



**CITY OF NEW BERLIN
PARKS, BUILDINGS & GROUNDS COMMISSION
MEETING**

Monday, December 12, 2022

5:30 PM

Mayor's Conference Room

AGENDA

CALL TO ORDER

ROLL CALL; DECLARATION OF QUORUM; PUBLIC NOTICE

APPROVAL OF MINUTES

1. September 12, 2022 PBG Meeting Minutes

NEW BUSINESS

2. Resolution 22-30- A Resolution Transferring Funds from the Safety Building Foundation CIP Account to the Malone Park Lighting CIP Account
3. Award of Contract in the Amount of \$467,893 with a 10% Contingency for a Total Construction Cost of \$514,593 to J Miller Electric, Inc.

UPDATES

4. Project Updates

ADJOURN

PLEASE NOTE:

- ✓ It is possible that action will be taken on any of the items on the agenda and that the agenda may be discussed in any order. It is also possible that members of and possible a quorum of other governmental bodies of the municipality may be in attendance at the above-stated meeting to gather information; no action will be taken by any governmental body at the above-stated meeting other than the governmental body specifically referred to above in this notice.
- ✓ Also, upon reasonable notice, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. For additional information or to request this service, contact City Clerk Rubina R. Medina (262) 786-8610.



CITY OF NEW BERLIN
PARKS, BUILDINGS & GROUNDS COMMISSION - MINUTES
Monday, September 12, 2022

Regular Meeting

Zoom Meeting

5:30 PM

Please note: Minutes are unofficial until approved by the Parks, Buildings & Grounds Commission at the next regularly scheduled meeting.

The Parks, Buildings & Grounds Commission has satisfied the requirements as directed by the Common Council on June 22, 2021 and Ordinance No. 2651 to hold this meeting via electronic means. The full text of this ordinance and the minutes from the above mentioned meeting can be viewed at www.newberlin.org

To participate in the meeting, view the meeting, and/or ask questions, the public was able to do so by downloading the ZOOM app located at <https://zoom.us/> and utilize Meeting ID # 830 7869 6702 to join.

All votes were taken via a voice roll call vote.

CALL TO ORDER

Mayor Ament called the meeting to order at 5:30PM

ROLL CALL; DECLARATION OF QUORUM; PUBLIC NOTICE

Present: Mayor Ament, Alderman Horbinski, Commissioner Ferrante, Commissioner Rafel and Commissioner Wicichowski.

Staff: Ed Bartz, Parks and Grounds Supervisor and Sherri Hanson, Deputy City Clerk

Others Present: Joe Mallinger

This meeting was noticed on Wednesday, September 7, 2022 in accordance with the Open Meetings Law.

APPROVAL OF MINUTES

ITEM: June 13, 2022 Parks Buildings and Grounds Meeting Minutes

MOTION: Motion to Approve the June 13, 2022 Meeting Minutes as presented

VOTE: Motion by: Commissioner Wicichowski
Second by: Alderman Horbinski
Motion passed 5-0.

NEW BUSINESS

ITEM: Dugout Covers Donation at Lions Park

MOTION: Motion by Commissioner Rafel to recommend to the Common Council the approval of the donation from Joe Mallinger of the concrete slaps and dugout covers for the Lions Park baseball diamond dugout areas. Seconded by Commissioner Wicichowski.

DISCUSSION Alderman Horbinski thanked Mr. Mallinger for the Donation. Ed Bartz stated the dugout cover will be a great asset to Lions Park.

VOTE: Motion by: Commissioner Rafel
Seconded by: Commissioner Wicichowski
Motion passed 5-0.

ADJOURN

Motion by Commissioner Rafel to adjourn. Seconded by Commissioner Wicihowski

VOTE: **Motion passed 5-0.** Meeting adjourned at 5:34PM

Respectfully Submitted by

Robert Rafel
PBG Secretary



REQUESTED ACTION STATEMENT

DATE: December 7, 2022

TO: Mayor
Common Council
Parks, Buildings and Grounds Commission

FROM: Josh Radomski – Director of Public Works

ISSUE:

Resolution Number 22-30: A Resolution Amending the 2022 Capital Projects Budget

REQUESTED:

Recommend Council to approve Resolution Number 2021-5: A Resolution Amending the Capital Projects Budget to transfer \$60,000 from Account #04251300-61413-C2022 Foundation – Safety Building into account 04252900-61127-C2022 Lighting – Malone Park.

FISCAL IMPACT:

The Foundation – Safety Building has not been completed to date. The \$60,000 is planned to be included within the 2023 CIP Budget request and is planned to be completed in 2023.

The existing lights at Malone Park Diamond #3 were removed in fall due to severe cracking in several of the light poles. Without lighting, the Diamond will be limited to use only during hours where daylight is available. The additional funding will be to fund the construction of the new light poles as well as a 10% contingency. The 10% contingency will only be used in the event that field conditions warrant.

RATIONALE:

In order to award and fund the Malone Park Lighting project, additional funding is necessary.

RESOLUTION NUMBER 22-30

A RESOLUTION AMENDING THE 2022 CAPITAL PROJECTS BUDGET

WHEREAS, the bids for the Malone Park Diamond #3 Lighting project came in over budget. Funds have to be transferred now to be able to accept the project bids. The project needs to be done to make the fields usable in 2023. The 2023 Capital budget has not been approved yet and can be adjusted to add the money back to the foundation account.

WHEREAS, It was determined that the Capital Projects Budget had to be amended to accomplish these goals.

NOW THEREFORE BE IT RESOLVED, by the Common Council of the City of New Berlin that the Capital Projects Fund Budget be amended as follows:

TRANSFER FROM

04251300-61413-C2022	FOUNDATION-SAFETY BUILDING	\$ 60,000
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TRANSFER TO

04252900-61127-C2022	LIGHTING – MALONE PARK	\$ 60,000
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BE IT FURTHER RESOLVED that the City Clerk is hereby directed to publish this resolution in the Waukesha County NOW within 10 days of adoption by the Common Council.

RESOLUTION ADOPTED by the New Berlin Common Council this 13th day of December 2022.

David Ament, Mayor

Countersigned:

Rubina R Medina, City Clerk



REQUESTED ACTION STATEMENT

DATE: December 7, 2022

TO: Mayor
Common Council
Parks, Buildings and Grounds Commission

FROM: Josh Radomski – Director of Public Works

ISSUE: Malone Park Diamond #3 Lighting

REQUESTED:

Recommend Council to award the Malone Park Diamond #3 Lighting project to the lowest, responsive and responsible bidder, J Miller Electric, Inc.

FISCAL IMPACT:

Monies to come from the Malone Park Lighting account #04252900-61127-C2022 for the contract amount of \$467,893 with a 10% Contingency of \$46,700 for a total construction cost of \$514,593.

RATIONALE:

J Miller Electric, Inc. was the lowest, responsive and responsible bidder.

PROJECT MANUAL

**City of New Berlin
Malone Park
Ball Diamond Lighting**

16400 W Al Stigler Pkwy
New Berlin, Wisconsin 53151

Harwood Engineering Consultants, Ltd.
Owner Project No. BG2022-1
HEC Project No. 19-1011.21
November 4, 2022

Project Name	City of New Berlin Malone Park Ball Diamond Lighting
HECL Project No.	19-1011.21
Owner Project No.	BG2022-1

INDEX Specification Sections

DIVISION 26 - ELECTRICAL

26 00 01	Electrical General Requirements
26 01 26	Testing Electrical Systems
26 05 02	Electrical Demolition for Remodeling
26 05 19	Wire & Cable 600 Volt and Below
26 05 26	Grounding and Bonding
26 05 33	Raceways and Boxes
26 05 53	Electrical Identification
26 24 16	Panelboards
26 27 26	Wiring Devices
26 28 16	Safety Switches, Circuit Breakers, & Fuses
26 56 29	Exterior Site Lighting (Athletic)

INVITATION TO BID

Project: BG2022-01

1. Bids will be prepared in accordance with Contract Documents prepared by ***Harwood Engineering Consultants, Ltd.***, Phone 414-475-5554, Fax 414-773-9299, 255 N 21st St. Milwaukee, WI, and dated November 4, 2022
2. Notice is hereby given that sealed Bids are due in the New Berlin City Hall – City Clerk office, by 9:00 a.m. CST/CDT on December 7th, 2022. (Reference Bid Form, Item 2)
3. Bids will be publicly read at 9:00 a.m. on December 7, 2022 in the Council Chambers at New Berlin City Hall located at 3805 S. Casper Dr.
4. Oral, faxed or e-mailed Bids will be rejected.
5. All blanks on the Bid Form shall be filled in by typewriter print or manually in ink. If the filled areas are illegible, the Bid shall be rejected. The Bidder shall make no additional stipulations on the Bid Form or qualify the Bid in any manner.
6. Where so indicated on the Bid Form, the values shall be expressed in both words and figures. In the event of discrepancy between the words and figures, the amount written in words shall govern.
7. Bids will be submitted using the Bid Forms provided herein. Bid security shall be by a qualified surety in the form of a bid bond, in the amount of five percent (5%) of Bid amount, and shall be submitted with the Bid. Bidders shall agree to not withdraw the Bid for a period of ninety (90) days after due date of Bids.
8. Accepted Bidders will be required, as a condition precedent to award of Contract, to furnish in the amount of 100% of the contract prices, satisfactory Performance Bond, Labor and Material Payment Bond and Certificate of Insurance.
9. Bidding Documents will be available on November 16th, 2022. Bidders may obtain Bidding Documents only from the following site: Quest ebid doc #8333815 – Bid/RFP Listing. Documents will be available for download. Documents will not be mailed. **It is the responsibility of prospective Bidders to check this website for any future amendments, questions, revisions, etc., prior to the opening date. All addenda must be acknowledged on the signature page in the area provided. Failure to do so may result in your response being rejected.**

10. Pre-Bid meeting and walkthrough on November 30th, 2022 at 9:00 AM. Meeting location is New Berlin Malone Park Field #3, 16400 W Al Stigler Parkway, New Berlin, WI 53151. Parking is available in the lot on the south side of the field. **Please be on time as no accommodations will be made for late arrivals. NOTE: This will be the only opportunity for a walk through, therefore, be sure to bring all potential subcontractors. Vendors are also reminded to review all Bid Documents, etc. prior to arrival.**
12. The right to reject any or all Bids, either in whole or in part, or to waive any informalities or irregularities is reserved by City of New Berlin.

Published by Order of:
City of New Berlin
Buildings and Grounds
(262) 786-8610
3805 S Casper Dr
New Berlin, WI 53151

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

GENERAL:

Carefully review Project Manual, including Bidding Requirements, General Requirements, Specifications, Alternates, and Amendments, all of which contain provisions applicable to all Bidders. Successful Bidder will be required to execute all Work belonging to their Contract which is stated in the Specifications, or reasonably implied as necessary to complete their Contract, including removal of existing work and preparing present work to receive new, if such be the requirements of actual job conditions.

Visit site to become acquainted with: Adjacent areas; means of approach to the site; present conditions of project site; and facilities for delivering, storing, placing and handling of materials and equipment. Compare Specifications with existing work in place, inspect demolition requirements and inform yourself of all conditions affecting execution of Work, including other new work, if any, being performed.

WORKSITE AVAILABILITY:

A specific window of opportunity exists for completion of the Work, therefore Work shall commence on the date noted in the Bid Form. Construction activities may take place between **7:00 AM and 7:00 PM Monday through Friday, 8:00 AM – 5:00 PM on Saturday and no work will be allowed on Sundays.**

DOCUMENTS:

Bidders shall be familiar with all Bidding Requirements and proposed Contract Documents. See General Conditions for definition of Contract Documents.

BID FORM:

Alterations of or amendments to Bid Form, attachments thereto, or inclusion of any correspondence, or other written or printed matter or details of any nature other than that specifically called for may disqualify Bid. No e-mailed alterations to the Bid will be accepted.

Only Bids which are made on regular Bid Form will be considered. No Bids for any arbitrary subdivision or sub classification of Work required by requested Bid(s) will be accepted.

Requirements of Signing: Include with each Bid full business address of Bidder. Bids by corporations shall be executed in the full legal name of the corporation, giving State of incorporation and be signed by an authorized officer or officers, who shall, in each case, type or print name and corporate title beneath the signature. Partnership Bids shall state the full name of all partners, e.g., “Smith and Jones, a partnership of John S. Smith and William B. Jones”. Such Bids must also be signed by an authorized partner or other representative, typing or printing the name and title of the signer beneath the signature. Individuals operating as a business shall sign Bids, typing or printing the individuals name followed by the words “Sole Proprietor” beneath the signature. When requested by Owner, furnish satisfactory evidence of agency or authority of any person signing on behalf of another.

Submission of Bids: Reference Bid Form, Section 2.

CONTRACT AND CONTRACT DOCUMENTS:

The Contract into which successful Bidder will be required to enter is based on City of New Berlin General Terms and Conditions of Service (as modified by Owner). Familiarize yourself with the provisions of this document.

ACCEPTANCE OF BID (AWARD):

It is the intent of the Owner to award a Contract or accept any Bid which will be in the best interests of the Owner, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner reserves the right to waive informalities or irregularities in a Bid received and to accept the Bid, which in the Owner's judgment, is in the Owner's best interests.

The Owner reserves the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsible Bidder on the basis of the Base Bid and Alternates accepted.

WITHDRAWAL OF BIDS:

Matters pertaining to the withdrawal of a Bid and to claims of error, omission or mistake in preparing or submitting a Bid shall be governed by Section 66.0901 of the Wisconsin Statutes.

All Bids shall be effective and open for acceptance for a period of ninety (90) days after date set for opening of Bids.

RESERVATION:

Owner reserves the right to: reject any or all Bids, reject a Bid not accompanied by a required bid security or by other data required by the Bidding Documents, reject a Bid which is in any way incomplete or irregular, waive any irregularities in any Bid, accept any Bid which will be in best interests of Owner.

INADEQUACIES AND OMISSIONS:

Failure to request timely clarification or interpretation of Bidding Documents shall not relieve Bidder/Contractor of responsibility to execute the Work in accordance with the intent of the Contract Documents. Signing of Contract means that the Contractor has thorough comprehension of full intent and scope of Contract Documents.

The Owner and his consultants are not responsible for oral instructions.

INTERPRETATIONS AND CORRECTIONS:

Carefully review and compare all parts of the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is being submitted. Examine the site and local conditions, and immediately report to the Owner errors, inconsistencies or ambiguities discovered.

Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall submit a written request to the Owner, received in Owner's office at least seven (7) days prior to the date set for receipt of Bids.

Interpretations and corrections of and changes to the Bidding Documents will be made in writing by Addendum only. Interpretations and corrections made in any other manner are not binding. Bidders shall not rely upon verbal instructions or information.

POWER OF ATTORNEY AND BOND REQUIREMENTS:

Submit with each Bid a bond executed by an attorney-in-fact, including a certified and effectively dated copy of his power of attorney. Where the certification is by facsimile, or otherwise does not bear an original signature, the bonding company must be qualified for recognition under facsimile execution.

New Berlin Malone Park Ball Diamond Lighting
Project #BG2022-1
16400 W Al Stigler Pkwy., New Berlin, WI 53151

BID FORM

1. **GENERAL DIRECTIONS TO BIDDERS**

- A. All Bids must be submitted on these standard form sheets inclusive without modification. Fill out all blanks on the Bid Form by typing or writing in ink. Sign in ink. Erasures or other changes in Bid must be explained or noted over signature of Bidder. Enter Bid amount in both written words and printed figures in spaces provided on Bid Form. In case of conflict, amount given in written words will govern.
- B. Base Bid(s) must be for Work bid in strict accordance with the Drawings and Specifications. **INCLUDE BOND COSTS IN THE BASE BID(S).** Bid all requested Alternates. If no change to the Base Bid applies, enter “No Change.”
- C. Bid Forms containing qualifications, conditions, omissions, unexplained erasures, alterations or items not called for in Bid Form or other irregularities of any kind may be rejected at the discretion of the Owner.
- D. Bidders shall examine the provisions of the Project Manual thoroughly to ensure compliance with all bidding requirements.
- E. Bidders shall only submit the Bid Forms included in the Project Manual – DO NOT return the Project Manual.
- F. Bidders shall ensure that all items in the Bid Form such as Work Schedule, Bidders Official Title and Signature, and Proof of Responsibility are properly executed.
- G. A bid must be accompanied by a bid security made payable to Owner in an amount of 5% of bidder’s maximum bid price (determined by adding the base bid and all alternates), and in the form of a certified check, bank money order or a bid bond issued by a surety acceptable to the City. The bid security will be retained by the City until the City awards the contract to such bidder and such bidder has executed the contract documents and met the other conditions of the Notice of Award, where upon the bid security will be released. If the successful bidder fails to execute and deliver the contract documents and furnish the requirements contract security within 15 days after the Notice of Award, the Owner may consider the bidder to be in default and annul the Notice of Award and the bid security of that bidder will be forfeited. Such forfeiture shall be the Owner’s exclusive remedy if the bidder defaults.

- H. The Bidder shall be required to identify any subcontractor, suppliers, individuals or entities to be submitted to the Owner 14 days in advance of the City's acceptance of the agreement. The apparent successful bidder shall, within 5 days after the bid opening, submit to the Owner a list of all such subcontractors, suppliers, individuals or other entities that will be utilized in the completion of the work. An experience statement with pertinent information regarding similar projects and other evidence of qualification for the work that the subcontractor will be performing is required. If the Owner, after review of such information, determines, in its sole discretion, that such subcontractor, supplier, individual or entity is not satisfactory, the Owner, prior to the Notice of Award, shall give notice to the successful bidder requiring that an acceptable substitute be provided. In the event there is any adjustment to the cost as a result of said substitution, Owner may take that into consideration in making the contract award. In the event that the contractor fails to make the substitution requested, the Owner may award the contract to the next lowest responsive responsible bidder.
- I. Bids not conforming to the above directions may be declared irregular and are subject to disqualification at the discretion of the Owner.

THE BIDDER HEREBY AGREES THAT THIS BID IS INVALID WITHOUT BIDDER'S SIGNATURE APPEARING IN THE SIGNATURE BLOCK ON THE LAST PAGE OF THIS BID FORM.

2. BID SUBMITTAL PROCEDURE

In submitting a Bid, the Bidder represents that:

- He/She thoroughly reviewed and understood the Bidding and Contract Documents and the Bid is made in full accordance with these documents and amendments issued thereto.
- He/She has thoroughly reviewed and understands the Bidding and Contract Documents related to the Work of other portions of the Project, if any, being bid concurrently or presently under construction.
- He/She has thoroughly reviewed informational reports and documents available to him/her, visited the project site, become familiar with actual local conditions under which the Work is to be performed and has correlated his/her evaluations and personal observations with the requirements of the Bidding and Contract Documents.
- The contract for the work, if awarded, will be on the basis of materials and equipment specified or described in the bidding documents, and those or equal or substitute or materials and equipment subsequently approved by the Owner prior to the submittal of bids and identified by addendum. No item of material or equipment will be considered by Owner as an or equal or substitute unless written requests for approval has been submitted by the bidder and has been received by the Owner at least 10 days prior to the date of receipt of bids in the case of a proposed substitute. The burden of proof on the merit of the proposed item is upon the bidder. The Owner's decision of approval or disapproval of a proposed item will be final. If the Owner approves any such proposed items, such approval will be set forth as an addendum issued to all perspective bidders. Bidder shall not rely upon approvals made in any other manner. All prices

that Bidder sets forth in this bid shall be based on the presumption that the contractor will furnish the materials and equipment specified or described in the bidding documents as supplemented by any addenda.

- A. After Bid Forms are completed, place one (1) set of signed originals and the Bid Bond in a sealed envelope. Oral, telephonic, e-mailed, or faxed Bids are invalid and will not be considered.
- B. Address the envelope to:
New Berlin Malone Park Ball Diamond Lighting Bid
City C
3805 S Casper Dr
New Berlin, WI 53151
- C. Bidders shall affix their name and address to the front upper left-hand corner of the envelope with the words "Sealed Bid Enclosed" written on the outside. Identified in lower left corner should be: Bid number, project name and opening date.

3. BID CLOSING

- A. Bids must be received on or before 9:00 a.m. on December 7th, 2022. The Bidder assumes full responsibility for timely delivery at the location designated for receipt of Bids. **Bids received after the time and date for receipt of Bids will be rejected and returned unopened.**

4. BID OPENING

- A. Bids will be publicly read at 9:00 a.m. on December 7th, 2022 in the New Berlin City Hall – Common Council Chambers.

(a corporation)

We _____ (a partnership)
_____ (an individual)
(Cross out inapplicable)

Of _____
Street City County State Zip

hereby agree to execute the proposed Contract and to furnish a satisfactory Public Improvement Performance/Labor and Material Payment Bond, in the amount of one hundred percent (100%), and to provide all labor and material required for the construction of the designated Work, for the prices hereinafter set forth, in strict accordance with the Construction Documents released by: **City of New Berlin**, address: 3805 S. Casper Dr, New Berlin, WI dated March 23, 2021.

Including Amendment Nbr(s)._____ **dated**_____.

5. BASE BID

Base Bid includes all work required to complete the Project, including Building Permits, General Conditions, overhead, profit, insurance, bonds, taxes, and all other expenses. Bid Guarantee ten percent (10%) Bid Bond Cost, Public Improvement Performance Bond and Labor and Materials Payment Bond Cost one hundred percent (100 %) for the sum of:

_____ Dollars (\$ _____)

8. SCHEDULE OF VALUES

- A. Submit schedule of standard rates for all personnel, including personnel of subcontractors, involved with project.
- B. Include schedule of standard markups.

10. COMMENCEMENT, PROGRESS AND COMPLETION OF WORK

- A. If written Notice of Intent to Award Contract is issued not later than December 14, 2022 with a Project commencement of December 15, 2022, can you complete the Work in compliance with the requirements of the Contract Documents by March 31, 2022, in full cooperation and coordination with other Contractors, if any.
Yes ___ No ___ .

If "No", state additional calendar days required _____.

- B. The undersigned understands that time is of the essence and agrees that the specified time period for completion stated above is a reasonable time for the completion of the Work. All time limits shall be binding.

11. BID ACCEPTANCE:

- A. All Bids as stated above are effective and open for acceptance by the Owner for a period of ninety (90) days after date set for opening of Bids.

FIRM NAME _____

BY SIGNATURE _____

TITLE _____

DATED _____

TELEPHONE _____

FAX NBR _____

EMAIL ADDRESS: _____

If a corporation, answer the following:

Incorporated under laws of what state?

SEAL _____ (If Bid is by Corporation)

**CITY OF NEW BERLIN
GENERAL TERMS and CONDITIONS
FOR THE MALONE PARK DIAMOND #3 LIGHTING UPGRADE**

1. Introduction. This document (hereinafter referred to as “Terms and Conditions”) is hereby incorporated and part of the contract between the City of New Berlin (hereinafter referred to as “City”) and the vendor identified below (hereinafter referred to as “Vendor”). These Terms and Conditions, along with the Bid Instructions, Bid Forms, Specification, City of New Berlin Insurance Requirements, Certificates of Insurance and Policy Endorsements, shall constitute the entire contract for materials, work and other goods and services, collectively referred to as the “Contract” between the City and the Vendor. The work that is being performed herein shall collectively be referred to as the “Project”. It is expressly agreed that no statement, arrangement, warranty or understanding, oral or written, expressed or implied, will be recognized unless it is stated in or otherwise permitted by these Terms and Conditions, and the aforementioned invoices and specifications. These Terms and Conditions are solely for the benefit of the City and the Vendor, and are not intended for the benefit of any other party.

2. Goods and/or Equipment. The goods and materials being furnished under this contract shall be as identified in Bid Instructions, Bid Forms and Specifications that are incorporated herewith.

The City shall not be deemed to have accepted the Goods until they have been provided the opportunity to inspect them and to acknowledge, in writing, that they are in accordance with the specifications/invoice and without damage or defect.

3. Contract Time. Time is of the essence with respect to all time limits, milestones (if any), as well as deadlines for substantial completion and completion of the work provided for in the specifications.

The work will be substantially completed on or before March 31, 2022, and completed and ready for final acceptance and payment in accordance with this Agreement on or before April 15, 2022, subject to conditions beyond the control of the Contractor, such as labor or material shortages, weather conditions, strikes, civil unrest or wars. The Owner shall make the final decision as to the adequacy of the justification for the delay. Contractor and Owner recognize that time is of the essence and that the Owner will suffer financial and other losses if the work is not completed and the milestones are not achieved within the time limits specified above. The parties also recognize that delays, expense and difficulties involved in proving, in a legal or arbitration proceedings, of the actual loss suffered by the Owner if not completed on time. As a consequence and not as a penalty, but rather to cover the City’s costs if the milestones are not achieved and the work causing baseball games to be moved or cancelled is not completed by the completion date, the parties agree that the City shall be entitled to liquidated damages in the sum of \$500.00 (five hundred dollars) per day as to when substantial completion is delayed.

4. Contract Price. The City shall pay the Vendor for the completion of the work in accordance with the Contract in the amounts that follow, subject to any applicable adjustments under the Contract:

- a. For all unit price work in an amount equal to the sum of the established unit prices for each separately identified item of unit price work times the actual quantity of that time.
- b. The estimated total of all unit price work for the base bid is \$ _____. These prices are based on estimated quantities.
- c. These quantities shall be adjusted based upon the actual work performed.
- d. For all work at the price as stated in the Contract Bid attached hereto as Exhibit A.

5. Payment Procedures. Contractors shall submit applications for payments in accordance with the terms of this Agreement upon final completion and acceptance of the work. Owner shall have thirty (30) days after receipt of such request to review the request for correctness and to obtain approval for such payment by its Common Council. The Owner may withhold payment for any portion of the work which is not completed in accordance with the specifications, and shall pay for the work related to any undisputed charges. Upon the successful completion of the work and the acceptance of that work as provided for hereunder, the Owner shall pay the remainder of the contract price.

Upon substantial completion of the work, the owner shall pay an amount sufficient to increase the total payments to the Contractor to one hundred (100%) percent of the work completed, but less such amount set off by Owner as provided for herein, less two hundred (200%) percent of the estimated value of the work to be completed or corrected in accordance with a punch list to be completed prior to final payment. Upon the successful completion of the work and the acceptance of that work as provided for hereunder, the Owner shall pay the remainder of the contract price.

6. Vendor's Representations. In order to induce the City to enter into this Contract, the Vendor makes the following representations:

- a. The Vendor has examined and carefully studied the Contract documents and any data and referenced items included in the Contract documents.
- b. The Vendor has visited the site, conducted a thorough visual examination of the site and adjacent areas, and has become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress and performance of the work.
- c. The Vendor is familiar with and is satisfied as to all laws and regulations that may affect cost, progress and performance of the work.
- d. The Vendor has carefully studied all reports and expirations and tests related to the conditions in which the work will be performed, as well as reports and drawings related to the work and technical data in such reports and drawings.

- e. The Vendor has considered the information known to the Vendor itself, including information commonly known to vendors doing business in the Milwaukee metropolitan area, as well as information and observations obtained from visits to the site; the Contract documents; site related reports and drawings in the Contract documents with respect to the impact of such information; observations and documents on the cost, progress and performance of the work; the means, methods, techniques, sequences and procedures of construction; and the Vendor's safety, precautions and programs.

Based on the information and observation referred to in the preceding paragraph, Vendor agrees that no further examinations, investigations, explorations, tests, studies or data are necessary for the performance of the work of the Contract price within the Contract times in accordance with the other terms and conditions of the Contract.

The Vendor has given the City written notice of all conflicts, errors, ambiguities or discrepancies which the Vendor has discovered in the Contract documents and the Vendor certifies that the written resolution there by the City is acceptable to the Vendor.

The Contract documents are sufficient to indicate and convey understanding of all terms and conditions for performance in the furnishing of the work.

The Vendor is entering into this Contract constitutes an incontrovertible representation by the Vendor that, without exception, all prices in the Contract are premised upon performing and furnishing the work requirement by the Contract documents.

7. Assignment of Contract. Unless expressly agreed to by the City, no assignment may be made of the rights and responsibilities of the Vendor under this agreement.

8. Successors and Assigns. The City and Vendor each binds themselves, their successors, agents, legal representatives and assigns with respect to all covenants, agreements and obligations contained in the Contract documents.

9. Severability. Any provision or part of the Contract documents held to be void or unenforceable under any law or regulation shall be deemed stricken and all remaining provisions shall continue to be valid and binding upon the City and Vendor, which do hereby agree that the Contract documents shall be performed or replaced as to such stricken revision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10. Taxes, Social Security and Government Reporting. Personal income tax payments, social security contributions, insurance, payroll taxes and all other governmental reporting and contributions required as a consequence of the Contract or receiving payment for this Contract shall be the sole responsibility of the Vendor.

11. Advertising. The Vendor shall not identify the City as a client or customer of the Vendor or utilize the name of the City or its logo in any advertisements or other documents placed in the public domain without the express written consent of the City.

12. Modification. In the event that the parties determine that a modification to the Terms and Conditions of the providing of these goods are necessary, such change shall not be effective unless executed by authorized representatives of both parties.

13. Delivery. The goods provided hereunder shall be delivered to the City within the number of working days set forth in the contract or otherwise as soon as reasonably practicable unless delay occurs due to work stoppage, adverse weather conditions, labor disputes or modifications to the Terms and Conditions of the contract. In the event that the goods are not delivered within a reasonable period of time, the City shall have the right to cancel this contract without fee or penalty.

14. Insurance. Vendor shall maintain workers compensation, automobile liability and commercial general liability insurance coverage with carriers licensed to do business in the State of Wisconsin, and with such limits as the City may establish and require from time to time:

- a. General Aggregate: \$2,000,000.00
- b. Personal Advertising Injury: \$1,000,000.00
- c. Each occurrence: \$1,000,000.00
- d. Fire damage: \$50,000.00
- e. Medical Expense, any one person: \$5,000.00
- f. Automobile liability: CSL \$1,000,000.00
- g. Excess liability umbrella form: \$1,000,000.00 per occurrence
- h. Excess liability umbrella form: \$2,000,000.00 in the aggregate with a self-insured retention limit of not greater than \$10,000.00
- i. Professional Liability, General Aggregate: \$2,000,000.00
- j. Professional Liability, Each Occurrence: \$1,000,000.00

Vendor shall furnish a Certificate of Insurance evidencing the types and amounts of coverage. Said coverage shall be on an occurrence basis and the limits identified in the general liability coverage shall be for this project and not the policy as a whole. Vendor agrees to require that the insurer list the City as an Additional Insured and to provide adequate evidence of said status through the liability insurance endorsement. Vendor shall further obtain an endorsement from the insurance carrier indicating that any material changes to the policy or any cancellation of the coverage subsequent to the issuance of the Certificate, and until the completion of the services hereunder, shall necessitate that the insurer provide not less than thirty (30) days notice to the City of said fact. Clauses such as that the insurer will endeavor to notify the City are unacceptable and will be rejected.

15. Dispute. These Terms and Conditions shall be deemed to have been made and governed by the laws of the State of Wisconsin. Any legal suit or action with regard to these Terms and Conditions or the project as a whole shall be venued in the Waukesha County Circuit

Courts, Waukesha County, Wisconsin, unless the parties mutually agree to arbitration and/or mediation in place of civil litigation.

16. Limitation on Liability. The City's liability to the Vendor shall not exceed the sums paid by the City to the Vendor under this contract. In addition, to the extent that the Vendor seeks indemnification from the City, that indemnity shall be subject to the limitations set forth herein. No indemnity provided under any contract hereinunder shall be construed to be a waiver or estoppel of the City of New Berlin or its insureds' ability to rely upon the limitations, defenses and immunities contained within Wisconsin law, including, but not limited to those set forth in Wisconsin Statute §893.80, §895.52 and §345.05. To the extent indemnification is available and enforceable, the City of New Berlin or its insured shall not be liable in indemnity or contribution for any amount greater than the limits of liability for municipal claims established by Wisconsin law. The City's obligations to indemnify hereunder are further subject to the availability limits of applicable insurance coverage. Under no circumstances shall the City be required to indemnify the Vendor for its own negligence or intentional conduct.

17. Protection of the Project Site. Vendor agrees to post signage and to appropriately guard the area in which the contract work is being performed, and to take all other steps that may be necessary in accordance with requirements of OSHA and/or other governmental agencies with jurisdiction to ensure that the project site is maintained in a safe manner to as to prevent workers and passersby from entering the project site.

18. Warranty. Vendor warrants and guarantees to City that all goods and/or equipment to be supplied hereunder will be of good quality and free from faults and defects. This warranty shall cover materials for the manufacturer stated warranty period and workmanship for two (2) year from the date of substantial completion or as provided in the specifications/invoice attached hereto, whichever is greater.

19. Conflicts. If there is any inconsistency between these Terms and Conditions and the specifications/invoice or any attachments thereto, these Terms and Conditions shall apply.

20. Hold Harmless. The Vendor shall indemnify and hold harmless the City and its agents, employees, elected officials, representatives and assigns (hereinafter referred to as the "Indemnified Parties") as and against any and all claims, demands, actions, causes of action, losses, costs, expense, including, but not limited to actual attorney fees, arising out of or resulting from the performance of the work. Said indemnity shall include both the Vendor, as well as any subcontractors working under them, regardless of whether or not such claims, demands, losses or expenses are caused in whole, or in part, by the parties that are being indemnified. Such obligation shall not be considered to negate, abridge or reduce other rights or obligations of indemnity which would otherwise exist as to a party or persons described in this paragraph. To the extent that the Vendor retains subcontractors for the performance of the work, or any portion thereof, the Vendor and/or subcontractors shall provide evidence of the insurance coverages set forth above, as well as the terms of this indemnification provision shall be applicable to such Vendor and/or subcontractors.

21. Modification and Assignability. This contract, including all documents incorporated by reference herein, may not be enlarged, modified or altered except upon written agreement signed by both parties. The Vendor may not subcontract or assign its rights, including rights to compensation, or terms of performance arising hereunder without the prior written consent of the City. Any subcontractor or assignee shall be bound by all of the terms and conditions of the contract, and will be required to enter into a written agreement with the City.

22. Termination of Contract. This contract may be terminated as follows:

- a. *Termination for Convenience.* City may terminate this contract in whole or in part for the convenience of the City when the City determines that the continuation of the project is not in the best interests of the City. Vendor shall be entitled to payment for all of the services performed at the date of the termination, together with its direct costs of termination. Under no circumstances shall the Vendor be entitled to any penalty for the termination nor shall the Vendor be entitled to any payment for lost profits.
- b. *Termination for Cause.* If the City determines that the Vendor has failed to comply with any of the terms and conditions of the contract and the scope of services and related documents thereto, the City may give written notice to the Vendor of any such deficiency and in the event that the Vendor fails to cure said deficiency within ten (10) days of the notice of such failure, the City may, with no further notice, declare this contract to be terminated. Vendor will therefore be entitled to receive payment for those services performed at the date of termination, plus the amount of reasonable damages suffered by the City by reason of the Vendor's failure to comply with the terms of the contract. Under no circumstances shall the Vendor be entitled to any lost profits arising from the contract.

23. Ongoing Services. This is also a contract for ongoing preventative maintenance services, as provided for in the Project Specifications. The parties agree that these Terms and Conditions shall be applicable to these ongoing Services.

24. Relationship of the Parties. The Vendor agrees to perform the services as provided for hereunder as an independent contractor, not as an employee of the City. The Vendor shall furnish all services, labors, materials and equipment necessary to conduct and complete the work. The work shall be performed in accordance with the specifications subject to the satisfaction of the City.

25. Delay. The Contractor shall not be liable for delays or failure to perform the services necessary to complete the work which are caused directly or indirectly by circumstances beyond the Contractor's control, including but limited to, acts of God, fire, flood, war, sabotage, accident, labor dispute, material shortage, governmental action, including regulatory requirements, change conditions, delays resulting from actions of the Owner or third parties not under control of the Contractor, site inaccessibility or inability of others to obtain materials, labor, equipment or transportation. Should any of the above occur, then the date for completion of the services shall be adjusted for such delay, provided that the Contractor reports the delay, both verbally and in

writing, to the Owner within a reasonable time of its discovery. The Owner shall determine whether or not the cause of delaying or not completing a duty or obligation under this Agreement is under the control of the Contractor.

The Contractor acknowledges that in December of 2019 a novel strain of the Coronavirus (now referenced as COVID-19) was detected and has now spread throughout many countries, including the United States. Based upon this, the World Health Organization has declared a Public Health Emergency of international concern; and the United States Department of Health and Human Services has declared a Public Health Emergency. The Contractor further acknowledges that it is aware of the COVID-19 pandemic and that the existence of said pandemic will not constitute a force majeure or otherwise preclude the Contractor's ability to perform the terms of this agreement absent the issuance of any Order by a governmental entity with jurisdiction that would preclude such performance

The Contractor acknowledges that it must perform the work and services hereunder, pursuant to the terms and conditions of this Agreement and that such work shall conform to the recognized standards in the Milwaukee Metropolitan Area for the performance of this work as are prevalent in this field of endeavor and like services. Also, its work shall be performed in a good and workmanlike manner.

26. Regulations. The Vendor agrees to comply with all the requirements of applicable federal, state and local laws, as well as Codes and Specification requirements related to the performance of the work under this Contract.

27. Records and Reports. Records relating to the performance of the services under this Contract must be retained for seven (7) years after final disposition. However, if any litigation claim or audit has started before the expiration of the seven (7) year period, then records shall be retained for five (5) years after the litigation or audit is resolved. Notwithstanding any other clause written herein, Vendor understands and agrees that the City is a municipal entity and therefore, is subject to the Open Records Law of the State of Wisconsin. Wisconsin Statute §19.36(3) requires governmental entities to make available for inspection a copy of any records produced or collected under a contract entered into by the municipal entity to the same extent as if the record were maintained by the municipality. Therefore, in the event there is a request for any other documentation pertaining to this Contract, Vendor shall provide the information as requested and charge no more than the cost to copy said information. The parties agree that upon completion or termination of this Contract, all project contract documents or instruments of service, including electronic files of computer-aided record drawings and field inspection reports shall be delivered to and shall become the property of the City. These records, drawings, reports, etc. may be used without restriction by the City for any public purpose and to implement construction and use of the project. Any such use or reuse of these documents outside the scope of the project shall be without compensation or liability to the Vendor, excepting for errors and omissions associated with the completed project, services and documents performed under this Contract.

28. Governing Law; Entire Agreement. This Contract shall be governed and construed in accordance with the laws of the State of Wisconsin. These Contract documents represent the

complete understanding of the parties with respect to the subject matter set forth herein and may only be amended in a subsequent agreement executed by all parties.

29. Relationship of the Parties. The contractor agrees to perform the services as provided for hereunder as an independent contractor, not as an employee of the owner. The contractor shall furnish all services and labors and materials and equipment necessary to conduct and complete the work. The work shall be performed in accordance with the specifications subject to the satisfaction of the owner.

CITY:
City of New Berlin

VENDOR:

[Insert Vendor Name]

By: _____

[Print Name & Title]

By: _____

[Print Name & Title]

Section 26 00 01 - Electrical General Requirements

PROJECT DESCRIPTION: Electrical work associated with the Baseball Field Sports Lighting at the New Berlin Malone Park Diamond.

Some of the project highlights include:

- Remove and demolish existing concrete bases in their entirety along with and associated electrical conduit and wiring. Poles were taken down above finished ground for safety measures.
- Provide wiring and all associated lighting to provide sports lighting for Diamond #3. Note that additional lighting will be provide on poles A2b and B2b to illuminate the third base side and right field of the adjacent field.
- Provide new electrical panel, controls and a new enclosure in the fenced in area to serve new lights. Coordinate the modification of the existing fence with the City if needed.

PART 1 - GENERAL

1.00 INDEX

DIVISION 26 - ELECTRICAL

26 00 01	Electrical General Requirements
26 01 26	Testing Electrical Systems
26 05 02	Electrical Demolition for Remodeling
26 05 19	Wire & Cable 600 Volt and Below
26 05 26	Grounding and Bonding
26 05 33	Raceways and Boxes
26 05 53	Electrical Identification
26 24 16	Panelboards
26 27 26	Wiring Devices
26 28 16	Safety Switches, Circuit Breakers, & Fuses
26 56 29	Exterior Site Lighting (Athletic)

1.01 DESCRIPTION

- A. Work Includes:
1. Furnish all labor materials, tools, equipment, and services for all electrical work as indicated, in accord with provisions of Contract Documents.
 2. Completely coordinate with work of all other trades.
 3. Although such work is not specifically called out on drawing, the contractor shall furnish and install all miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
- B. Drawings Use and Interpretation:
1. Drawings are diagrammatic and indicate general arrangement of systems and equipment, except when specifically dimensioned or detailed.
 2. For exact locations field measuring is required.
 3. Intention is to show size, capacity, approximate location, direction and general relationship of one work phase to another, but not exact detail or arrangement.
 4. Field verify locations and arrangement of all existing systems and equipment.
 5. Omissions no later than ten (10) days before bid opening, the Contractor

shall call the attention of the Engineer to any materials or apparatus the Contractor believes to be inadequate and to any necessary items of work omitted.

6. If any errors or omissions appear in Drawings, Specifications, or other documents, bidding Contractor shall notify Engineer no later than ten (10) days prior to submitting bid. Should conflict occur in or between drawings and specifications, bidding contractor is deemed to have estimated more expensive way of doing work, unless he shall have asked for and obtained written decision (addendum) before submission of bid as to which method or materials will be required.
- C. Installation of all systems and equipment is subject to clarification as indicated in reviewed shop drawings and field coordination drawings.
- D. Dimensions indicated are limiting dimensions.
- E. Do not use equipment exceeding dimensions indicated or equipment or arrangements that reduce required clearances or exceed specified maximum dimensions.
- F. Description of systems: Furnish and install all materials to provide functioning systems in compliance with performance requirements specified, and any modifications required by reviewed shop drawings and field coordinated drawings.
- G. Definitions:
 1. A/E: Owner and/or Engineer
 2. Provide: Furnish, install, wire and connect complete by Contractor.
 3. Contractor/EC: The person or group responsible for project construction under Divisions 26.
 4. The word "ENERGIZE" means all material and labor necessary to apply voltage to a device or item of equipment to make same operational.
 5. The word "CODE" means all applicable codes.
 6. Unless noted otherwise, the terminology used throughout the Specifications shall be interpreted as defined in Article 100 of the NEC.

1.02 WEATHERPROOF EQUIPMENT

- A. Where weatherproof (WP) equipment is indicated, use NEMA 3R enclosures.
 1. All exterior devices and equipment shall be weather-proof.

1.03 QUALITY ASSURANCE

- A. Perform all work and install materials and equipment in full accordance with the latest applicable rules, regulations, requirements, and specifications of the following:

State and Federal Laws
 National Electrical Testing Association (NETA)
 National Electrical Code (NEC 2011 Edition)
 International Building code (IBC)
 Life Safety Code (NFPA-101)
 National Electrical Safety Code (NESC)
 American National Standards Institute (ANSI)
 National Electrical Manufacturers Association (NEMA)
 Institute of Electrical and Electronic Engineers (IEEE)

Insulated Power Cable Engineers Association (ICEA)
 The Occupational Safety and Health Act (OSHA)
 American Society for Testing and Materials (ASTM)
 Underwriters' Laboratory (UL)
 Wisconsin Safety and Professional Services Code
 Department of Natural Resources NR-101
 Local laws, codes and ordinances
 ADA Accessibility Guidelines

- B. Conflicts, if any, that may exist between the above items, the more restrictive shall govern.
- C. The Electrical Contractor is charged with responsibility for full compliance with local interpretations of applicable Codes. After entering into contract, this Contractor will be held to complete all work as per the foregoing without extra compensation.

1.04 SUBMITTALS

- A. General:
 - 1. The A/E's review of shop drawings or samples shall not relieve the EC of responsibility for any deviation from the contract documents. The EC shall include with the shop drawings an index sheet detailing all deviations from the contract documents, and will be held responsible for all deviations unless he has received written approval from the A/E for the specific deviation, separate from general shop drawing approval. The A/E's review shall not relieve the EC from responsibility for errors or omissions in the shop drawings or samples.
- B. Shop Drawings:
 - 1. As indicated in Divisions 26.
 - 2. Provide scale layout of equipment placement and clearances.
 - 3. The Contractor shall review the shop drawings and stamp with his approval prior to submitting shop drawings to A/E for review.
 - 4. Shop drawings shall be submitted electronically in an editable PDF format file. PDF file name shall contain specification number and product name. Provide one submittal (PDF file) for each specification section submitted. Each shop drawing submittal shall contain the following:
 - a. Cover Sheet
 The submittals shall contain a cover sheet, which shall include the following information:
 - Submittal Date
 - Specification Section(s)
 - Manufacturer's Representative (Contact Name, address, and telephone number)
 - Electrical Contractor (Contact Name, address, and telephone number)
 - Project Name, Project City, Project State, and Project Address.
 - b. Equipment List
 A complete equipment list of all components, including the following: Quantity, Manufacturer, Part Number, and Description. If the supplier uses different part numbers from those of the actual manufacturer, the actual manufacturer and part numbers

as they appear - marked on the shipping box/packages, shall also be identified on this list.

c. Product Data:

Manufacturer's product data sheets, and equipment description of all system components.

These data sheets shall be highlighted or suitably marked, so that included items and options are indicated. On data sheets that include multiple products, products that are not used shall be crossed out.

- Product Data Sheets shall be organized, in order, corresponding to the FIRST occurrence of the corresponding item on the equipment list.

C. Samples:

1. As indicated in Divisions 26.

D. Project Information:

1. As indicated in Divisions 26.

E. Approval Documents:

1. Prepare and submit all drawings, calculations, and professional seals as required to Federal, State and local authorities having jurisdiction.

F. Substitution:

1. Review of substitutions or change proposed by Contractor shall be a fee of \$500.00 paid by the Contractor to Harwood Engineering Consultants, Ltd. Electrical Department.

1.05 PROTECTION

A. Provide covering and shielding for all equipment to protect from damage.

B. Repair, restore or replace damaged, corroded and rejected items.

1.06 JOB CONDITIONS

A. Cause as little interference or interruption of existing utilities and services as possible.

1. Schedule work which will cause interference or interruption in advance with Owner, Engineer, authorities having jurisdiction and all affected trades.

B. Examine Contract Documents to determine how other work will affect execution of electrical work.

C. Determine and verify locations of all existing utilities on or near site.

D. Make arrangements for and pay for necessary permits, licenses, and inspections. City issued permits will have fees waved.

E. Record drawings:

1. Keep a complete set of all electrical drawings in job site office for showing actual installation of electrical systems and equipment.
2. Use this set of drawings for no other purpose.

3. Where any material, equipment, or system components are installed differently from that shown, indicate differences clearly and neatly using ink or indelible pencil.
4. At project completion, submit record set of drawings (See Division 01).

1.07 QUALIFICATIONS

- A. Where specified in various Sections of this DIVISION, final wiring terminations to all equipment and testing of the completed system, shall be done by a factory authorized representative. The representative shall be part of a fully equipped service organization capable of furnishing adequate maintenance to the entire system, including factory replacement parts.

1.08 COORDINATION

- A. Obtain and review shop drawings, product data, and manufacturer's instructions for equipment furnished under other sections.
- B. Determine connection locations and requirements.
- C. Sequence rough-in of electrical connections to coordinate with installation schedule for equipment.
- D. Sequence electrical connections to coordinate with start-up schedule for equipment.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Acceptable Manufacturers:
 1. Individual items:
 - a. Base: As noted
 - b. Optional: As noted
 2. Other manufacturers desiring approval comply with Instruction to Bidders
- B. Use only prime quality, new materials, apparatus and equipment.
- C. Use U/L labeled electrical materials where listing has been established for materials or devices in question.
 1. Manufactured items and fabricated assemblies of electrically operating equipment: U/L approval or U/L reexamination listing.
- D. Structural steel for supports: ASTM A36.
 1. Galvanize members installed in areas of high humidity or condensation.
 2. Furnish other members with shop coat of rust inhibiting primer.
 3. Shop fabricate for field assembly using bolts.
 4. Minimize field welding.
 5. Retouch primer and galvanizing after field welding.

PART 3 - EXECUTION

3.01 GENERAL

- A. Use only thorough, highly skilled, and experienced workmen.
 - 1. Divisions 26 equipment shall be installed in a neat and workmanlike manner.
- B. When changes in location of any work are required, obtain approval from the Engineer before making change.
 - 1. Make changes at no extra cost.
- C. Do not change indicated sizes without written approval of Engineer.
- D. Provide all necessary offsets and crossovers in conduits, raceways and ducts.

3.02 INSTALLATION OF EQUIPMENT

- A. Install all equipment in accord with manufacturer's recommendations.
- B. Provide all necessary anchoring devices and supports.
 - 1. Use structural supports suitable for equipment.
 - 2. Check loadings and dimensions of equipment with shop drawings.
 - 3. Do not cut, or weld to, building structural members.
- C. Verify that equipment will fit support layouts indicated.
 - 1. Where substitute equipment is used, revise indicated supports to fit at no additional cost.
- D. Arrange for necessary openings to allow entry of equipment.
- E. Install equipment to permit easy access for normal maintenance.
 - 1. Maintain easy access to switches, pull boxes, non-fused disconnects, receptacles, etc.
 - 2. Relocate items which interfere with access.
- F. Provide concrete foundations or pads for all floor mounted electrical equipment, as indicated or as follows:
 - 1. Where drawings do not show special foundations, install 4 IN high concrete pads.
 - 2. Use 3,000 PSI (14 Kg/s/mm) concrete.
 - 3. Reinforce with 6 x 6 IN W2.9 x W2.9, 10 GA (3.4 mm) mesh, with short dowels into floor at 12 IN OC around perimeter.
 - 4. Chamfer top edges 3/4 IN (18 mm).
 - 5. Make all faces smooth.
 - 6. Set anchor bolts for equipment. Consult with user.
- G. Where equipment components are installed prior to final installation (back boxes, panel tubs, etc.), these components shall be properly protected from construction debris (paint, dirt, plaster, etc.)
- H. In wet and damp locations, use steel channel supports to stand cabinets and panelboards one inch off wall.

3.03 PAINTING

- A. By Electrical Contractor:
 - 1. Touch up or completely paint all factory painted Electrical System components which have become rusted, scratched, or otherwise

damaged during construction (which are not painted under Division 09) to match the original finish or pay for restoration of such items as may be stipulated by the AE.

3.04 FIELD QUALITY CONTROL

- A. Perform indicated tests to demonstrate workmanship, operation, and performance.
 - 1. Conduct tests in presence of Owner and, if required inspectors or agencies having jurisdiction.
 - 2. Arrange date of tests in advance with Owner, manufacturer and installer.
 - 3. Give all inspectors minimum of 24 hours' notice.
 - 4. Furnish or arrange for use of electrical energy, required for tests.
 - 5. Furnish all lubricating materials required for test.
 - 6. Provide written report on all tests.
- B. Repair or replace equipment and systems found inoperative or defective and retest.
 - 1. If equipment or system fails retest, replace it with products conforming with Contract Documents.
 - 2. Continue remedial measures and retests until satisfactory results are obtained.
- C. Test equipment and systems as indicated for each item, unless otherwise recommended by manufacturer.

3.05 FINAL PERFORMANCE TEST

- A. At completion of installation, test for operation, panel load balance, short circuits, and ground.
 - 1. Provide written report on final performance test.

3.06 ADJUST AND CLEAN

- A. Inspect all equipment and put in good working order.
- B. Clean all exposed and concealed items.
- C. Where new work occurs in existing areas where no other work has been done, clean area and restore to original condition.
- D. Perform adjustments to lights during the night as needed.

3.07 PUTTING SYSTEMS IN OPERATION - START UP

- A. Prior to energizing any equipment whether installed by this section or not:
 - 1. First make a thorough inspection of it to make sure it has been unpacked correctly and all packing materials and supports have been removed.
 - 2. Be responsible for assisting the equipment start up personnel to assure correct equipment connections and rotation.
- B. Prior to final acceptance, at time agreed to by Owner and Engineer, put all systems in to satisfactory operation.
- C. Operate all systems in good working order for period of 5 working days.

3.08 DEVICE MOUNTING SCHEDULE

- A. Dimensions are to center of item unless otherwise indicated. Coordinate outlet locations with all architectural millwork and/or casework elevations.
- B. Mounting heights as indicated below:
- | | |
|--------------------------------|-------|
| Receptacle _____ | 18 IN |
| Safety switch _____ | 54 IN |
| Panelboard (to top) _____ | 72 IN |
| Lighting override switch _____ | 46IN |

3.09 TRAINING

- A. Electrical Contractor shall be responsible for owner training as specified in other sections of this specification. Provide competent personnel to meet the Owner or his representative to fully explain and familiarize the Owner with the operation of all equipment and systems installed under Divisions 26.
- B. Use the submitted Operation and Maintenance Manuals as referenced during training sessions.

END OF SECTION

Section 26 01 26 - Testing Electrical System

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Applicable provisions of Division 01 shall apply to all work of this section.

1.02 RELATED WORK AND REQUIREMENTS

- A. Section 26 05 26 - Grounding and Bonding
- B. Section 26 24 16 - Panelboards
- C. Section 26 28 16 – Safety Switches, Circuit Breakers and Fuses

1.03 DESCRIPTION OF WORK

- A. Prior to energizing equipment, retain services of a recognized independent testing contractor for purpose of performing inspections and tests as herein specified.
- B. Assure that electrical equipment is operational within industry and manufacturer's tolerances and is installed in accordance with design specifications.
- C. Items to be tested:
 - 1. Grounding Systems

1.04 QUALITY ASSURANCE

- A. Inspections and tests shall utilize the following references:
 - 1. Project design specifications.
 - 2. Project design drawings.
 - 3. Manufacturer's instruction manuals applicable to each particular apparatus.
- B. Testing Agency:
 - 1. Meet federal, state, and local safety requirements for accreditation of testing laboratories, Title 29, Part 1907. Membership in National Electrical Testing Association constitutes proof of meeting such criteria.
 - 2. Meet Federal **Department of Commerce** requirements for nationally independent testing laboratory certification.
 - 3. Submit agency name for approval by Engineer.
 - 4. Electrical Contractor may be Testing Agency if they have the proper certification.
- C. Permanently record checks and tests and make available to Engineer and Owner.

1.05 SUBMITTALS

- A. Test Reports:
 - 1. Electronic copies of complete testing report.
 - 2. Submit report no later than 30-days after completion of testing.

- B. Submit proof of testing agency qualification.

1.06 JOB CONDITIONS

- A. Contractor's Responsibilities:
 - 1. Supply a source of test power to test laboratory at each test site.
 - 2. Notify testing Subcontractor when equipment becomes available for acceptance tests.
 - 3. Coordinate work to minimize project delay.
 - 4. Supply a complete set of electrical drawings, specifications, and pertinent change orders to testing contractor prior to commencement of testing.
- B. Testing Subcontractor's Responsibilities:
 - 1. Notify Engineer 72 hours prior to commencement of testing.
 - 2. Provide material, equipment, labor, and technical supervision to perform such tests and inspections.
- C. Recommendations for acceptance or rejection shall be given upon consultation of Engineer, Owner, Contractor, and Testing laboratory's Representative.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.01 GENERAL

- A. Test work and equipment installed to ensure its proper and safe operation in accordance with intent of drawings and specifications.
- B. Check interlocking and automatic control sequences and test operation of safety and protective devices.
- C. Correct defects.
- D. Cooperate with electrical utility, supplier's, and manufacturer's representatives in order to achieve proper and intended operation of equipment.
- E. Test, adjust, and record operating voltages at each system level before energizing branch circuits.
- F. Where transformer is under utility jurisdiction, obtain services of utility to correct voltage.
- G. Replace devices and equipment damaged due to failure to comply with this requirement.
- H. Balance load among feeders conductors at each panelboard, and reconnect loads as may be necessary to obtain a reasonable balance of load on each

phase. Electrical unbalance shall not exceed 7-1/2% between phases. Submit test results on forms similar to that found on sheets at the end of this section.

3.02 GROUNDING SYSTEMS

- A. Visual And Mechanical Inspection:
 - 1. Inspect ground system for compliance with drawings and specifications.
- B. Electrical Tests:
 - 1. Fall of Potential test per IEEE Standard No. 81, Section 9.04 on main grounding electrode or system.
 - 2. Two Point Method test per IEEE Standard No. 81, Section 9.03, to determine ground resistance between main grounding system, and major electrical equipment frame, system neutral, and/or derived neutral points.
 - 3. Alternate to two point method:
 - a. Ground continuity test between main ground system and equipment frame, system neutral, and/or derived neutral point.
 - b. This test shall be made by passing a minimum of 10 amp dc current between ground reference system and ground point to be tested.
 - c. Voltage drop shall be measured and resistance calculated by voltage drop method.

3.03 FEEDERS

- A. Each feeder shall be megger tested for insulation resistance.
- B. Test results shall be submitted on forms similar to that found on sheets at the end of this section.
- C. Verify ampere readings on any cable operating in parallel to insure an even division of current.

END OF SECTION

PANEL/TRANSFER SWITCH DESIGNATION _____

MEGGER TEST RESULTS

A-B Phase _____

B-C Phase _____

C-A Phase _____

A-Ground _____

B-Ground _____

C-Ground _____

Bolts Torqued

Visual Inspection Comments:

Tested By _____

Date Tested _____

Time of Day _____

FEEDER FROM _____ **TO** _____

Applied Voltage _____

Resistance Reading _____

Tested By _____

Date Tested _____

Time of Day _____

FEEDER FROM _____ **TO** _____

LOAD IN AMPS

Phase A _____

Phase B _____

Phase C _____

Tested By _____

Date Tested _____

Time of Day _____

Was Balancing Required? ____ Yes ____ No

ELECT MOTOR # _____

HVAC DES. _____

NAMEPLATE DATA:

Overload Relay Type _____

Protective Relay Setting _____

Voltage Readings (Motor Operating)

A-Phase _____

B-Phase _____

C-Phase _____

Current Readings (Motor Operating)

A-Phase _____

B-Phase _____

C-Phase _____

Direction of rotation clockwise counterclockwise.

Section 26 05 02 - Electrical Demolition

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work Includes:
Furnish all labor, materials, tools, equipment, and services for wiring all equipment furnished by others as indicated, in accord with provisions of Contract Documents.

1.02 WORK INCLUDED

- A. Electrical Demolition

PART 2 - MATERIALS

2.01 MATERIALS AND EQUIPMENT

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

PART 3 - EXECUTION

3.01 DEMOLITION, RENOVATION AND DISPOSITION OF EXISTING EQUIPMENT:

- A. The EC shall do the necessary demolition work in the affected site areas including the removal of conduit, wiring, electrical equipment and pole bases.
- B. Electrical equipment in conflict with construction shall be removed and/or relocated as indicated on the drawings, as directed or required. Remove all electrical equipment, accessible conduit, wire and low voltage exposed cabling back to source released from service as a result of construction, equipment removed shall not be reused, except as specifically directed on the drawings or elsewhere herein. Unless otherwise indicated, all electrical equipment removed shall become the property of the EC and shall be removed from the site by the EC. Equipment to be retained by Owner shall be stored on site at location designated by Owner.
- C. Electrical drawings are based on the best information available. For areas being remodeled, work shown reflects information shown on original construction drawings; it is not guaranteed 100% accurate. This contractor must field verify conditions and make necessary adjustments without extra costs to the project to suit actual needs.

END OF SECTION

Section 26 05 19 - Wire and Cable - 600 Volt and Below

PART 1 - GENERAL

1.01 DESCRIPTION

- A. General:
 - 1. Furnish all labor, materials, tools, equipment, and services for all wire and cable (600 V and below) as indicated, in accord with provisions of Contract Documents.
 - 2. Completely coordinate with work of all other trades.
 - 3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
 - 4. See Section 26 00 01 for General Electrical Requirements.

1.02 WORK INCLUDED

- A. Underground wire and cable.
- B. Wiring connectors and connections.

1.03 RELATED SECTIONS

Section 26 05 33 – Raceways and Boxes
Section 26 05 53 - Electrical Identification

1.04 REFERENCES

- A. ANSI/NFPA 70- National Electrical Code.

1.05 SHOP DRAWING SUBMITTALS

- A. Submit under provisions of General conditions and Section 26 00 01.
- B. Submit product data: Provide for each cable assembly type.
- C. Submit factory test reports: Indicate procedures and values obtained.
- D. Submit manufacturer's installation instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.

1.06 QUALIFICATIONS

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

1.07 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.08 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Conductor sizes are based on copper.
- C. Wire and cable routing shown on Drawings is approximate unless dimensioned. Route wire and cable as required to meet Project Conditions.
- D. Where wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required.

1.09 COORDINATION

- A. Coordinate Work under provisions of General conditions and Section 26 00 01.
- B. Determine required separation between cable and other work.
- C. Determine cable routing to avoid interference with other work.

PART 2 - PRODUCTS**2.01 GENERAL**

- A. All wire shall be new, delivered to the site in unbroken cartons and shall be less than one year old out of manufacturer's stock.
- B. All conductors shall be copper.
- C. Insulation shall have a 600 volt rating.
- D. In mechanical rooms, light fixtures, and other high temperature applications, the insulation shall be rated 90°C. Other areas shall use insulation rated 75°C unless stated.
- E. All conductors must be suitable for the application intended. Conductors #14 and larger must be stranded. Conductors #16 and smaller may be solid or stranded with the following requirements or exceptions.
- F. All conductors terminated with crimp type devices must be stranded.
- G. Stranded conductors may only be terminated with UL or ETL Listed type terminations or methods: e.g. stranded conductors may not be wrapped around a terminal screw but must be terminated with a crimp type device if a terminal screw is used or must be terminated in an approved back wired method.

2.02 WIRE

- A. Description: Single conductor insulated wire.
- B. Insulation: Type XHHW insulation for feeders and branch circuits.
- C. Use conductors not smaller than #10 AWG for power and lighting circuits.

2.03 WIRING CONNECTORS

- A. Split Bolt Connectors: Not acceptable.
- B. Solderless Pressure Connectors: High copper alloy terminal. May be used only for cable termination to equipment pads. Not approved for splicing.
- C. Spring Wire Connectors: Solderless spring type pressure connector with insulating covers for copper wire splices and taps. Use for conductor sizes 10 AWG and smaller.
- D. Mechanical Connectors: Bolted type tin-plated; high conductivity copper alloy; spacer between conductors; belled cable entrances.
- E. Compression (crimp) Connectors: Long barrel; seamless, tin-plated electrolytic copper tubing; internally beveled barrel ends. Connector shall be clearly marked with the wire size and type and proper number and location of crimps.
- F. ILSCO type connectors are acceptable.

PART 3 - EXECUTION

3.01 GENERAL WIRING METHODS

- A. All wire and cable shall be installed in conduit.
- B. All conductors shall be sized to prevent excessive voltage drop at rated circuit ampacity. As a minimum use 10 AWG conductor for 20 ampere, 120 volt branch circuit home runs longer than 100 feet.
 - 1. 3% drop for branch circuits.
 - 2. 5% drop for motor circuits.
- C. Make conductor lengths for parallel conductors equal.
- D. Splice only in junction or outlet boxes.

3.02 WIRING INSTALLATION IN RACEWAYS

- A. Pull all conductors into a raceway at the same time. Use Listed wire pulling lubricant for pulling 4 AWG and larger wires and for other conditions when necessary.

- B. Completely and thoroughly swab raceway system before installing conductors.
- C. Place all conductors of a given circuit (this includes phase wires, neutral (if any), and ground conductor) in the same raceway. If parallel phase and/or neutral wires are used, then place an equal number of phase and neutral conductors in same raceway or cable.

3.03 CABLE INSTALLATION

- A. Provide protection for exposed cables where subject to damage.
- B. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- C. Use suitable cable fittings and connectors.

3.04 WIRING CONNECTIONS AND TERMINATIONS

- A. Water proof splice shall only be made in accessible junction boxes.
- B. Wire splices and taps shall be made firm, and adequate to carry the full current rating of the respective wire without soldering and without perceptible temperature rise.
- C. Use solderless spring type pressure connectors with insulating cover for wire splices and taps, 10 AWG and smaller.
- D. Use mechanical or compression connectors for wire splices and taps, 8 AWG and larger. Tape uninsulated conductors and connectors with electrical tape to 150 percent of the insulation value of conductor.
- E. Thoroughly clean wires before installing lugs and connectors.
- F. At all splices and terminations, leave tails long enough to cut splice out and completely resplice.

3.05 FIELD QUALITY CONTROL

- A. Feeders and new branch circuits shall have their insulation tested after installation and before connection to utilization devices such as fixtures, motors, or appliances.
- B. Test shall be performed by meggar and conductors shall test free from short-circuits and grounds.
- C. Test conductors phase-to-phase and phase-to-ground.
- D. The contractor shall furnish the instruments, materials, and labor for these tests.

3.06 WIRE AND CABLE INSTALLATION SCHEDULE

- A. All wire shall be in raceways.

3.07 WIRE COLOR

- A. General:
 - 1. For wire sizes 10 AWG and smaller - Wire shall be colored as indicated below.
 - 2. For wire sizes 8 AWG and larger - Identify wire with colored tape at all terminals, splices and boxes. Colors to be as indicated below.
- B. Neutral Conductors: White. Where there are two or more neutrals in one conduit, each shall be individually identified with the proper circuit. See requirements of NEC 200-6, 200-7, 210-4, and 310-12.
- C. Branch Circuit Conductors: Three or four wire home runs shall have each phase uniquely color coded.
- D. Feeder Circuit Conductors: Each phase shall be uniquely color coded.
- E. Ground Conductors: Green for 6 AWG and smaller. For 4 AWG and larger, identify with green tape at both ends and all visible points including in all junction boxes. See requirements of NEC 210-5 and 310-12.

3.08 BRANCH CIRCUITS

- A. In general, the use of multiwire branch circuits with a common neutral feeding loads producing a high level of harmonics is discouraged due to the problems with overheating of the common neutral.

END OF SECTION

Section 26 05 26 - Grounding and Bonding

PART 1 - GENERAL

1.01 DESCRIPTION

- A. General:
 - 1. Furnish all labor, materials, tools, equipment, and services for grounding as indicated in accord with provisions of Contract Documents.
 - 2. Completely coordinate with work of all other trades.
 - 3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
 - 4. See Section 26 00 01 for General Electrical Requirements.

1.02 WORK INCLUDED

- A. Grounding electrodes and conductors.
- B. Equipment grounding conductors.
- C. Bonding.

1.03 RELATED SECTIONS

- A. None

1.04 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.
- B. IEEE/ANSI 142-1982 - Recommended Practice for Grounding of Industrial and Commercial Power System.

1.05 GROUNDING ELECTRODE SYSTEM

- A. Rod Electrode

1.06 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 2 ohms.

1.07 SUBMITTALS

- A. Submit under provisions of Section 26 00 01.
- B. Product Data: Provide data for grounding electrodes and connections.
- C. Test Reports: Indicate overall resistance to ground and resistance of each electrode.
- D. Manufacturer's Instructions: Include instructions for storage, handling, protection, examination, preparation and installation of exothermic connectors.

1.08 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of General conditions.
- B. Accurately record actual locations of grounding electrodes.

1.09 QUALIFICATIONS

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

1.10 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART 2 - PRODUCTS**2.01 ROD ELECTRODE**

- A. Acceptable Manufacturers
 - 1. Burndy
 - 2. Blackburn
 - 3. Or Equal
 - 4. Substitutions: Under provisions of General Conditions and Section 26 00 01.
- B. Material: Copper clad steel.
- C. Diameter: 3/4 inch minimum.
- D. Length: 10 feet minimum rods. Rod shall be driven at least 9'-6" deep.
- E. Provide the number of rods required to obtain proper ground resistance. This applies to manholes, padmount switches, transformers, service entrances, etc.

2.02 MECHANICAL CONNECTORS

- A. Acceptable Manufacturers
 - 1. Burndy Co., Hy-Ground Series
 - 2. Or Equal
 - 3. Substitutions: Under provisions of General Conditions and Section 26 00 01.
- B. Type: Compression type applied with compression tool.
- C. Material: Bronze.

2.03 EXOTHERMIC CONNECTIONS

- A. Manufacturers:
 - 1. Cadweld
 - 2. Or Equal
 - 3. Substitutions: Under provisions of General Conditions Section 26 00 01.

2.04 WIRE

- A. Material: Stranded copper (aluminum not permitted).
- B. Grounding Electrode Conductor: Size as shown on drawings, specifications or as required by NFPA 70, whichever is larger.
- C. Foundation Electrodes: Bare copper #4 wire in the new footing. Center wire in footing and attach to steel reinforcement.
- D. Feeder and Branch Circuit Equipment Ground: Same size as phase conductors or as indicated on plan.

2.05 BUS

- A. Material: copper (aluminum not permitted).
- B. Size: 1/4" x 2" minimum.

2.06 INTERSYSTEM BONDING TERMINATION

- A. Provide an Intersystem Bonding Termination Bar exterior of main service enclosure with a minimum set of six spare termination points. See NEC "250.94 Bonding of Other Systems" for more information.

PART 3 - EXECUTION

3.01 EXAMINATION

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

3.02 GENERAL

- A. Install Products in accordance with manufacturer's instructions.
- B. Mechanical connections shall be accessible for inspection and checking. No insulation shall be installed over mechanical ground connections.
- C. Ground connection surfaces shall be cleaned and all connections shall be made so that it is impossible to move them.
- D. Attach grounds permanently before permanent building service is energized.
- E. Install rod electrodes at locations indicated or as required by Code, whichever requires the most rods. Install additional rod electrodes as required to achieve specified resistance to ground.

3.03 LESS THAN 600 VOLT SYSTEM GROUNDING

- A. Supplementary Grounding Electrode: Use driven ground rod in main service equipment area.
- B. Provide code sized copper grounding electrode conductor from secondary switchboard ground bus, each separately derived system neutral secondary service system neutral, to street side of water meter, building steel, ground rod, and any concrete encased electrodes. Provide bonding jumper around water meter. Bond conduit as described above.
- C. Receptacle Grounding: All receptacle circuits and permanently wired equipment, except light fixtures, shall have a separate grounding conductor. Receptacles shall be connected to the ground conductor utilizing pigtails. At time of final inspection, any one device found improperly grounded shall mean a complete check by the Contractor of every device on the project at no additional cost to the Owner.
- D. Provide separate ground wire for motors and other equipment items from equipment items to nearest conduit system box. Provide green wire ground continuously from panel to all surface raceway systems and where indicated on plans.
- E. Provide grounding conductor in all non-metallic and flexible raceways. Terminate each end on a grounding lug, bus or bushing.
- F. Bond together system neutrals, service equipment enclosures, exposed non-current carrying metal parts of electrical equipment, metal raceway systems, grounding conductor in raceways and cables, receptacle ground connectors and plumbing systems.
- G. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder circuit raceway. Terminate each end on suitable lug, bus, or bushing. Where conductors are run in parallel in multiple raceways or cables, the equipment grounding conductors shall be run in parallel in each raceway or cable. Each parallel equipment grounding conductor shall be sized on the basis of the ampere rating of the overcurrent device protecting the circuit conductors in the raceway or cable.
- H. Equipment grounding shall comprise a permanent bonding together of all metallic, noncurrent – carrying parts of the Electrical System (raceways, boxes, panels, cabinets, equipment enclosures, housings, motor frames, lighting fixtures, etc.) to insure a continuous grounding circuit. Provide a grounding bushing on each conduit entering service entrance equipment, bonding same to equipment grounding stud/bar/bus.
- I. Equipment Grounding Conductor: Provide separate, insulated grounding conductor in all branch circuit and feeder raceways. Terminate each end on suitable lug, bus, or bushing.

3.04 FIELD QUALITY CONTROL

- A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

- B. Measure ground resistance from system neutral connection at service entrance to convenient ground reference point using suitable ground testing equipment. Resistance shall not exceed 2 ohms.

END OF SECTION

Section 26 05 33 – Raceways and Boxes

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work Includes:
 - 1. Furnish all labor, materials, tools, equipment and services for all raceways as indicated, in accord with provisions of Contract Documents.
 - 2. Completely coordinate with work of all other trades.
 - 3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
 - 4. See Section 26 00 01 for General Electrical Requirements.

1.02 WORK INCLUDED

- A. Galvanized Rigid and Intermediate Metal Conduit and Fittings
- B. Electrical Metallic Tubing (EMT) and Fittings
- C. Rigid Nonmetallic Conduit and Fittings
- D. Conduit Supports
- E. Expansion Fittings
- F. Conduit Bodies
- G. Outlet Boxes
- H. Pull and Junction Boxes
- I. Conduit Sizing, Arrangement and Support
- J. Underground Conduit
- K. Conduit Installation
- L. Conduit Installation Schedule
- M. Connections and Fittings
- N. Pull and Junction Box Installation
- O. Pull and Junction Box Installation Requirements

1.03 RELATED WORK

Section 26 05 29 – Hangers and Supports for Electrical Systems
Section 26 27 26 – Wiring Devices

PART 2 - PRODUCTS

2.01 GALVANIZED RIGID AND INTERMEDIATE METAL CONDUIT AND FITTINGS

- A. Manufactured lengths, full weight, heavy wall, rigid steel conduit, protected inside and out by hot-dipped galvanized or electro-galvanized coating.
- B. Minimum conduit size shall be 1/2 inch.
- C. Connectors and Couplings: Threaded, liquidtight, insulated throat.

2.02 ELECTRICAL METALLIC TUBING (EMT)

- A. Standard lengths and size.
- B. Minimum conduit size shall be 1/2 inch.
- C. Connectors and Couplings: Threaded, insulated throat, gland compression type, rain and concrete tight. No set screw, push on or indenter type permitted.

2.03 RIGID NONMETALLIC CONDUIT AND FITTINGS

- A. Standard lengths and sizes.
- B. Minimum size 1/2" with the exception that the minimum size conduit for underground site lighting circuits shall be 1".
- C. Schedule 40 or 80, rigid plastic (PVC) conduit manufactured to NEMA TC-2 standards, UL listed, and as required by NEC.
- D. PVC conduit may not be used in plenum rated ceilings.
- E. Rated for 90°C cable.
- F. Connectors and Couplings: Schedule 40 or 80 to match conduit.

2.04 CONDUIT BODIES

- A. Galvanized or cadmium plated with threaded hubs.
- B. PVC in corrosive areas.
- C. Removable cover, with gasket.
- D. Corrosion-resistant screws, 316 stainless steel.

2.05 OUTLET BOXES

- A. Acceptable Manufacturers:
 - 1. Galvanized boxes:
 - a. Base: Appleton Electric Co.; Steel City; and Raco.
 - 2. Corrosion resistant boxes and fittings:
 - a. Base: Crouse-Hinds; and Appleton Electric Co.
 - 3. PVC boxes F Series with ground lug.
 - a. Base: Heritage Plastic Group.

4. Junction box and conduit supports:
 - a. Base: CADDY.
 5. Other manufacturers desiring approval comply with Instruction to Bidders.
- B. Exposed switch and receptacle boxes: Galvanized type.
- C. Weatherproof receptacle boxes: Die Cast Aluminum type
- D. Pull and junction boxes: Code-sized galvanized steel boxes provided with plain blank removable covers held in place with screws unless otherwise indicated.
1. Where sizes are not indicated, use 4 IN square or NEC size.

2.6 PULL AND JUNCTION BOXES

- A. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
- B. Acceptable Manufacturers:
1. For interior work, provide galvanized sheet metal boxes of code thickness with lapped and welded joints, 3/4" flanges and screw covers.
 2. For exterior work, provide galvanized sheet metal boxes of code thickness with lapped and welded joints, 3/4" flanges, bolted covers with full gaskets forming a completely raintight assembly, equal to Keystone 19000 series.
 3. For exterior work in graded areas outside the building, provide heavy duty sidewalk junction boxes externally flanged for flush mounting. Covers shall be fully gasketed, watertight with grounding strap and secured with plated screws or bolts equal to Quazite Type PC. Covers shall have logo naming the type of system, electric, high voltage lighting, etc. Shall comply with NEC 314.

PART 3 - EXECUTION

3.01 CONDUIT SIZING, ARRANGEMENT AND SUPPORTS

- A. Interior conduits for electrical wiring may be electrical metallic tubing (EMT) exceptions to the requirements stated above area as follows:
1. Conduits for feeder conductors shall be EMT regardless of conduit size.
 2. Conduits in poured concrete construction shall be PVC regardless of size.
 3. Conduits installed in corrosive areas shall be PVC conduit.
 4. Conduits installed within 1-1/2" under metal-corrugated sheet roof decking shall be IMC or GRC.
 5. Above ground exterior conduit shall be GRC.
- B. Cut joints shall be square, reamed smooth, and drawn up tight.
- C. Keep conduit plugged, clean, and dry during construction.
- D. Install No. 12 pull wire in empty conduit.
- E. Cap spare conduits.

- F. Provide a watertight conduit system where installed in wet locations such as underground, or where embedded in concrete.

3.02 UNDERGROUND CONDUIT

- A. Exterior underground conduit shall be HDPE – high density polyurethane conduit.
- B. Exterior underground conduit shall be buried at a depth of not less than 30 IN below grade.
- C. Underground conduits shall slope 1/8" per foot for proper drainage. Conduits shall drain toward manholes and junction boxes, not the electrical equipment.
- D. The city will restore the existing surface back to its original condition. Final approval shall come from the City.
- E. No conduits shall be routed underneath the field. Should be directionally bored but must avoid irrigation lines and if hit, contractor to have them repaired by irrigation contractor. All electrical conduits shall run outside the field. There are existing irrigation lines that should be avoided.

3.03 CONDUIT INSTALLATION

- A. Run exposed conduit in straight lines at right angles to or parallel with walls, beams or columns.
- B. Where corrosion protection is necessary and conduit is threaded in field, the threads shall be coated with an approved electrically conductive corrosion-resistant compound.

3.04 CONDUIT INSTALLATION SCHEDULE

- A. Support all conduit systems from structure with approved hangers or supports.
 - 1. Do not support from piping, ducts or support systems for piping or ducts.
- B. Do not install more than the equivalent of three 90° bends (270 degrees total) in any conduit run.
 - 1. Where more bends are necessary, install junction box or pullbox.
 - 2. Make all bends in 1/2 IN and 3/4 IN conduit (1 IN EMT) with a conduit bender.
 - 3. Use machine bends for larger sizes.
- C. Make joints in threaded conduit watertight with white nonlead compound applied to male threads only.
 - 1. Cut square, ream smooth, and properly thread field joints to receive couplings.
 - 2. Do not use running threads.
- D. Fit all conduit ends at switch and outlet boxes with approved tight bond with box when screwed tightly in place.
- E. Remove moisture and debris from conduit before wire is drawn into place. Tightly plug ends of conduit with tapered wood plugs inserts until wire is pulled.
- F. Neatly seal openings around conduits, etc., where they pass through fire rated

construction or exterior walls or roof.

3.05 CONNECTIONS AND FITTINGS

- A. Install electrical fittings in accordance with the manufacturer's written instructions and with recognized industry practices to ensure that fittings serve intended purposes.
- B. Rigidly secure connectors at cabinets and boxes with galvanized lock nut and bushing.
- C. Seal conduits that run through different temperature or atmospheric conditions to prevent condensations or moisture from entering electrical equipment and devices.
- D. Locate conduit bodies so as to assure accessibility of electrical wiring.

3.10 PULL AND JUNCTION BOX INSTALLATION

- A. Support pull and junction boxes independent of conduit.

3.11 PULL AND JUNCTION BOX INSTALLATION REQUIREMENTS

- A. Provide junction boxes as shown on drawings and otherwise where required, sized according to number of conductors in box or type of service to be provided. Minimum junction box size 4" square and 2-1/8" deep. Provide screw covers for junction boxes.
- B. Use minimum 16 gauge steel for pull boxes and provide with screw cover.
- C. Install boxes in conduit runs wherever necessary to avoid excessive runs or bends. Do not exceed 100' runs without pull boxes.
- D. Rigidly secure boxes to walls or ceilings. Conduit runs will not be considered as adequate support.
- E. Install boxes with covers in accessible locations. Size boxes in accordance with Article 314 of the latest edition of the National Electric Code.
- F. Do not install pull or junction boxes for joint use of line voltage and signal or low voltage controls unless all conductors are insulated for the highest voltage being used in the same box.
- G. Install all components as indicated.
- H. Tag ends of conduit with system identification letters.
- I. Test conduit for clear passage.
- J. Neatly mark inside of outlet boxes with system identification letters using black felt-ink mark.

END OF SECTION

Section 26 05 53 - Electrical Identification

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work Includes:
 - 1. Furnish all labor, materials, tools, equipment, and services for wiring all equipment furnished by others as indicated, in accord with provisions of Contract Documents.
 - 2. Completely coordinate with work of all other trades.
 - 3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
 - 4. See Section 26 00 01 for General Electrical Requirements.

1.02 SECTION INCLUDES

- A. Nameplates
- B. Stenciling
- C. Wire and Cable Markers

1.03 SUBMITTALS

- A. Submit shop drawings under provisions of Section 26 00 01.
- B. Include schedule for nameplates and stenciling.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Nameplates: Engraved three-layer laminated plastic, black letters on a white background. Emergency system shall use red letters on white background.
- B. Stenciling: Black paint. Emergency system stenciling shall use red paint.
- C. Wire and Cable Markers: Cloth markers, split sleeve or tubing type.
- D. Tape (phase identification only): Scotch #35 tape in appropriate colors for system voltage and phase.
- E. Adhesive type labels not permitted except for phase and wire identification.

PART 3 - EXECUTION**3.01 GENERAL**

- A. All branch circuit and power panels must be identified with the same symbol used in circuit directory in main distribution center.
- B. Wording of nameplates and embossed labels shall define the components actual use. Nomenclature used on the Drawings and in Specifications is for construction purposes only. Actual nomenclature shall be verified with the Owner. Identify voltage where other than 120 volts.

3.02 INSTALLATION

- A. Clean surfaces to receive nameplates or stenciling.
- B. Install nameplates parallel to equipment lines.
- C. Secure nameplates to equipment fronts using screws, or rivets. Secure nameplate to inside of recessed panelboards in finished locations.
- D. Embossed tape will not be permitted for any application.
- E. Stenciling may only be used on equipment fronts in unfinished areas or in areas designated by the Architect/Engineer.
- F. Secure nameplate to inside surface of door on panelboard that is recessed in finished locations.
- G. Identify underground conduits using underground warning tape. Install one tape per trench at 6 inches below finished grade.

3.03 WIRE IDENTIFICATION

- A. Provide wire markers on each conductor in panelboard gutters, pull boxes, outlet and junction boxes, and at load connection. Identify with branch circuit or feeder number for power and lighting circuits, and with control wire number as indicated on schematic and interconnection diagrams for control wiring.
- B. Verify label identification numbering systems with the Owner's representative.

3.04 FEEDER IDENTIFICATION

- A. Each feeder within each pulling pit, manhole and pull box will be identified utilizing permanently attached nameplates.
- B. Nameplates shall be engraved three-layer laminated plastic, black on white background for normal power, red on white background for emergency power. Firmly attach to cable with non-aging nylon tie-wraps.
- C. Nameplate shall identify voltage, system (i.e. normal, em-equip or em-life) and destination of feeder (i.e. buildings A, B, C and D, etc.).
- D. Temporary tags are to be utilized during construction and permanent tags to be installed near substantial completion of distribution system.

3.05 NAMEPLATE ENGRAVING AND STENCILING

- A. Provide nameplates or stencils of minimum letter height as scheduled below.
- B. Panelboards and Switchboards: 1 inch; identify equipment designation. 1/2 inch; identify voltage rating and source, and available short circuit current, per the short circuit study.
- C. Individual Circuit Breakers, Switches, and Motor Starters in Panelboards, Switchboards, and Motor Control Centers: 1/4 inch; identify circuit and load served, including location.
- D. Individual Circuit Breakers, Enclosed Switches, and Motor Starters: 1/4 inch; identify load served.
- E. Junction boxes: 1/2 inch; identify system source(s) and load(s) served.

3.06 PANELBOARD DIRECTORIES

- A. Directories for panels must be covered with clear plastic, have a metal frame and shall be typewritten. Room number on directories shall be Owner's numbers, not Plan numbers unless Owner so specifies. Directory shall include panel name, available short circuit current per the short circuit study, circuit description including: breaker amp/pole size, description of devices served, and area served.

3.07 WIRING DEVICE IDENTIFICATION

- A. Receptacles, device plates and box covers, junction boxes, shall be identified with circuit numbers and source. Identifications should be made inside of device covers, unless directed otherwise. Use machine-generated labels, or neatly hand-written permanent marker.

END OF SECTION

Section 26 24 16 - Panelboards

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work Includes:
 - 1. Furnish all labor, materials, tools, equipment, and services for all panelboards as indicated, in accord with provisions of Contract Documents.
 - 2. Completely coordinate with work of all other trades.
 - 3. Although such work is not specifically shown or specified, all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation shall be furnished and installed as part of this work.
 - 4. See Section 26 00 01 for General Electrical Requirements.

1.02 SCOPE

- A. Provide panelboards as indicated in the panel schedule, as noted on the drawings and as specified herein.

1.03 RELATED WORK

- A. Section 26 05 53 - Electrical Identification
- B. Section 26 28 16 - Safety Switches, Circuit Breakers and Fuses
- C. Plans - Panel Schedule

1.04 SUBMITTALS

- A. Shop Drawings:
 - 1. Cabinet dimensions, nameplate nomenclature, electrical ratings, and breaker type listing.
 - 2. Product data sheets with installation instructions.
 - 3. Field quality control test results.
 - 4. Operating and maintenance data.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Do not store panelboards exposed to weather.
- B. Protect panelboards against damage from work of other trades.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Use of a manufacturer's name and model or catalog number is for the purpose of establishing standard of quality and general configuration desired.

2.02 ACCEPTABLE MANUFACTURERS

- A. Square D
- B. Cutler Hammer
- C. Engineer approved equal.

2.03 PANELBOARD RATINGS

- A. UL listed short circuit rating (integral equipment rating):
 - 1. 208Y/120V Branch Circuit Panels: 10,000 RMS symmetrical amperes minimum or as indicated on Short-Circuit, Arc Flash Study equivalent to Square D Type NQOD.
 - 2. Power Panels: 18,000 RMS symmetrical amperes minimum
 - 3. Panels used for the main service shall be suitable for service entrance.

2.04 PANELBOARD CONSTRUCTION

- A. Main breaker or main lugs only, per panelboard schedule.
- B. Insulated Neutral Bus with Terminals: Provide bus with minimum number of terminals equal to 50% of number of poles in panel.
- C. Equipment Grounding Bus with Terminals: Bus shall be bonded to enclosure. Provide bus with minimum number of terminals equal to 50% of number of poles in panel.
- D. Insulated/Isolated Grounding Bus with Terminals: Provide bus with minimum number of terminals equal to 50% of number of poles in panel.
- E. Branch Breaker Details:
 - 1. Conform to Section 26 28 16.
 - 2. Emergency branch breakers shall be properly coordinated.
- F. Bussing:
 - 1. Distributed phase sequence type.
 - 2. Ratings per panelboard schedule, 100 amp minimum.
 - 3. Plated copper construction.
 - 4. Bolt on circuit breaker construction.
- G. Gutters adequate for wire size used, 4 in. minimum.
- H. Boxes:
 - 1. NEMA 1 enclosure where indicated on drawings. Exterior shall be NEMA 3R.
 - 2. Minimum 20" wide.
 - 3. Minimum 5-3/4" deep.
 - 4. Height as required to accommodate breakers and spaces indicated on plans and code required gutter space.
- I. Fronts:
 - 1. Dead front safety type.
 - 2. Concealed adjustable trim clamps.
 - 3. Concealed hinges.

4. Flush stainless steel cylinder tumbler type locks with spring loaded door pulls.
 5. Locks keyed alike.
 6. Code gauge steel with rust inhibiting primer and baked enamel finish.
 7. Panel front shall be hinged door-in-door type, hinged overall door with hinged door within cover to access circuit breakers.
- J. Circuit Directory: Conform to Section 26 05 53.
1. Suitable for complete descriptions.
 2. Clear plastic cover.
 3. Typewritten card.
 4. Provide steel frame holder on inside cover of door to hold directory. Directory shall be covered with a sheet of clear plastic.

2.05 NAMEPLATES: Conform to Section 26 05 53.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine area to receive panelboard to assure adequate clearance for panelboard installation.
- B. Start work only after unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's written instructions, applicable requirements of NEC and NECA's "Standard of Installation," and in accordance with recognized industry practices.
- B. Flush mount, surface mount, as specified on drawings and schedules.
- C. Support panel cabinets independently to structure with no weight bearing on conduits.
- D. Install panelboards so top breaker is not higher than 6 ft.-7 in. above floor.
- E. Adjacent panel cabinets shall be of same size and mounted in horizontal alignment.
- F. Install in each panelboard a typewritten directory accurately indicating rooms and/or equipment being served, current available short circuit, breaker amp/pole rating.

3.03 FIELD QUALITY CONTROL

- A. Balance load among feeder conductors.
- B. Unbalance shall not exceed $\pm 7\frac{1}{2}\%$ of computed average load per phase.
- C. Energize each circuit and check for complete and correct function.

3.04 ADJUSTMENT AND CLEANING

- A. Adjust doors and operating mechanisms for free mechanical movement.
- B. Tighten lugs and bus connections per manufacturer's torque specifications.
- C. Clean interior of panelboard.
- D. EC shall install temporary panel covers as necessary during construction to reduce the construction debris within panels.

END OF SECTION

Section 26 27 26 - Wiring Devices**PART 1 - GENERAL****1.01 DESCRIPTION****A. General:**

1. Furnish all labor, materials, tools, equipment, and services for all wiring devices as indicated, in accord with provisions of Contract Documents.
2. Completely coordinate with work of all other trades.
3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices and incidental to or necessary for a sound, secure and complete installation.
4. See Section 26 00 01 for General Electrical Requirements.

1.02 SUBMITTALS

- A. Submittals for products in this Section are not required.

PART 2 - PRODUCTS**2.01 MATERIALS - GENERAL****A. Acceptable Manufacturers:**

1. GFI Receptacles:
 - a. Base: Hubbell; Leviton; Pass & Seymour (P&S); and Arrow Hart.
2. Other manufacturers desiring approval comply with Instructions to Bidders.

B. Device and Cover Plate Colors:

1. Cover plates to be while-in-use commercial electric expandable cover or equal.

2.02 DUPLEX AND SINGLE RECEPTACLES**A. Specification Grade (Heavy Duty):**

1. 20 amp, duplex: NEMA 5-20R; Hubbell HBL 5362; Leviton 5362; P&S 5362A.

B. Special Requirements:

1. Ground Fault Circuit Interrupter: 20 amp, with built-in ground fault interruption, 5 mA sensitivity, LED indicator light (on when operable) and reset, UL 2003 compliant. GFI receptacle shall have lock-out feature when GFI protection device fails. Duplex, Leviton 8898.
2. GFI, weather-resistant, tamper-resistant, duplex Hubbell GFTR20 Series.

C. Weatherproof Receptacles: Exterior cover plates to be commercial electric expandable cover or equal.

1. Receptacles shall be GFCI weather-resistant type.

2.03 DEVICE PLATES

- A. Shall be Nylon type.

- B. Device Plates for Surface Type Cast-metal Boxes: Cadmium-plated cast ferrous metal designed for application.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install convenience receptacles with grounding pole on top.
- B. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface-mounted outlets.
- C. Receptacles shall have a bonding conductor from grounding terminal to the metal conduit system. Self-grounding receptacles using mounting screws as bonding means are not approved.

3.02 FIELD QUALITY CONTROL

- A. Inspect each wiring device for defects.
- B. Verify that each receptacle device is energized.
- C. Test each receptacle device for proper polarity.
- D. Test each GFCI receptacle device for proper operation.

3.03 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.
- B. Mark all conductors with the panel and circuit number serving the device, at the device.
- C. Mark the panel and circuit number serving the device on the backside of the device plate with a permanent marking system that does not show through the front of the plate.

END OF SECTION

Section 26 28 16 - Safety Switches, Circuit Breakers and Fuses

PART 1 - GENERAL

1.01 DESCRIPTION

- A. General:
 - 1. Furnish all labor materials, tools, equipment and services for all safety switches, circuit breakers and fuses as indicated, in accord with provisions of Contract Documents.
 - 2. Completely coordinate with work of all other trades.
 - 3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
 - 4. See Section 26 00 01 for General Electrical Requirements.

1.02 SUBMITTALS (See General Conditions)

- A. Project Data:
 - 1. Operating and maintenance data: See Section 26 00 01.

1.03 RELATED WORK

- A. Section 26 05 26 - Grounding and Bonding

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Do not store exposed to weather.
- B. Protect against damage from work of other trades.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Same as gear manufacturer.

2.02 DISCONNECT RATINGS

- A. UL listed short circuit rating:
 - 1. 200,000 RMS amps with Class R fuses.

2.03 SAFETY SWITCH CONSTRUCTION

- A. NEMA heavy duty Type HD.
- B. Dual cover interlock.
- C. Visible blades.
- D. Provisions for control circuit interlock.
- E. Pin type hinges.

- F. Tin plated copper current carrying parts.
- G. Quick make and break operator mechanism.
- H. Handle attached to box, not cover.
- I. Handle position indication, ON in up position and OFF in down position.
- J. Padlock provisions for up to three padlocks in OFF position.
- K. UL listed lugs for type and size of wire specified.
- L. Spring reinforced fuse clips for Type R fuses.
- M. Provisions for insulated or grounded neutral.

2.04 LIGHTING AND POWER PANEL CIRCUIT BREAKERS

- A. Thermal and magnetic protection.
- B. Single-handle common trip, two and three poles (handle ties not acceptable).
- C. Bolt-on type.
- D. Quick make and break toggle action.
- E. Handle trip indication.
- F. Handle position indication, ON in up position, OFF in down position, and TRIPPING centered.
- G. UL listed for type and temperature rating of wire specified.
- H. UL listed short circuit rating (integrated equipment rating): as indicated on drawings. Series rating is not acceptable.
- I. UL listed for type and temperature rating of wire specified.

2.05 ENCLOSURES

- A. Indoor: NEMA 1 code gauge steel with rust inhibiting primer and baked enamel finish.
- B. Outdoor: NEMA 3R code gauge zinc coated steel with baked enamel finish or NEMA 4 when indicated on drawings.

2.06 NAMEPLATES

- A. In accordance with Section 26 05 53.
- B. Identify per equipment controlled.

PART 3 - EXECUTION

3.01 GENERAL

- A. Provide disconnect switches as indicated on the drawings.

3.02 INSPECTION

- A. Examine area to receive disconnect to assure adequate clearance for installation.
- B. Start work only after unsatisfactory conditions are corrected.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's written instructions, applicable requirements of NEC and NECA's "Standard of Installation," and in accordance with recognized industry practices.
- B. Locate disconnect switches as shown on drawings or as required by NEC.
- C. Install on equipment support where feasible, or anchor firmly to wall or structural surface.
- D. If applicable, Provide adhesive label on inside door of each switch indicating UL fuse class and size for replacement.

3.04 ADJUSTMENT

- A. Adjust covers and operating mechanism for free mechanical movement.
- B. Verify overcurrent protection to provide proper operation and compliance with NEC.
- C. Tighten wire and cable connections.
- D. Clean interior or enclosure.
- E. Touch up scratched or marred surfaces to match original finish.

END OF SECTION

SECTION 26 56 29**EXTERIOR SITE LIGHTING (Athletic)****PART 1 - GENERAL****1.01 DESCRIPTION****A. General:**

1. Furnish all labor, materials, tools, equipment, and services for all exterior site lighting, as indicated, in accord with provisions of Contract Documents.
2. Completely coordinate with work of all other trades.
3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
4. Each symbol indicated on the drawings shall denote complete lighting fixture assembly consisting of lighting fixture, module/driver, pole or base and concrete base.
5. See Section 26 00 01 for General Electrical Requirements.
6. See Division 1 for General Requirements.

1.02 SUBMITTALS (SEE GENERAL CONDITIONS)**A. Shop Drawings:**

1. Names of manufacturers, cuts, and photometric performance curves of all lighting fixtures to be used.
2. Identify fixtures by fixture schedule number, including special notations for finishes, colors, and mountings.
3. Site photometric calculation.

B. Project Data:

1. Operating and maintenance data: See Division 1.

1.03 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 Malone Park 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 Field
- 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 these specifications.

1.04 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 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 Footcandles (infield) 30 Footcandles (outfield)	2.0:1.0 (infield) 2.5:1.0 (outfield)	25 (infield) 107 (outfield)	30' x 30'

- 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
4	A1, A2a, A2b, C1, C2	70'
2	B1, B2a, B2b	80'

1.05 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.

	Average	Maximum
150' Specified Spill Line Horizontal Footcandles	.1 fc	.5 fc
150' Specified Spill Line Max Vertical Footcandles	.5 fc	.7 fc
150' Specified Spill Line Max Candela	5500 cd	10,000 cd

- 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.

1.06 LIGHTING PERFORMANCE

- 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 - PRODUCTS

2.01 MATERIALS

- A. Acceptable Manufacturers:
1. Luminaires:
 - a. Base: As indicated in appendices to this section.
 2. Contactors:
 - a. Base: Square D Co.; Allen Bradley; and General Electric.
 3. Selector switches:
 - a. Base: Allen-Bradley; Square D Co.; and General Electric.
 4. Other manufacturers desiring approval comply with Section 01700.
- B. 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.
- C. 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.

D. 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 reinforced 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 and monitoring 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.
- E. Safety: All system components shall be UL listed for the appropriate application.

2.02 ELECTRICAL

- A. Electric Power Requirements for the Sports Lighting Equipment:
 1. Electric power: <Enter voltage, F11> Volt, <Enter phase, F11> 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 65 or less.

2.03 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.

2.04 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 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

3.01 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 Wisconsin 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.

3.02 DELIVERY TIMING

- A. Delivery Timing Equipment On-Site: The equipment must be on-site 8-12 weeks from receipt of approved submittals and receipt of complete order information.

3.03 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.

3.04 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.

3.05 PRE-BID SUBMITTAL REQUIREMENTS (Non-Musco)

- A. Design Approval: The Owner / Engineer will review pre-bid submittals from all the manufacturers to ensure compliance to the specification 10 days prior to bid per Section 4.0.B. If the design meets the design requirements of the specifications, an addendum will be issued to the manufacturer indicating approval for the specific design submitted.
- B. Approved Product: Musco's Light-Structure SystemTM with TLC for LEDTM 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.

END OF SECTION

ADDENDUM TO CITY OF NEW BERLIN CONTRACTS

This Addendum is made and entered into and shall be considered an attachment to all contracts entered into by the City of New Berlin for so long as the City of New Berlin is subject to the U.S. Department of Treasury Restrictions, as well as other federal regulations related to the City's receipt of American Rescue Plan Act Funds. The following Terms and Conditions shall be included in each such agreement and are incorporated as though fully set forth in the original contract.

1. The contractor agrees to comply with the applicable requirements of Section 603 of the American Rescue Plan Act (hereinafter referred to as the "Act") regulations adopted by the US Department of Treasury (hereinafter referred to as the "Treasury") pursuant to Section 603(f) of the Act and the guidance issued by the Treasury regarding the foregoing. The contractor also agrees to comply with all other applicable federal statutes, regulations and executive orders and shall provide for such compliance by other parties, including subcontractors in any agreements it enters into with other parties related to this award.
2. Statutes and regulations prohibiting discrimination and applicable to this contract include, but are not limited to the following:
 - a. Title VI of the Civil Rights Act of 1964 (42 USC, §2000 D, et. seq.) and Treasury's implementing regulations at 31 CFR, Part 22, which prohibit discrimination on the basis of race, color or national origin under programs or activities receiving federal financial assistance.
 - b. Fair Housing Act. Title VIII of the Civil Rights Act of 1968 (42 USC, §3601, et. seq.) which prohibits discrimination in housing on the basis of race, color, religion, national origin, sex, familial status or disability.
 - c. Section 504 of the Rehabilitation Act of 1973, as amended, (29 USC, §794), which prohibits discrimination on the basis of disability under any program or activity receiving federal financial assistance.
 - d. The Age Discrimination Act of 1975, as amended (42 USC, §6101, et. seq.) and Treasury's implementing regulations at 31 CFR, Part 23, which prohibit discrimination on the basis of age and programs or activities receiving federal financial assistance; and
 - e. Title II of the Americans with Disabilities Act of 1990, as amended (42 USC, §12, 12101 et. seq.), which prohibits discrimination on the basis of disability under programs, activities and services provided or made available by state and local governments or instrumentalities or agencies thereto.
3. Equal Employment Opportunity. During the performance of the contract, the contractor will be required to comply with Equal Opportunity Employment Statutes as outlined in 47 CFR, §90.168.
4. Copeland Anti-Kickback Act. The contractor shall comply with 18 USC, § 874, 40 USC, §3145 and the requirements of 29 CFR, Part 3, as may be applicable, which are incorporated by reference into this contract.

5. Contract Work Hours of the Safety Standards Act.

- a. Overtime Requirements. No contract or subcontract contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any work week in which he/she is employed on such work to work in excess of 40 hours in such work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such work week.
 - b. Violation. Liability for unpaid wages; liquidated damages: In the event a violation of the clause set forth in (a) above, the contractor or any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards employed in violation of this section.
 - c. Withholding fund paid wages and liquidated damages: The City of New Berlin shall, upon its own action or upon written request of an authorized representative of the US Department of Labor, withhold or cause to be withheld from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other federal contract with the same contractor or any other federally assisted contract subject to the contract work hours and Safety Standards Act, which is held by the same contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractors or subcontractors or unpaid wages and liquidated damages as provided in the clause set forth in this section.
 - d. Subcontract. The contractors or subcontractors shall insert in any contract the clauses set forth in Paragraph B, 1-4 of 29 CFR §5.5 and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in Paragraphs B, 1-4 of 21 CFR, §5.5.
6. Clean Air Act and Federal Water Pollution Control Act. Contractor needs to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 USC, §7401, et. seq.
7. Debarment and Suspension. This award is a covered transaction for purposes of 2 CFR, Part 180 and 2 CFR, Part 3000. As such, the contractor is required to verify that none of the contractors principals (defined in 2 CFR, §180.995) or its affiliate (defined in 2 CFR, §180.1.905) are excluded (defined in 2 CFR, §180.940) or disqualified (defined in 2 CFR, §180.935). Selected contractors must comply with 2 CFR, Part 180, Subpart C and 2 CFR, Part 3000, Subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into. This certification is a material representation of fact relied upon by the City of New Berlin. If it is later determined that the contractor did not comply with 2 CFR, Part 180, Subpart C and 2 CFR, Part 3000, Subpart C, in addition to remedies available to the City of New Berlin, the federal government may pursue available remedies including, but not limited to, suspension and/or

disbarment. The contractor and the bidder or proposer agree to comply with the requirements of 2 CFR, Part 180, Subpart C and 2 CFR, Part 3000, Subpart C, while this offer is valid and throughout the period of any contract that may arise from this offer. This contractor and the bidder or proposer further agrees to provide a provision requiring such compliance in its lower tier covered transactions.

8. Byrd Anti-Lobbying Amendment. The contractor shall file the required certification. The contractor and all subcontractors certify that they will not and have not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress or an employee of a member of Congress, or employees of the City of New Berlin in connection with obtaining any federal contract, grant or any award covered by 31 USC, §1352. Each tier, including the contractor and all subcontractors, shall also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier up to the recipient, who in turn will forward the certifications to the awarding agency. If the agreement exceeds \$100,000.00, the contractor must certify compliance with the Byrd Anti-Lobbying Amendment.
9. Procurement of Recovered Materials. Contractor shall comply with 2 CFR, §200.323 as applicable.
10. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment. Contractor shall comply with 2 CFR, §200.216, as applicable.
11. Domestic Preferences for Procurements. Contractor shall comply with 2 CFR, §200.322.
12. This Exhibit A is intended to incorporate those federal laws and regulations that apply to this contract. If the contractor believes that any law or regulation described herein is not applicable in this contract per the terms of the federal law or regulation, the contractor shall present their position in that regard to the City of New Berlin with a written change order request. The laws cited herein shall be followed by the contractor and all subcontractors unless the municipality agrees that the cited federal law or regulation does not apply, and the change order is approved by the City of New Berlin Common Council.

ADDENDUM TO CITY OF NEW BERLIN CONTRACTS

This Addendum is made and entered into and shall be considered an attachment as Exhibit B to all contracts entered into by the City of New Berlin for so long as the City of New Berlin is subject to the U.S. Department of Treasury Restrictions, as well as other federal restrictions related to the City's receipt of Federal Funds. The following Terms and Conditions shall be included in each such agreement and are incorporated as though fully set forth in the original contract.

1. No City contractor or employee shall operate any machinery or vehicle while utilizing a smart phone, including, but not limited to, the use of any cellular phone or texting.
2. All City employees and contractors, while engaged in the performance of City business or acting consistent with the performance of services under a contract with the City shall utilize seatbelts and any other safety devices related to the operation of a motor vehicle.
3. City employees or contractors whose duties and responsibilities are funded through the Coronavirus State and Local Fiscal Recovery Funds agree that they will not engage in any lobbying activities while in the course of providing services on behalf of the City of New Berlin, as restricted under the Hatch Act, 5 USC Sec. 1501-1508. No funds appropriated under the Coronavirus State and Local Fiscal Recovery Act shall be utilized for lobbying, and no political payments shall be made through the use of said funds.
4. All City employees and contractors, while in the performance of duties on behalf of the City shall abide by all local, state and federal regulations concerning the ingestion of controlled substances and shall not violate such Statutes or Ordinances. The City shall enforce drug free workplace standards and provide awareness programs for Staff. The City shall further agree to take action regarding individuals using drugs in the workplace according to law.
5. All City employees and contractors, in the course of performing of their duties on behalf of the City, shall, to the extent applicable, comply with the provisions in Wisconsin Statute §19.59 regarding conflicts of interest, as well as City of New Berlin Municipal Code Chapter 28 regarding ethics. Specifically, no City employee or contractor shall accept or solicit money or tangible personal property or otherwise receive consideration in exchange for the agreement to enter into a contract with a third party.
6. City employees shall avoid the acquisition of unnecessary items or property on behalf of the City.
7. City employees shall, to the extent applicable, engage in value engineering as part of any construction work performed on behalf of the City.
8. Contracts shall only be awarded to responsible contractors with experience in performing the services being contracted for.

9. City contracts shall avoid compensating for contractor work performed on a time and material basis and, to the extent practicable, shall have fixed-price contracts.
10. The selection of a contractor by the City should be done in an atmosphere of open and honest competition.
11. In the course of public bidding involving the purchase of equipment, the City shall not specify only a brand name for the purpose of limiting potential contracting parties. The City may include a clause, however, that any equipment being supplied under a City contract must interface well and be compatible with existing equipment utilized by the City of New Berlin, which is identified as the following: _____.
12. The City shall verify that any entity with which it is contracting has not been excluded for contracting pursuant to 2 CFR §180.
13. City contractors do hereby certify that they are not designated by the federal government as being precluded from engaging in federal contracts.
14. The City of New Berlin, its employees, officers, agents, contractors and assigns may not discharge, demote or otherwise discriminate against an employee in reprisal for disclosing information that the employee reasonably believes is evidence of gross mismanagement of a Federal, State or City contract or grant; a gross waste of Federal, State or City funds; an abuse of authority relating to Federal, State or Local Contractor Grant; a substantial and specific danger to public health, safety or welfare; or a violation of law, rule or regulation related to a Federal, State or City contract (including, but not limited to, the competition for or negotiation of a contract) or Grant. The entities to which disclosure of such information includes, but is not limited to the following entities:
 - a. A member of Congress or a representative of a committee of Congress;
 - b. An Inspector General;
 - c. The Government Accountability Office;
 - d. A Treasury employee responsible for contract grant oversight or management;
 - e. An authorized official of the Department of Justice or other law enforcement agency;
 - f. A Court or Grand Jury;
 - g. A management official or other employee of the City;
 - h. A contractor of the City;
 - i. A subcontractor of the City, which has the responsibility to investigate, discover or address misconduct;
 - j. An official of the State of Wisconsin, or other employee, agent or contractor of the State who has the responsibility to investigate, discover or address misconduct.
15. This Policy shall be disclosed to all City officers, agents, contractors or assigns and shall be included as part of the City's Addendum for City contract.
16. The City shall engage in a cost and price evaluation analysis to include independent estimates of the cost of the equipment or service before placing the matter out for bid.

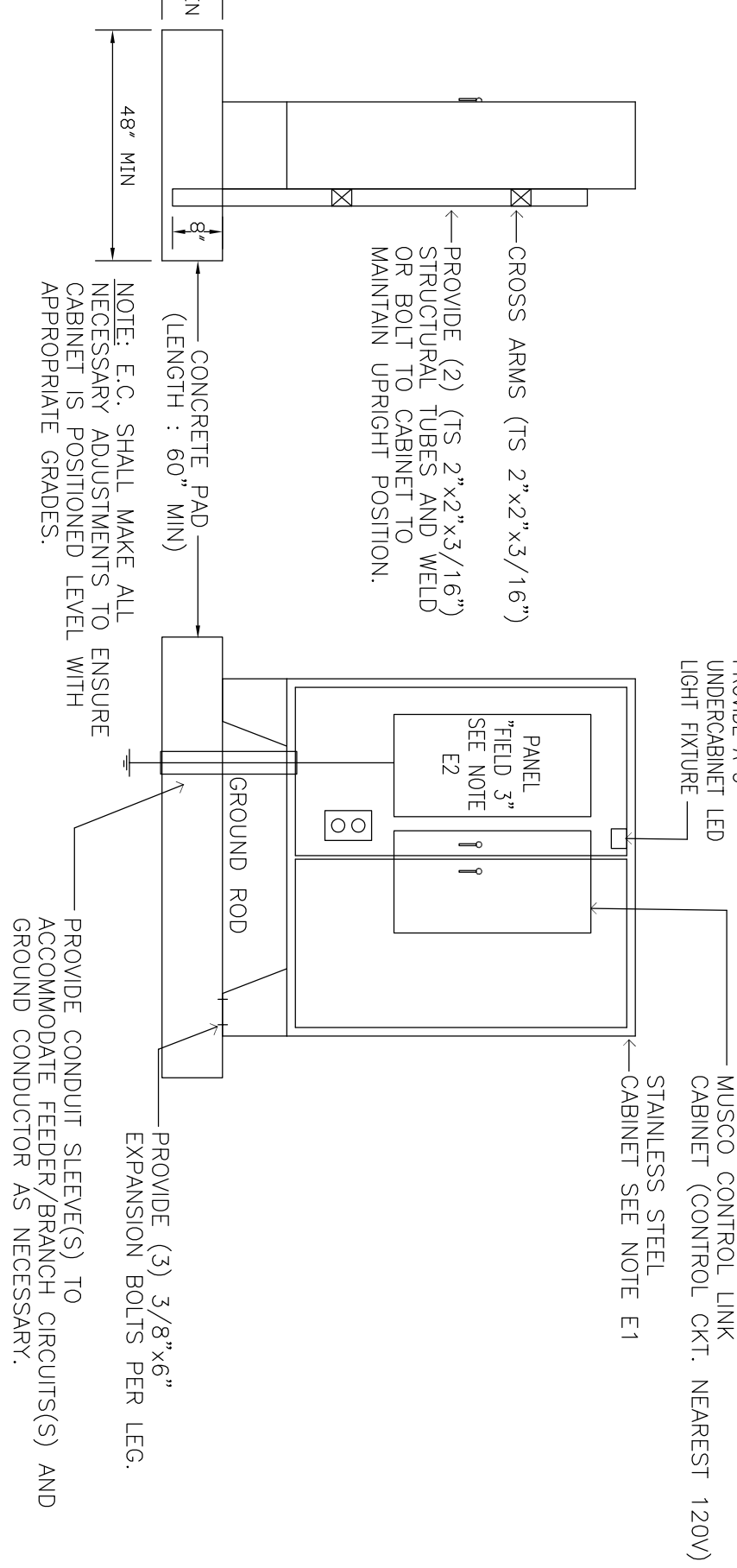
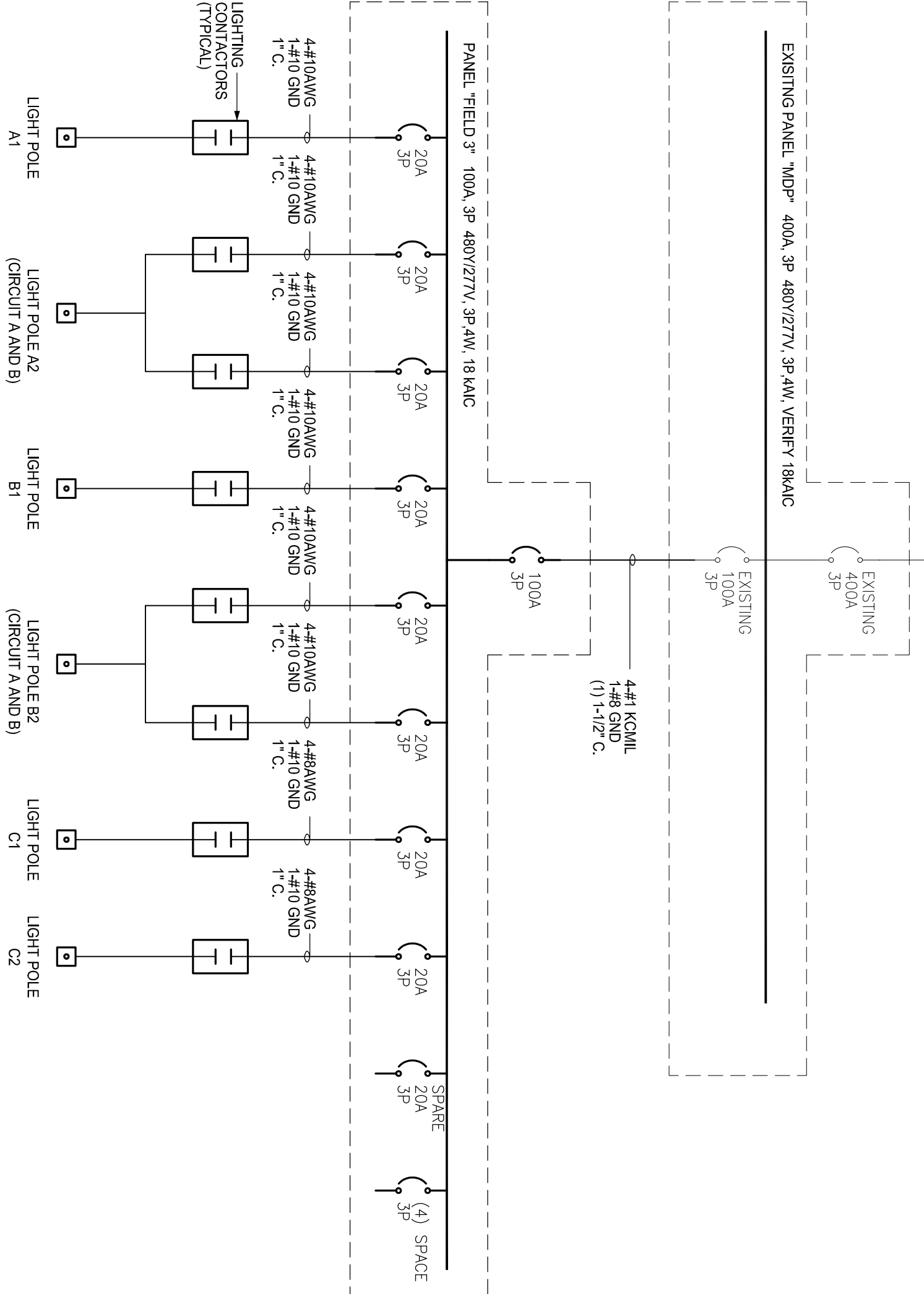
17. When the City is engaged in negotiating purchase of goods and services, the profit in the contract shall be negotiated independently from the materials and labor. In any contract entered into by the City of New Berlin for the acquisitions of goods and services shall require remedies in the event of a breach of the agreement and shall include provisions for termination as to cause.

INVITATION TO BID

Project: **BG-2022-1**
Malone Park Ball Diamond Lighting
16400 W Al Stigler Pkwy.
New Berlin, WI 53151

1. Scope: The city of New Berlin is soliciting requests to provide new sports lighting on Malone Park Field #3. The sports lighting poles on the first base side and right field will also provide illumination to the adjacent field on the west side.
2. Notice is hereby given that sealed Bids are due at 9:00 A.M., on December 7, 2022.
3. Bidding Documents will be available on or before November 16, 2022. Bidders may obtain Bidding Documents only from the following site: Quest ebid doc #8333815 – Bid/RFP Listing. Documents will be available for download. Documents will not be mailed. **It is the responsibility of prospective Bidders to check this website for any future amendments, questions, revisions, etc., prior to the opening date.**
4. Pre-Bid meeting and walkthrough on November 30th, 2022 at 9:00 AM. Meeting location is New Berlin Malone Park Field #3, 16400 W Al Stigler Parkway, New Berlin, WI 53151. Parking is available in the lot on the south side of the field. **Please be on time as no accommodations will be made for late arrivals. NOTE: This will be the only opportunity for a walk through, therefore, be sure to bring all potential subcontractors. Vendors are also reminded to review all Bid Documents, etc. prior to arrival.**

Published by Order of:
City of New Berlin
Buildings and Grounds
(262) 786-8610
3805 S Casper Dr
New Berlin, WI 53151



E1. PROVIDE A NEMA 4X 1P LOCKABLE FREE STANDING STAINLESS STEEL CABINET. CABINET SHALL BE SIZED TO HOUSE PANEL, 2" CONDUIT, CONDUIT, MISCO CONTROL LINK CABINET (OR EQUIV.), A DUPLEX GFI RECEPTACLE AND A PORCELAIN LAMPHOLDER (FULL CHAIN TYPE). ON THE OUTSIDE OF THE ENCLOSURE, PROVIDE MISCO'S REMOTE MANUAL SWITCH CABINET PER THE OWNER'S REQUEST.

E2. PROVIDE A 100 AMP MAIN CIRCUIT BREAKER. REFER TO PANELBOARD SCHEDULE FOR CIRCUIT BREAKER SIZES. CIRCUIT BREAKERS SHALL BE RATED 18,000 AC FOR BONDING PURPOSES. PANEL SHALL BE STAINLESS STEEL.

E3. ALL SUPPORTS FOR THE ELECTRICAL CABINET SHALL BE STAINLESS STEEL.

E4. E2 SHALL VERIFY WIRE SIZES BY PROVIDING A VOLTAGE DROP ANALYSIS AS PART OF THE SHOP DRAWING SUBMISSION.

E5. CONCRETE SLAB SHALL BE RAISED ABOVE THE FINISHED GROUND AT LEAST 4".

NEW SERVICE CABINET DETAIL

E1.0 NO SCALE



EXISTING NEMA 3R ENCLOSURE FOR PANELBOARDS

E1.0 NO SCALE

NOTE: REMOVE AND DISPOSE EXISTING 100A/3P CIRCUIT BREAKER AND THE (2) CONDUITS. ALL EXISTING ELECTRICAL SHALL BE REMOVED. ALL WIRING EXTENDED GROUND AS POSSIBLE. THE REMOVAL SHALL BE SCALED PROPERLY.



EXISTING MAIN DISTRIBUTION PANEL LOCATED BEHIND FIELD 3

E1.0 NO SCALE

NOTE: UTILIZE EXISTING 100A/3P SPARE CIRCUIT BREAKER LABELED "FIELD 3".



NEW EXTERIOR ENCLOSURE IN FENCED AREA

E1.0 NO SCALE

NOTE: REFER TO DETAIL E1.0 FOR MORE INFORMATION. LOCATED THIS ENCLOSURE WITHIN THE FENCED IN AREA. THE ENCLOSURE SHALL BE 120V SOURCE IS NOT NEAR.

FIGURE 1.1 UNDERGROUND
LED LIGHT FIXTURE LIGHT
FIXTURE SHOWN ON WIRE IS
300' IN DIAMETER

MISCO CONTROL
LINK CABINET

Street LIGHTING FIXTURE SCHEDULE AND NOTES

Project MALONE - PARK BALL DIAMOND LIGHTING

MALONE PARK NEW BERLIN, WI

Date
November 03, 2022
Project No.
19-1011.21

Sheet No. E1.0

3 EXISTING PARTIAL DEMOLISHED POLE BASE

E1.0 NO SCALE

NOTE: C. SHALL REMOVE AND DISPOSE ALL EXISTING POLE BASES (TOTAL OF 8) DOWN BELOW GRADE. REMOVE AS MUCH CONDUIT AND WIRE AS POSSIBLE.



SYMBOLS LIST NOTE:

ANY SYMBOLS UTILIZED ON THE FLOOR PLANS NOT OTHERWISE ON THE SYMBOLS LIST SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEERS PRIOR TO BIDDING FOR CLARIFICATION.

LIGHTING



LED POLE FIXTURE – REFER TO LIGHT FIXTURE SCHEDULE FOR QUANTITY OF HEADS (MUSCO'S LIGHTING DESIGN)

POWER & DIAGRAMS

$\phi_{GFI,WP}$ GROUND FAULT CIRCUIT INTERRUPTER: 20 AMP, WITH BUILT-IN GROUND FAULT INTERRUPTION, 5 MA SENSITIVITY, LED INDICATOR LIGHT (ON WHEN OPERABLE) AND RESET, UL 943 2015 COMPLIANT. GFI RECEPTACLE SHALL HAVE LOCK-OUT FEATURE WHEN GFI PROTECTION DEVICE FAILS, AUTO-MONITORING OR SELF-TEST FUNCTION AND REVERSE LINE-LOAD MISFIRE FUNCTION. DUPLEX, LEVITON 8898: COVER SHALL BE WEATHERPROOF- WHILE-IN-USE TYPE, METALLIC WITH PAD LOCK HOLES, HUBBELL WP SERIES. GROUND WIRES SHALL NOT BE READILY ACCESSIBLE.

- ϕ DUPLEX RECEPTACLE – MOUNTED 18" AFF.
- ϕ_{GFI} DUPLEX RECEPTACLE – GROUND FAULT CIRCUIT INTERRUPTER TYPE.
- ϕ_{WP} DUPLEX RECEPTACLE – WEATHER PROOF.
- $\square$ POLE MOUNTED SPORTS LIGHT FIXTURE
- --- LOCAL SWITCH, SINGLE POLE – MOUNTED 48" AFF.
- --- LOCAL SWITCH, SINGLE POLE – 3-WAY.
- --- LOCAL SWITCH, SINGLE POLE – 4-WAY.
- $\square$ DISCONNECT SWITCH.
- $\square$ DISCONNECT SWITCH – FUSIBLE.
- $\square$ ELECTRICAL DISTRIBUTION PANEL – NEW
- --- GROUND
- OR $\square$ TRANSFORMER
- $\square$ JUNCTION BOX

MISCELLANEOUS SYMBOLS

- --- INDICATES DETAIL NUMBER
- --- SEE DETAIL
- --- INDICATES SHEET NUMBER
- --- INDICATES NOTE NUMBER
- --- SEE NOTE
- --- INDICATES SHEET NUMBER

CIRCUIT DESIGNATIONS

- --- BRANCH CIRCUIT – COMMON CONTROL, INCLUDES GREEN GROUND WIRE, NEUTRAL AND PHASE WIRES.
- --- BRANCH CIRCUIT – SEPARATE CONTROL, INCLUDES GREEN GROUND WIRE, NEUTRAL AND PHASE WIRES.

SYMBOLS LIST NOTE:

ANY SYMBOLS UTILIZED ON THE FLOOR PLANS NOT OTHERWISE ON THE SYMBOLS LIST SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEERS PRIOR TO BIDDING FOR CLARIFICATION.

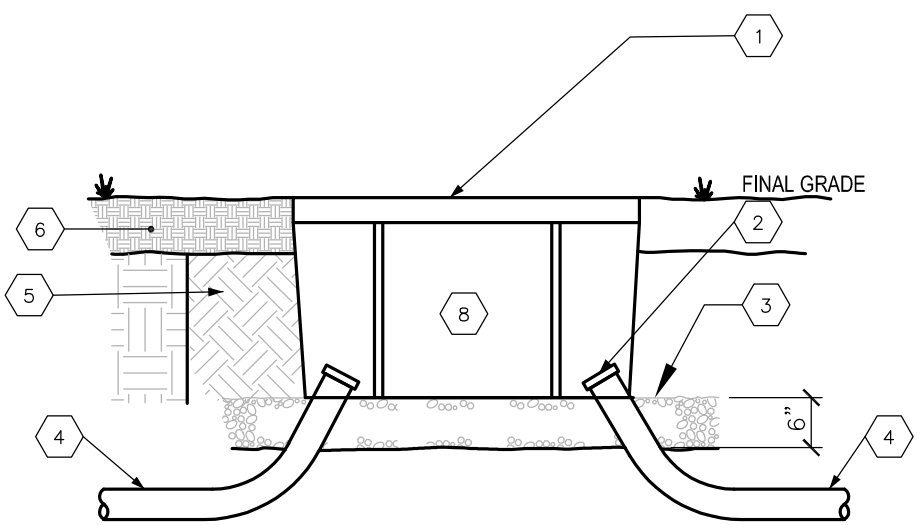
GENERAL RENOVATION/DEMOLITION NOTES:

- ELECTRICAL DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE. FOR AREAS BEING REMODELED, WORK SHOWN REFLECTS INFORMATION SHOWN ON AS-BUILT PLANS AND FIELD OBSERVATIONS; IT IS NOT GUARANTEED 100% ACCURATE. THIS CONTRACTOR MUST FIELD VERIFY CONDITIONS AND MAKE NECESSARY ADJUSTMENTS WITHOUT EXTRA COSTS TO THE PROJECT TO SUIT ACTUAL NEEDS.
- THE CONTRACTOR SHALL REWIRE/REROUTE/RELOCATE, AS REQUIRED DUE TO CONSTRUCTION, ALL EXISTING CIRCUITS AND EQUIPMENT WHICH ARE TO CONTINUE IN OPERATION.
- CIRCUITS INDICATED ARE INTENDED TO DENOTE WHICH DEVICES/FIXTURES ARE TO BE WIRED TO A COMMON CIRCUIT BREAKER, AND NOT ITS POSITION IN THE PANEL. REBALANCE LOADS BETWEEN PHASES (MAX. 7.5%) UPON COMPLETION OF WIRING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING AND AIMING ALL FIXTURES TO THE OPTIMUM DISTRIBUTION AND OWNER'S SATISFACTION.
- THE CONTRACTOR SHALL DO THE NECESSARY DEMOLITION AND DISPOSAL WORK INCLUDING THE REMOVAL OF POLE LIGHTING FIXTURES AND THE EXISTING CONCRETE BASES, LAMPS, WIRING, ACCESSIBLE CONDUIT, AND ELECTRICAL EQUIPMENT.

Panel Designation		FIELD 3			Location			Outside			
480Y/277		Volts		3Ø	4-wire	MCB	SURFACE	A.I.C.	18	100	AMPS
REMARKS											
QTY	No.	KVA/ Pole	Description	AMP/F Pole	A	B	C	AMP/F Pole	Description	KVA/ Pole	QTY
1	1.8		POLE A1	20/3	3.5			20/3	POLE A2a	1.8	2
3	1.8				5	3.5				1.8	4
5	1.8				5.3		3.5				1.8
7	1.8		POLE A2b	20/3		5.3		20/3	POLEP B1	3.5	8
9	1.8					5.3				3.5	10
11	1.8						5.3				3.5
13	3.5		POLE B2a	20/3	5.8			20/3	POLE B2b	2.6	14
15	3.5					5.8				2.6	16
17	3.5						5.8				2.6
19	3.2		POLE C1	20/3	6.5			20/3	POLE C2	3.2	20
21	3.2					6.5				3.2	22
23	3.2						6.5				3.2
25			SPACE	20/3	0.0				SPACE		26
27						0.0					28
29							0.0				30
31			SPACE		0.0				SPACE		32
33											34
35							0.0				36
37					0.0					38	
39						0.0				40	
41							0.0			42	
KVA SUB TOTALS					21.1	21.1	21.1				
KVA CONNECTED =					63.3					KVA DEMAND =	
AMP CONNECTED =					76.3					AMP DEMAND =	
										64.2	
										77.3	

ELECTRICAL DRAWING ABBREVIATIONS

A/E	ARCHITECT/ENGINEER	I	INSTALLED
AF	AMP FUSE	IU	INTEGRAL TO UNIT
AFC	AVAILABLE FAULT CURRENT	KW	KILOWATT
AFF	ABOVE FINISHED FLOOR	LUG	LAY-IN GRID
ARCH	ARCHITECT	LOC	LOCATION
AFS	ABOVE FINAL GRADE	LTG	LIGHTING
AR	AS REQUIRED	MAG	MAGNETIC STARTER
AS	AMP SWITCH	MAN	MANUAL STARTER
B	JUNCTION BOX	MC	MECHANICAL CONTRACTOR
BKR	BREAKER	MLO	MAIN LUGS ONLY
BFG	BELOW FINAL GRADE	MSB	MAIN SWITCHBOARD
C	MOUNTED 6" ABOVE COUNTER	MTD	MOUNTED
CAB	CABINET	NLU	NEAR UNIT
CB	CIRCUIT BREAKER	NIC	NOT IN CONTRACT
CKT	CIRCUIT	O	OTHERS
CLG	CEILING	OC	ON CENTER
CONC	CONCRETE	ORS	OVER RIDE SWITCH
CP	CONTROL PANEL	OU	ON UNIT
D	DISCONNECT SWITCH	P	POLE
DISC	DISCONNECT SWITCH	PC	PHOTOCELL
DN	DOWN	PEND	PENDANT
DNLT	DOWN LIGHT	PLBG	PLUMBING CONTRACTOR
EWC	ELECTRIC WATER COOLER	PNL	PANEL
E.C	ELECTRIC CONTRACTOR	PB	PUSH-BUTTON
ELEV	ELEVATION	R	RECEPTACLE
EMT	ELECTRICAL METALLIC TUBING	REC	RECESSED
ENT	ELECTRICAL NON-METALLIC TUBING	SS	SWITCH STATION
ER	EXISTING TO BE REMOVED	SURF	SURFACE
EXP	EXPOSED	SUSP	SUSPENDED
EXR	EXISTING IN NEW LOCATION	SW	SWITCH
EX	EXISTING TO REMAIN	TC	TIME CLOCK
F	FURNISHED	TCC	TEMPERATURE CONTROL
FIXT	FIXTURE		CONTRACTOR
FLUOR	FLUORESCENT	TYP	TYPICAL
G.C.	GENERAL CONTRACTOR	UM	UNIT MANUFACTURER
GFI	GROUND FAULT INTERRUPTING	VER	VERIFY
GRC	GALVANIZED RIGID CONDUIT	VFD	VARIABLE FREQUENCY DRIVE
GYP	GYPSON BOARD	W	WIRED
HOA	HAND-OFF-AUTO SELECTOR SWITCH	WP	WEATHERPROOF
HP	HORSEPOWER	XFMR	TRANSFORMER



1 GROUND MOUNTED PULL BOX
EL NO SCALE

NOTES:

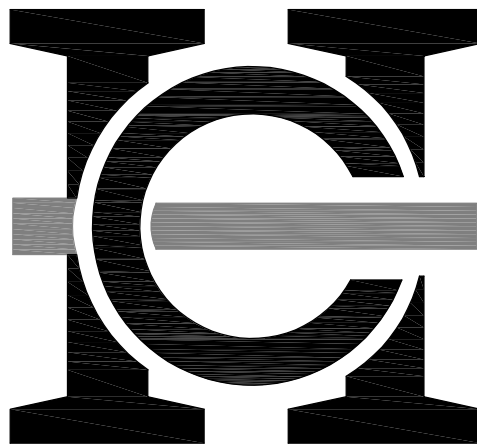
- PROVIDE A JUNCTION FOR ALL BRANCH CIRCUITS NEAR THE BLEACHER AREA. ELECTRICAL HANDHOLE SHALL BE QUARTZITE "PG24260G307" OPEN BOTTOM AND "PG24584H407" COVER GASKETED WITH (2) STAINLESS STEEL PENTA HEAD BOLTS. COVER SHALL BE MARKED "ELECTRIC". LOAD RATINGS = WUC 3.6, ASTM C 857, ANSIS/SCFE 77 - "115/20k". VERIFY EXACT LOCATION OF PULL BOX IN FIELD. DO NOT INSTALL IN PAVEMENT OR CONCRETE (GRASSY AREAS ONLY).
- EXTEND CONDUITS A MINIMUM OF 6" ABOVE HAND HOLE BOTTOM.
- 6" COMPACT BASE COURSE AGGREGATE.
- CONDUIT AS INDICATED ON DRAWINGS.
- COMPACTED SAND BACKFILL AROUND ENTIRE PERIMETER OF HAND HOLE 6".
- 6" TOPSOIL.
- INSTALL 36" MINIMUM WIRING LOOP IN ALL HAND HOLES.
- THERE SHALL BE NO SPLICES WITHIN HANDHOLE.
- PROVIDE (2) SLOT COVER HOOKS AND TURN OVER TO OWNER.

GENERAL RENOVATION/DEMOLITION NOTES:

- ELECTRICAL DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE. WORK SHOWN REFLECTS INFORMATION SHOWN ON AS-BUILT PLANS AND FIELD OBSERVATIONS; IT IS NOT GUARANTEED 100% ACCURATE. THIS CONTRACTOR MUST FIELD VERIFY CONDITIONS AND MAKE NECESSARY ADJUSTMENTS WITHOUT EXTRA COSTS TO THE PROJECT TO SUIT ACTUAL NEEDS.
- THE CONTRACTOR SHALL REWIRE/REROUTE/RELOCATE, AS REQUIRED DUE TO CONSTRUCTION, ALL EXISTING CIRCUITS AND EQUIPMENT WHICH ARE TO CONTINUE IN OPERATION.
- MAINTAIN THE INTEGRITY OF ALL SYSTEMS AFFECTED BY THE REMOVAL OR ADDITION OF ELECTRICAL EQUIPMENT.
- PAINT ALL EXPOSED CONDUIT.
- ALL WORK SHALL BE DONE IN A MANNER AND TIME ACCEPTABLE TO OWNER. OUTAGES AND OTHER WORK RENDERING EXISTING EQUIPMENT INOPERATIVE SHALL BE HELD TO A MINUM. PRIOR ARRANGEMENTS FOR EACH SHALL BE MADE WITH OWNER AND SHALL BE ACCEPTABLE AS TO TIME AND DURATION. ALL SHUTDOWNS SHALL BE COORDINATED WITH OWNER/PARKS TWO WEEKS IN ADVANCE. E.G. SHALL ALSO COORDINATE TIMING OF CONSTRUCTION WITH THE OWNER/PARKS TO AVOID ANY CONFLICTS WITH VARIOUS SCHOOLS SCHEDULED GAMES AND PRACTICES THAT TAKE PLACE ON THIS FIELD.
- THE CONTRACTOR SHALL DO THE NECESSARY DEMOLITION WORK IN THE AFFECTED AREAS INCLUDING THE REMOVAL OF WIRING, ACCESSIBLE CONDUIT, AND ELECTRICAL EQUIPMENT. ALSO, WHERE NECESSARY TO MAINTAIN SERVICE IN OTHER AREAS, PROVIDE NECESSARY AND REQUIRED SOURCES OF POWER AND TEMPORARY WIRING. REMOVE ALL CONDUIT AND WIRING OF EQUIPMENT BEING REMOVED AND/OR ABANDONED BACK OF SOURCE. EXISTING POLE BASES SHALL BE REMOVED IN THEIR ENTIRETY.
- ALL EXTERIOR UNDERGROUND CONDUIT SHALL BE HDPE "HIGH DENSITY POLYETHYLENE CONDUIT" PER ARTICLE 353. SAWCUTTING EXISTING ASPHALT IS NOT PERMITTED. PROVIDE A PLAN SHOWING THIS WORK PRIOR TO COMMENCING ANY EXTERIOR WORK. NO UNDERGROUND CONDUIT IS ALLOWED WITHIN THE FIELD. ALL ELECTRICAL SHALL BE RUN OUTSIDE THE FIELD AREA. NOTE THAT THERE ARE EXISTING IRRIGATION LINES THAT SHOULD BE AVOIDED.

SHEET INDEX

EL	LIGHTING FIXTURE SCHEDULE AND NOTES
ES1.0	ELECTRICAL SITE PLAN
ET1.0	RISER DIAGRAM AND DETAILS



HARWOOD
ENGINEERING
CONSULTANTS, LTD.

255 North 21st Street Milwaukee Wisconsin 53233
414.473.5554 414.773.9299 fax harwood@hrec.com

Revisions

Sheet
LIGHTING FIXTURE
SCHEDULE AND NOTES

Project
MALONE - PARK BALL
DIAMOND LIGHTING

Project
MALONE PARK
NEW BERLIN, WI

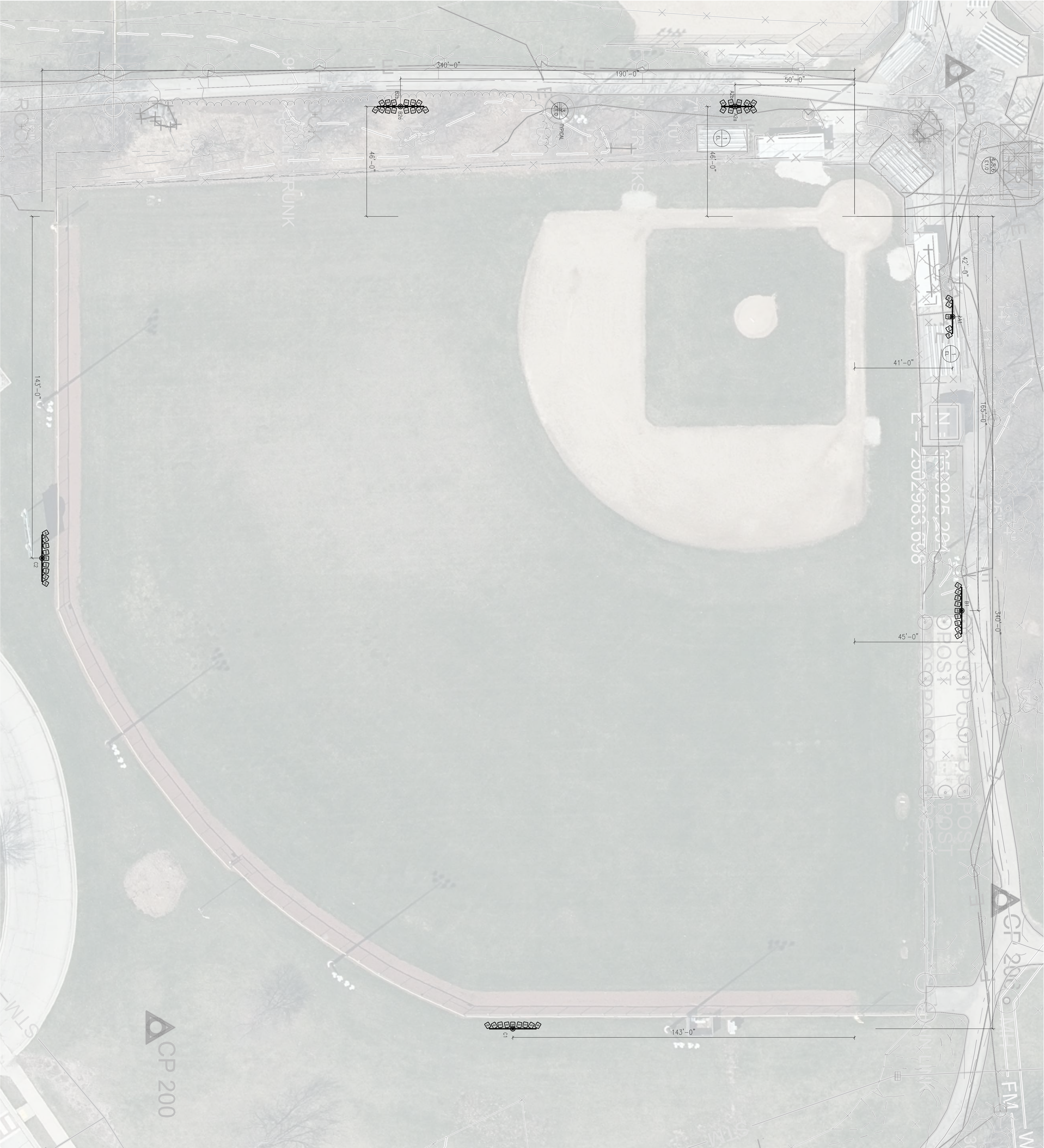
Date
November 03, 2022

Project No.
19-1011.21

Sheet No.

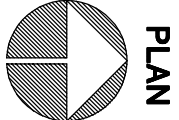
EL

- GENERAL NOTES:
1. THE OWNER HAS AGREED TO RESTORE REASONABLE DAMAGE TO THE GROUND AROUND THE FIELD. COORDINATE THIS WORK PRIOR TO BEGINNING THIS PROJECT.
 2. EXISTING ELECTRICAL CONDUCTORS SERVING EXISTING POLES SHALL NOT BE REJECTED REMOVE AND DISPOSE ALL EXISTING BRANCH CIRCUITS BACK TO SERVICE.
 3. ALL NEW POLES SHALL BE SETBACK WITH NEW BRANCHES. ALL EXISTING UNDERGROUND CONDUIT SHALL BE REPEL HIGH DENSITY POLYETHYLENE CONDUIT PER ARTICLE 303. SAW CUTTING EXISTING ASPHALT IS NOT PERMITTED. WORK NO UNDERGROUND CONDUIT IS ALLOWED WITHIN THE FIELD. ALL ELECTRICAL SHALL BE INSTALLED OUTSIDE OF THE FIELD AREA. NOTE THAT THE SERVICE OF THE UNDERGROUND POLES IS TO MAINTAIN THE AIR TO BE AROUND THE SPORTS LIGHTING BRANCH CIRCUITS TO THE FUTURE RELOCATED DISTRIBUTION LOCATION. PROVIDE ADEQUATE LOPS ON EACH CIRCUIT TO ACCOMMODATE THIS WORK.
 - 4.



Revisions

Sheet
ELECTRICAL SITE PLAN



Project
**MALONE - PARK BALL
DIAMOND LIGHTING**

**MALONE PARK
NEW BERLIN, WI**

Date
November 03, 2022
Project No.
19-1011.21

Sheet No.

ES10

Malone Park Lighting Project

Company	Base Bid
J Miller Electric	\$467,893.00
Allcon	\$555,632.00
Pieper Electric	\$482,900.00
Preferred Electrical Contractors	\$515,267.00

New Berlin Malone Park Ball Diamond Lighting
Project #BG2022-1
16400 W Al Stigler Pkwy., New Berlin, WI 53151

BID FORM

1. **GENERAL DIRECTIONS TO BIDDERS**

- A. All Bids must be submitted on these standard form sheets inclusive without modification. Fill out all blanks on the Bid Form by typing or writing in ink. Sign in ink. Erasures or other changes in Bid must be explained or noted over signature of Bidder. Enter Bid amount in both written words and printed figures in spaces provided on Bid Form. In case of conflict, amount given in written words will govern.
- B. Base Bid(s) must be for Work bid in strict accordance with the Drawings and Specifications. **INCLUDE BOND COSTS IN THE BASE BID(S).** Bid all requested Alternates. If no change to the Base Bid applies, enter "No Change."
- C. Bid Forms containing qualifications, conditions, omissions, unexplained erasures, alterations or items not called for in Bid Form or other irregularities of any kind may be rejected at the discretion of the Owner.
- D. Bidders shall examine the provisions of the Project Manual thoroughly to ensure compliance with all bidding requirements.
- E. Bidders shall only submit the Bid Forms included in the Project Manual – DO NOT return the Project Manual.
- F. Bidders shall ensure that all items in the Bid Form such as Work Schedule, Bidders Official Title and Signature, and Proof of Responsibility are properly executed.
- G. A bid must be accompanied by a bid security made payable to Owner in an amount of 5% of bidder's maximum bid price (determined by adding the base bid and all alternates), and in the form of a certified check, bank money order or a bid bond issued by a surety acceptable to the City. The bid security will be retained by the City until the City awards the contract to such bidder and such bidder has executed the contract documents and met the other conditions of the Notice of Award, where upon the bid security will be released. If the successful bidder fails to execute and deliver the contract documents and furnish the requirements contract security within 15 days after the Notice of Award, the Owner may consider the bidder to be in default and annul the Notice of Award and the bid security of that bidder will be forfeited. Such forfeiture shall be the Owner's exclusive remedy if the bidder defaults.

- H. The Bidder shall be required to identify any subcontractor, suppliers, individuals or entities to be submitted to the Owner 14 days in advance of the City's acceptance of the agreement. The apparent successful bidder shall, within 5 days after the bid opening, submit to the Owner a list of all such subcontractors, suppliers, individuals or other entities that will be utilized in the completion of the work. An experience statement with pertinent information regarding similar projects and other evidence of qualification for the work that the subcontractor will be performing is required. If the Owner, after review of such information, determines, in its sole discretion, that such subcontractor, supplier, individual or entity is not satisfactory, the Owner, prior to the Notice of Award, shall give notice to the successful bidder requiring that an acceptable substitute be provided. In the event there is any adjustment to the cost as a result of said substitution, Owner may take that into consideration in making the contract award. In the event that the contractor fails to make the substitution requested, the Owner may award the contract to the next lowest responsive responsible bidder.
- I. Bids not conforming to the above directions may be declared irregular and are subject to disqualification at the discretion of the Owner.

THE BIDDER HEREBY AGREES THAT THIS BID IS INVALID WITHOUT BIDDER'S SIGNATURE APPEARING IN THE SIGNATURE BLOCK ON THE LAST PAGE OF THIS BID FORM.

2. BID SUBMITTAL PROCEDURE

In submitting a Bid, the Bidder represents that:

- He/She thoroughly reviewed and understood the Bidding and Contract Documents and the Bid is made in full accordance with these documents and amendments issued thereto.
- He/She has thoroughly reviewed and understands the Bidding and Contract Documents related to the Work of other portions of the Project, if any, being bid concurrently or presently under construction.
- He/She has thoroughly reviewed informational reports and documents available to him/her, visited the project site, become familiar with actual local conditions under which the Work is to be performed and has correlated his/her evaluations and personal observations with the requirements of the Bidding and Contract Documents.
- The contract for the work, if awarded, will be on the basis of materials and equipment specified or described in the bidding documents, and those or equal or substitute or materials and equipment subsequently approved by the Owner prior to the submittal of bids and identified by addendum. No item of material or equipment will be considered by Owner as an or equal or substitute unless written requests for approval has been submitted by the bidder and has been received by the Owner at least 10 days prior to the date of receipt of bids in the case of a proposed substitute. The burden of proof on the merit of the proposed item is upon the bidder. The Owner's decision of approval or disapproval of a proposed item will be final. If the Owner approves any such proposed items, such approval will be set forth as an addendum issued to all perspective bidders. Bidder shall not rely upon approvals made in any other manner. All prices

that Bidder sets forth in this bid shall be based on the presumption that the contractor will furnish the materials and equipment specified or described in the bidding documents as supplemented by any addenda.

- A. After Bid Forms are completed, place one (1) set of signed originals and the Bid Bond in a sealed envelope. Oral, telephonic, e-mailed, or faxed Bids are invalid and will not be considered.
- B. Address the envelope to:
New Berlin Malone Park Ball Diamond Lighting Bid
City C
3805 S Casper Dr
New Berlin, WI 53151
- C. Bidders shall affix their name and address to the front upper left-hand corner of the envelope with the words "Sealed Bid Enclosed" written on the outside. Identified in lower left corner should be: Bid number, project name and opening date.

3. BID CLOSING

- A. Bids must be received on or before 9:00 a.m. on December 7th, 2022. The Bidder assumes full responsibility for timely delivery at the location designated for receipt of Bids. **Bids received after the time and date for receipt of Bids will be rejected and returned unopened.**

4. BID OPENING

- A. Bids will be publicly read at 9:00 a.m. on December 7th, 2022 in the New Berlin City Hall – Common Council Chambers.

(a corporation)

We J. Miller Electric, Inc. (a-partnership)
(an-individual)

Of 512 S Park Street, Port Washington, Ozaukee, WI 53074 (Cross out inapplicable)
Street City County State Zip

hereby agree to execute the proposed Contract and to furnish a satisfactory Public Improvement Performance/Labor and Material Payment Bond, in the amount of one hundred percent (100%), and to provide all labor and material required for the construction of the designated Work, for the prices hereinafter set forth, in strict accordance with the Construction Documents released by: **City of New Berlin**, address: 3805 S. Casper Dr, New Berlin, WI dated March 23, 2021.

Including Amendment Nbr(s). _____ dated _____.

5. BASE BID

Base Bid includes all work required to complete the Project, including Building Permits, General Conditions, overhead, profit, insurance, bonds, taxes, and all other expenses. Bid Guarantee ten percent (10%) Bid Bond Cost, Public Improvement Performance Bond and Labor and Materials Payment Bond Cost one hundred percent (100 %) for the sum of:

Four hundred sixty seven Dollars (\$ 467,893)
thousand eight hundred ninety three

8. SCHEDULE OF VALUES

- A. Submit schedule of standard rates for all personnel, including personnel of subcontractors, involved with project.
- B. Include schedule of standard markups.

10. COMMENCEMENT, PROGRESS AND COMPLETION OF WORK

- A. If written Notice of Intent to Award Contract is issued not later than December 14, 2022 with a Project commencement of December 15, 2022, can you complete the Work in compliance with the requirements of the Contract Documents by March 31, 2022, in full cooperation and coordination with other Contractors, if any.

Yes ☒ No ☐.

If "No", state additional calendar days required _____.

- B. The undersigned understands that time is of the essence and agrees that the specified time period for completion stated above is a reasonable time for the completion of the Work. All time limits shall be binding.

11. BID ACCEPTANCE:

- A. All Bids as stated above are effective and open for acceptance by the Owner for a period of ninety (90) days after date set for opening of Bids.

FIRM NAME J. Miller Electric, Inc.

BY SIGNATURE 

TITLE Vice President

DATED 12/7/2022

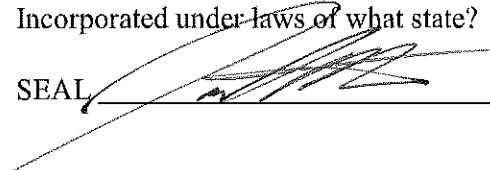
TELEPHONE 262-284-2646

FAX NBR 262-284-6282

EMAIL ADDRESS: justin.jmillerelectric@gmail.com

If a corporation, answer the following:

Incorporated under laws of what state? Wisconsin

SEAL  (If Bid is by Corporation)