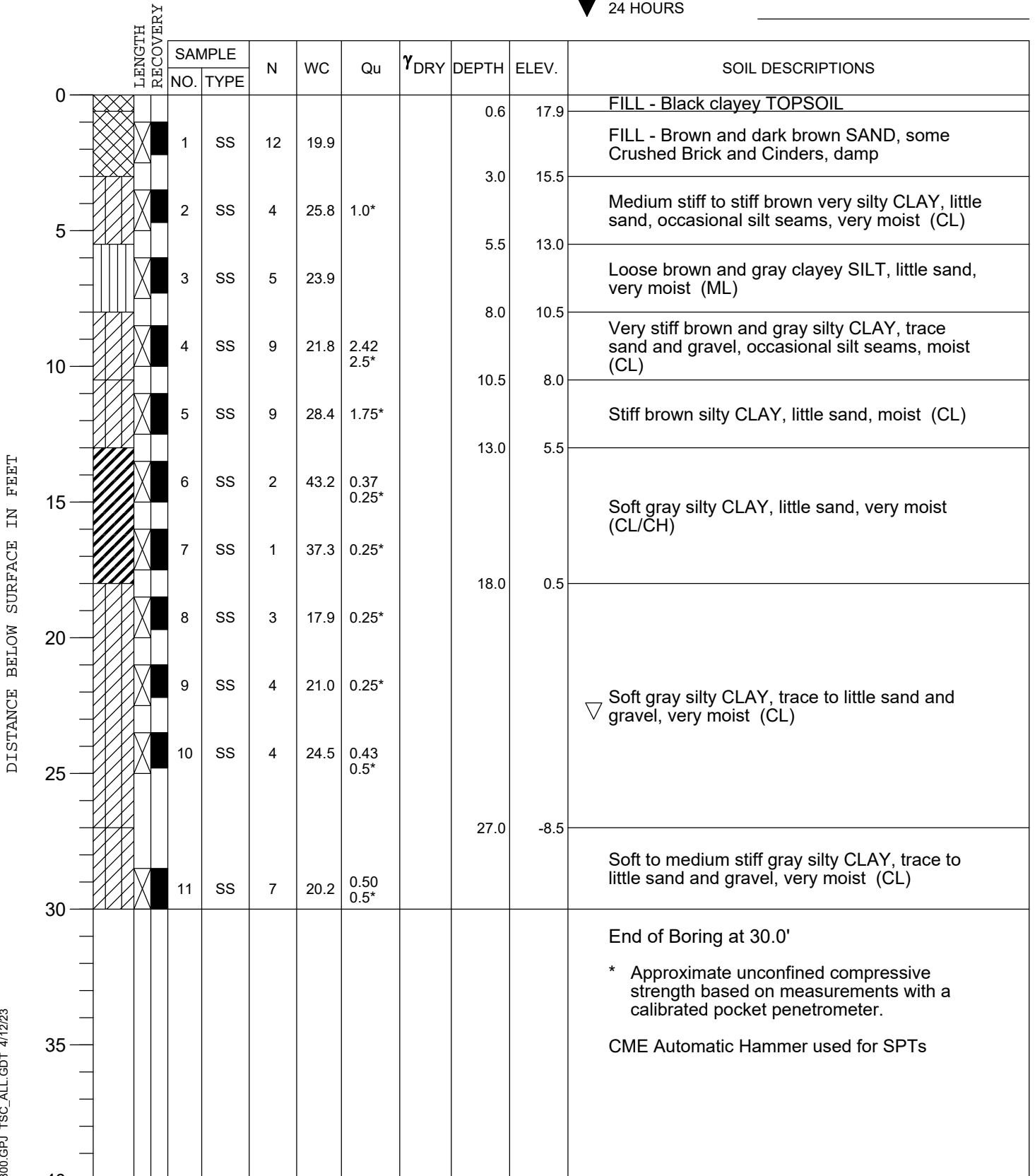
* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

ELEVATIONS

GROUND SURFACE	18.5 ECD
END OF BORING	-11.5 ECD

WATER LEVEL OBSERVATIONS

▽ WHILE DRILLING	Dry
▽ AT END OF BORING	23.0'
▼ 24 HOURS	



TSC 95300.GPJ TSC_ALL.GDT 4/12/23

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
CME Automatic Hammer used for SPTs

ELEVATIONS

GROUND SURFACE	17.5 ECD
END OF BORING	-32.5 ECD

WATER LEVEL OBSERVATIONS

▽ WHILE DRILLING	5.5'
▽ AT END OF BORING	6.0'
▼ 24 HOURS	

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.8	16.7	FILL - Dark brown clayey TOPSOIL
		1	SS	7	29.4	1.5*	88	3.0	14.5	FILL - Dark brown silty CLAY, trace sand and gravel, trace organic, brick and glass pieces, very moist
		2	SS	3	25.4			5.5	12.0	FILL - Brown SAND, little gravel, some Cinders, Slag, Glass and Brick pieces, moist
		3	SS	2	40.3					
		4	SS	1	50.6					
		5	SS	3	58.0					
		6	SS	3	51.5					
		7	SS	2	55.6					
		8	SS	2	54.1					FILL - Dark brown to black SAND with Cinders, Slag, Glass and Brick pieces, trace to little Wire and Wood pieces, wet
		9	SS	3	65.9					
		10	SS	2	50.8					
		11	SS	5	31.0					
		12	SS	3	21.1	0.57 0.5*		33.0	-15.5	Medium stiff gray silty CLAY, little sand, trace gravel, very moist (CL)
		A			10.6	1.0*		37.0	-19.5	Stiff gray very silty CLAY, some sand, very moist (CL-ML)
		13B	SS	19	9.4			39.0	-21.5	(Description on Page 2)

TSC 95300.GPJ TSC_ALL.GDT 4/12/23

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

ELEVATIONS

GROUND SURFACE	17.5 ECD
END OF BORING	-32.5 ECD

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING	5.5'
▽ AT END OF BORING	6.0'
▼ 24 HOURS	

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
40										Medium dense gray clayey SAND, some gravel, very moist (SC)
45		14	SS	11	21.4	1.25*		43.0	-25.5	Stiff gray silty CLAY, little sand, trace gravel, moist to very moist (CL)
50		15	SS	14	19.1	1.5*				End of Boring at 50.0'
55										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
60										CME Automatic Hammer used for SPTs
65										
70										
75										
80										

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

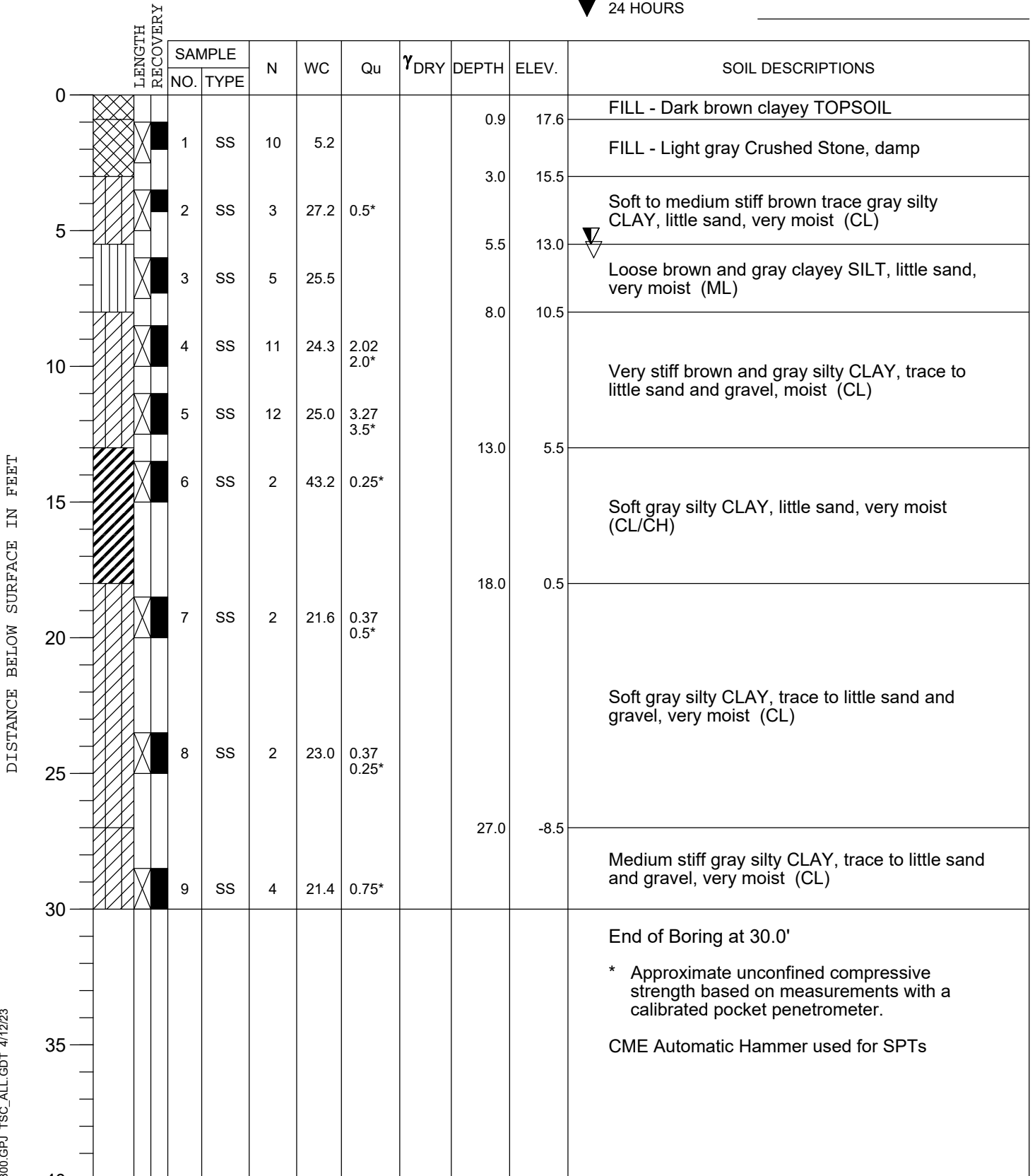
TSC 95300.GPJ TSC_ALL.GDT 4/12/23

ELEVATIONS

GROUND SURFACE	18.5 ECD
END OF BORING	-11.5 ECD

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING	5.5'
▽ AT END OF BORING	6.0'
▼ 24 HOURS	



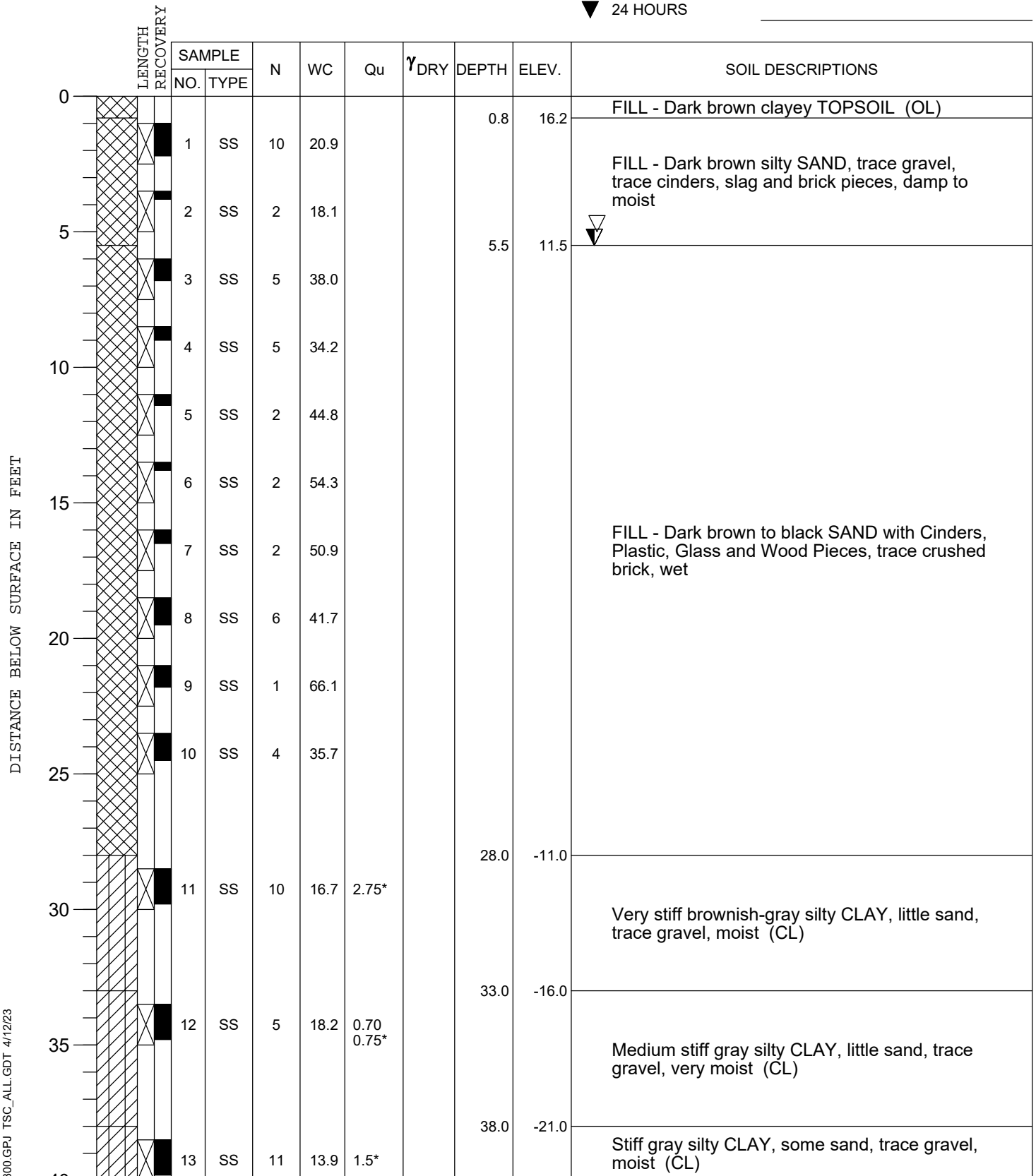
TSC 95300.GPJ TSC_ALL.GDT 4/12/23

ELEVATIONS

GROUND SURFACE	17.0 ECD
END OF BORING	-28.0 ECD

WATER LEVEL OBSERVATIONS

▽ WHILE DRILLING	5.5'
▽ AT END OF BORING	5.0'
▼ 24 HOURS	



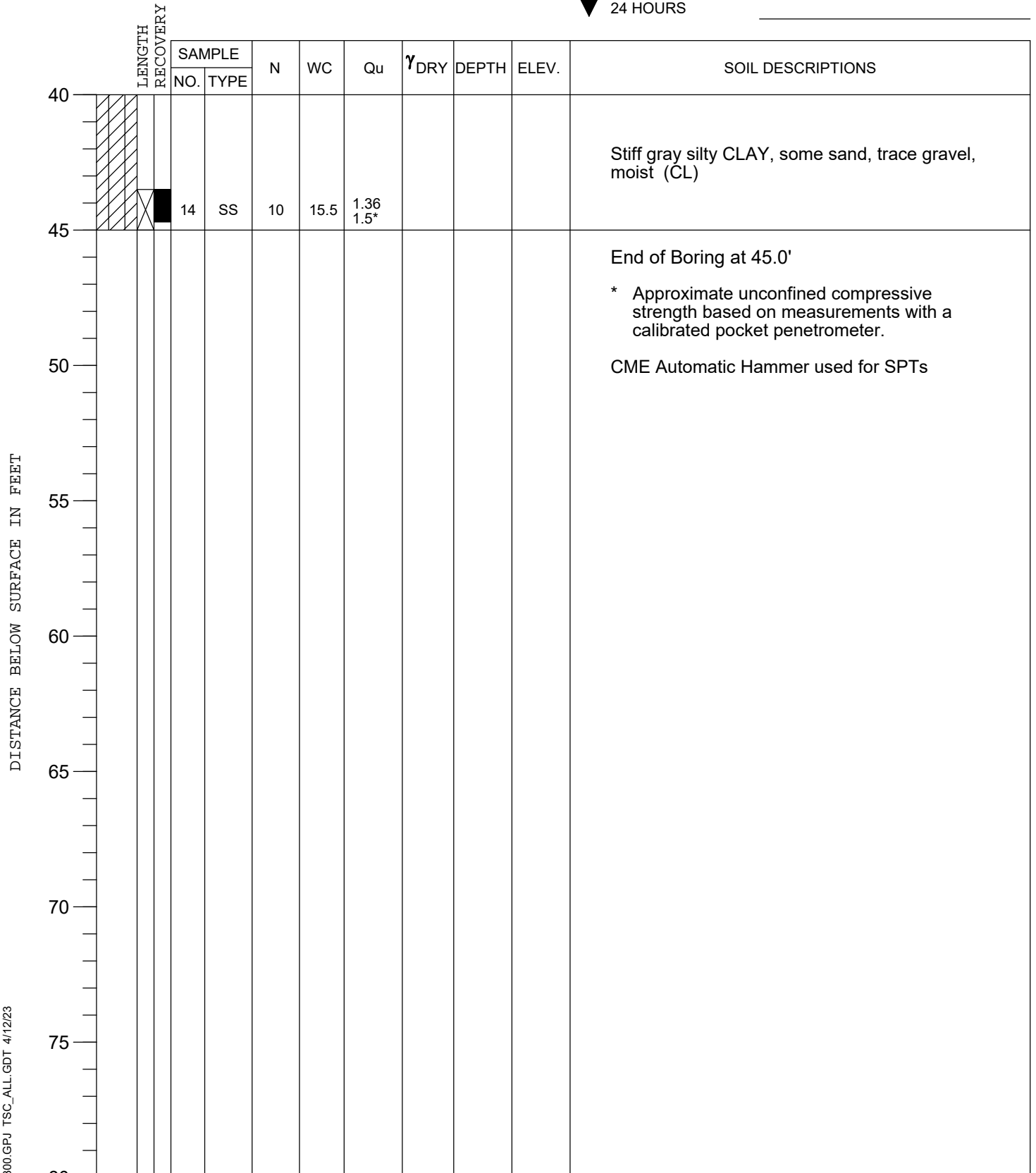
TSC 95300.GPJ TSC_ALL.GDT 4/12/23

ELEVATIONS

GROUND SURFACE	17.0 ECD
END OF BORING	-28.0 ECD

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING	5.5'
▽ AT END OF BORING	5.0'
▼ 24 HOURS	



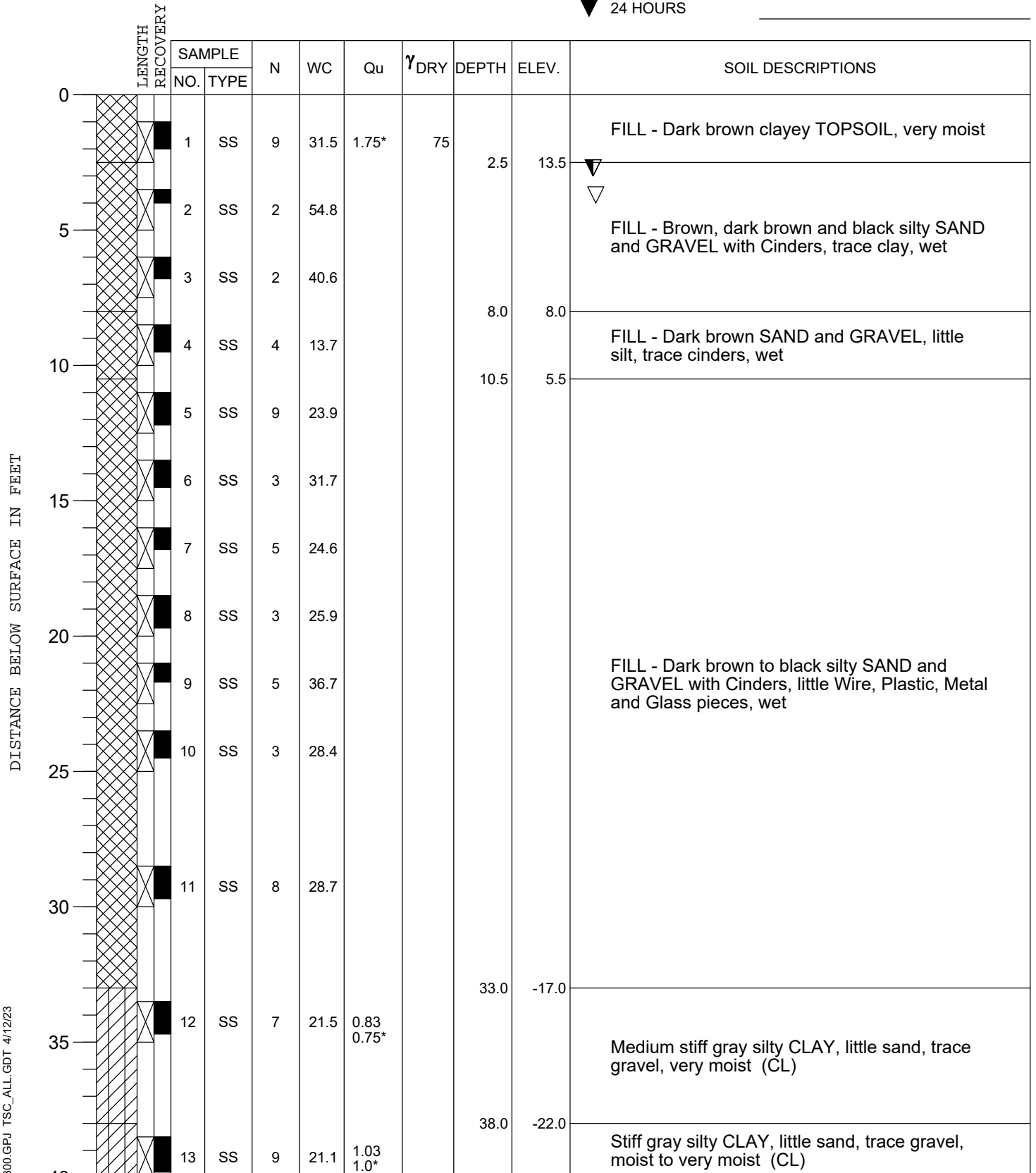
TSC 95300.GPJ TSC_ALL.GDT 4/12/23

ELEVATIONS

GROUND SURFACE	16.0 ECD
END OF BORING	-34.0 ECD

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING	3.0'
▽ AT END OF BORING	4.0'
▼ 24 HOURS	



TSC 95300.GPJ TSC_ALL.GDT 4/12/23

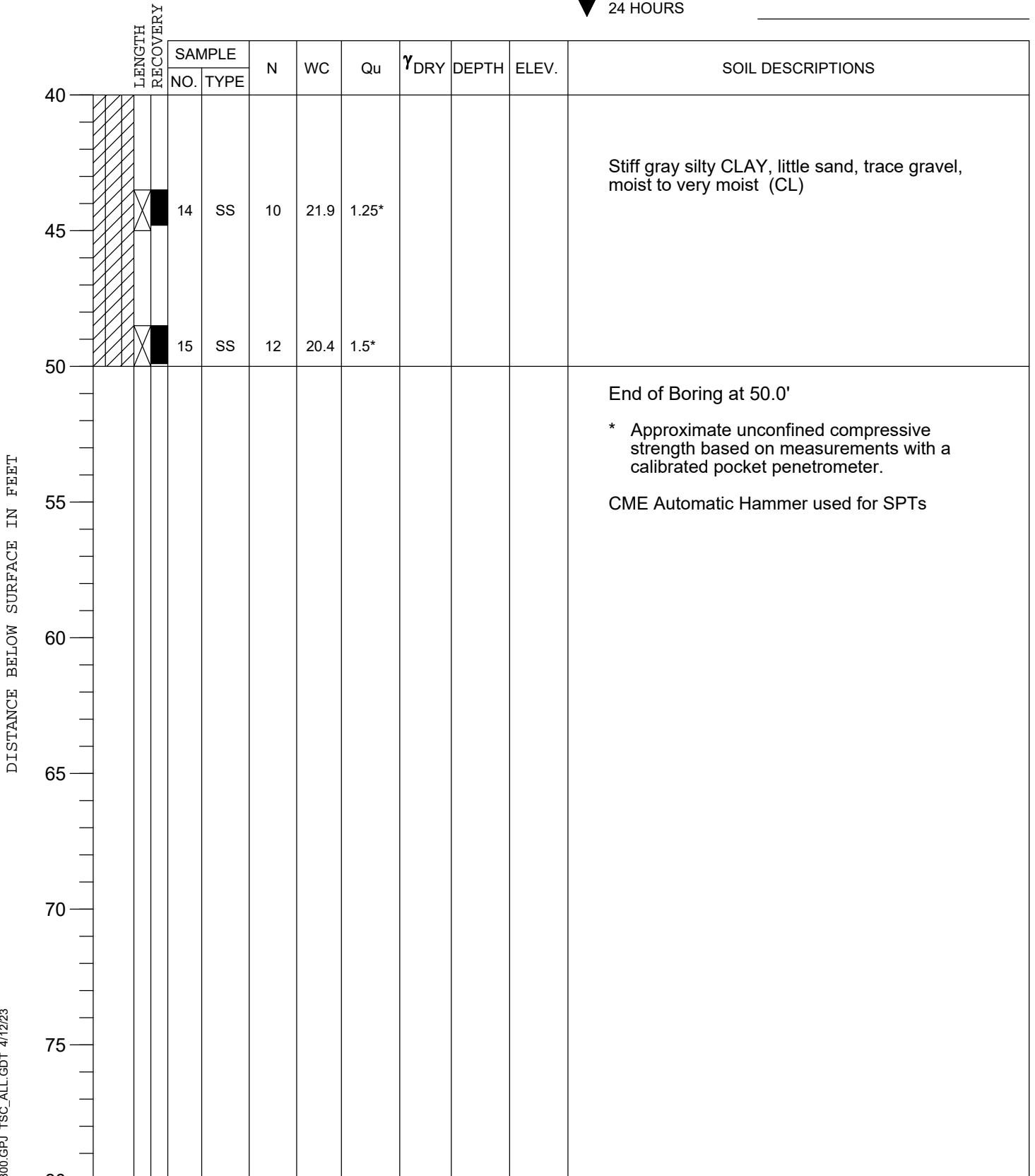
Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

ELEVATIONS

GROUND SURFACE	16.0 ECD
END OF BORING	-34.0 ECD

WATER LEVEL OBSERVATIONS

▽ WHILE DRILLING	3.0'
▽ AT END OF BORING	4.0'
▽ 24 HOURS	



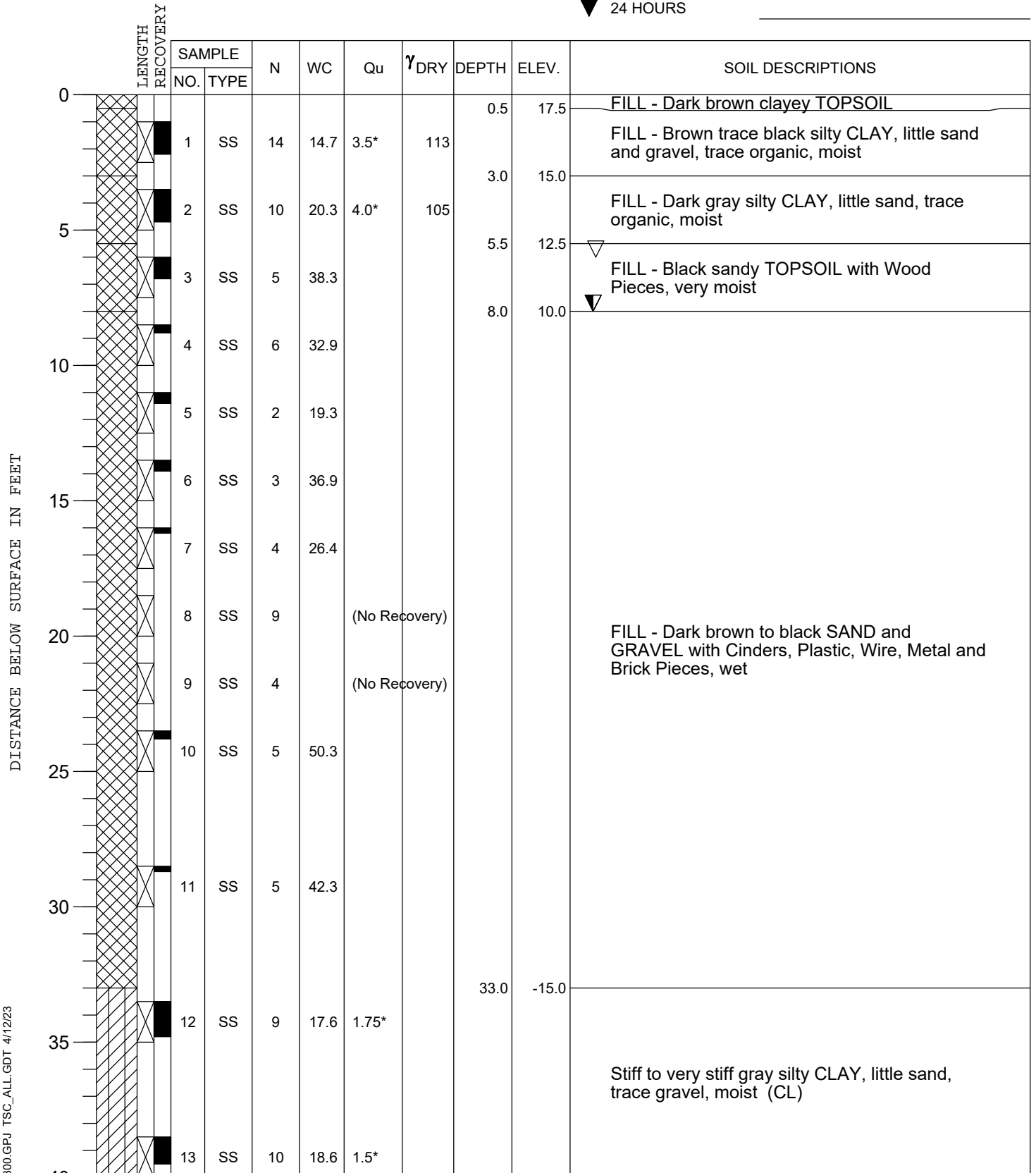
TSC 95300.GPJ TSC_ALL.GDT 4/12/23

ELEVATIONS

GROUND SURFACE	18.0 ECD
END OF BORING	-27.0 ECD

WATER LEVEL OBSERVATIONS

▽ WHILE DRILLING	8.0'
▽ AT END OF BORING	6.0'
▼ 24 HOURS	



TSC 95300.GPJ TSC.ALL.GDT 4/12/23

ELEVATIONS

GROUND SURFACE	18.0 ECD
END OF BORING	-27.0 ECD

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING	8.0'
▽ AT END OF BORING	6.0'
▼ 24 HOURS	

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
40										Stiff to very stiff gray silty CLAY, little sand, trace gravel, moist (CL)
45		14	SS	10	18.4	2.0*				
50										End of Boring at 45.0'
55										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
60										CME Automatic Hammer used for SPTs
65										
70										
75										
80										

TSC 95300.GPJ TSC_ALL.GDT 4/12/23

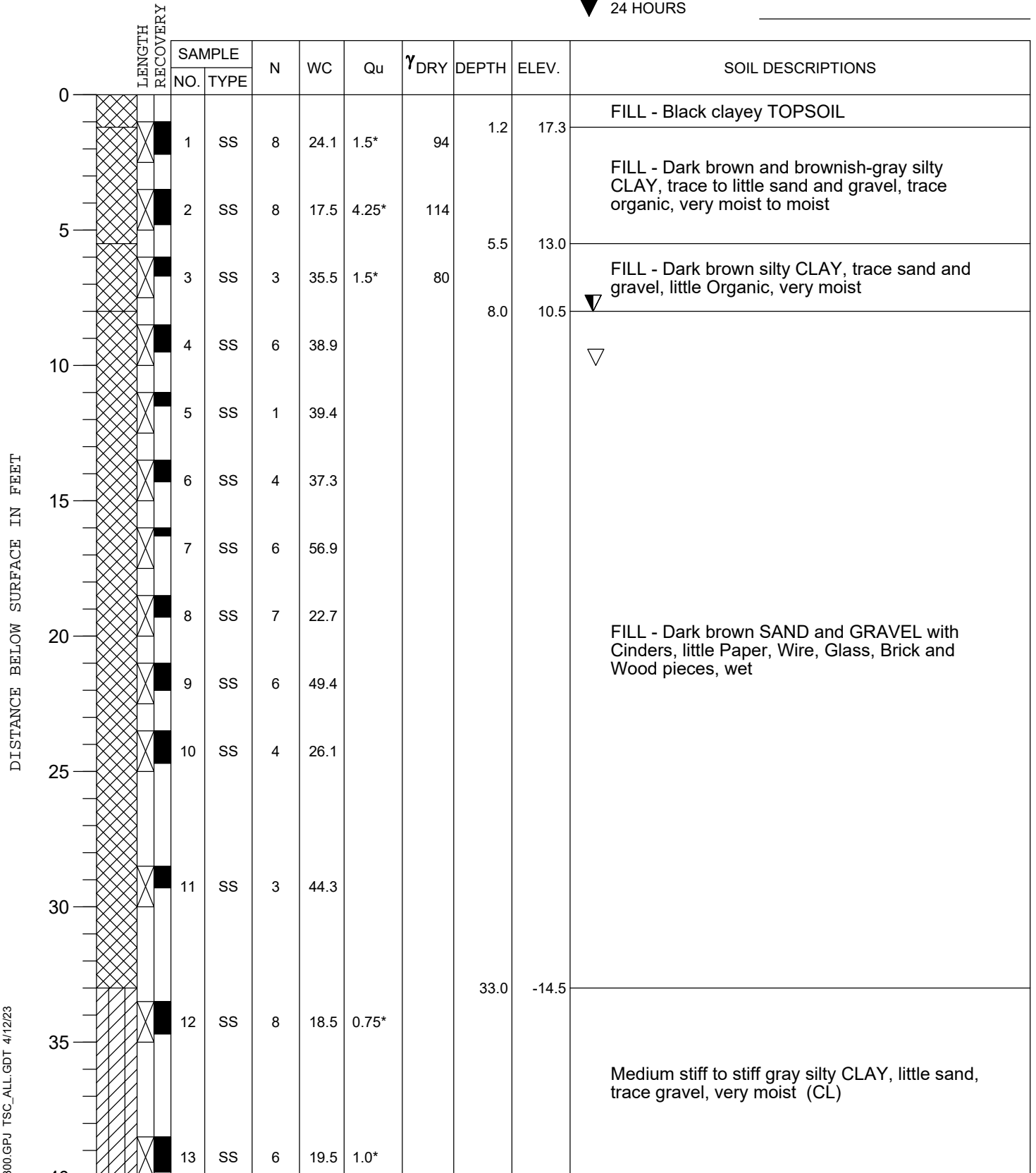
Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

ELEVATIONS

GROUND SURFACE	18.5 ECD
END OF BORING	-46.5 ECD

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING	8.0'
▽ AT END OF BORING	10.0'
▼ 24 HOURS	



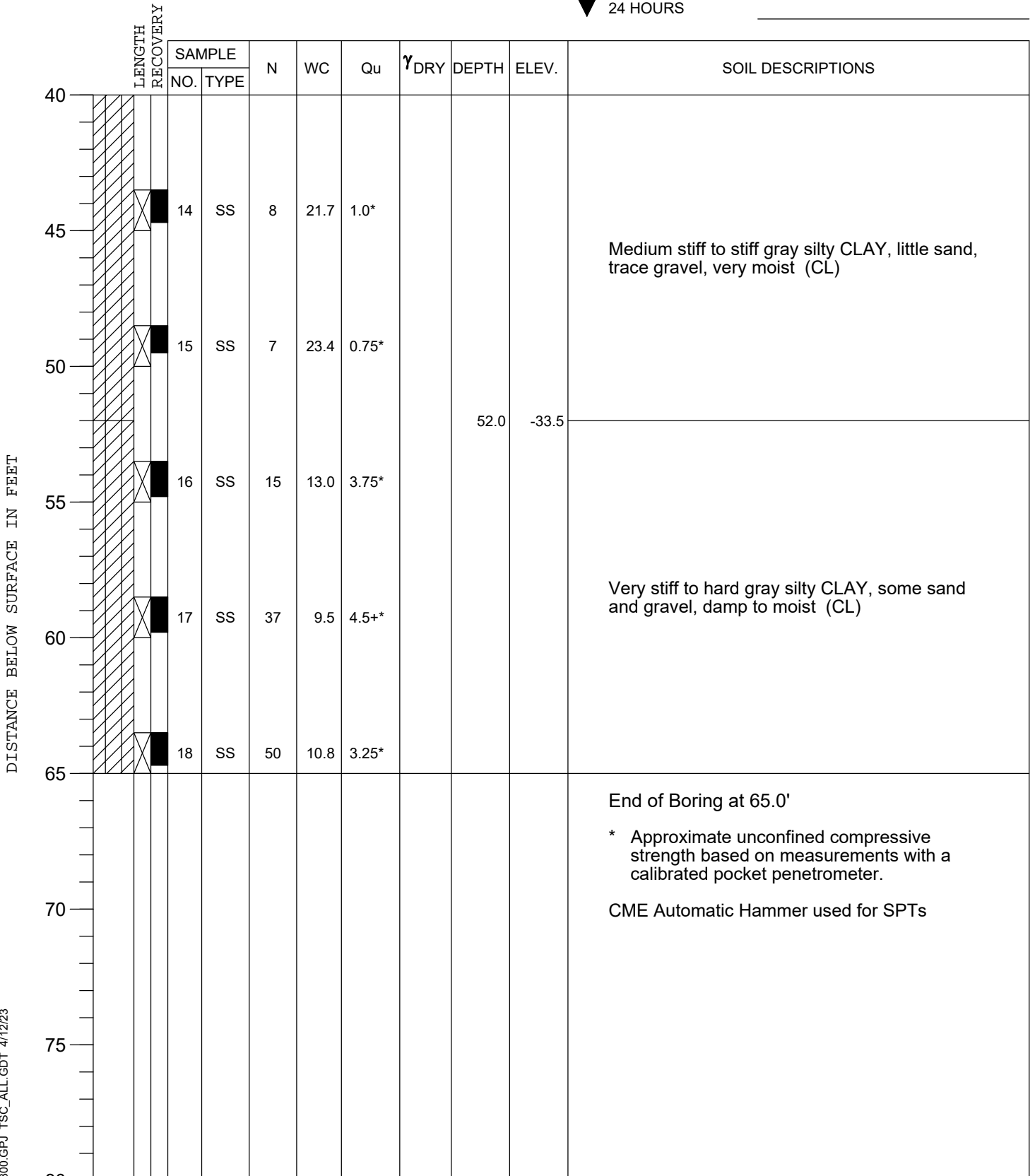
TSC 95300.GPJ TSC_ALL.GDT 4/12/23

ELEVATIONS

GROUND SURFACE	18.5 ECD
END OF BORING	-46.5 ECD

WATER LEVEL OBSERVATIONS

▽ WHILE DRILLING	8.0'
▽ AT END OF BORING	10.0'
▼ 24 HOURS	



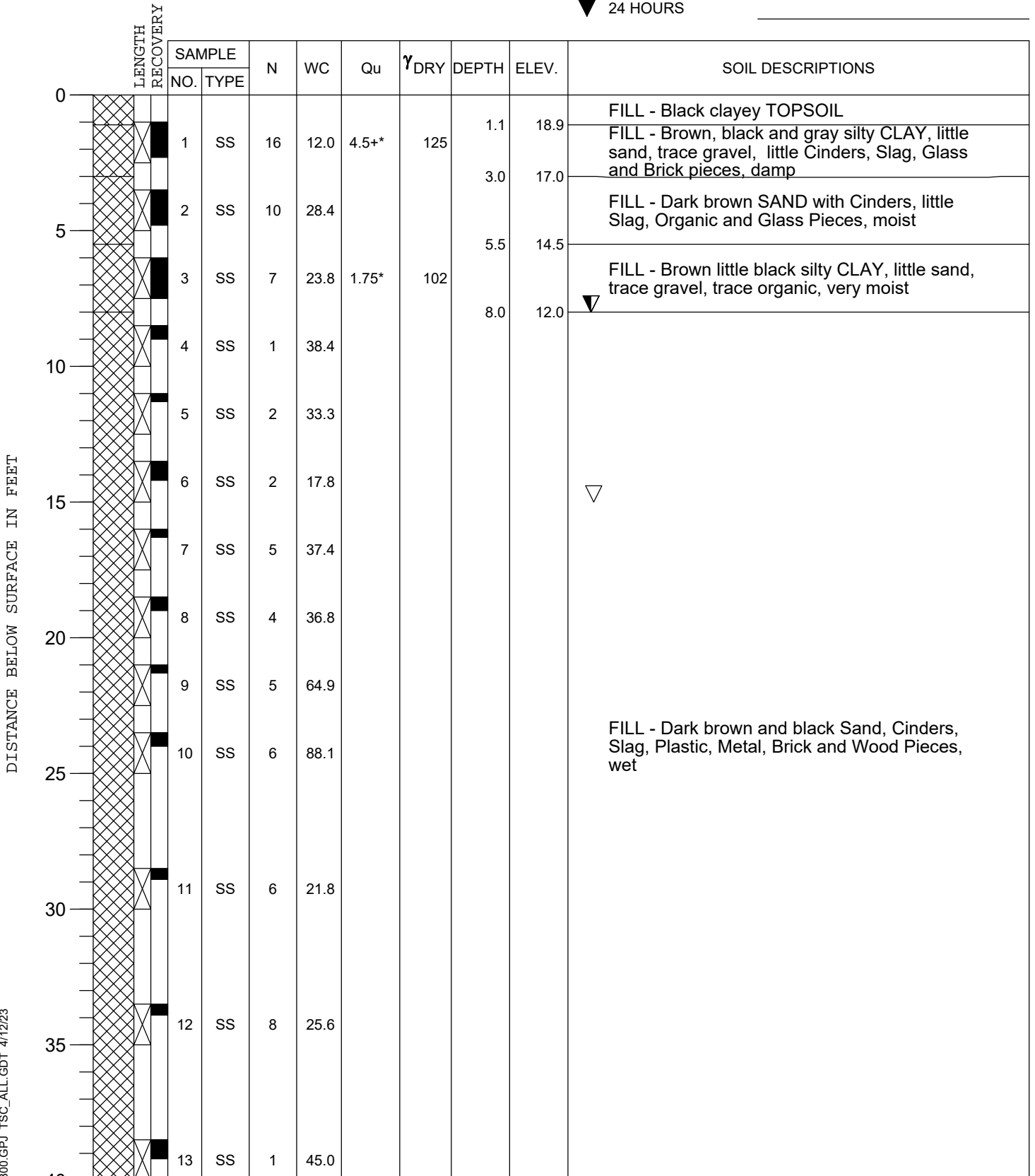
TSC 95300.GPJ TSC_ALL.GDT 4/12/23

ELEVATIONS

GROUND SURFACE	20.0 ECD
END OF BORING	-50.0 ECD

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING	8.0'
▽ AT END OF BORING	15.0'
▼ 24 HOURS	



TSC 95300.GPJ TSC_ALL.GDT 4/12/23

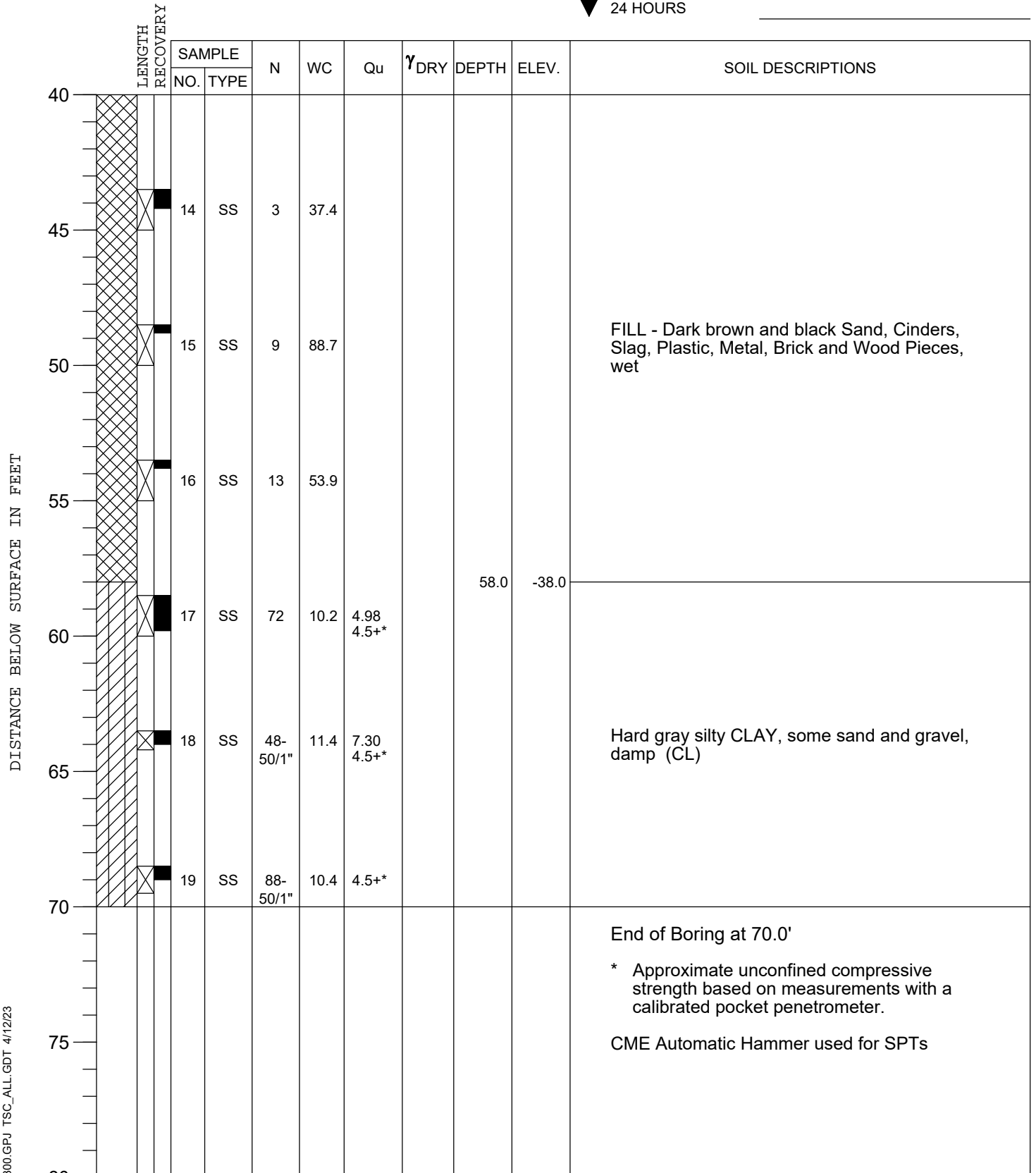
Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

ELEVATIONS

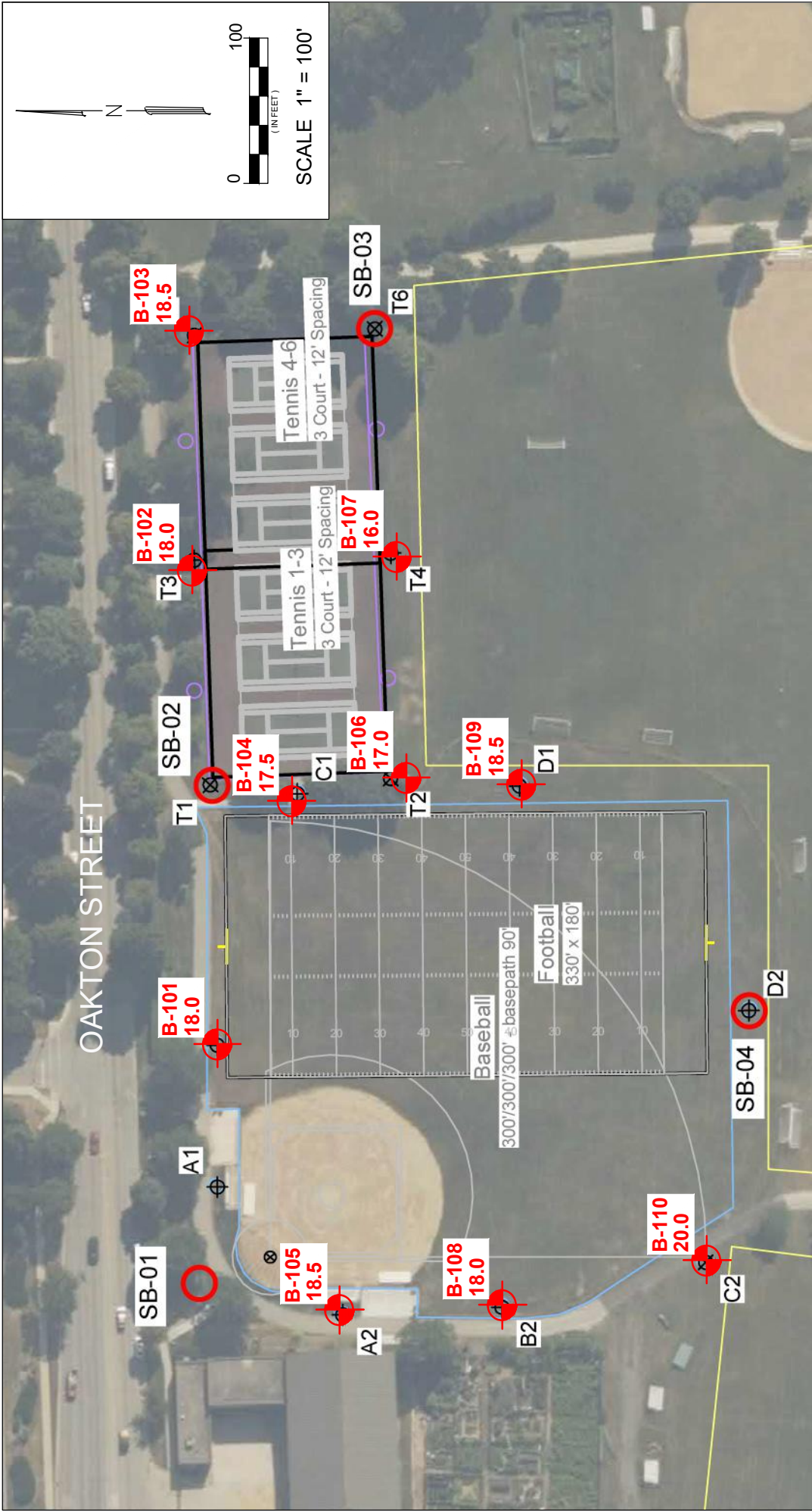
GROUND SURFACE	20.0 ECD
END OF BORING	-50.0 ECD

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING	8.0'
▽ AT END OF BORING	15.0'
▼ 24 HOURS	



TSC 95300.GPJ TSC_ALL.GDT 4/12/23



NOTE: GROUND SURFACE ELEVATIONS AT THE BORINGS WERE ACQUIRED BY TSC USING A TRIMBLE R8S GNSS RECEIVER, BEING ROUNDED TO THE NEAREST 0.5 FOOT.

BORINGS SB-01 TO SB-04 PERFORMED BY INTERRA IN JUNE 2021.

LEGEND

SOIL BORING LOCATION

BORING LOCATION PLAN
 LIGHT POLE FOUNDATIONS
 JAMES PARK
 EVANSTON, ILLINOIS

TESTING SERVICE CORP.
 457 EAST GUNDERSEN DRIVE
 CAROL STREAM, ILLINOIS 60188

DRAWN BY: FFE	PAGE NO. ATTACHMENT 3
CHECKED BY: AJB	
JOB NO.: L-95,300	
DATE: 03-31-23	

Contractors are advised that James Park is a former municipal landfill. A copy of environmental soil testing performed in 2021 at the property is attached for reference in determining disposal sites/requirements for contractor bidding. The attached soil tests were not performed in the exact location of the proposed lighting for this project but are expected to be similar to what will be found below grade at the project site.

SUBURBAN LABORATORIES, Inc.

1950 S. Batavia Ave., Suite 150 Geneva, Illinois 60134
Tel. (708) 544-3260 • Toll Free (800) 783-LABS
Fax (708) 544-8587
www.suburbanlabs.com

February 04, 2021

Ashok Guntaka
INTERRA, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440

Workorder: 2101G76

TEL: (630) 754-8700
FAX: (630) 754-8705
RE: 8785 Evanston James Park

Dear Ashok Guntaka:

Suburban Laboratories, Inc. received 2 sample(s) on 1/26/2021 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation including, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,

Keith Sinon
Project Manager
708-544-3260 ext 212
keith@suburbanlabs.com




Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Case Narrative

Client: INTERRA, Inc.

Date: February 04, 2021

Project: 8785 Evanston James Park

PO #:
WorkOrder: 2101G76

QC Level:
Temperature of samples upon receipt at SLI: 3.4 C

Chain of Custody #:
General Comments:

- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.
- All radiological results are reported to the 95% confidence level.

Abbreviations:

- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:

For a complete list of method references please contact us.

- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:

8082:

Sample 2101G76-001C: S= Due to interferences, the MS and MSD could not be evaluated for Aroclor 1016.

8081:

Sample 2101G76-001C and -002C: S=The Laboratory Control Sample exceeded the upper acceptance limit for the compounds listed below, resulting in a high bias. There were no detects in the samples.

Dieldrin

Client: INTERRA, Inc.

Date: February 04, 2021

Project: 8785 Evanston James Park

PO #:

WorkOrder: 2101G76

QC Level:

Temperature of samples upon receipt at SLI: 3.4 C

Chain of Custody #:

Endrin aldehyde



Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Laboratory Results

Client ID: INTERRA, Inc.

Report Date: February 04, 2021

Project Name: 8785 Evanston James Park

Workorder: 2101G76

Client Sample ID: EJP-B03

Matrix: SOIL

Lab ID: 2101G76-001

Date Received: 01/26/2021 5:06 PM

Collection Date: 01/25/2021 12:05 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
METALS BY ICP		Method: EPA-6010B-Rev 2, Dec-96			Analyst: SCT		
Arsenic	23.0	1.12		mg/Kg-dry	1	01/28/2021 1:43 PM	71173
Barium	440	0.121		mg/Kg-dry	1	01/28/2021 4:00 PM	71173
Cadmium	6.15	0.0728		mg/Kg-dry	1	01/28/2021 1:43 PM	71173
Chromium	40.2	0.0583		mg/Kg-dry	1	01/28/2021 1:43 PM	71173
Lead	552	0.583		mg/Kg-dry	1	01/28/2021 1:43 PM	71173
Selenium	ND	6.31		mg/Kg-dry	5	01/28/2021 2:55 PM	71173
Silver	1.03	0.0583		mg/Kg-dry	1	01/28/2021 1:43 PM	71173
ORGANOCHLORINE PESTICIDES		Method: EPA-8081A-Rev 1, Dec-96			Analyst: PSP		
4,4'-DDD	0.0827	0.0307		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
4,4'-DDE	ND	0.0307		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
4,4'-DDT	0.0395	0.0307		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
Aldrin	ND	0.0154		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
alpha-BHC	ND	0.0154		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
alpha-Chlordane	ND	0.0154		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
beta-BHC	ND	0.0154		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
Chlordane	ND	0.304		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
delta-BHC	ND	0.0154		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
Dieldrin	ND	0.0307	S	mg/Kg-dry	20	02/02/2021 6:38 PM	71240
Endosulfan I	ND	0.0154		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
Endosulfan II	ND	0.0307		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
Endosulfan sulfate	ND	0.0307		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
Endrin	ND	0.0307		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
Endrin aldehyde	ND	0.00153	S	mg/Kg-dry	1	02/01/2021 11:26 PM	71240
Endrin ketone	ND	0.0307		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
gamma-BHC	ND	0.0154		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
gamma-Chlordane	ND	0.0154		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
Heptachlor	ND	0.0154		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
Heptachlor epoxide	ND	0.0154		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
Methoxychlor	ND	0.154		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
Toxaphene	ND	0.611		mg/Kg-dry	20	02/02/2021 6:38 PM	71240
<u>Internal Quality Control Compounds</u>							
SS: Tetrachloro-m-xylene	55.7	33.7-156		%Rec	20	02/02/2021 6:38 PM	71240
PCBS		Method: EPA-8082-Rev 0, Dec-96			Analyst: PSP		
Aroclor 1016	ND	0.193	S	mg/Kg-dry	10	02/02/2021 5:00 PM	71239



Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Laboratory Results

Client ID: INTERRA, Inc.

Report Date: February 04, 2021

Project Name: 8785 Evanston James Park

Workorder: 2101G76

Client Sample ID: EJP-B03

Matrix: SOIL

Lab ID: 2101G76-001

Date Received: 01/26/2021 5:06 PM

Collection Date: 01/25/2021 12:05 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
PCBS		Method: EPA-8082-Rev 0, Dec-96			Analyst: PSP		
Aroclor 1221	ND	0.193		mg/Kg-dry	10	02/02/2021 5:00 PM	71239
Aroclor 1232	ND	0.193		mg/Kg-dry	10	02/02/2021 5:00 PM	71239
Aroclor 1242	ND	0.193		mg/Kg-dry	10	02/02/2021 5:00 PM	71239
Aroclor 1248	ND	0.193		mg/Kg-dry	10	02/02/2021 5:00 PM	71239
Aroclor 1254	ND	0.193		mg/Kg-dry	10	02/02/2021 5:00 PM	71239
Aroclor 1260	ND	0.193		mg/Kg-dry	10	02/02/2021 5:00 PM	71239
<u>Internal Quality Control Compounds</u>							
SS: Tetrachloro-m-xylene	53.6	33.7-156		%Rec	10	02/02/2021 5:00 PM	71239
VOLATILE ORGANIC COMPOUNDS		Method: EPA-8260B-Rev 2, Dec-96			Analyst: CY		
1,1,1-Trichloroethane	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
1,1,2,2-Tetrachloroethane	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
1,1,2-Trichloroethane	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
1,1-Dichloroethane	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
1,1-Dichloroethene	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
1,2-Dichloroethane	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
1,2-Dichloropropane	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
2-Butanone	ND	0.0103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
2-Hexanone	ND	0.0257		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
4-Methyl-2-pentanone	ND	0.0257		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Acetone	ND	0.0257		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Benzene	0.00175	0.000257		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Bromodichloromethane	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Bromoform	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Bromomethane	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Carbon disulfide	0.00272	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Carbon tetrachloride	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Chlorobenzene	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Chloroethane	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Chloroform	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Chloromethane	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
cis-1,2-Dichloroethene	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
cis-1,3-Dichloropropene	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Dibromochloromethane	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Ethylbenzene	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
m,p-Xylene	0.00220	0.00205		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Methyl tert-butyl ether	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Methylene chloride	ND	0.00514		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057



Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Laboratory Results

Client ID: INTERRA, Inc.

Report Date: February 04, 2021

Project Name: 8785 Evanston James Park

Workorder: 2101G76

Client Sample ID: EJP-B03

Matrix: SOIL

Lab ID: 2101G76-001

Date Received: 01/26/2021 5:06 PM

Collection Date: 01/25/2021 12:05 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method: EPA-8260B-Rev 2, Dec-96			Analyst: CY		
o-Xylene	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Total Xylenes	0.00220	0.00205		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Styrene	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Tetrachloroethene	ND	0.00205		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Toluene	0.00274	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
trans-1,2-Dichloroethene	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
trans-1,3-Dichloropropene	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Trichloroethene	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
Vinyl chloride	ND	0.00103		mg/Kg-dry	0.89	01/28/2021 6:02 PM	R129057
<u>Internal Quality Control Compounds</u>							
SS: 4-Bromofluorobenzene	88.2	80-130		%Rec	0.89	01/28/2021 6:02 PM	R129057
SS: Dibromofluoromethane	113	76.1-120		%Rec	0.89	01/28/2021 6:02 PM	R129057
SS: Toluene-d8	101	85-115		%Rec	0.89	01/28/2021 6:02 PM	R129057
SEMIVOLATILE ORGANICS (BNAS)		Method: EPA-8270C-Rev 3, Dec-96			Analyst: ES		
1,2,4-Trichlorobenzene	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
1,2-Dichlorobenzene	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
1,3-Dichlorobenzene	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
1,4-Dichlorobenzene	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
2,4,5-Trichlorophenol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
2,4,6-Trichlorophenol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
2,4-Dichlorophenol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
2,4-Dimethylphenol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
2,4-Dinitrophenol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
2,4-Dinitrotoluene	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
2,6-Dinitrotoluene	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
2-Chloronaphthalene	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
2-Chlorophenol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
2-Methylnaphthalene	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
2-Nitroaniline	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
2-Nitrophenol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
3,3-Dichlorobenzidine	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
3-Nitroaniline	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
4,6-Dinitro-2-methylphenol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
4-Bromophenyl phenyl ether	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
4-Chloro-3-methylphenol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
4-Chloroaniline	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
4-Chlorophenyl phenyl ether	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243



Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Laboratory Results

Client ID: INTERRA, Inc.

Report Date: February 04, 2021

Project Name: 8785 Evanston James Park

Workorder: 2101G76

Client Sample ID: EJP-B03

Matrix: SOIL

Lab ID: 2101G76-001

Date Received: 01/26/2021 5:06 PM

Collection Date: 01/25/2021 12:05 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
SEMIVOLATILE ORGANICS (BNAS)		Method: EPA-8270C-Rev 3, Dec-96			Analyst: ES		
4-Nitroaniline	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
4-Nitrophenol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Acenaphthene	ND	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Acenaphthylene	ND	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Anthracene	0.584	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Benzo(a)anthracene	2.71	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Benzo(a)pyrene	2.62	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Benzo(b)fluoranthene	3.04	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Benzo(g,h,i)perylene	1.20	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Benzo(k)fluoranthene	1.04	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Bis(2-chloroethoxy)methane	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Bis(2-chloroethyl)ether	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Bis(2-chloroisopropyl)ether	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Bis(2-ethylhexyl)phthalate	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Butyl benzyl phthalate	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Carbazole	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Chrysene	2.82	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Dibenzo(a,h)anthracene	0.467	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Dibenzofuran	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Diethyl phthalate	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Dimethyl phthalate	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Di-n-butyl phthalate	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Di-n-octyl phthalate	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Fluoranthene	4.30	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Fluorene	ND	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Hexachlorobenzene	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Hexachlorobutadiene	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Hexachlorocyclopentadiene	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Hexachloroethane	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Indeno(1,2,3-cd)pyrene	1.48	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Isophorone	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
m,p-Cresol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Naphthalene	ND	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Nitrobenzene	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
N-Nitroso-di-n-propylamine	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
N-Nitrosodiphenylamine	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
o-Cresol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Pentachlorophenol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Phenanthrene	2.21	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243



Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

ATTACHMENT 4

Laboratory Results

Client ID: INTERRA, Inc.

Report Date: February 04, 2021

Project Name: 8785 Evanston James Park

Workorder: 2101G76

Client Sample ID: EJP-B03

Matrix: SOIL

Lab ID: 2101G76-001

Date Received: 01/26/2021 5:06 PM

Collection Date: 01/25/2021 12:05 PM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
SEMIVOLATILE ORGANICS (BNAS)		Method: EPA-8270C-Rev 3, Dec-96			Analyst: ES		
Phenol	ND	1.44		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
Pyrene	4.37	0.288		mg/Kg-dry	5	02/02/2021 9:14 PM	71243
<u>Internal Quality Control Compounds</u>							
SS: 2,4,6-Tribromophenol	118	0.1-136		%Rec	5	02/02/2021 9:14 PM	71243
SS: 2-Fluorobiphenyl	97.6	16.3-118		%Rec	5	02/02/2021 9:14 PM	71243
SS: 2-Fluorophenol	102	4.2-97	S	%Rec	5	02/02/2021 9:14 PM	71243
SS: 4-Terphenyl-d14	94.3	0.1-147		%Rec	5	02/02/2021 9:14 PM	71243
SS: Nitrobenzene-d5	102	0.1-119		%Rec	5	02/02/2021 9:14 PM	71243
SS: Phenol-d6	99.3	9.82-111		%Rec	5	02/02/2021 9:14 PM	71243
MERCURY BY CVAA		Method: EPA-7471B-Rev 2, Feb-07			Analyst: RS		
Mercury	0.175	0.0219		mg/Kg-dry	1	02/01/2021 12:31 PM	71215
PH (IN LABORATORY) <ATC>		Method: EPA-9045C-Rev 3, Jan-95			Analyst: AD		
pH	7.83	1.00		pH Units	1	01/29/2021 2:34 PM	R129102
PERCENT MOISTURE		Method: ASTM-D2216-Rev 2005			Analyst: ALB		
Percent Moisture	13	1.0	c	wt%	1	01/28/2021 12:52 PM	R129034



Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Laboratory Results

Client ID: INTERRA, Inc.

Report Date: February 04, 2021

Project Name: 8785 Evanston James Park

Workorder: 2101G76

Client Sample ID: EJP-B01

Matrix: SOIL

Lab ID: 2101G76-002

Date Received: 01/26/2021 5:06 PM

Collection Date: 01/26/2021 8:20 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
METALS BY ICP		Method: EPA-6010B-Rev 2, Dec-96			Analyst: SCT		
Arsenic	5.54	1.13		mg/Kg-dry	1	01/28/2021 1:47 PM	71173
Barium	369	0.123		mg/Kg-dry	1	01/28/2021 4:04 PM	71173
Cadmium	1.33	0.0735		mg/Kg-dry	1	01/28/2021 1:47 PM	71173
Chromium	15.2	0.0588		mg/Kg-dry	1	01/28/2021 1:47 PM	71173
Lead	132	0.588		mg/Kg-dry	1	01/28/2021 1:47 PM	71173
Selenium	ND	1.27		mg/Kg-dry	1	01/28/2021 1:47 PM	71173
Silver	5.39	0.0588		mg/Kg-dry	1	01/28/2021 1:47 PM	71173
ORGANOCHLORINE PESTICIDES		Method: EPA-8081A-Rev 1, Dec-96			Analyst: PSP		
4,4'-DDD	0.281	0.0443		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
4,4'-DDE	0.0917	0.0443		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
4,4'-DDT	ND	0.0443		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
Aldrin	ND	0.0222		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
alpha-BHC	ND	0.0222		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
alpha-Chlordane	ND	0.0222		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
beta-BHC	ND	0.0222		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
Chlordane	ND	0.440		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
delta-BHC	ND	0.0222		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
Dieldrin	ND	0.0443	S	mg/Kg-dry	20	02/02/2021 7:02 PM	71240
Endosulfan I	ND	0.0222		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
Endosulfan II	ND	0.0443		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
Endosulfan sulfate	ND	0.0443		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
Endrin	ND	0.0443		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
Endrin aldehyde	ND	0.00221	S	mg/Kg-dry	1	02/02/2021 12:39 AM	71240
Endrin ketone	ND	0.0443		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
gamma-BHC	ND	0.0222		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
gamma-Chlordane	ND	0.0222		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
Heptachlor	ND	0.0222		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
Heptachlor epoxide	ND	0.0222		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
Methoxychlor	ND	0.222		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
Toxaphene	ND	0.883		mg/Kg-dry	20	02/02/2021 7:02 PM	71240
<u>Internal Quality Control Compounds</u>							
SS: Tetrachloro-m-xylene	29.0	33.7-156	S	%Rec	20	02/02/2021 7:02 PM	71240
PCBS		Method: EPA-8082-Rev 0, Dec-96			Analyst: PSP		
Aroclor 1016	ND	0.278		mg/Kg-dry	10	02/02/2021 7:27 PM	71239



Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Laboratory Results

Client ID: INTERRA, Inc.

Report Date: February 04, 2021

Project Name: 8785 Evanston James Park

Workorder: 2101G76

Client Sample ID: EJP-B01

Matrix: SOIL

Lab ID: 2101G76-002

Date Received: 01/26/2021 5:06 PM

Collection Date: 01/26/2021 8:20 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
PCBS		Method: EPA-8082-Rev 0, Dec-96			Analyst: PSP		
Aroclor 1221	ND	0.278		mg/Kg-dry	10	02/02/2021 7:27 PM	71239
Aroclor 1232	ND	0.278		mg/Kg-dry	10	02/02/2021 7:27 PM	71239
Aroclor 1242	ND	0.278		mg/Kg-dry	10	02/02/2021 7:27 PM	71239
Aroclor 1248	ND	0.278		mg/Kg-dry	10	02/02/2021 7:27 PM	71239
Aroclor 1254	ND	0.278		mg/Kg-dry	10	02/02/2021 7:27 PM	71239
Aroclor 1260	ND	0.278		mg/Kg-dry	10	02/02/2021 7:27 PM	71239
<u>Internal Quality Control Compounds</u>							
SS: Tetrachloro-m-xylene	36.7	33.7-156		%Rec	10	02/02/2021 7:27 PM	71239
VOLATILE ORGANIC COMPOUNDS		Method: EPA-8260B-Rev 2, Dec-96			Analyst: RWM		
1,1,1-Trichloroethane	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
1,1,2,2-Tetrachloroethane	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
1,1,2-Trichloroethane	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
1,1-Dichloroethane	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
1,1-Dichloroethene	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
1,2-Dichloroethane	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
1,2-Dichloropropane	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
2-Butanone	ND	1.12		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
2-Hexanone	ND	2.81		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
4-Methyl-2-pentanone	ND	2.81		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Acetone	ND	2.81		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Benzene	0.0394	0.0281		mg/Kg-dry	67.51	01/29/2021 1:41 PM	R129125
Bromodichloromethane	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Bromoform	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Bromomethane	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Carbon disulfide	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Carbon tetrachloride	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Chlorobenzene	1.09	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Chloroethane	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Chloroform	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Chloromethane	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
cis-1,2-Dichloroethene	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
cis-1,3-Dichloropropene	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Dibromochloromethane	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Ethylbenzene	0.130	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
m,p-Xylene	0.303	0.225		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Methyl tert-butyl ether	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Methylene chloride	ND	0.562		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058



Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

ATTACHMENT 4

Laboratory Results

Client ID: INTERRA, Inc.

Report Date: February 04, 2021

Project Name: 8785 Evanston James Park

Workorder: 2101G76

Client Sample ID: EJP-B01

Matrix: SOIL

Lab ID: 2101G76-002

Date Received: 01/26/2021 5:06 PM

Collection Date: 01/26/2021 8:20 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method: EPA-8260B-Rev 2, Dec-96			Analyst: RWM		
o-Xylene	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Total Xylenes	0.303	0.225		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Styrene	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Tetrachloroethene	ND	0.225		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Toluene	0.219	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
trans-1,2-Dichloroethene	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
trans-1,3-Dichloropropene	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Trichloroethene	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
Vinyl chloride	ND	0.112		mg/Kg-dry	67.51	01/28/2021 4:32 PM	R129058
<u>Internal Quality Control Compounds</u>							
SS: 4-Bromofluorobenzene	110	80-130		%Rec	67.51	01/28/2021 4:32 PM	R129058
SS: Dibromofluoromethane	103	76.1-120		%Rec	67.51	01/28/2021 4:32 PM	R129058
SS: Toluene-d8	96.4	85-115		%Rec	67.51	01/28/2021 4:32 PM	R129058
SEMIVOLATILE ORGANICS (BNAS)		Method: EPA-8270C-Rev 3, Dec-96			Analyst: ES		
1,2,4-Trichlorobenzene	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
1,2-Dichlorobenzene	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
1,3-Dichlorobenzene	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
1,4-Dichlorobenzene	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
2,4,5-Trichlorophenol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
2,4,6-Trichlorophenol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
2,4-Dichlorophenol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
2,4-Dimethylphenol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
2,4-Dinitrophenol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
2,4-Dinitrotoluene	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
2,6-Dinitrotoluene	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
2-Chloronaphthalene	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
2-Chlorophenol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
2-Methylnaphthalene	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
2-Nitroaniline	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
2-Nitrophenol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
3,3-Dichlorobenzidine	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
3-Nitroaniline	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
4,6-Dinitro-2-methylphenol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
4-Bromophenyl phenyl ether	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
4-Chloro-3-methylphenol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
4-Chloroaniline	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
4-Chlorophenyl phenyl ether	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243



Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Laboratory Results

Client ID: INTERRA, Inc.

Report Date: February 04, 2021

Project Name: 8785 Evanston James Park

Workorder: 2101G76

Client Sample ID: EJP-B01

Matrix: SOIL

Lab ID: 2101G76-002

Date Received: 01/26/2021 5:06 PM

Collection Date: 01/26/2021 8:20 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
SEMIVOLATILE ORGANICS (BNAS)		Method: EPA-8270C-Rev 3, Dec-96			Analyst: ES		
4-Nitroaniline	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
4-Nitrophenol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Acenaphthene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Acenaphthylene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Anthracene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Benzo(a)anthracene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Benzo(a)pyrene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Benzo(b)fluoranthene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Benzo(g,h,i)perylene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Benzo(k)fluoranthene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Bis(2-chloroethoxy)methane	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Bis(2-chloroethyl)ether	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Bis(2-chloroisopropyl)ether	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Bis(2-ethylhexyl)phthalate	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Butyl benzyl phthalate	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Carbazole	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Chrysene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Dibenzo(a,h)anthracene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Dibenzofuran	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Diethyl phthalate	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Dimethyl phthalate	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Di-n-butyl phthalate	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Di-n-octyl phthalate	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Fluoranthene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Fluorene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Hexachlorobenzene	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Hexachlorobutadiene	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Hexachlorocyclopentadiene	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Hexachloroethane	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Indeno(1,2,3-cd)pyrene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Isophorone	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
m,p-Cresol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Naphthalene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Nitrobenzene	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
N-Nitroso-di-n-propylamine	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
N-Nitrosodiphenylamine	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
o-Cresol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Pentachlorophenol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Phenanthrene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243



Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

ATTACHMENT 4

Laboratory Results

Client ID: INTERRA, Inc.

Report Date: February 04, 2021

Project Name: 8785 Evanston James Park

Workorder: 2101G76

Client Sample ID: EJP-B01

Matrix: SOIL

Lab ID: 2101G76-002

Date Received: 01/26/2021 5:06 PM

Collection Date: 01/26/2021 8:20 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
SEMIVOLATILE ORGANICS (BNAS)		Method: EPA-8270C-Rev 3, Dec-96			Analyst: ES		
Phenol	ND	16.4		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
Pyrene	ND	3.28		mg/Kg-dry	40	02/02/2021 10:28 PM	71243
<u>Internal Quality Control Compounds</u>							
SS: 2,4,6-Tribromophenol	169	0.1-136	S	%Rec	40	02/02/2021 10:28 PM	71243
SS: 2-Fluorobiphenyl	88.5	16.3-118		%Rec	40	02/02/2021 10:28 PM	71243
SS: 2-Fluorophenol	79.5	4.2-97		%Rec	40	02/02/2021 10:28 PM	71243
SS: 4-Terphenyl-d14	88.5	0.1-147		%Rec	40	02/02/2021 10:28 PM	71243
SS: Nitrobenzene-d5	0	0.1-119	S	%Rec	40	02/02/2021 10:28 PM	71243
SS: Phenol-d6	97.1	9.82-111		%Rec	40	02/02/2021 10:28 PM	71243
MERCURY BY CVAA		Method: EPA-7471B-Rev 2, Feb-07			Analyst: RS		
Mercury	0.132	0.0316		mg/Kg-dry	1	02/01/2021 12:34 PM	71215
PH (IN LABORATORY) <ATC>		Method: EPA-9045C-Rev 3, Jan-95			Analyst: AD		
pH	8.22	1.00		pH Units	1	01/29/2021 2:36 PM	R129102
PERCENT MOISTURE		Method: ASTM-D2216-Rev 2005			Analyst: ALB		
Percent Moisture	40	1.0	c	wt%	1	01/28/2021 12:52 PM	R129034


Suburban Laboratories, Inc.

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

PREP DATES REPORT

Client: INTERRA, Inc.
Project: 8785 Evanston James Park

Report Date: February 04, 2021
Lab Order: 2101G76

Sample ID	Collection Date	Batch ID	Prep Test Name	TCLP Date	Prep Date
2101G76-001A	1/25/2021 12:05:00 PM	71189	CLOSED SYSTEM P&T VOC Prep		1/29/2021
2101G76-001C		71215	Mercury Prep for Solids		2/1/2021
		71243	SOLID PREP SONICATION: BNA		2/2/2021
		71239	SOLID PREP SONICATION: PCB		2/1/2021
		71240	SOLID PREP SONICATION: Pest		2/1/2021
		71173	SOLID PREP TOTAL METALS: ICP		1/28/2021
2101G76-002A	1/26/2021 8:20:00 AM	71189	CLOSED SYSTEM P&T VOC Prep		1/29/2021
2101G76-002C		71215	Mercury Prep for Solids		2/1/2021
		71243	SOLID PREP SONICATION: BNA		2/2/2021
		71239	SOLID PREP SONICATION: PCB		2/1/2021
		71240	SOLID PREP SONICATION: Pest		2/1/2021
		71173	SOLID PREP TOTAL METALS: ICP		1/28/2021

**Suburban Laboratories, Inc.**

1950 S. Batavia Ave., Suite 150, Geneva, IL 60134 (708) 544-3260

Qualifier Definitions

WO#: 2101G76

Date: 2/4/2021

Qualifiers:

*/x	Value exceeds Maximum Contaminant Level
B	Analyte detected in the associated Method Blank
C	Value is below Minimum Concentration Limit
c	Analyte not in SLI scope of accreditation
E	Estimated, detected above quantitation range
G	Refer to case narrative page for specific comments
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limit (QL)
N	Tentatively identified compounds
ND	Not Detected at the Reporting Limit
P	Present
Q	Accreditation is not available from Wisconsin
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
T	Analyte detected in sample trip blank
V	EPA requires field analysis/filtration. Lab analysis would be considered past hold time.



SUBURBAN LABORATORIES, Inc.

1950 S. Batavia Ave. Ste. 150 Geneva, IL 60134

Tel. 708.544.3260

login@suburbanlabs.com

www.suburbanlabs.com

CHAIN OF CUSTODY RECORD

ATTACHMENT 4

Company Name: Interne

Company Address: 600 Territorial Dr. Suite 6

City: Bolingbrook State: IL Zip: 60440

Office: 630- Mobile: Fax:

Email Address: aguntaka@InterneServices.com

Project ID / Location: 8785 Eversta James Park

Project Manager (Report to): Ashok Guntaka

Sample Collector(s): Eric Shusser

TURNAROUND TIME REQUESTED

Normal RUSH*

* Must be pre-approved and surcharges apply. Checking this box indicates your approval of surcharges.

Date and Time Report Needed: _____

Specify Regulatory Program: None/Info Only

LUST SRP SDWA

503 Sludge NPDES MWRDGC

Disposal CCDD OTHER - Specify Below

ANALYSIS & METHOD REQUESTED

Enter an "X" in box below for request

VOC	SVOC	8 RCRA met-l	PH	PCBs	Pesticide
X	X	X	X	X	X

Page 1 of 1

PO # _____

Report Type: Normal Special*

* Additional charges apply for QC reports and raw data. Specify in comments section

Shipping Method _____

LAB USE ONLY

Work Order # 2101676

Temperature of Received Samples: 3.4 °C

Received within 24 hours of collection? No Yes

Lab Comment	LAB #
	<u>LABC</u>
	<u>2ABC</u>

	SAMPLE IDENTIFICATION (Use 1 line per container type)	COLLECTION		MATRIX	GRAB/ COMP.	CONTAINERS		PRESERVATIVE
		DATE	TIME			Qty	SIZE & TYPE	
1	<u>EJP-B03</u>	<u>1/25/20</u>	<u>1200</u>	<u>Soil</u>	<u>G</u>	<u>5</u>	<u>34oz, 14oz, 19oz</u>	<u>MESH W/</u>
2	<u>EJP-B01</u>	<u>1/26/20</u>	<u>0820</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water (SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) **CONTAINER:** 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) **PRESERVATIVE:** H₂SO₄, HCl, HNO₃, Methanol (MeOH), NaOH, Sodium Bisulfate (NaB), NaThio

COMMENTS & SPECIAL INSTRUCTIONS:
Sample EJP-B01 had a petroleum odor

1. Relinquished By: <u>[Signature]</u>	Date: <u>1/26/21</u>	2. Relinquished By:	Date:	3. Relinquished By:	Date:	4. Relinquished By:	Date:
Received By: <u>[Signature]</u>	Time: <u>1706</u>	Received By:	Time:	Received By:	Time:	Received By:	Time:

76085



Control System Summary

Project Specific Notes:

Project Information

Project #: 141525
 Project Name: James Park Baseball Football
 Date: 07/30/21
 Project Engineer: CLapaczonok
 Sales Representative: David Miller
 Control System Type: Control-Link™ Control and Monitoring System
 Communication Type: PowerLine-ST
 Scan: 141525F
 Document ID: 141525P1V2-0730113606
 Distribution Panel Location or ID: Baseball/Football
 Total # of Distribution Panel Locations for Project: 2
 Design Voltage/Hertz/Phase: 480/60/3
 Control Voltage: 120

Equipment Listing

DESCRIPTION	APPROXIMATE SIZE
1.Control and Monitoring Cabinet	24 X 72

	QTY	SIZE (AMPS)
Total Contactors	9	30 AMP
Total Off/On/Auto Switches:	2	

*Preliminary Plans
Confirm all Details - voltage,
of distribution panels, etc.*

Materials Checklist

Contractor/Customer Supplied:

- A dedicated control circuit must be supplied per distribution panel location
 - If the control voltage is NOT available, a control transformer is required
- Electrical distribution panel to provide overcurrent protection for circuits
 - HID rated or D-curve circuit breaker sized per full load amps on Circuit Summary by Zone Chart
- Wiring
 - See chart on page 2 for wiring requirements
 - Equipment grounding conductor and splices must be insulated (per circuit)
 - Lightning ground protection (per pole), if not Musco supplied
- Electrical conduit wireway system
 - Entrance hubs rated NEMA 4, must be die-cast zinc, PVC, or copper-free die-cast aluminum
- Mounting hardware for cabinets
- Breaker lock-on device to prevent unauthorized power interruption to control power and powerline connection (if present)
- Anti-corrosion compound to apply to ends of wire, if necessary

Call Control-Link Central™ operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation.

Note: Activation may take up to 1 1/2 hours.

IMPORTANT NOTES

1. Please confirm that the design voltage listed above is accurate for this facility. Design voltage/phase is defined as the voltage/phase being connected and utilized at each lighting pole's electrical components enclosure disconnect. Inaccurate design voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
2. In a 3 phase design, all 3 phases are to be run to each pole. When a 3 phase design is used Musco's single phase luminaires come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each pole. When a pole has multiple circuits, one contactor is required for each circuit. All contactors are 100% rated for the published continuous load. All contactors are 3 pole.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. A single control circuit must be supplied per control system.
6. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart- Minimum power factor is 0.9.

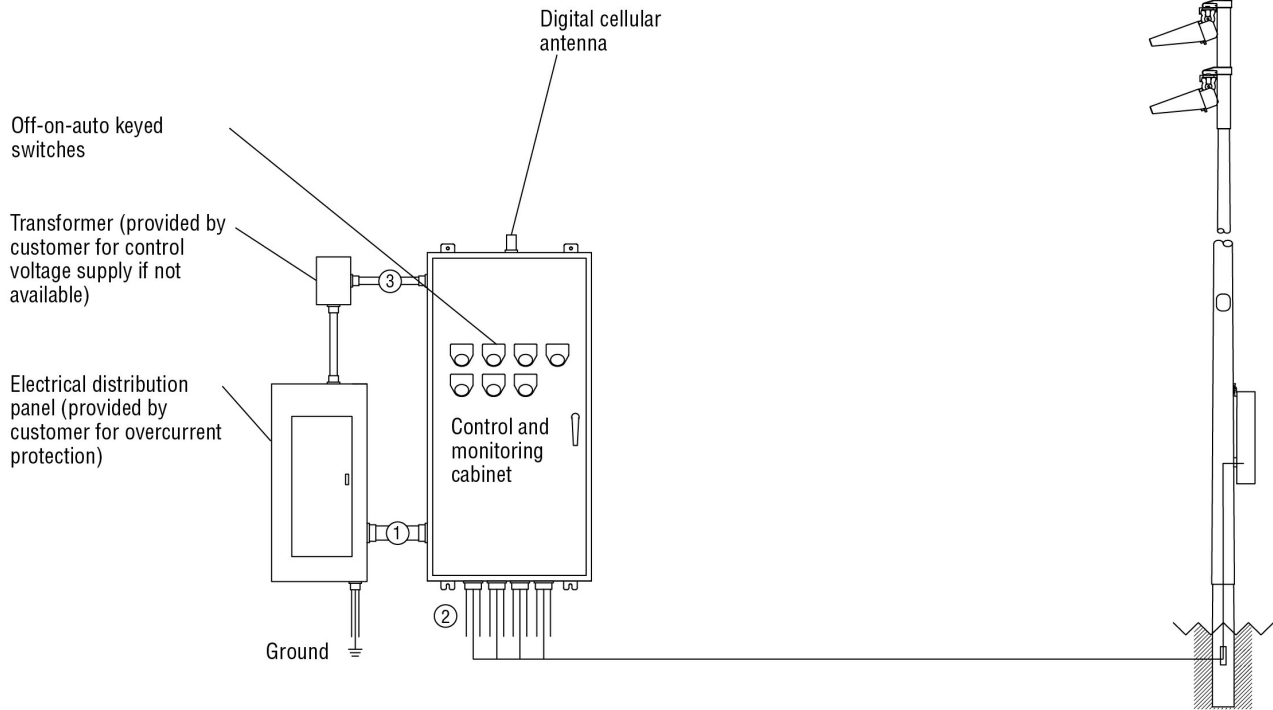
NOTE: Refer to Installation Instructions for more details on equipment information and the installation requirements.



Control System Summary

James Park Baseball Football / 141525 - 141525F
Baseball/Football - Page 2 of 8

Control•Link® Control and Monitoring System



Conduit ID	Description	# of Wires	Wire (AWG)	Conduit (in)	Max. Wire Length (ft)	MUSCO Supplied	Notes
1	Line power to contactors, and equipment grounding conductor	*A	*B	*C	N/A	No	A-E
2	Load power to lighting circuits, and equipment grounding conductor	*A	*B	*C	N/A	No	A-E
3	Control power (dedicated, 20A)	3	12	*C	N/A	No	C,E

* Notes:

- A. See voltage and phasing per the notes on cover page.
- B. Calculate per load and voltage drop.
- C. All conduit diameters should be per code unless otherwise specified to allow for connector size.
- D. Equipment grounding conductor and any splices must be insulated.
- E. Refer to control and monitoring system installation instructions for more details on equipment information and the installation requirements.

R60-100-00_B

IMPORTANT: Control wires (3) must be in separate conduit from line and load power wires (1, 2).



Control System Summary

James Park Baseball Football / 141525 - 141525F
Baseball/Football - Page 3 of 8

SWITCHING SCHEDULE

<u>Field/Zone Description</u>	<u>Zones</u>
Baseball	1,2
-Baseball	1
-Security	2

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading of Musco Supplied Equipment	INRUSH: 2778.0
	SEALED: 309.8

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	# OF DRIVERS	*FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
A1	Baseball	5	5	9.1	30	C1	1
A2	Baseball	5	5	9.1	30	C2	1
B1	Baseball	7	7	14.1	30	C3	1
B2	Baseball	7	7	14.1	30	C4	1
C1	Baseball	7	7	14.1	30	C5	1
C2	Baseball	7	7	14.1	30	C6	1
D1	Baseball	7	7	14.1	30	C7	1
D2	Baseball	8	8	17.3	30	C8	1
A1,A2,B1,B2,C1 C2,D1,D2	Security	8	8	2.4	30	C9	2

*Full Load Amps based on amps per driver.



Control System Summary

James Park Baseball Football / 141525 - 141525F
Baseball/Football - Page 4 of 8

PANEL SUMMARY						
CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)
1	1	C1	Pole A1	9.07		
1	1	C2	Pole A2	9.07		
1	1	C3	Pole B1	14.07		
1	1	C4	Pole B2	14.07		
1	1	C5	Pole C1	14.07		
1	1	C6	Pole C2	14.07		
1	1	C7	Pole D1	14.07		
1	1	C8	Pole D2	17.28		
1	1	C9	Pole A1,A2,B1,B2,C1,C2,D1,D2	2.40		

ZONE SCHEDULE				
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	CIRCUIT DESCRIPTION	
			POLE ID	CONTACTOR ID
Zone 1	1	Baseball	A1	C1
			A2	C2
			B1	C3
			B2	C4
			C1	C5
			C2	C6
			D1	C7
			D2	C8
Zone 2	2	Security	A1	C9
			A2	C9
			B1	C9
			B2	C9
			C1	C9
			C2	C9
			D1	C9
			D2	C9



Control System Summary

Project Information

Project Specific Notes:

This service will contain 2 push button/strobe kits

Project #: 141525
 Project Name: James Park Baseball Football
 Date: 07/30/21
 Project Engineer: CLapaczonk
 Sales Representative: David Miller
 Control System Type: Control-Link™ Control and Monitoring System
 Communication Type: PowerLine-ST
 Scan: 141525F
 Document ID: 141525P1V2-0730113606
 Distribution Panel Location or ID: Tennis
 Total # of Distribution Panel Locations for Project: 2
 Design Voltage/Hertz/Phase: 480/60/3
 Control Voltage: 120

Equipment Listing

DESCRIPTION	APPROXIMATE SIZE
1.Control and Monitoring Cabinet	24 X 72

	QTY	SIZE (AMPS)
Total Contactors	9	30 AMP
Total Off/On/Auto Switches:	3	

*Preliminary Plans
 Confirm all Details - voltage,
 # of distribution panels, etc.*

Materials Checklist

Contractor/Customer Supplied:

- A dedicated control circuit must be supplied per distribution panel location
 - If the control voltage is NOT available, a control transformer is required
- Electrical distribution panel to provide overcurrent protection for circuits
 - HID rated or D-curve circuit breaker sized per full load amps on Circuit Summary by Zone Chart
- Wiring
 - See chart on page 2 for wiring requirements
 - Equipment grounding conductor and splices must be insulated (per circuit)
 - Lightning ground protection (per pole), if not Musco supplied
- Electrical conduit wireway system
 - Entrance hubs rated NEMA 4, must be die-cast zinc, PVC, or copper-free die-cast aluminum
- Mounting hardware for cabinets
- Breaker lock-on device to prevent unauthorized power interruption to control power and powerline connection (if present)
- Anti-corrosion compound to apply to ends of wire, if necessary

Call Control-Link Central™ operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation.

Note: Activation may take up to 1 1/2 hours.

IMPORTANT NOTES

1. Please confirm that the design voltage listed above is accurate for this facility. Design voltage/phase is defined as the voltage/phase being connected and utilized at each lighting pole's electrical components enclosure disconnect. Inaccurate design voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
2. In a 3 phase design, all 3 phases are to be run to each pole. When a 3 phase design is used Musco's single phase luminaires come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each pole. When a pole has multiple circuits, one contactor is required for each circuit. All contactors are 100% rated for the published continuous load. All contactors are 3 pole.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. A single control circuit must be supplied per control system.
6. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart- Minimum power factor is 0.9.

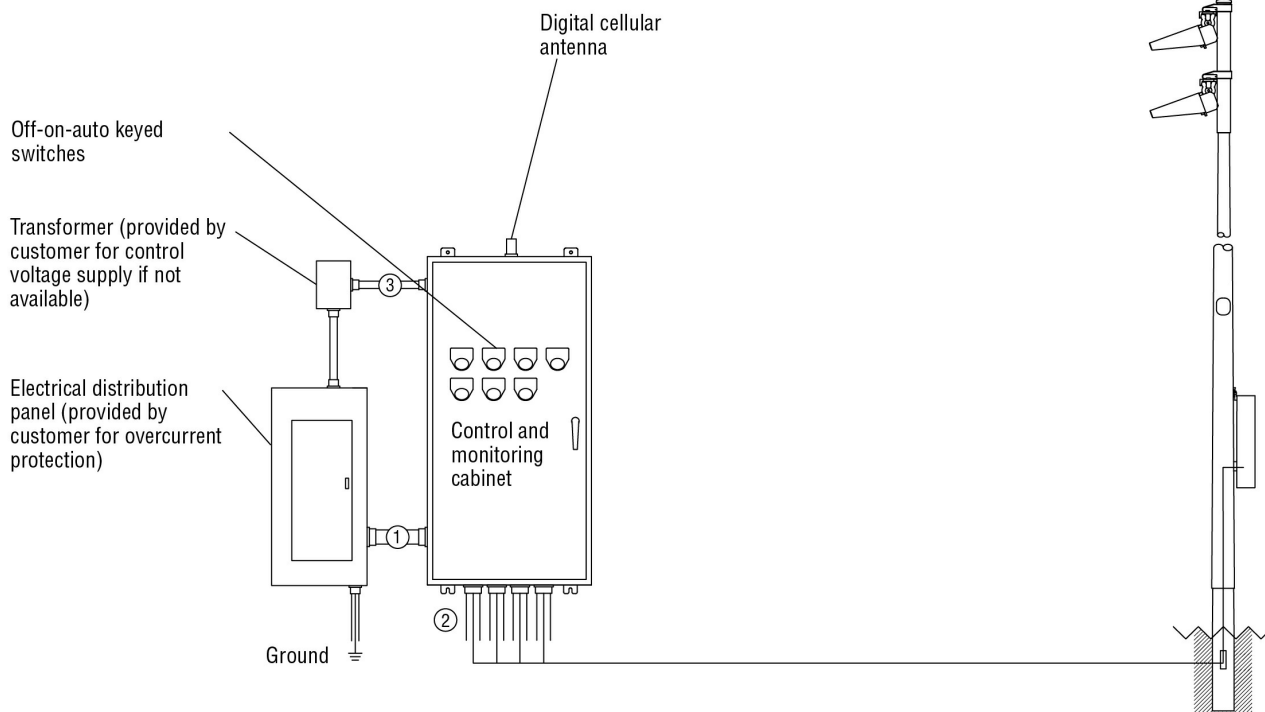
NOTE: Refer to Installation Instructions for more details on equipment information and the installation requirements.



Control System Summary

James Park Baseball Football / 141525 - Tennis - Page 6 of 8

Control•Link® Control and Monitoring System



Conduit ID	Description	# of Wires	Wire (AWG)	Conduit (in)	Max. Wire Length (ft)	MUSCO Supplied	Notes
1	Line power to contactors, and equipment grounding conductor	*A	*B	*C	N/A	No	A-E
2	Load power to lighting circuits, and equipment grounding conductor	*A	*B	*C	N/A	No	A-E
3	Control power (dedicated, 20A)	3	12	*C	N/A	No	C,E

* Notes:

- A. See voltage and phasing per the notes on cover page.
- B. Calculate per load and voltage drop.
- C. All conduit diameters should be per code unless otherwise specified to allow for connector size.
- D. Equipment grounding conductor and any splices must be insulated.
- E. Refer to control and monitoring system installation instructions for more details on equipment information and the installation requirements.

R60-100-00_B

IMPORTANT: Control wires (3) must be in separate conduit from line and load power wires (1, 2).



Control System Summary

James Park Baseball Football / 141525 -
Tennis - Page 7 of 8

SWITCHING SCHEDULE

<u>Field/Zone Description</u>	<u>Zones</u>
Tennis 1-3	1,3
-Tennis 1-3	1
-Security	3
Tennis 4-6	2,3
-Tennis 4-6	2
-Security	3

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading of Musco Supplied Equipment	INRUSH: 2778.0
	SEALED: 309.8

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	# OF DRIVERS	*FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
T1	Tennis 1-3	3	2	3.4	30	C1	1
T2	Tennis 1-3	3	2	3.4	30	C2	1
T3	Tennis 1-3	3	2	3.9	30	C3	1
T4	Tennis 1-3	3	2	3.9	30	C4	1
T3	Tennis 4-6	3	2	3.9	30	C5	2
T4	Tennis 4-6	3	2	3.9	30	C6	2
T5	Tennis 4-6	3	2	3.4	30	C7	2
T6	Tennis 4-6	3	2	3.4	30	C8	2
T1,T2,T3,T4,T5	Security	6	6	1.8	30	C9	3
T6							

*Full Load Amps based on amps per driver.



Control System Summary

James Park Baseball Football / 141525 -
Tennis - Page 8 of 8

PANEL SUMMARY						
CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)
2	2	C1	Pole T1	3.43		
2	2	C2	Pole T2	3.43		
2	2	C3	Pole T3	3.85		
2	2	C4	Pole T4	3.85		
2	2	C5	Pole T3	3.85		
2	2	C6	Pole T4	3.85		
2	2	C7	Pole T5	3.43		
2	2	C8	Pole T6	3.43		
2	2	C9	Pole T1,T2,T3,T4,T5,T6	1.80		

ZONE SCHEDULE				
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	CIRCUIT DESCRIPTION	
			POLE ID	CONTACTOR ID
Zone 1	1	Tennis 1-3	T1	C1
			T2	C2
			T3	C3
			T4	C4
Zone 2	2	Tennis 4-6	T3	C5
			T4	C6
			T5	C7
			T6	C8
Zone 3	3	Security	T1	C9
			T2	C9
			T3	C9
			T4	C9
			T5	C9
			T6	C9

Cook County Prevailing Wage Rates posted on 5/22/2023

Trade Title	Rg	Type	C	Base	Foreman	Overtime				H/W	Pension	Vac	Trng	Other Ins
						M-F	Sa	Su	Hol					
ASBESTOS ABT-GEN	All	ALL		47.40	48.40	1.5	1.5	2.0	2.0	17.05	15.21	0.00	0.90	
ASBESTOS ABT-MEC	All	BLD		39.60	42.77	1.5	1.5	2.0	2.0	14.77	13.59	0.00	0.86	
BOILERMAKER	All	BLD		54.71	59.63	2.0	2.0	2.0	2.0	6.97	25.06	0.00	2.83	
BRICK MASON	All	BLD		49.81	54.79	1.5	1.5	2.0	2.0	12.10	21.56	0.00	1.10	
CARPENTER	All	ALL		52.01	54.01	1.5	1.5	2.0	2.0	11.79	24.76	1.50	0.80	
CEMENT MASON	All	ALL		49.75	51.75	2.0	1.5	2.0	2.0	17.08	20.74	0.00	1.00	
CERAMIC TILE FINISHER	All	BLD		44.18	44.18	1.5	1.5	2.0	2.0	12.25	14.77	0.00	1.00	
CERAMIC TILE LAYER	All	BLD		51.44	55.44	1.5	1.5	2.0	2.0	12.25	18.48	0.00	1.08	
COMMUNICATION ELECTRICIAN	All	BLD		47.16	50.46	1.5	1.5	2.0	2.0	12.70	14.10	1.25	1.57	0.50
ELECTRIC PWR EQMT OP	All	ALL		58.25	63.91	1.5	1.5	2.0	2.0	13.08	19.67	0.00	3.19	
ELECTRIC PWR GRNDMAN	All	ALL		45.44	63.91	1.5	1.5	2.0	2.0	10.20	15.34	0.00	2.49	
ELECTRIC PWR LINEMAN	All	ALL		58.25	63.91	1.5	1.5	2.0	2.0	13.08	19.67	0.00	3.19	
ELECTRICIAN	All	ALL		52.05	55.69	1.5	1.5	2.0	2.0	17.65	18.30	1.25	1.92	1.50
ELEVATOR CONSTRUCTOR	All	BLD		62.47	70.28	2.0	2.0	2.0	2.0	16.03	20.21	5.00	0.65	
FENCE ERECTOR	All	ALL		46.89	48.89	1.5	1.5	2.0	2.0	13.68	17.42	0.00	0.75	
GLAZIER	All	BLD		48.75	50.25	1.5	2.0	2.0	2.0	15.19	24.43	0.00	1.70	
HEAT/FROST INSULATOR	All	BLD		52.80	55.97	1.5	1.5	2.0	2.0	14.77	16.76	0.00	0.86	
IRON WORKER	All	ALL		55.81	57.81	2.0	2.0	2.0	2.0	16.05	25.31	0.00	0.49	
LABORER	All	ALL		47.40	48.15	1.5	1.5	2.0	2.0	17.05	15.21	0.00	0.90	
LATHER	All	ALL		52.01	54.01	1.5	1.5	2.0	2.0	11.79	24.76	1.50	0.80	
MACHINIST	All	BLD		53.18	57.18	1.5	1.5	2.0	2.0	9.93	8.95	1.85	1.47	
MARBLE FINISHER	All	ALL		38.00	51.41	1.5	1.5	2.0	2.0	12.10	19.60	0.00	0.60	
MARBLE SETTER	All	BLD		48.96	53.86	1.5	1.5	2.0	2.0	12.10	21.03	0.00	0.78	
MATERIAL TESTER I	All	ALL		37.40		1.5	1.5	2.0	2.0	17.05	15.21	0.00	0.90	
MATERIALS TESTER II	All	ALL		42.40		1.5	1.5	2.0	2.0	17.05	15.21	0.00	0.90	
MILLWRIGHT	All	ALL		52.01	54.01	1.5	1.5	2.0	2.0	11.79	24.76	1.50	0.80	
OPERATING ENGINEER	All	BLD	1	55.10	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	2	53.80	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	3	51.25	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	4	49.50	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	5	58.85	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	

OPERATING ENGINEER	All	BLD	6	56.10	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55
OPERATING ENGINEER	All	BLD	7	58.10	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55
OPERATING ENGINEER	All	FLT	1	61.10	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40
OPERATING ENGINEER	All	FLT	2	59.60	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40
OPERATING ENGINEER	All	FLT	3	58.10	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40
OPERATING ENGINEER	All	FLT	4	53.60	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40
OPERATING ENGINEER	All	FLT	5	62.60	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40
OPERATING ENGINEER	All	FLT	6	41.00	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40
OPERATING ENGINEER	All	HWY	1	53.30	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55
OPERATING ENGINEER	All	HWY	2	52.75	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55
OPERATING ENGINEER	All	HWY	3	50.70	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55
OPERATING ENGINEER	All	HWY	4	49.30	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55
OPERATING ENGINEER	All	HWY	5	48.10	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55
OPERATING ENGINEER	All	HWY	6	56.30	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55
OPERATING ENGINEER	All	HWY	7	54.30	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55
ORNAMENTAL IRON WORKER	All	ALL		53.32	55.82	2.0	2.0	2.0	2.0	14.23	25.00	0.00	1.75
PAINTER	All	ALL		50.30	56.59	1.5	1.5	1.5	2.0	14.26	14.99	0.00	1.72
PAINTER - SIGNS	All	BLD		41.55	46.67	1.5	1.5	2.0	2.0	3.04	3.90	0.00	0.00
PILEDRIVER	All	ALL		52.01	54.01	1.5	1.5	2.0	2.0	11.79	24.76	1.50	0.80
PIPEFITTER	All	BLD		53.00	56.00	1.5	1.5	2.0	2.0	11.85	22.85	0.00	2.92
PLASTERER	All	BLD		47.75	50.62	1.5	1.5	2.0	2.0	17.08	19.18	0.00	1.00
PLUMBER	All	BLD		54.80	58.10	1.5	1.5	2.0	2.0	16.70	17.04	0.00	1.58
ROOFER	All	BLD		48.00	53.00	1.5	1.5	2.0	2.0	11.83	15.26	0.00	0.99
SHEETMETAL WORKER	All	BLD		49.10	53.03	1.5	1.5	2.0	2.0	13.53	28.20	0.00	1.00
SIGN HANGER	All	BLD		34.72	37.50	1.5	1.5	2.0	2.0	6.85	4.50	0.00	0.00
SPRINKLER FITTER	All	BLD		54.55	57.30	1.5	1.5	2.0	2.0	14.20	18.70	0.00	0.75
STEEL ERECTOR	All	ALL		55.81	57.81	2.0	2.0	2.0	2.0	16.05	25.31	0.00	0.49
STONE MASON	All	BLD		49.81	54.79	1.5	1.5	2.0	2.0	12.10	21.56	0.00	1.10
TERRAZZO FINISHER	All	BLD		45.57	45.57	1.5	1.5	2.0	2.0	12.25	17.14	0.00	1.03
TERRAZZO MECHANIC	All	BLD		49.41	52.91	1.5	1.5	2.0	2.0	12.25	18.60	0.00	1.07
TRAFFIC SAFETY WORKER I	All	HWY		39.30	40.90	1.5	1.5	2.0	2.0	9.65	9.10	0.00	0.10
TRAFFIC SAFETY WORKER II	All	HWY		40.30	41.90	1.5	1.5	2.0	2.0	9.65	9.10	0.00	0.10
TRUCK DRIVER	E	ALL	1	39.95	40.60	1.5	1.5	2.0	2.0	12.30	15.24	0.00	0.15
TRUCK DRIVER	E	ALL	2	40.20	40.60	1.5	1.5	2.0	2.0	12.30	15.24	0.00	0.15
TRUCK DRIVER	E	ALL	3	40.40	40.60	1.5	1.5	2.0	2.0	12.30	15.24	0.00	0.15
TRUCK DRIVER	E	ALL	4	40.60	40.60	1.5	1.5	2.0	2.0	12.30	15.24	0.00	0.15

TRUCK DRIVER	W	ALL	1	40.63	41.18	1.5	1.5	2.0	2.0	10.70	14.71	0.00	0.15	
TRUCK DRIVER	W	ALL	2	40.78	41.18	1.5	1.5	2.0	2.0	10.70	14.71	0.00	0.15	
TRUCK DRIVER	W	ALL	3	40.98	41.18	1.5	1.5	2.0	2.0	10.70	14.71	0.00	0.15	
TRUCK DRIVER	W	ALL	4	41.18	41.18	1.5	1.5	2.0	2.0	10.70	14.71	0.00	0.15	
TUCKPOINTER	All	BLD		49.53	50.53	1.5	1.5	2.0	2.0	9.04	21.06	0.00	1.07	

Legend

Rg Region

Type Trade Type - All,Highway,Building,Floating,Oil & Chip,Rivers

C Class

Base Base Wage Rate

OT M-F Unless otherwise noted, OT pay is required for any hour greater than 8 worked each day, Mon through Fri. The number listed is the multiple of the base wage.

OT Sa Overtime pay required for every hour worked on Saturdays

OT Su Overtime pay required for every hour worked on Sundays

OT Hol Overtime pay required for every hour worked on Holidays

H/W Health/Welfare benefit

Vac Vacation

Trng Training

Other Ins Employer hourly cost for any other type(s) of insurance provided for benefit of worker.

Explanations COOK COUNTY

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration. If in doubt, please check with IDOL.

TRUCK DRIVERS (WEST) - That part of the county West of Barrington Road.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date. ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when

used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATIONS ELECTRICIAN

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

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all material that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installation of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and exteriors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and exterior which are installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

OPERATING ENGINEER - BUILDING

Class 1. Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson Attachment; Batch Plant; Benoto (requires Two Engineers); Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Conveyor (Truck Mounted); Concrete Paver Over 27E cu. ft; Concrete Paver 27E cu. ft. and Under; Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Spider Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Heavy Duty Self-Propelled Transporter or Prime Mover; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, One, Two and Three Drum; Hoists, Two Tugger One Floor; Hydraulic

Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Lubrication Technician; Manipulators; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes: Squeeze Cretes-Screw Type Pumps; Gypsum Bulker and Pump; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-Form Paver; Straddle Buggies; Operation of Tie Back Machine; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators (remodeling or renovation work); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Low Boys; Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

Class 5. Assistant Craft Foreman.

Class 6. Gradall.

Class 7. Mechanics; Welders.

OPERATING ENGINEERS - HIGHWAY CONSTRUCTION

Class 1. Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines: ABG Paver; Backhoes with Caisson Attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Tower Cranes of all types: Creter Crane: Spider Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dredges; Elevators, Outside type Rack & Pinion and Similar Machines; Formless Curb and Gutter Machine; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Truck Mounted; Hoists, One, Two and Three Drum; Heavy Duty Self-Propelled Transporter or Prime Mover; Hydraulic Backhoes; Backhoes with shear attachments up to 40' of boom reach; Lubrication Technician; Manipulators; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Rock/Track Tamper; Roto Mill Grinder; Slip-Form Paver; Snow Melters; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Operation of Tieback Machine; Tractor Drawn Belt Loader; Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Traffic Barrier Transfer Machine; Trenching; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole Drills (Tunnel Shaft); Underground Boring and/or Mining Machines 5 ft. in diameter and over tunnel, etc; Underground Boring and/or Mining Machines under 5 ft. in diameter; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (Less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; Hydro Excavating (excluding hose work); Laser Screed; All Locomotives, Dinky; Off-Road Hauling Units (including articulating) Non Self-Loading Ejection Dump; Pump Cretes: Squeeze Cretes - Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotary

Snow Plows; Rototiller, Seaman, etc., self-propelled; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper - Single/Twin Engine/Push and Pull; Scraper - Prime Mover in Tandem (Regardless of Size); Tractors pulling attachments, Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than Asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper-Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Vacuum Trucks (excluding hose work); Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. SkidSteer Loader (all); Brick Forklifts; Oilers.

Class 6. Field Mechanics and Field Welders

Class 7. Dowell Machine with Air Compressor; Gradall and machines of like nature.

OPERATING ENGINEER - FLOATING

Class 1. Craft Foreman; Master Mechanic; Diver/Wet Tender; Engineer; Engineer (Hydraulic Dredge).

Class 2. Crane/Backhoe Operator; Boat Operator with towing endorsement; Mechanic/Welder; Assistant Engineer (Hydraulic Dredge); Leverman (Hydraulic Dredge); Diver Tender.

Class 3. Deck Equipment Operator, Machineryman, Maintenance of Crane (over 50 ton capacity) or Backhoe (115,000 lbs. or more); Tug/Launch Operator; Loader/Dozer and like equipment on Barge, Breakwater Wall, Slip/Dock, or Scow, Deck Machinery, etc.

Class 4. Deck Equipment Operator, Machineryman/Fireman (4 Equipment Units or More); Off Road Trucks; Deck Hand, Tug Engineer, Crane Maintenance (50 Ton Capacity and Under) or Backhoe Weighing (115,000 pounds or less); Assistant Tug Operator.

Class 5. Friction or Lattice Boom Cranes.

Class 6. ROV Pilot, ROV Tender

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

TRAFFIC SAFETY Worker I

Traffic Safety Worker I - work associated with the delivery, installation, pick-up and servicing of safety devices during periods of roadway construction, including such work as set-up and maintenance of barricades, barrier wall reflectors, drums, cones, delineators, signs, crash attenuators, glare screen and other such items, and the layout and application or removal of conflicting and/or temporary roadway markings utilized to control traffic in construction zones, as well as flagging for these operations.

TRAFFIC SAFETY WORKER II

Work associated with the installation and removal of permanent pavement markings and/or pavement markers including both installations performed by hand and installations performed by truck.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION - EAST & WEST

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled Dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turntrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turntrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

MATERIAL TESTER & MATERIAL TESTER/INSPECTOR I AND II

Notwithstanding the difference in the classification title, the classification entitled "Material Tester I" involves the same job duties as the classification entitled "Material Tester/Inspector I". Likewise, the classification entitled "Material Tester II" involves the same job duties as the classification entitled "Material Tester/Inspector II".

Registering for DemandStar



We are pleased to announce our membership in the DemandStar network. DemandStar is an online marketplace that connects our suppliers directly to the bids, quotes and RFPs that matter to them.

DemandStar is open and accessible to all businesses and provides instant access to our solicitations. By registering for your complimentary DemandStar account, you will receive:

- **Instant** access to bids, quotes and RFPs
- **Automatic** notifications, right to you inbox, of bids that match the commodity codes you select
- The ability to **quickly view** the contractual terms and scope of work
- All the **forms and documents** you need in one place
- Access to **more government bids** in neighboring cities, counties and states

It's EASY! Get started with these 3 easy steps!

1 REGISTER

Go to:

<https://www.demandstar.com/registration>

Create an Account with DemandStar

You are one step away from picking your free government agency

Email Address

Company Name

I accept the DemandStar [Terms of Use](#) and [Privacy Policy](#)

Next



2 CHOOSE YOUR FREE AGENCY

Type in the name of the government agency you'd like to add, for example "City of Metropolis" in the Search Box

3 CHECK OUT

Check out with your **FREE AGENCY** Registration by clicking "Skip for now" on the page where it gives you options to add additional counties and States

← Choose Your Free Agency

Receive full access to the government agency of your choice and receive advance notifications of new opportunities.

City of Metropolis ✕

Narrow down your search by selecting a state and county.

State	County
Select State ▼	Select County ▼

- City of Metropolis – Board of Commisioners
- City of Metropolis Purchasing
- Metropolis Technical College

You have chosen **Metropolis Technical College** as your free agency.
Add additional government agencies below for \$25 per County,
Statewide and National subscriptions available.

My Subscriptions  [0]

Nation (0)

States (0)

Counties (0)

		Your Current Rate
Total	(0 subscriptions)	\$0/year

Proceed to Checkout

Skip for Now

SIGN UP

Visit www.demandstar.com





DEMANDSTAR

B u i l d i n g C o m m u n i t i e s .

(E-bidding) Electronic Bidding Instructions

Introduction

To submit a bid electronically (e-bidding) on DemandStar

- The project **MUST** be setup for e-bidding by the government agency advertising the opportunity

Bid Identifier	Agency Name	Bid Status	Broadcast Date	Date Due ▼	Name	Actions
RFP-2019-01-0-2019/df	Town of Malabar	Active	5/15/2019	5/31/2019	Malabar Parks and Recreation Board Memorial Wall Project	Planholders, Download/Order, Details
EBID-20190077-0-2019/HF	City of Port St. Lucie, Procurement Management Department	Active	4/25/2019	5/31/2019	Purchase Breaching "Backpack Gas Masks and Gas Mask Cartridges for the Police Department JAG Grant Funded	E-Bidding, Planholders, Download/Order, Details



How to check if it is an e-bidding opportunity

- Not all opportunities posted on DemandStar by government are available for e-bidding
- Those that are available for you to electronically bid will list "e-bidding" as an available "ACTION" when you look at the project details

In order to do
e-bidding

1. Click on “E-bidding” in
the actions column

Bid Identifier	Agency Name	Bid Status	Broadcast Date	Date Due ▼	Name	Actions
RFP-2019-01-0-2019/df	Town of Malabar	Active	5/15/2019	5/31/2019	Malabar Parks and Recreation Board Memorial Wall Project	Planholders, Download/Order, Details
EBID-20190077-0-2019/HF	City of Port St. Lucie, Procurement Management Department	Active	4/25/2019	5/31/2019	Purchase Breaching “Backpa Gas Masks and Gas Mask Cartridges for the Police Department JAG Grant Funded	E-Bidding, Planholders, Download/Order, Details



In order to do
e-bidding

2. Enter your contact information and enter in all required fields

Note: You **MUST** put a number of the “BID AMOUNT” box. However, that number can be 0 so as to allow for a more detailed description of your bid through your uploaded documents.

Contact Information

**indicates required fields*

Company Name *

Address 1 *

Address 2

City *


State *

Postal Code *

Phone *

Fax

Country *

 Bid Amount *

Alternate Bid Amount

Notes

In order to do e-bidding

- In the agency required documents section – check the documents you intend on uploading and fulfilling. By checking these boxes this is **ONLY** an acknowledgement of how you will fulfill the requirement. You still have to upload the documents.

Required Documents



The following documents are required by the agency for this project. Please select which documents you will be submitting electronically (online) and which ones you will submit directly to the agency (offline).

Agency Required Documents

Document	None	Online/ Electronic	Offline/ Manual	Not submitting
-	⚠	✓	📄	•
Bid Reply	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Checklist	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subcontractor List	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Current Workload, List of Projects and Completion Dates	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Questionnaire	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drug Free Workplace Form	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In order to do e-bidding

Upload your response documents in an accepted file format

Make sure that you have covered and uploaded all the required documents

E-Bid Response Documents

Agency Name	City of Port St. Lucie, Procurement Management Department
Bid Number	EBID-20190077-0-2019/HF
Bid Name	Purchase Breaching "Backpack" Kits, Gas Masks and Gas Mask Cartridges for the Police Department JAG Grant Funded
Bid Due Date	5/31/2019 3:00:00 PM Eastern time
Bid Opening	14 days, 21 hours, 45 minutes, 5 seconds

No response documents uploaded

Agency Accepted File Formats



Formats

Adobe Acrobat (*.PDF)
Microsoft Excel (*.XLS)
Microsoft Excel (*.XLSX)
Microsoft PowerPoint (*.PPT)
Microsoft Word (*.DOC)
Microsoft Word (*.DOCX)

Upload Electronic Documents

** indicates required fields*



Document Title *

Specify Upload Document *

No file chosen


(Type the path of the document, or click the Browse button.)

In order to do e-bidding

Once you decide you've uploaded all your documents that you would like to submit, make sure you click the **NEXT** button at the bottom of the screen

E-Bid Response Documents

Agency Name City of Port St. Lucie, Procurement Management Department
Bid Number EBID-20180218-0-2018/jer
Bid Name Sculpture on Lawn at City Hall Temporary Art Installation
Bid Due Date 1/9/2019 2:00:00 PM Eastern time
Bid Opening 100 days, 1 hour, 20 minutes, 11 seconds

	Document Title	Format	Size	Uploaded	Status	Action
1	 E-Bidding for Suppliers	Microsoft Word	12 Kb	10/1/2018 9:39:50 AM	Complete	View , Remove

Agency Accepted File Formats

Formats
Adobe Acrobat (*.PDF)
Microsoft Excel (*.XLS)
Microsoft Excel (*.XLSX)
Microsoft PowerPoint (*.PPT)
Microsoft Word (*.DOC)
Microsoft Word (*.DOCX)

Upload Electronic Documents

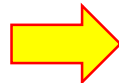
* indicates required fields

Document Title *

Specify Upload Document *

(Type the path of the document, or click the Browse button.)

Your document has successfully uploaded but your response is not yet complete. You must still click 'Submit Response' on Bid Response Details page in order to complete your response and receive a confirmation



Completing your e-bid submittal

- Please **VERIFY** that you have attached **ALL** the required documents
- Click on the **Submit Response** button to complete your e-bid

Agency Required Documents

EDIT

1. **Bid Reply** (Electronic/Online) ✓
2. **Checklist** (Electronic/Online) ✓
3. **Subcontractor List** (Electronic/Online) ✓
4. **Current Workload, List of Projects and Completion Dates** (Electronic/Online) ✓
5. **Questionnaire** (Electronic/Online) ✓
6. **Drug Free Workplace Form** (Electronic/Online) ✓
7. **Current Certificate of Insurance** (Electronic/Online) ✓
8. **License/Certification to do Described Work** (Electronic/Online) ✓
9. **Reference Check Form** (Electronic/Online) ✓
10. **E-Bid Reply Excel Spreadsheet** (Electronic/Online) ✓
11. **E-Bid Bond** (Electronic/Online) ✓
12. **Vendor Code of Ethics** (Electronic/Online) ✓
13. **W-9 form** (Electronic/Online) ✓

Uploaded Documents

EDIT

1. test document upload to ensure e-bidding active

E-Bid Confirmation

After clicking "Submit Response" the following process will begin:

- We will verify that your response is complete as entered.
- You will see a confirmation page with your confirmation number and date/time stamp of your upload.
- You will receive a confirmation e-mail indicating a successful response submittal.
- You may track your response submission under the View Responses page.

If you do not receive any of the above, please call Supplier Services at (206) 940-0305.

<< Return

Submit Response

Confirmation of Response

- When you complete you will receive a confirmation
- This is a confirmation that what you uploaded will be visible to the agency when the bid closes, **this is not** a confirmation that all your documents were fill out or submitted correctly

E-Bid Response Details

Agency Name City of Port St. Lucie, Procurement Management Department

Bid Number EBID-20180218-0-2018/er

Bid Name **Sculpture on Lawn at City Hall Temporary Art Installation**

Bid Due Date 1/9/2019 2:00:00 PM Eastern time

Bid Opening 100 days, 1 hour, 6 minutes, 46 seconds

Response # 15104

Results Your bid response is submitted.

<< Return

Post Submission Edits

If you feel like you missed something or need to make a change you can go back to your submittal response and edit your e-bid. By clicking on “DETAILS” then “EDIT” the section you wish

Bid Identifier	Agency Name	Bid Status	Broadcast	Date Due ▼	Name	Status	Actions
EBID-20190077-0-2019/HF	City of Port St. Lucie, Procurement Management Department	Active	4/25/2019	5/31/2019	Purchase Breaching “Backpack” Kits, Gas Masks and Gas Mask Cartridges for the Police Department JAG Grant Funded	Incomplete	Details, Bid, History

Contact Information

EDIT

Company Name Sample DBE Company

Address 1 509 Olive Way

Address 2

City Seattle

State Washington

Postal Code 98101

Phone 2063739233

Fax 2063739233

Country United States of America

Bid Amount \$0.00

Alternate Bid Amount

Notes



Agency Required Documents

EDIT

1. Bid Reply (Electronic/Online) ✓



DemandStar E-Bidding: Frequently Asked Questions

- Do suppliers need to be registered with DemandStar to participate in e-bidding?
Yes. But if they don't already have an account with DemandStar, they can sign up and either
 - Be a subscriber for only your agency, at no charge, and be able to download documents at no charge and then receive notifications that match their commodity codes
 - Be a "basic supplier" for free - who researches on our platform and then pays \$5 to download all documents, thus becoming a plan holder
 - Be a paid subscriber for a county, state, national and receive notifications from all included agencies
- Can suppliers respond with document uploads or do they simply fill in forms?
Yes, they may respond with document uploads that are available to you via the DemandStar platform.
- What type of E-Bidding Documents can be uploaded?
Acceptable file formats for sending back documents that the city will accept:

E-Bidding Documents

Document Types	Bidding Documents - Exhibits Pricing Bid Bond
File Formats	Adobe Acrobat (*.PDF) Microsoft Excel (*.XLS) Microsoft Excel (*.XLSX) Microsoft PowerPoint (*.PPTX) Microsoft PowerPoint (*.PPT) ZIP Compressed Archive (*.ZIP)

- Is there a maximum file size that I can upload?
Vendors can simply upload a single file or multiple documents as long as it doesn't exceed 100 MBs (single or multiple files)
- After a bid opening, what document(s) are made public by DemandStar?
None. Only the agency can see the vendor responses so you are the only ones who will determine what you want to download and make public.
- Who do I call if I have questions or problems with the DemandStar?
The City strongly encourages each respondent to setup their account and to explore the eBidding module at least a couple of days before the bid due date.

If you have questions or issues creating your account, accessing the eBidding module or submitting your bid prior to the bid due date, please contact DemandStar at 866.273.1863 or by email at hello@demandstar.com.
