STATE OF NORTH CAROLINA/ASHEVILLE CITY SCHOOLS

REQUEST FOR BIDS #148-MAINT-032

PROJECT: **Asheville High Baseball Field Lighting PROJECT**

USING AGENCY: **Asheville City Schools** **ISSUE DATE: 11/1/2023**

Bids subject to the conditions made a part hereof will be received until **2:00 pm, Thursday, November 16, 2023****, for furnishing all labor, materials, equipment, and services incidental and implied, for completion of the project described herein.

All Bids must be sent to the Purchasing Clerk at the address or email address provided below:

Asheville City Schools
Attn: 148-MAINT-032
c/o Chris Pohlman
85 Mountain Street
Asheville, NC 28801

Phone: 828-350-6101
Fax: 828-251-4915
Email: chris.pohlman@acsgmail.net

***Note: The deadline for Bids to be submitted was extended to 11/27/2023 at 12:00pm via Addendum #2. See Addendum #2 for more information.*

All Bid Packages must be fully sealed and be clearly labeled, and must reference RFP# 148-MAINT-032 on the outside of the package.

Direct inquiries concerning this Request for Bids to:

Bidding and document questions:	Chris Pohlman, Purchasing Specialist	Office: 828-350-6101
Specifications and technical questions:	Tim Shelton, Maintenance Director	Mobile: 828-713-6430

THE PROCUREMENT PROCESS

The following is a general description of the process by which a firm will be selected to provide services.

1. Request for Bids is issued to prospective contractors.
2. The deadline for written questions is three days prior to the due date.
3. Bids shall be signed and dated by an official authorized to bind the firm. Unsigned bids will not be considered.
4. All bids must be received by the issuing agency not later than the date and time specified on the cover sheet of this Request for Bids, at which point all Bids will be immediately thereafter opened and a bid tab prepared. Attendance by Bidders at the Public Bid Opening is not required.
5. Bids will be evaluated according to completeness, content, experience with similar projects, ability of the offeror and its staff, and cost. Award of a contract to one offeror does not mean that the other bids lacked merit, but that, all factors considered, the selected bid was deemed most advantageous to the State.
6. Bidders are cautioned that this is a request for bids, not a request to contract, and Asheville City Schools reserves the right to reject any and all unqualified offers when such rejection is deemed to be in the best interest of Asheville City Schools.

(NOTE: THE BID FORM MUST BE FULLY EXECUTED AND RETURNED FOR CONSIDERATION)

BID FORM #148-MAINT-032

Asheville High Baseball Field Lighting PROJECT

DUE DATE: 11/16/2023 by 2:00PM

The undersigned having carefully read and considered the terms and conditions of the Contract Documents for the Asheville High Baseball Field Lighting Project for Asheville City Schools, North Carolina, does hereby offer to perform such services on behalf of the District, of the type and quality and in the manner described, and subject to and in accordance with the terms and conditions set forth in the Contract Documents at the rates on the Bid Forms hereinafter set forth.

Bidder: _____

Address: _____

City/State/Zip: _____ Phone: _____

Fed ID No: _____ MBE Status: _____ Fax: _____

Email: _____

By: (Signature) _____ Date: _____

Printed Name _____ Title: _____

Therefore, in compliance with this Request for Bids, and subject to all conditions herein, the undersigned offers and agrees, if this bid is accepted, to furnish the subject services for a cost not to exceed:

$_____ Total

Additional Information, if applicable (attach extra sheets as needed): _____

_____

_____

END OF BID FORM

1. **PURPOSE**

The purpose of this solicitation is to request Bids for the installation of field lights at the Asheville High School Baseball Field, located at 419 McDowell St, Asheville, NC 28803, within Asheville City Schools ("ACS"), as per the specifications described herein.

2. **SCOPE OF WORK**

The design specifications are included as **Attachment A** to this solicitation.

Further specifications regarding the concrete sidewalks are included as **Attachment B** to this solicitation.

Further specifications regarding trenching and backfilling are included as **Attachment C** to this solicitation.

3. **DISPOSAL OF WASTE**

All waste to be transported off site and disposed of at an approved site. All permits and any fees associated with this project must be included in the Bid.

4. **CONDITIONS**

Each Bidder shall fully acquaint itself with conditions relating to the scope and restrictions attending the execution of the work under Contract. Bidders shall thoroughly examine and be familiar with the Specifications.

It is also expected that the Bidders will obtain information concerning the conditions at locations that may affect its work. The failure or omission of any Bidder to receive or examine any form, instrument, addendum or other document, or to acquaint itself with existing conditions, shall in no way relieve it of any obligations with respect to its Bid or to the Contract.

The Bidder shall make its own determination as to conditions and shall assume all risk and responsibility and shall complete the work in and under conditions it may encounter or create, without extra cost to Asheville City Schools.

5. **SAFETY REGULATIONS:**

The Contractor shall adhere to the rules, regulations, and interpretations of all state, federal, and local laws that pertain to workers and site safety. This to include OSHA 1910, General Construction, or those regulations mandated by these specifications.

6. **HISTORICALLY UNDERUTILIZED BUSINESSES**

Pursuant to General Statute 143-48 Executive Order #150, Asheville City Schools invited and encourages participation in this procurement process by businesses owned by minorities, women, disabled, disabled business enterprises and non-profit work centers for the blind and severely disabled.

Pursuant to 2 CFR 200.321, affirmative steps are required to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. The bidder shall identify on its bid proposal the minority business participation it will use on the project (Identification of Minority Business Participation) form and shall include either Affidavit A or Affidavit B as applicable. Required forms and instructions are included as **Exhibit A** to this solicitation.

7. **DEBARMENT**

Bidder certifies by submitting a Bid that the Bidder and/or any of its Principals are not presently debarred, per the State's website: http://ncadmin.nc.gov/government-agencies/procurement/contracts/debarred-vendors ; and are not presently debarred, per the Federal Excluded Parties List: www.sam.gov/portal/public/SAM ; and are not listed on the Final Divestment List and Parent and Subsidiary List located at https://www.nctreasurer.com/inside-

the-department/OpenGovernment/Pages/Iran-Divestment-Act-Resources.aspx which was created by the NC State Treasurer pursuant to N.C.G.S. 147-86.58, Iran Divestment Act; and are not suspended, proposed for debarment, declared ineligible or voluntarily excluded from entering into this Agreement by any federal agency or by any department, agency or political subdivision of the State.

8. NONDISCRIMINATION

Contractor and any subcontractors employed by Contractor shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.

9. COMPLIANCE

The Contractor shall comply with all laws, ordinances, codes, rules, regulations, and licensing requirements that are applicable to the conduct of its business, including those of federal, state, and local agencies having jurisdiction and/or authority.

The Contractor shall obtain all licenses and permits required to execute contract by authorities that have jurisdiction.

The Contractor shall comply with all relevant ACS Policies and Procedures applicable to its provision of the services described hereunder during the term of the Agreement. All Asheville City Schools Board Policies can be found at https://www.boardpolicyonline.com/bl/?b=asheville_city

10. JESSICA LUNSFORD ACT

Under North Carolina law, certain sex offenders are prohibited from coming onto school campuses. Bidder agrees to conduct an annual check of the N.C. Sex Offender and Public Protection Registration Program, the N.C. Sexually Violent Predator Registration Program, and the National Sex Offender Registry for all of its employees involved in this project. ACS prohibits any personnel listed on such registries from being on any property owned or operated by ACS and from having any direct interaction with students. As a term of the Agreement, said checks must be performed by the Contractor and reported to the ACS Superintendent or Designee, upon request. Under provisions set forth in the Jessica Lunsford Act under North Carolina law, my signature below certifies that neither I nor any employee or agent of Contractor that is involved with project is listed as a sex offender on the NC Sex Offender and Public Protection Registration Program, the Sexually Violent Predator Registration Program, and/or the National Sex Offender Registry.

11. INDEMNITY

Bidder will indemnify and save harmless Asheville City Schools, its officers, agents, and employees from and against any and all suits, actions, legal proceedings, claims, demands, damages, costs, expenses, and attorneys' fees to the extent resulting from a willful or negligent act or omission of the Bidder, its officers, or agents; provided, however, that the Contractor shall not be liable for any suits, actions, legal proceedings, claims, demands, damages, costs, expenses and attorneys' fees to the extent resulting from a willful or negligent act or omission of the Asheville City Schools, its officers, agents, or employees.

12. INSURANCE

If awarded a contract, the Bidder will provide a Certificate of Liability Insurance naming the District as additional insured. The issuing insurer must provide 30 days written notice to the District of the expiration of the insurance. As a minimum, the Contractor shall provide and maintain the following coverage and limits:

- Workers' Compensation Insurance, including Employer's Liability with limits of $250,000 each accident. The Aggregate Limit will not be less than $2,000,000.

- Property Damage Insurance, including Liability Coverage, with a per occurrence limit of $1,000,000. The Aggregate Limit will not be less than $2,000,000

Providing and maintaining adequate insurance coverage is a material obligation of the contractor and is of the essence of this contract. All such insurance shall meet all laws of the State of North Carolina. Such insurance coverage shall be obtained from companies that are authorized to provide such coverage and that are authorized by the Commissioner of Insurance to do business in North Carolina. The Contractor shall at all times comply with the terms of such insurance policies, and all requirements of the insurer under any such insurance policies, except as they may conflict with existing North Carolina laws or this contract. The limits of coverage under each insurance policy maintained by the contractor shall not be interpreted as limiting the contractor's liability and obligations under the contract.

To the extent permitted by law, all or any part of any required insurance coverages may be provided under a plan or plans of self-insurance. The coverages may be provided by the Contractor's parent corporation.

13. SALES AND USE TAX

NC public school systems are entitled to refunds from the State of North Carolina of certain sales and/or use taxes paid to the State of North Carolina. This refund provision includes taxes paid by construction contractors on materials which have become permanently affixed to buildings owned or leased by the school system, accordance with the provisions of G.S. 105-164. 14(c).

- Sales Taxes that are refundable to school systems include sales taxes paid in North Carolina by the school system's contractors on purchases of building materials, supplies, fixtures and equipment which become a part of or are annexed to any building or structure being erected, altered or repaired under contract with the school system. Since contractors are required to pay tax on purchases of materials, ACS requires Contractors to complete a Contractor's Statement of NC Sales and Use Tax Paid, which must include all of the following:
    a. the date the property was purchased;
    b. the type of property purchased;
    c. the project for which the property was used;
    d. if the property was purchased in this State, the county in which it was purchased;
    e. if the property was not purchased in this State, the county in which the property was used; and
    f. the amount of sales and use taxes paid.

  A sample Contractor's Statement of NC Sales and Use Tax Paid form is included as **Exhibit B** to this solicitation.

- Sales Taxes that are not refundable to schools include, but are not limited to, scaffolding, forms for concrete, fuel for the operation of machinery and equipment, tools, equipment repair parts and equipment rentals, blueprints, etc., or any other items which do not become a part of or are not annexed to the building or structure being erected, altered, or repaired.

- Sales Taxes paid by a subcontractor must follow the guidelines as listed above for the contractor, the only difference being that the subcontractor must submit their certification and accompanying documentation to the contractor for the contractor to submit to the school system, as stated above.

14. QUALITY OF WORK

All work shall be performed in a good and professional manner by skilled, experienced workers. Asheville City Schools shall be responsible for determining the quality of work, and may notify the Contractor of the same.

15. PERFORMANCE AND DEFAULT

If, through any cause, the Contractor shall fail to fulfill in timely and proper manner the obligations under this agreement, Asheville City Schools shall thereupon have the right to terminate this contract by giving written

notice to the Contractor and specifying the effective date thereof. In that event, all finished or unfinished deliverable items under this contract prepared by the Contractor shall, at the option of Asheville City Schools, become its property, and the Contractor shall be entitled to receive just and equitable compensation for any satisfactory work completed on such materials.

In case of default by the Contractor, Asheville City Schools may procure the services from other sources and hold the Contractor responsible for any excess cost occasioned thereby.

Upon the entering of a judgment of bankruptcy of insolvency by or against the Contractor, the Agency may terminate this contract for cause. Neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations by any act of war, hostile foreign action, nuclear explosion, riot, strikes, civil insurrection, earthquake, hurricane, tornado, or other catastrophic natural event or act of God.

16. TERMINATION

Asheville City Schools may terminate this agreement at any time by 15 days' notice in writing to the Contractor. If the contract is terminated by Asheville City Schools as provided herein, the Contractor shall be paid for services satisfactorily completed, less payment or compensation previously made.

17. TRANSFERABILITY OF CONTRACT

Other than by operation of law, no assignment of the Contract or any right accruing under this Contract shall be made in whole or in part by the Contractor without the express written consent of Asheville City Schools, which consent shall not be unreasonably withheld; however, in the event of an assignment, the assignee shall assume the liability of the Contractor.

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFF/G	ABOVE FINISHED FLOOR/GRADE
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
AUX	AUXILIARY
A/V	AUDIBLE/VISUAL
AWG	AMERICAN WIRE GAUGE
BB	BACKBOARD
BCW	BARE COPPER WIRE
BATT	BATTERY
BTM	BOTTOM
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT
CAB	CABINET
CATV	COMMUNITY ACCESS TELEVISION (CABLE TELEVISION)
CB	CIRCUIT BREAKER
CIR	CIRCUIT
CKT	CIRCUIT
℄	CENTER LINE
CO	COMPANY
COMM	COMMUNICATIONS
CONN	CONNECTION, CONNECT
CUH	CABINET UNIT HEATER
CT	CURRENT TRANSFORMER
CU	COPPER
CWA	CONSTANT WATTAGE AUTOTRANSFORMER
△	DELTA CONNECTION
D	DEEP
DB	DECIBEL
DET	DETECTOR
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DIV	DIVISION
DN	DOWN
DWG	DRAWING
EA	EACH
EBH	ELECTRIC BASEBOARD HEATER
EF	EXHAUST FAN
EL	ELEVATION
ELEC	ELECTRIC(AL)
EMER	EMERGENCY
ENCL	ENCLOSURE
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EXT	EXTERIOR
F	FUSE(D)
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FC	FOOTCANDLES
FIXT	FIXTURE
FLR	FLOOR
FLUOR	FLUORESCENT
FT	FOOT (FEET)
FUT	FUTURE
G, GND	GROUND
GALV	GALVANIZE(D)
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
HD	HEAVY DUTY
HGT	HEIGHT
HID	HIGH INTENSITY DISCHARGE
HO	HIGH OUTPUT
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
HW	HOT WATER
ID	IDENTIFY, IDENTIFICATION
INCAND	INCANDESCENT
J-BOX	JUNCTION BOX
J.C.	JANITOR CLOSET
JCT	JUNCTION
KCM/Kcmil	THOUSAND CIRCULAR MILS
KVA	KILO VOLT AMPERE
KW	KILOWATT
LGT	LIGHTING
LT(S)	LIGHT(S)
LED	LIGHT EMITTING DIODE
L	LOUVER
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MC	METAL CLAD CABLE
MFR	MANUFACTURER
MH	METAL HALIDE
MECH	MECHANICAL
MIN	MINIMUM
ML	MOTORIZED LOUVER
MLO	MAIN LUGS ONLY
MT	MOUNT
MTD	MOUNTED
MTR	MOTOR
N	NORTH
NEC	NATIONAL ELECTRICAL CODE
NF	NON-FUSED
NL	NIGHT LIGHT
No/#	NUMBER
OC	OVER COUNTER
OL	OVERLOAD
P	POLE(S)
PA	PUBLIC ADDRESS
PNL	PANEL
PR	PAIR
PRI	PRIMARY
PWR	POWER
ø	PHASE
PT	PRESSURE TREATED
R	REMOVE / REMOVAL
RECEP.	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RM	ROOM
SEC	SECONDARY
SH	SHIELDED
SPKR	SPEAKER
SW	SWITCH
TEMP	TEMPORARY/TEMPERATURE
T-STAT	THERMOSTAT
TB	TERMINAL BOARD
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
V	VOLT, VOLTS
VA	VOLT-AMPERES
W	WATT, WIRE
W/	WITH
WP	WEATHERPROOF
XFMR/T	TRANSFORMER
Y	WYE CONNECTION

LIGHTING

REFER TO LIGHTING FIXTURE SCHEDULE FOR TYPE, LAMP, BALLAST, POWER REQUIREMENTS, MOUNTING HEIGHT AND MANUFACTURER.

- SPORTS LIGHT
- FLAG POLE LIGHT
- PEDESTRIAN WALKWAY LIGHT

RACEWAYS

- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- PP-1 / 1/3/5 — HOMERUN BACK TO PANEL (PANEL AND CIRCUITS INDICATED)
- CIRCUIT CONTINUED OR CONNECTED TO EQUIPMENT AS INDICATED
- UNDERGROUND CONDUIT
- GROUND CONDUCTOR
- INDICATES EXISTING DEVICES OR EQUIPMENT
- UGEL — EXISTING UNDERGROUND ELECTRICAL FROM UTILITY FEED

DEVICES AND APPURTENANCES

- $ — SINGLE POLE TOGGLE SWITCH
- WP — DUPLEX RECEPTACLE -WP INDICATES WEATHERPROOF
- GFI WP — GFI DUPLEX RECEPTACLE -WP INDICATES WEATHERPROOF
- TWO – 20 AMP DUPLEX RECEPTACLES UNDER SINGLE COVER
- GROUND ROD 5/8" X 10'-0" COPPER CLAD
- J — JUNCTION BOX
- HH — HANDHOLE
- MH — MANHOLE

ONE LINE DIAGRAMS

- POWER TRANSFORMER
- AMPS FRAME — 400AF; AMPS TRIP — 400AT; NR. of POLES — 3P; GFP — MOLDED CASE CIRCUIT BREAKER W/GROUND FAULT PROTECTION
- SAFETY DISCONNECT SWITCH – UNFUSED
- CONNECTED CONDUCTORS
- CROSSING OF CONDUCTORS NOT CONNECTED
- NORMALLY OPEN CONTACT/RELAY
- NORMALLY CLOSED CONTACT/RELAY
- CURRENT TRANSFORMER
- FUSE
- GROUNDING CONNECTION
- FUSED DISCONNECT SWITCH AND/OR BOLT PRESSURE SWITCH
- METER — METER ASSEMBLY
- INDICATES EQUIPMENT ENCLOSURE

POWER DISTRIBUTION EQUIPMENT

- SURFACE MOUNTED BRANCH CIRCUIT PANELBOARD 480/277V, 3ø, 4W, UON
- SURFACE MOUNTED BRANCH CIRCUIT PANELBOARD 240/120V, 1ø, 3W, UON
- SPORTS LIGHTING CONTROL PANEL (SLCP)
- 30/3 — NON-FUSED SAFETY SWITCH DISCONNECT RATING/POLES
- 30/3/15 — FUSIBLE SAFETY SWITCH DISCONNECT RATING/POLES/FUSE RATING

GENERAL

- (#) — NUMBER IN CIRCLE, WITH OR WITHOUT ARROW OR LEADER, REFER TO MATCHING NUMBERED CODED NOTE
- ⟨#⟩ — NUMBER IN CIRCLE, WITH OR WITHOUT ARROW OR LEADER, REFER TO MATCHING NUMBERED DEMO NOTE
- ### — CABLE TAG. REFER TO CABLE SCHEDULE ON SHEET E-501.
- X / XXX — DETAIL CALLOUT

GENERAL NOTES

1. REFER TO CIVIL DRAWINGS FOR SYMBOLS ASSOCIATED WITH WORK, EQUIPMENT, ETC. BY OTHER(S).
2. CONDUIT RUNS SHOWN ARE DIAGRAMMATIC, U.O.N. EXACT LOCATION OF ALL CONDUIT RUNS SHALL BE DETERMINED IN THE FIELD.

CHA
80 Winners Circle, PO Box 5269
Albany, NY 12205-0269
518.453.4500 . www.chacompanies.com

ASHEVILLE SCHOOL DISTRICT

85 MOUNTAIN STREET, ASHEVILLE, NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052806 REGISTERED

ASHEVILLE HIGH SCHOOL BASEBALL FIELD LIGHTING

No.	Submittal / Revision	App'd	By	Date

ELECTRICAL LEGEND, ABBREVIATIONS & SYMBOLS

Designed By:	Drawn By:	Checked By:
MJO	MJO	REG
Issue Date:	Project No:	Scale:
07/07/2023	081062	AS SHOWN

Drawing No.:

E-001

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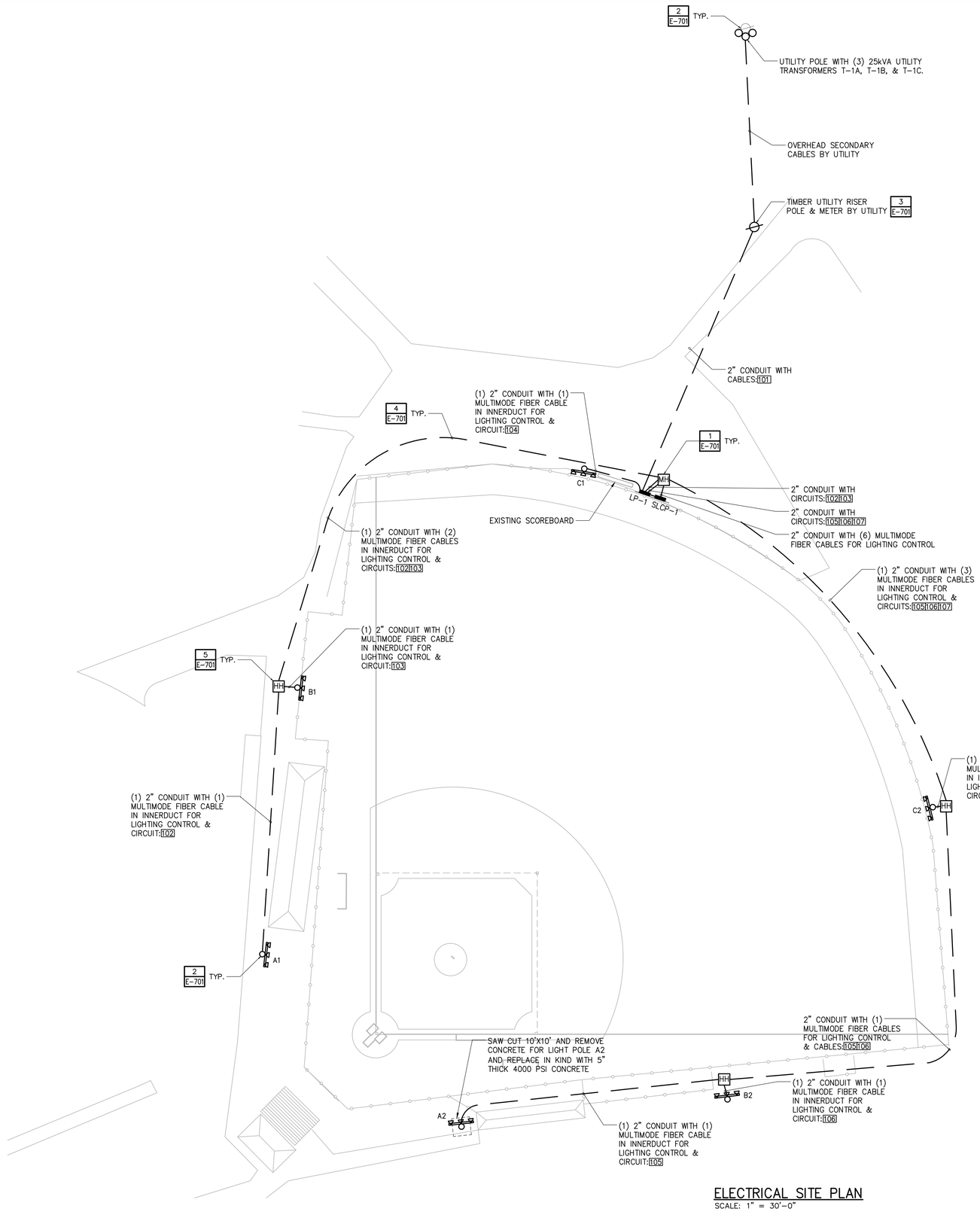

ELECTRICAL SITE PLAN
SCALE: 1" = 30'-0"

0 30' 60'
Scale in feet

GENERAL NOTES:

1. REFER TO E-501 FOR CONDUIT FILL AS NOTED.
2. SLCP-1 AND ASSOCIATED CONTROL FIBER SHALL BE FURNISHED BY LIGHTING VENDER AND INSTALLED BY ELECTRICAL CONTRACTOR.

CODED NOTES: (#)

1. PROVIDE (1) MULTIMODE FIBER CABLE TO EACH REMOTE DRIVER ENCLOSURE.

CHA
30 Winners Circle, PO Box 5269
Albany, NY 12205-0269
518.453.4500 . www.chacompanies.com

ASHEVILLE SCHOOL DISTRICT

85 MOUNTAIN STREET, ASHEVILLE, NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052806 CHRISTOPHER E. WALKER, P.E. S.W.C.P.

ASHEVILLE HIGH SCHOOL BASEBALL FIELD LIGHTING

No.	Submittal / Revision	App'd.	By	Date

ELECTRICAL SITE PLAN

Designed By:	Drawn By:	Checked By:
MJO	MJO	REG
Issue Date:	Project No:	Scale:
07/07/2023	081062	AS SHOWN

Drawing No.:
E-101

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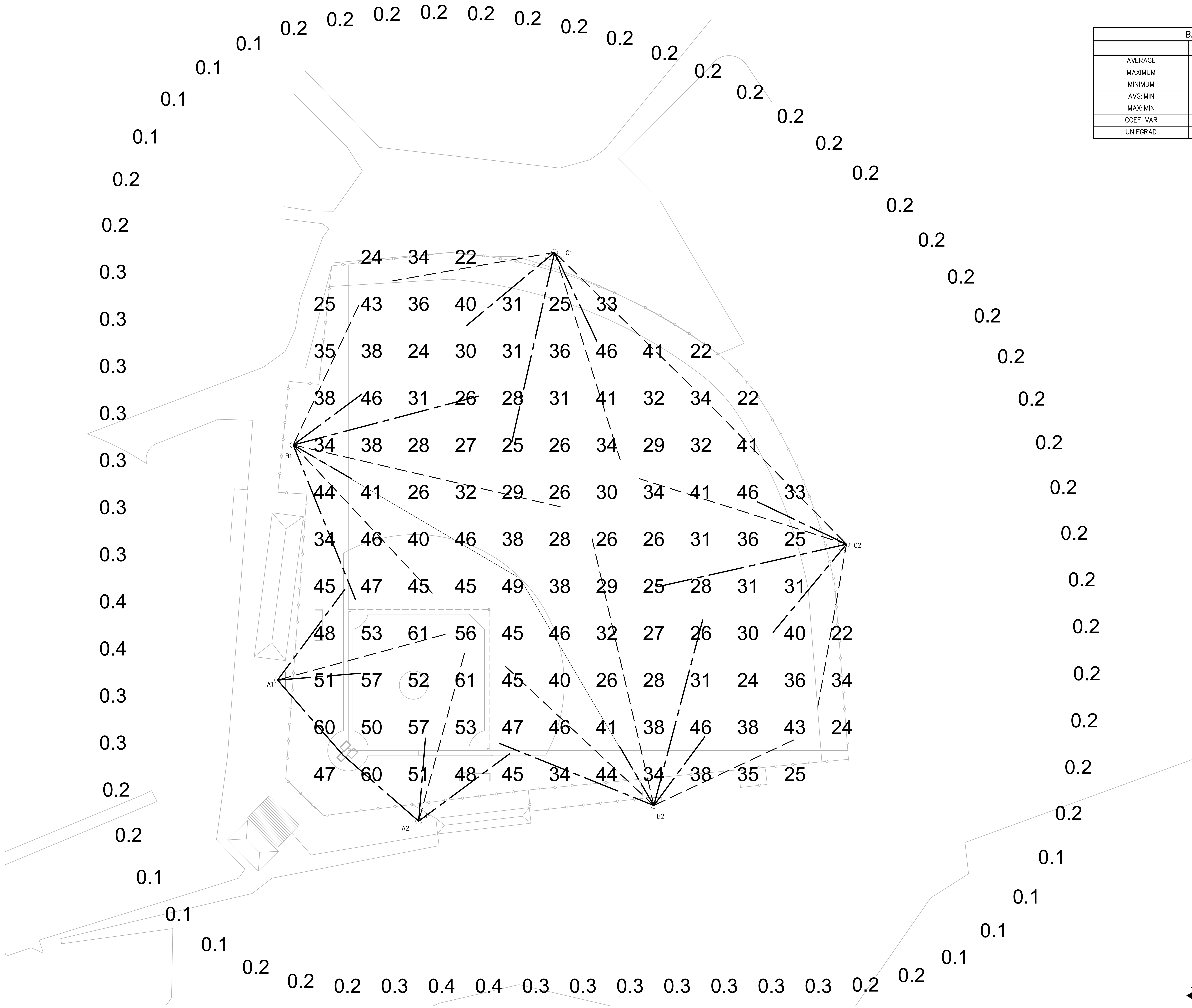
BASEBALL PHOTOMETRICS		
	OUTFIELD (FC)	INFIELD (FC)
AVERAGE	33	51
MAXIMUM	46	61
MINIMUM	22	45
AVG: MIN	1.51	1.14
MAX: MIN	2.09	1.36
COEF VAR	0.21	0.11
UNIFGRAD	1.86	1.36



SITE PHOTOMETRICS PLAN
SCALE: 1" = 30'-0"

0 30' 60'
Scale in feet

Drawing Copyright © 2020

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518.453.4500 . www.chacompanies.com

ASHEVILLE SCHOOL DISTRICT

85 MOUNTAIN STREET, ASHEVILLE, NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 052806 ENGINEER ERIK S. WOLF

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

ASHEVILLE HIGH SCHOOL BASEBALL FIELD LIGHTING

No.	Submittal / Revision	App'd.	By	Date

SITE PHOTOMETRICS PLAN

Designed By:	Drawn By:	Checked By:
MJO	MJO	JJD
Issue Date:	Project No:	Scale:
07/07/2023	081062	AS SHOWN

Drawing No.:
E-201

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SPORTS LIGHTING POLE SCHEDULE

TAG	DISCRIPTION	FIXTURE MOUNTING HEIGHT	POLE HEIGHT	VOLTS	MANUFACTURER & CATALOG NUMBER	COMMENTS	SYMBOL
A1	LED SPORTS LIGHTING POLE	(4) 1000W AT 70'	70'	480V	PREMIER SPORTS LIGHTING OR APPROVED EQUAL		
A2	LED SPORTS LIGHTING POLE	(4) 1000W AT 70'	70'	480V	PREMIER SPORTS LIGHTING OR APPROVED EQUAL		
B1	LED SPORTS LIGHTING POLE	(8) 1000W AT 70'	70'	480V	PREMIER SPORTS LIGHTING OR APPROVED EQUAL		
B2	LED SPORTS LIGHTING POLE	(8) 1000W AT 70'	70'	480V	PREMIER SPORTS LIGHTING OR APPROVED EQUAL		
C1	LED SPORTS LIGHTING POLE	(6) 1000W AT 70'	70'	480V	PREMIER SPORTS LIGHTING OR APPROVED EQUAL		
C2	LED SPORTS LIGHTING POLE	(6) 1000W AT 70'	70'	480V	PREMIER SPORTS LIGHTING OR APPROVED EQUAL		

SPORTS LIGHTING ZONE SCHEDULE

ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	POLE ID
SPORTS LIGHTING CONTACTOR PANEL "SLCP-1"			
ZONE 1	1	BASEBALL FIELD	A1, B1, C1, A2, B2, C2

CIRCUIT SCHEDULE

CABLE NUMBER	SYSTEM VOLTAGE	CONDUCTORS FROM SOURCE TO LOAD	SOURCE	DEVICE	REMARKS
101	480V	(4)#4/0, (1)#6G	POLE MOUNTED TRANSFORMER	SLP-BB	
102	480V	(4)#4, (1)#4G	SLP-BB	SPORTS LIGHT A1	
103	480V	(4)#3, (1)#3G	SLP-BB	SPORTS LIGHT B1	
104	480V	(4)#6, (1)#6G	SLP-BB	SPORTS LIGHT C1	
105	480V	(4)#6, (1)#6G	SLP-BB	SPORTS LIGHT A2	
106	480V	(4)#4, (1)#4G	SLP-BB	SPORTS LIGHT B2	
107	480V	(4)#10, (1)#10G	SLP-BB	SPORTS LIGHT C2	

LOCATION: OUTFIELD FENCE
MOUNTING: NEMA 4X - FENCE
SOURCE: UTILITY TRANSFORMER

PANEL ID
SLP-BB

VOLTS, PHASE, WIRE: 480/277V, 3ϕ, 4W
MAINS: 150A MCB
SHORT CIRCUIT RATING: 22 KAIC

CKT	LOAD DESCRIPTION	CB AMPS/ POLE	CONN LOAD KVA	CONN LOAD KVA	CONN LOAD KVA	CONN LOAD KVA	CONN LOAD KVA	CONN LOAD KVA	CB AMPS/ POLE	LOAD DESCRIPTION	CKT
1			1.67			1.67					2
3	SPORTS LIGHTING POLE A1	15/3		1.67			1.67		15/3	SPORTS LIGHTING POLE A2	4
5					1.67			1.67			6
7			3.33			3.33					8
9	SPORTS LIGHTING POLE B1	25/3		3.33			3.33		25/3	SPORTS LIGHTING POLE B2	10
11					3.33			3.33			12
13			2.5			2.5					14
15	SPORTS LIGHTING POLE C1	20/3		2.5			2.5		20/3	SPORTS LIGHTING POLE C2	16
17					2.5			2.5			18
19	SLCP-1	20/2							20/1	SPARE	20
21									20/1	SPARE	22
23	SPARE	20/1							20/1	SPARE	24
NOTES:											
			7.5	7.5	7.5	7.5	7.5	7.5			
			TOTAL kVA								
			45.0								

CHA
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ASHEVILLE SCHOOL DISTRICT

85 MOUNTAIN STREET, ASHEVILLE, NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052806 REGISTERED M. S. WORK

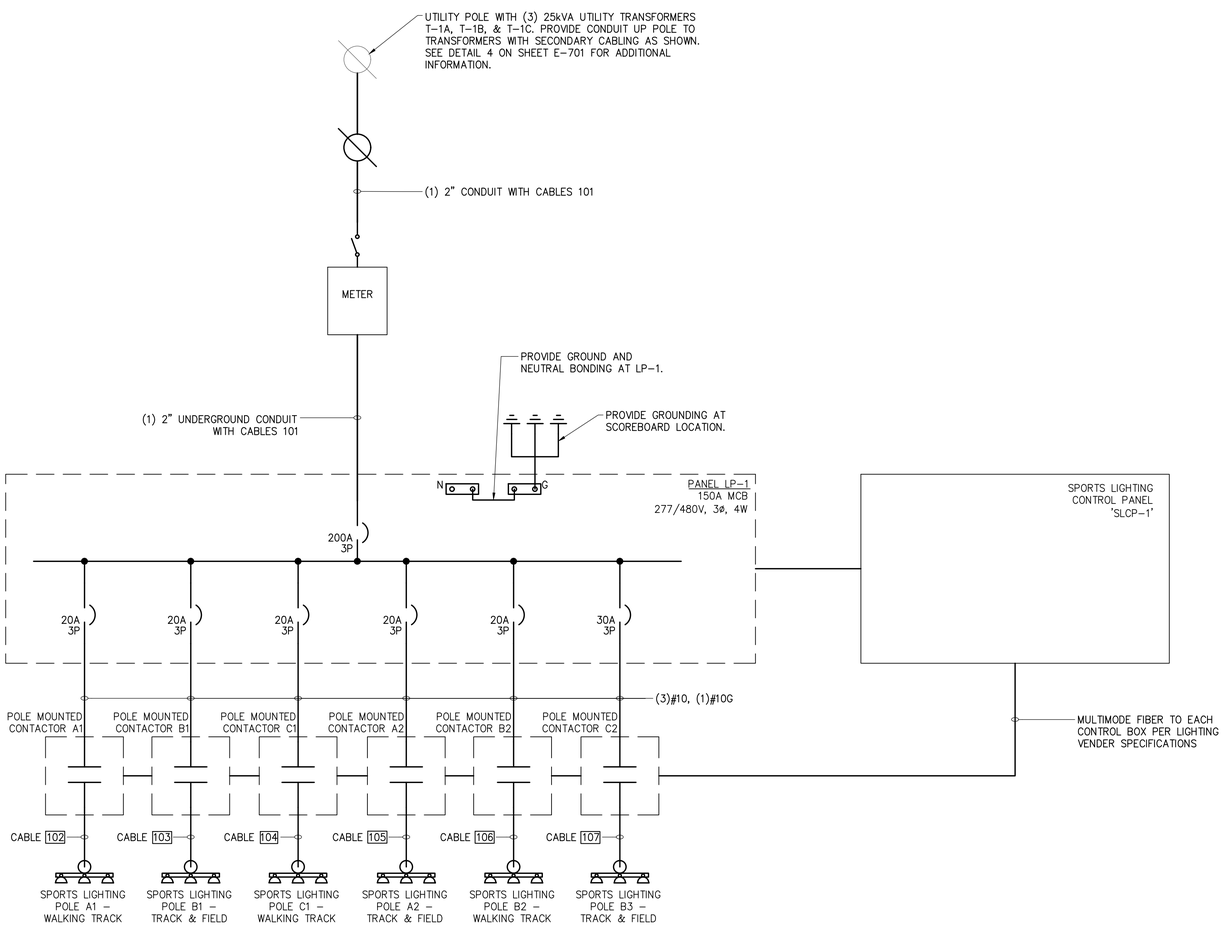
ASHEVILLE HIGH SCHOOL BASEBALL FIELD LIGHTING

No.	Submittal / Revision	App'd.	By	Date

ELECTRICAL SCHEDULES

Designed By:	Drawn By:	Checked By:
MJO	MJO	REG
Issue Date:	Project No:	Scale:
07/07/2023	081062	AS SHOWN

Drawing No.:
E-501



ELECTRICAL ONE-LINE DIAGRAM

SCALE: NONE

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Saved: 7/7/2023 3:45:41 PM Plotted: 7/10/2023 1:29:13 PM Current User: O'Connor, Michael LastSavedBy: 7692

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ASHEVILLE SCHOOL DISTRICT

85 MOUNTAIN STREET, ASHEVILLE, NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052806 CHRISTOPHER E. WOLF

ASHEVILLE HIGH SCHOOL BASEBALL FIELD LIGHTING

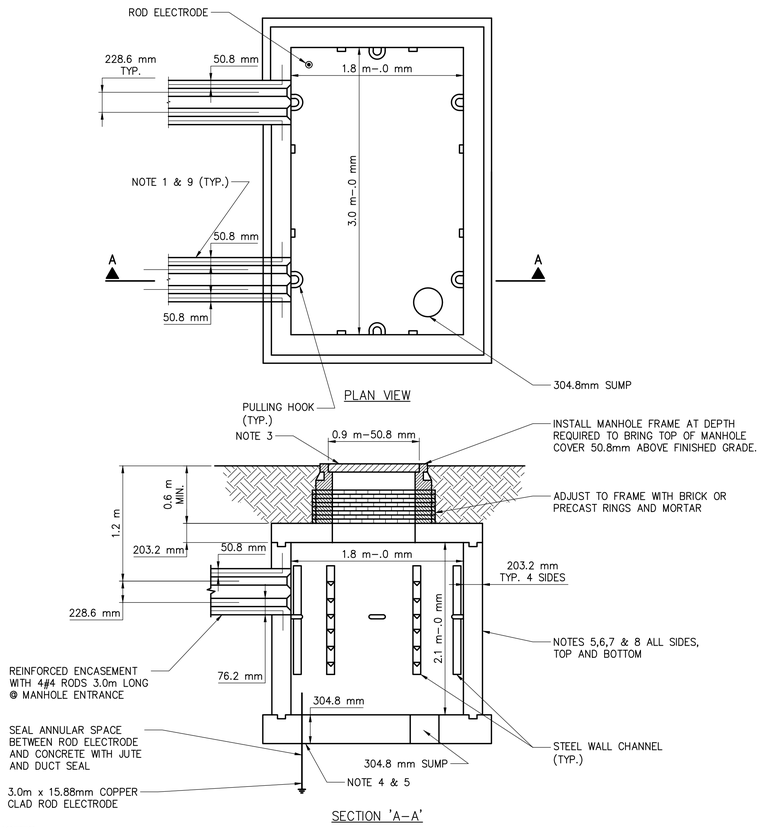
No.	Submittal / Revision	App'd.	By	Date

ELECTRICAL ONE-LINE DIAGRAM

Designed By:	Drawn By:	Checked By:
MJO	MJO	REG
Issue Date:	Project No:	Scale:
07/07/2023	081062	AS SHOWN

Drawing No.:

E-601

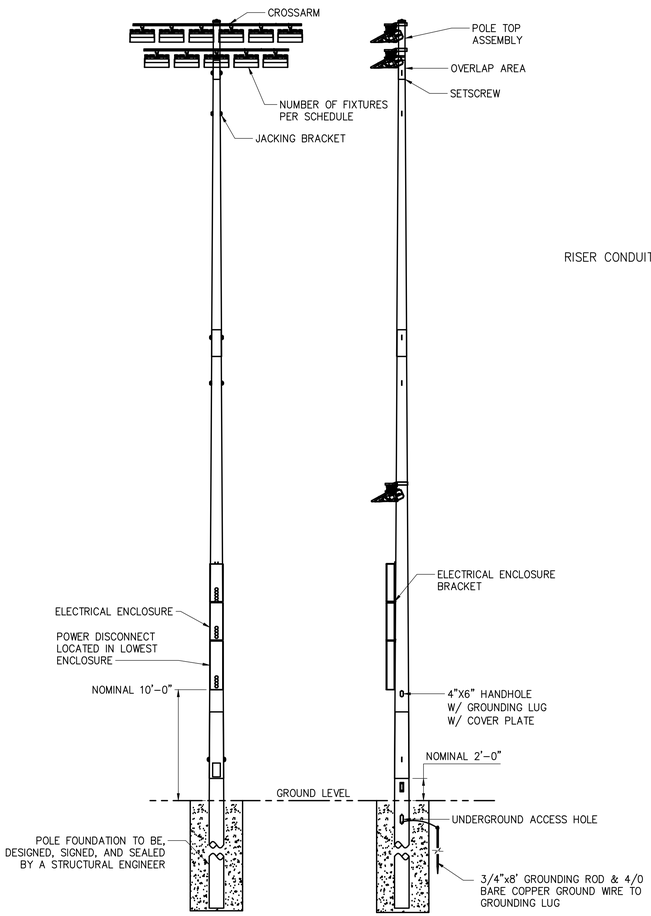


NOTES

1. FOR NUMBER AND SIZE OF CONDUITS ENTERING AND LEAVING MANHOLES, SEE DWG. E–2.
2. BOND MANHOLE COVER FRAME AND CHANNEL RACKS TO ROD ELECTRODE WITH NO. 6 AWG BARE COPPER GROUND CONDUCTOR.
3. HEAVY DUTY STEEL MANHOLE FRAME AND 50.8 mm THICK COVER INSCRIBED 'COMMUNICATIONS' WITH SECURITY SADDLE PLATE.
4. INSTALL MANHOLE LEVEL.
5. MINIMUM 304.8 mm #2 CRUSHED STONE BEDDING BELOW MANHOLE.
6. CONCRETE MINIMUM COMPRESSION STRENGTH – 4000 PSI @ 28 DAYS.
7. STEEL REINFORCEMENT – ASTM–A–615, GRADE 60, 25.4 mm COVER.
8. DESIGN LOADING – AASHTO HS20–44.
9. ENCASED RIGID NON–METALLIC CONDUITS WITH 76.2 mm COVER OF CONCRETE. EXTEND CONCRETE 1.8 mm OUT FROM WALL OF MANHOLE.

1 MANHOLE – SECTION AND ELEVATION

– NOT TO SCALE

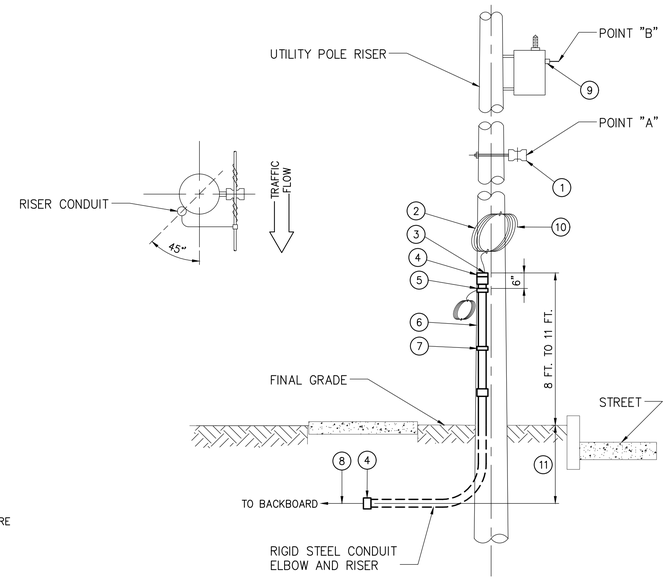


NOTES:

1. PROVIDE PRE–CONSTRUCTED WIRE HARNESS FOR LIGHTING FIXTURE WIRING WITH KELLUM GRIPS AND QUICK CONNECT PLUGS FOR EASE OF CONNECTION IN THE FIELD. (HARNESSES WRAPPED IN MYLAR CASING AND A PROTECTIVE SLEEVE FOR ABRASION RESISTANCE.)
2. ALL STEEL CROSSARMS AND POLES SHALL BE HOT DIPPED GALVANIZED.
3. ALL ELECTRICAL ENCLOSURES SHALL BE POWDER COATED ALUMINUM.
4. ALL THREADED FASTENERS, HINGES, AND LATCHES SHALL BE STAINLESS STEEL.
5. PROVIDE POLE TOP ASSEMBLY W/ FACTORY WIRING AND AIMING (COMPLETE WELDED ASSEMBLY).
6. JACKING BRACKET DESIGN ALLOWS FOR EASY USE OF "COME–A–LONGS" FOR INSTALLATION.
7. ALL EXPOSED HARDWARE SHALL BE TAMPER RESISTANT.

2 SPORTS LIGHTING POLE

– NOT TO SCALE

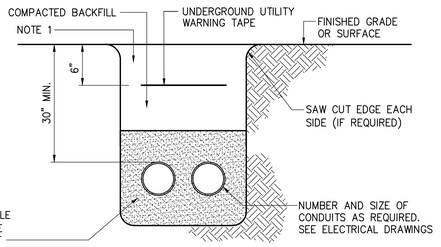


CODED NOTES

1. UTILITY COMPANY'S SECONDARY RACK–POINT "A".
2. SERVICE LATERAL CABLE TO BE FURNISHED AND INSTALLED BY CONTRACTOR. IT MUST BE LONG ENOUGH TO EXTEND 3 FT. (900 MM) ABOVE POINT "A" OR "B" WITHOUT A SPLICE. IF SECONDARY RACK IS NOT ON POLE, ASK UTILITY COMPANY FOR ITS LOCATION. PENDING CONNECTION BY UTILITY COMPANY, TEMPORARILY SECURE CABLE TO POLE TO PREVENT DAMAGE.
3. PROVIDE DUCT SEAL.
4. INSULATING BUSHING.
5. FOR GALVANIZED STEEL CONDUIT ELBOWS, THEY SHALL BE GROUNDED BY BONDING TO AN APPROVED V–BOLT TYPE GROUND CLAMP 6" (150 MM) FROM TOP OF THE CONDUIT. A CONDUCTOR OF SUFFICIENT LENGTH SHALL BE PROVIDED TO EXTEND 24" (600 MM) BEYOND THE UTILITY COMPANY'S SECONDARY NEUTRAL. THE CONDUCTOR SHALL BE SIZED AS REQUIRED BY THE NATIONAL ELECTRICAL CODE, ARTICLE 250, BUT IN NO CASE SHALL IT BE SMALLER THAN #4 AWG COPPER.
6. PROVIDE RIGID GALVANIZED STEEL RISER CONDUIT. THE CONDUIT SHALL RISE ON THE SIDE OF THE POLE AWAY FROM TRAFFIC. CONSULT UTILITY COMPANY FOR PROPER LOCATION ON POLE.
7. PIPE STRAPS, INSTALL AT NOT MORE THAN 30" (750 MM) INTERVALS.
8. SERVICE LATERAL TO BACKBOARD.
9. UTILITY COMPANY'S TRANSFORMER SECONDARY TERMINALS –– POINT "B".
10. SEAL CABLE ENDS TO PREVENT ENTRANCE OF MOISTURE DURING CONSTRUCTION.
11. THE BURIAL DEPTH SHALL BE 30" MINIMUM.

3 RISER POLE DETAIL – SECONDARY SERVICE

– SCALE: NOT TO SCALE

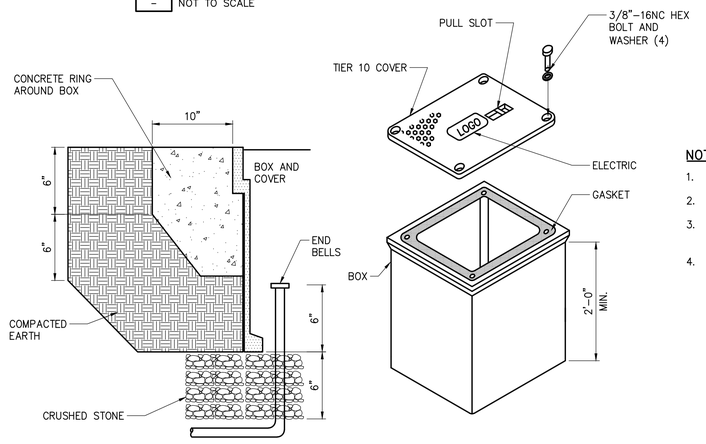


NOTE:

1. REPLACE EXISTING SURFACE CONDITIONS IN KIND TO INCLUDE, BUT NOT LIMITED TO: CONCRETE, CRUSHED STONE, SELECT GRAVEL, ASPHALT, TOPSOIL AND GRASS

4 UNDERGROUND CONDUIT

– NOT TO SCALE



NOTES

1. SIZE HANDHOLE AT EACH LOCATION PER NEC. MINIMUM SIZE SHALL BE 18" X 18" X 24".
2. PROVIDE ALL CONDUITS WITH A PULL ROPE.
3. REPLACE EXISTING SURFACE CONDITIONS IN KIND TO INCLUDE, BUT NOT LIMITED TO: CONCRETE, CRUSHED STONE, SELECT GRAVEL, ASPHALT CONCRETE, TOPSOIL AND GRASS.
4. ALL CONDUITS ENTER FROM BOTTOM, RISE ABOVE STONE 6" AND HAVE END BELLS.

5 HANDHOLE – DETAIL

– NOT TO SCALE

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ASHEVILLE SCHOOL DISTRICT

85 MOUNTAIN STREET, ASHEVILLE, NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 052806 CHRISTOPHER E. WORK

ASHEVILLE HIGH SCHOOL BASEBALL FIELD LIGHTING

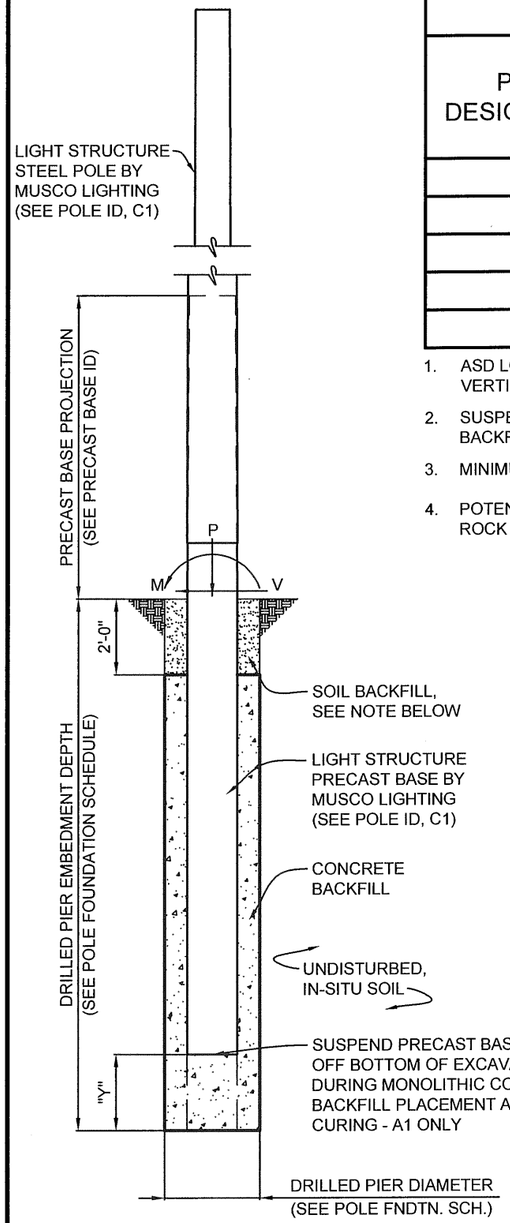
No.	Submittal / Revision	App'd	By	Date

ELECTRICAL DETAILS

Designed By:	Drawn By:	Checked By:
MJO	MJO	REG
Issue Date:	Project No:	Scale:
07/07/2023	081062	AS SHOWN

Drawing No.:

E-701



POLES A1, A2, B1, B2 ,C1 FOUNDATION ELEVATION

SCALE: NOT TO SCALE

SOIL BACKFILL NOTE:
THE TOP TWO FEET OF ANNULUS SHALL BE BACKFILLED WITH SOIL, WITH A CLASSIFICATION OF CLASS 5 (TABLE 1806.2) OR BETTER. COMPACTION, 95% FOR COHESIVE SOIL AND 98% FOR A COHESIONLESS SOIL BASED UPON STANDARD PROCTOR TESTING (ASTM D698).

POLE FOUNDATION SCHEDULE - A1, A2, B1, B2, C1

POLE DESIGNATION	FORCES (1.)			DRILLED PIER			
	MOMENT (M) FT-LBS	SHEAR (V) LBS	VERTICAL (P) LBS	DIAMETER INCHES	EMBEDMENT DEPTH (4.)	SUSPENSION "Y" (2.)	CONCRETE BACKFILL YD^3 (3.)
A1	45,615	1,036	1,319	30	12'-0"	2'-0"	1.6
A2	45,615	1,036	1,319	30	10'-0"	NA	1.3
B1	58,898	1,274	1,788	36	12'-0"	NA	2.3
B2	58,898	1,274	1,788	30	12'-0"	NA	1.5
C1	53,759	1,238	1,552	36	12'-0"	NA	2.3

1. ASD LOAD COMBINATION D + 0.6W.
   VERTICAL FORCE IS WEIGHT OF DRESSED POLE (DOES NOT INCLUDE PRECAST BASE WEIGHT)
2. SUSPEND PRECAST BASE "Y" OFF THE BOTTOM OF THE EXCAVATION DURING MONOLITHIC CONCRETE BACKFILL PLACEMENT AND CURING. NA = NOT APPLICABLE, SUSPENSION NOT REQUIRED.
3. MINIMUM CONCRETE BACKFILL VOLUME, SITE CONDITIONS MAY REQUIRE ADDITIONAL BACKFILL.
4. POTENTIAL FOR ENCOUNTERING ROCK BEFORE REACHING EMBEDMENT DEPTH.
   ROCK AUGERING EQUIPMENT MAY BE REQUIRED.

POLE IDENTIFICATION

POLE DESIGNATION	POLE TYPE	PRECAST BASE TYPE	FIXTURE CONFIGURATION (FIX. PER XARM)	FIXTURE AND ACCESSORIES EPA (FT^2)
A1, A2	LSS70AA	2B	5 (4)	10.7
B1, B2	LSS70B	3B	7 (6)	14.4
C1, C2	LSS70A	3B	7 (5)	15.7

- POLES A1, A2, B1, & B2 HAVE (1) MUSCO LED FIXTURE AT 15'-6" AGL INCLUDED ABOVE.
- POLES C1 & C2 HAVE (2) MUSCO LED FIXTURES AT 15'-6" AGL INCLUDED ABOVE.

CONCRETE/REINFORCEMENT NOTES

CONCRETE SHALL COMPLY WITH THE FOLLOWING ASTM STANDARDS:
MIXTURE WITH ASTM C-94, PORTLAND CEMENT WITH ASTM C-150 TYPE I,
AGGREGATES (0.75" MAX) WITH ASTM C-33 AND BE IN CONFORMANCE WITH ACI 318.

CONCRETE SHALL BE AIR-ENTRAINED (COMPLY WITH ASTM C-260), HAVE A MAXIMUM WATER -CEMENT RATIO, w/cm = 0.45 AND HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 4,500 PSI (C2); 3,000 PSI (A1, A2, B1, B2, C1).

DESIGN SLUMP LIMITS ARE 4" MINIMUM AND 6" MAXIMUM. THE JOB SITE SLUMP MAY BE INCREASED BY THE USE OF A WATER REDUCING AGENT MEETING ASTM C494-92.

REQUIREMENTS FOR C2 ONLY BELOW:

CONCRETE REINFORCEMENT SHALL COMPLY WITH ASTM A615 GRADE 60 AND BE IN CONFORMANCE WITH ACI 315 & 318.

CONCRETE DRILLED PIERS MUST ATTAIN 3,000 PSI STRENGTH PRIOR TO POLE INSTALLATION AND FIXTURE MOUNTING.

THE DEPTH EQUAL TO THE PRECAST BASE EMBEDMENT SHALL BE THOROUGHLY CONSOLIDATED BY MECHANICAL VIBRATION DURING PLACEMENT.

DESIGN NOTES

DESIGN PARAMETERS:
WIND: V_{ult} = 115 MPH, V_{asd} = 89 MPH (EXPOSURE C, RISK CATEGORY II) PER NORTH CAROLINA BUILDING CODE, 2018 EDITION (IBC 2015 / ASCE 7-10).
DESIGN WIND PARAMETERS ARE AS NOTED, ACTUAL EXPOSURE MUST BE VERIFIED FOR THE SITE BY THE PROPER GOVERNING OFFICIAL.

GEOTECHNICAL PARAMETERS:
ALLOWABLE END BEARING SOIL PRESSURE: 3,000 PSF
ALLOWABLE LATERAL SOIL BEARING PRESSURE:
0 PSF/FT (GRADE TO -2'-0"); VARIES BY LOCATION, SEE SOIL BORINGS (BELOW -2'-0") IN ACCORDANCE WITH THE 2018 EDITION OF THE NORTH CAROLINA BUILDING CODE, CHAPTER 18.

DESIGN SOIL PARAMETERS ARE AS NOTED. ACTUAL ALLOWABLE SOIL PARAMETERS MUST BE VERIFIED ON SITE. REFERENCE GEOTECHNICAL EXPLORATION REPORT, PROJECT NO. J23-19967-01, PREPARED BY BUNNELL LAMMONS ENGINEERING (BLE).

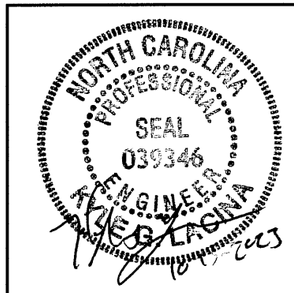
A GEOTECHNICAL ENGINEER OR REPRESENTATIVE OF IS RECOMMENDED (NOT REQUIRED) TO BE AVAILABLE AT THE TIME OF THE FOUNDATION INSTALLATION TO VERIFY THE SOIL DESIGN PARAMETERS AND TO PROVIDE ASSISTANCE IF ANY PROBLEMS ARISE IN FOUNDATION INSTALLATION.

ENCOUNTERING SOIL FORMATIONS THAT WILL REQUIRE SPECIAL DESIGN CONSIDERATIONS OR EXCAVATION PROCEDURES MAY OCCUR. POLE FOUNDATIONS WILL NEED TO BE ANALYZED ACCORDING TO THE SOIL CONDITIONS THAT EXIST. IF ANY DISCREPANCIES OR INCONSISTENCIES ARISE, NOTIFY THE ENGINEER OF SUCH DISCREPANCIES. FOUNDATIONS WILL THEN BE REVISED ACCORDINGLY. REVISIONS WILL BE ANALYZED PER RECOMMENDATIONS DIRECTED BY A LICENSED ENGINEER.

ALL EXCAVATIONS MUST BE FREE OF LOOSE SOIL AND DEBRIS PRIOR TO FOUNDATION INSTALLATION AND CONCRETE BACKFILL PLACEMENT. TEMPORARY CASINGS OR DRILLERS SLURRY MAY BE USED TO STABILIZE THE EXCAVATION DURING INSTALLATION. CASINGS MUST BE REMOVED DURING CONCRETE BACKFILL PLACEMENT. CONCRETE BACKFILL MUST BE PLACED WITH A TREMIE WHEN SLURRY OR WATER IS PRESENT WITHIN THE EXCAVATION OR WHEN THE FREE DROP EXCEEDS 6'-0".

CONTRACTOR MUST BE FAMILIAR WITH THE COMPLETE SOIL INVESTIGATION REPORT AND BORINGS, AND CONTACT THE GEOTECHNICAL FIRM (IF NECESSARY) TO UNDERSTAND THE SOIL CONDITIONS AND THE POSSIBILITY OF GROUND WATER PUMPING AND EXCAVATION STABILIZATION OR BRACING DURING PRECAST BASE INSTALLATION AND PLACEMENT OF CONCRETE BACKFILL.

GENERAL NOTES:
FIXTURES MUST BE LOCATED TO MAINTAIN 10'-0" MINIMUM HORIZONTAL CLEARANCE FROM ANY OBSTRUCTION. ENGINEER MUST BE NOTIFIED IF FOUNDATIONS ARE NEAR ANY RETAINING WALLS OR WITHIN / NEAR ANY SLOPES STEEPER THAN 3H : 1V. POLES, FIXTURES, PRECAST BASES, ELECTRICAL ITEMS AND INSTALLATION PER MUSCO LIGHTING.



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NORTH CAROLINA.

KYLE G. LACINA - NO. 39346
LICENSE RENEWAL DATE: DECEMBER 31, 2023

IOWA SE, PC - NO. C-2836

DRAWING NO. COVERED BY THIS SEAL: C1, C2

ASHEVILLE HS
BASEBALL
FIELD LIGHTING
ASHEVILLE, NC

musco Lighting
CORPORATE: 100 1st AVE WEST
OSKALOOSA, IA 52577
(800) 825-6020

IOWA SE, PC
114 NICHOLAS DRIVE
MARSHALLTOWN, IOWA 50158
PHONE NUMBER: 641-752-6334
EMAIL: MSL.INFO@SEPC.BIZ

DRAWING TITLE: POLE AND FOUNDATION
SCALE: SEE PLAN
NOTES:
SCAN #215685C

PROJECT NUMBER
215685

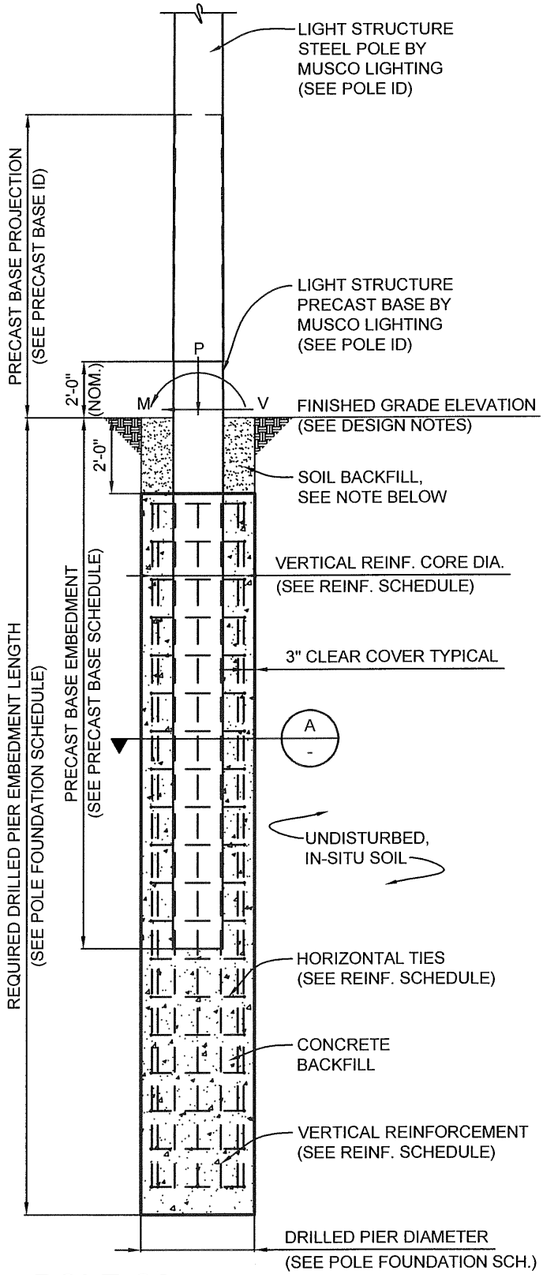
DATE
13 OCTOBER 2023

DRAWING NUMBER
C1
OF TWO

POLE FOUNDATION SCHEDULE - C2

POLE DESIGNATION	FORCES (1.)			DRILLED PIER			REINFORCING		
	MOMENT (M) FT-LBS	SHEAR (V) LBS	VERTICAL (P) LBS	DIAMETER INCHES	EMBEDMENT DEPTH (4.)	CONCRETE BACKFILL YD^3 (2.)	CORE DIAMETER INCH (3.)	VERTICAL REINFORCING	HORIZONTAL TIES
C2	53,759	1,238	1,552	36	21'-0"	4.7	29	12 - #6	#4 @ 12"

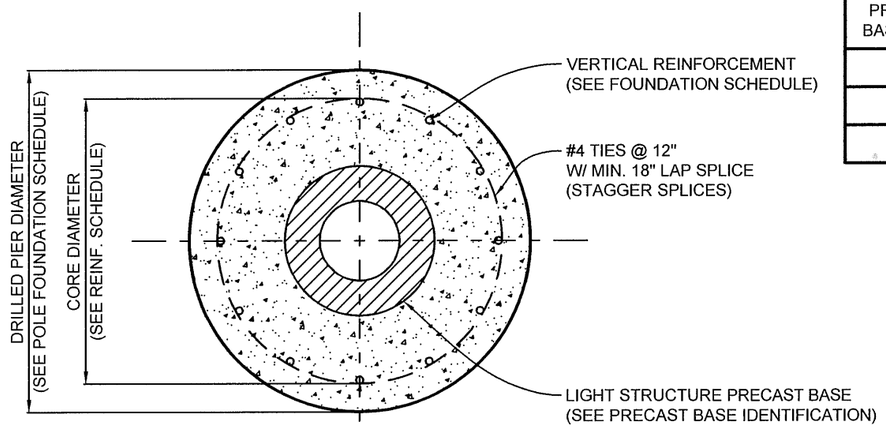
1. ASD LOAD COMBINATION D + 0.6W.
   VERTICAL FORCE IS WEIGHT OF DRESSED POLE (DOES NOT INCLUDE PRECAST BASE WEIGHT).
2. MINIMUM CONCRETE BACKFILL VOLUME, SITE CONDITIONS MAY REQUIRE ADDITIONAL BACKFILL.
3. CORE DIAMETER EQUAL TO INSIDE DIAMETER OF TIES.
4. POTENTIAL FOR ENCOUNTERING ROCK BEFORE REACHING EMBEDMENT DEPTH.
   ROCK AUGERING EQUIPMENT MAY BE REQUIRED.



POLE C2
FOUNDATION ELEVATION

SCALE: NOT TO SCALE

SOIL BACKFILL NOTE:
THE TOP TWO FEET OF ANNULUS SHALL BE BACKFILLED WITH SOIL, WITH A CLASSIFICATION OF CLASS 5 (TABLE 1806.2) OR BETTER. COMPACTION, 95% FOR COHESIVE SOIL AND 98% FOR A COHESIONLESS SOIL BASED UPON STANDARD PROCTOR TESTING (ASTM D698).



POLE C2
PIER DETAIL

SCALE: NOT TO SCALE

INSTALLATION NOTE (POLE C2 ONLY):
CONCRETE TO BE PLACED IN A CONTINUOUS POUR OR A COLD JOINT WILL BE ACCEPTABLE AT THE BOTTOM OF THE PRECAST BASE. TWO POUR: WITH THE REINFORCEMENT IN PLACE, THE CONCRETE BELOW THE BOTTOM OF THE PRECAST BASE MAY BE POURED AND ALLOWED TO SET UP LONG ENOUGH TO SUPPORT WEIGHT OF PRECAST BASE. THEN THE PRECAST BASE MAY BE SET IN PLACE AND THE REST OF THE CONCRETE CONCRETE BACKFILL POURED. DEPENDING ON THE DEPTH TO GROUND WATER AT THE TIME OF INSTALLATION, THE TWO POUR METHOD UTILIZING A COLD JOINT MAY NOT BE FEASIBLE.

PRECAST BASE IDENTIFICATION

PRECAST BASE TYPE	PRECAST BASE WEIGHT	PRECAST BASE LENGTH	PROJECTION ABOVE GRADE	STANDARD EMBEDMENT	OUTSIDE DIAMETER
2B	1,690 LBS	17'-3"	7'-3"	10'-0"	12.00"
3B	2,470 LBS	20'-0"	8'-0"	12'-0"	13.38"
REFERENCE POLE ID TABLE ON SHEET C1 FOR POLE TO PRECAST BASE TYPES					

ASHEVILLE HS
BASEBALL
FIELD LIGHTING
ASHEVILLE, NC

musco Lighting
CORPORATE: 100 1ST AVE WEST
OSKALOOSA, IA 52577
(800) 825-6020

IOWA SE, PC
114 NICHOLAS DRIVE
MARSHALLTOWN, IOWA 50158
PHONE NUMBER: 641-752-6334
EMAIL: MSL.INFO@SEPC.BIZ

DRAWING TITLE: POLE AND FOUNDATION
SCALE: SEE PLAN
NOTES: SCAN #215685C

PROJECT NUMBER 215685

DATE 13 OCTOBER 2023

DRAWING NUMBER C2

OF TWO

System Requirements: Control System Summary

Project Name: Asheville High School Football Baseball | Project #: 215685
Control System ID: 1 of 1
Distribution Panel Location/ID: Baseball Field

Project Information

Control System

Control System ID: 1 of 1
Control System Type: Control-Link ® Control and Monitoring System with Show-Light ® Special Effects
Communication Type: PowerLine-ST

Power Requirements

Control cabinet(s):
Control voltage (phase to neutral) 120/60
VA loading - Inrush 2643.0
VA loading - Sealed 250.0
Lighting Circuits:
Voltage/Hertz/Phase 208/60/3
Communication cabinet(s):
Cabinet voltage (phase to neutral) 120/60
Touchscreen(s):
Touchscreen power (receptacle) 120/60

Project Notes:

Equipment Listing		
Description	**Qty**	**Size (in)**
Control and monitoring cabinet - primary	1	24 X 48
Communication cabinet	1	-
Touchscreen	1	-
Contactors, 30 amperes	6	-
Off/On/Auto switches	1	-

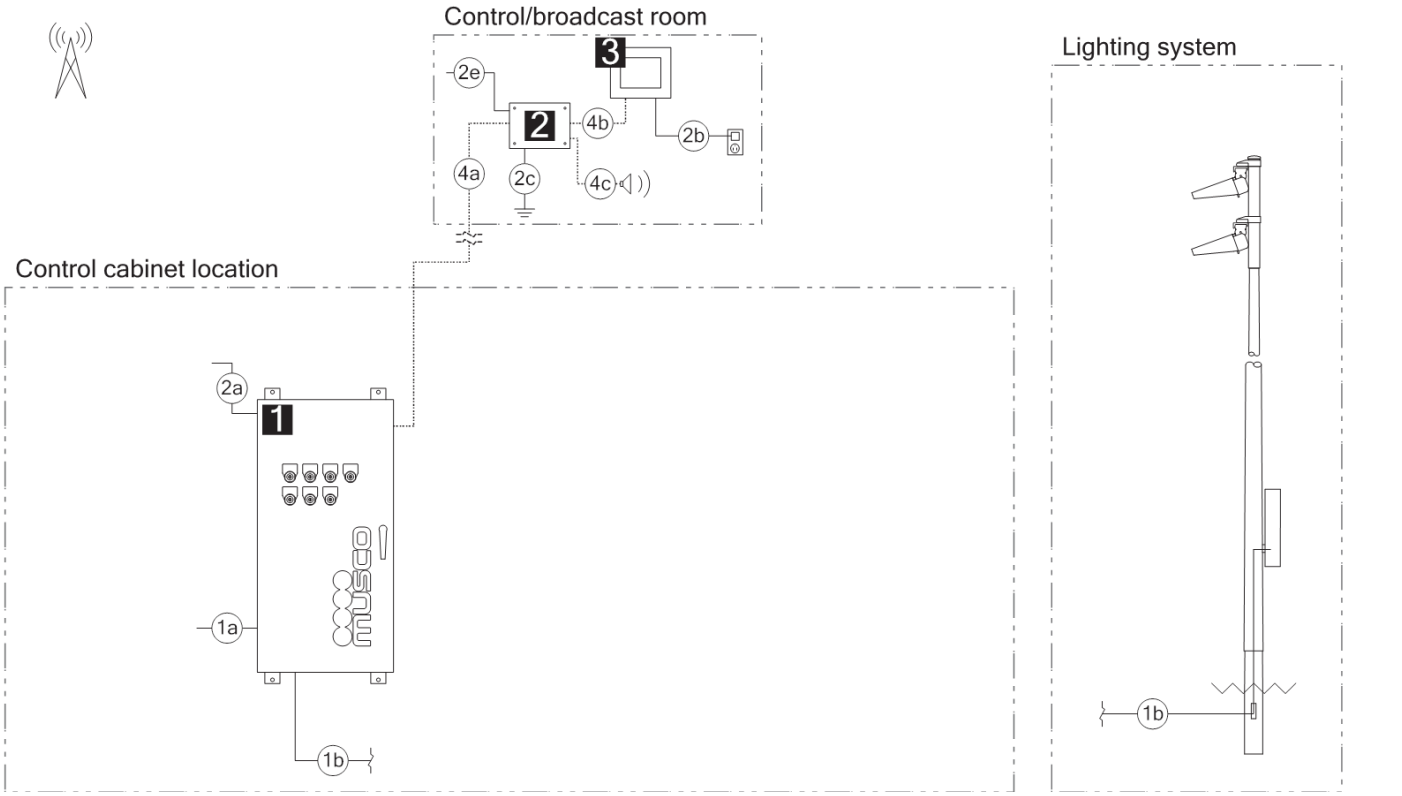
Important Notes:

1. Please confirm that the lighting circuit voltage listed above is accurate for this facility. This is the voltage/phase being connected and utilized at each lighting pole's electrical components enclosure disconnect. Inaccurate voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
2. In a 3 phase design, all 3 phases are to be run to each pole location. Musco's single phase luminaires come pre-wired to utilize all 3 phases across the entire facility.
3. One contactor is required for each circuit at each pole location. Contactors are 3 pole and 100% rated for the published continuous load.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. Size overcurrent devices using the full load amps column of the Circuit Summary by Switch chart (Minimum power factor is 0.9). Size conduit per code unless otherwise specified as larger to allow for harness connectors.
6. Avoid use of in-ground junction/pull boxes when possible. If used, all wire connectors must be UL listed for Wet Locations to prevent leakage current.
7. Control power wiring must be in separate conduit from line or load power wiring. Communication cables must be in separate conduit from any power wiring.
8. Refer to Installation Instructions for more details on equipment information and the installation requirements.

System Requirements: Control System Summary

Project Name: Asheville High School Football Baseball | Project #: 215685
Control System ID: 1 of 1
Distribution Panel Location/ID: Baseball Field

Equipment Layout and Connection Details



Connection Details

ID	Description
1a	Line power to contactors, and equipment grounding conductor. Requires one circuit per contactor, size wiring per load and voltage drop.
1b	Load power from contactors, and equipment grounding conductor. Requires one circuit per contactor, size wiring per load and voltage drop.
2a	Control power with equipment ground to control cabinet. Requires dedicated 20 A circuit. Provide transformer if control voltage not present.
2b	Power cord for touchscreen. Requires standard receptacle.
2c	Earth ground connection at communication cabinet location. Requires installation of ground electrode if existing earth gound not present.
2e	Control power with equipment ground.
4a	Communication cable - Communication cabinet to primary control cabinet. Requires Cat5e cable (Belden 7937A or equal), maximum of 1500 feet.
4b	Communication cable - Communication cabinet to touchscreen. 10-foot ethernet cable provided by Musco. Ethernet cable provided by contractor if longer length is needed. Maximum cable length is 300 feet.

Equipment

ID	Description
1	Control and monitoring cabinet - primary
2	Communication cabinet
3	Touchscreen

Equipment Layout and Connection Details

Connection Details - Cont'd

ID	Description
4c	Audio cable - Communication cabinet to audio system, provided by contractor. Requires audio cable with 3.5 mm audio plug.

Equipment - Cont'd

ID	Description

System Requirements: Control System Summary

Circuit Summary

Switching Schedule	
Field/Switch Description	**Switches**
Baseball	1

Control Module ID: 1

Lighting Circuit Voltage: 208/60/3

Circuit Summary by Switch							
Switch	**Zone Description**	**Pole ID**	**Qty of Fixtures**	**Full load amperes**	**Contactor Size (Amps)**	**Cabinet #**	**Contactor ID**
1	Baseball	A1	5	20.88	30	1	C1
	Baseball	A2	5	20.88	30	1	C2
	Baseball	B1	7	26.87	30	1	C3
	Baseball	B2	7	26.87	30	1	C4
	Baseball	C1	7	26.87	30	1	C5
	Baseball	C2	7	26.87	30	1	C6

Asheville High School Football Baseball

Asheville, NC

Lighting System

Pole / Fixture Summary

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
A1-A2	70'	70'	4	TLC-LED-1200	4.68 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
B1-B2	70'	70'	6	TLC-LED-1200	7.02 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
C1-C2	70'	70'	5	TLC-LED-1200	5.85 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
6			***38***		***39.70 kW***	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Baseball	39.7 kW	38

Fixture Type Summary

Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1200	LED 5700K - 75 CRI	1170W	150,000	>120,000	>120,000	>120,000	30
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8

Single Luminaire Amperage Draw Chart

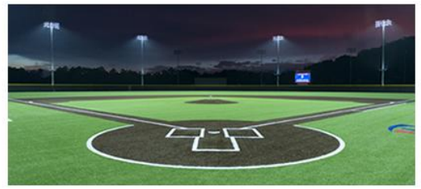
Driver (.90 min power factor)	Max Line Amperage Per Luminaire						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1200	6.9	6.5	6.0	5.2	4.2	3.8	3.0
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5

Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Baseball (Infield)	Horizontal Illuminance	50.2	38.1	56.9	1.50	1.32	A	38
Baseball (Outfield)	Horizontal Illuminance	31.6	24	42.5	1.77	1.32	A	38

From Hometown to Professional



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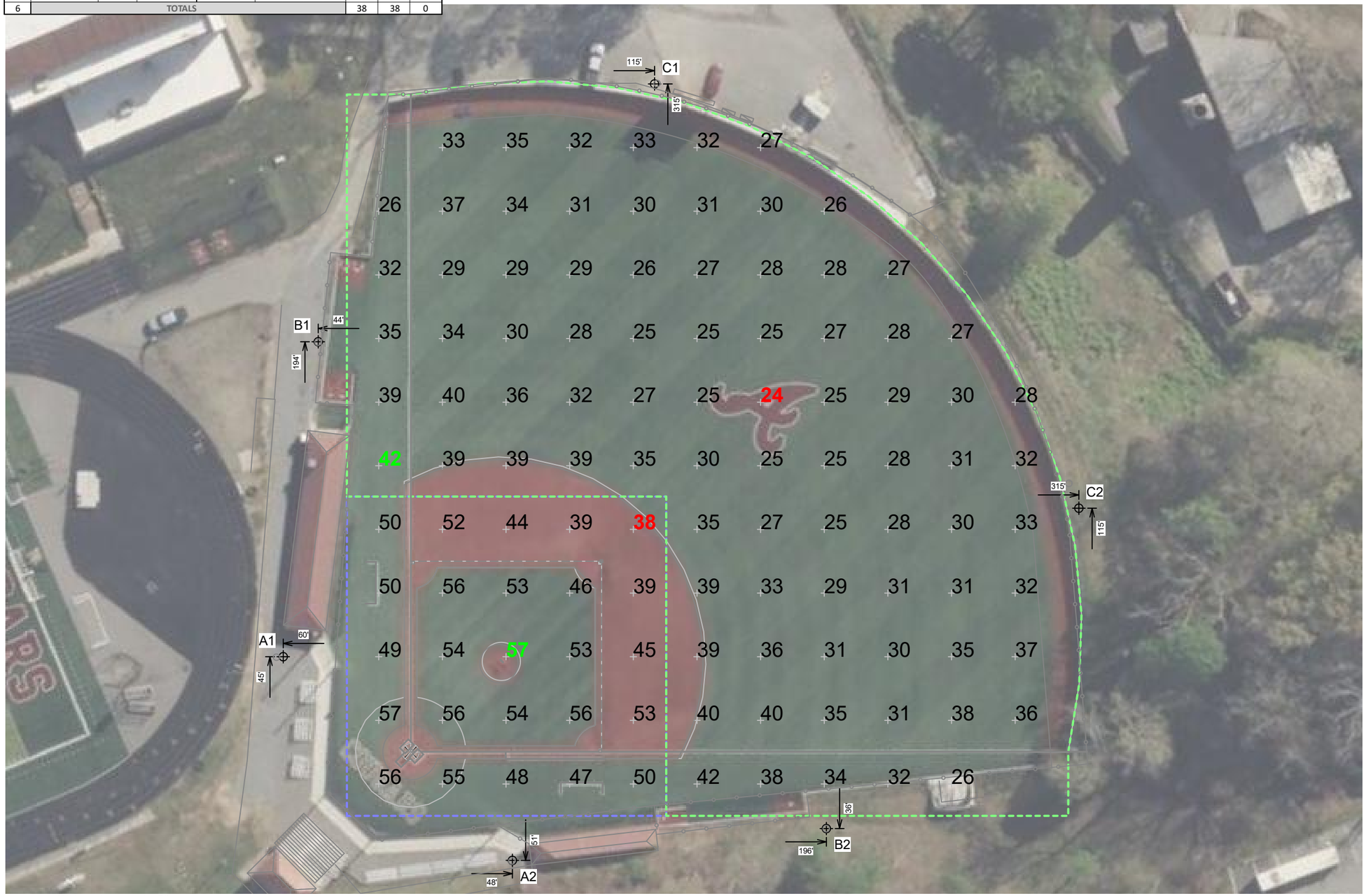
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	4	4	0
2	B1-B2	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	6	6	0
2	C1-C2	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1200	5	5	0
6	TOTALS					38	38	0



SCALE IN FEET 1 : 50

0' 50' 100'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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Asheville High School Football Baseball
Asheville, NC

GRID SUMMARY

Name:	**Baseball**
Size:	310'/340'/310' - basepath 90'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	50.24	31.61
Maximum:	56.9	42.5
Minimum:	38.1	24.0
Avg / Min:	1.32	1.32
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.50	1.77
UG (adjacent pts):	1.20	1.46
CU:	0.73	
No. of Points:	25	84

LUMINAIRE INFORMATION

Applied Circuits:	A
No. of Luminaires:	**38**
Total Load:	39.7 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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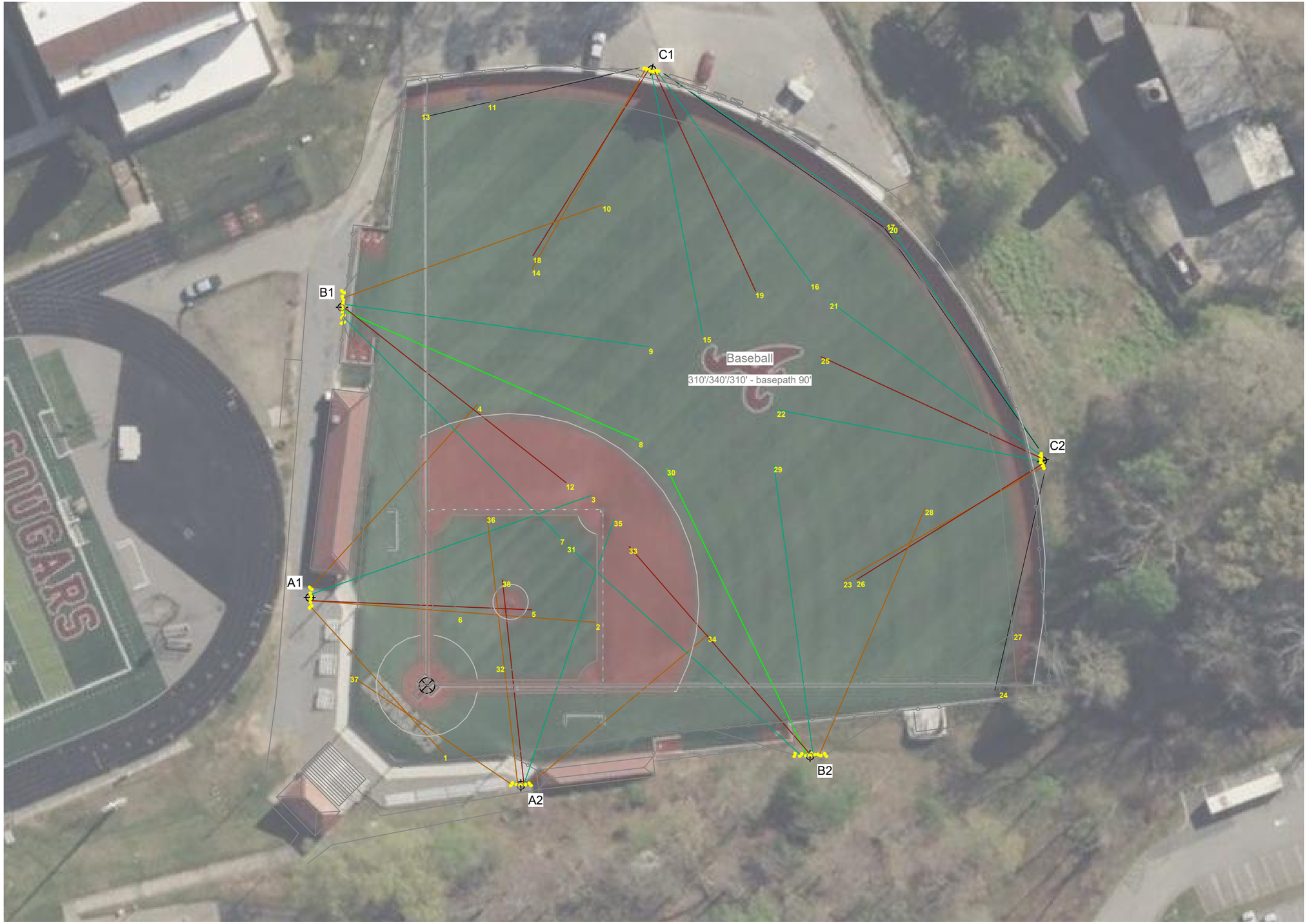
Asheville High School Football Baseball
Asheville, NC



SCALE IN FEET 1 : 50

0' 50' 100'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: D.Alexander · File #215685D · 17-Oct-23

EQUIPMENT LAYOUT

INCLUDES:
· Baseball

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	CLASS	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
2	A1-A2	LSS70AA	-	15.5' 70'	TLC-BT-575 TLC-LED-1200	1 4
2	B1-B2	LSS70B	-	15.5' 70'	TLC-BT-575 TLC-LED-1200	1 6
2	C1-C2	LSS70A	-	15.5' 70'	TLC-BT-575 TLC-LED-1200	2 5
6	TOTALS					38

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Driver (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1200	6.9	6.5	6.0	5.2	4.2	3.8	3.0
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5

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SECTION 321630 – CONCRETE SIDEWALKS

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes the installation of concrete sidewalk as shown on the Drawings, or as specified herein.

B. The materials and methods specified herein are directly intended for placement of "new" concrete sidewalk. Where existing sidewalk is removed and replaced during construction, modifications to these specifications to match existing conditions shall be made as directed by the Engineer.

1.2 QUALITY ASSURANCE

A. Reference Standards:
   1. The latest edition of the following standards, as referenced herein, shall be applicable.
      a. Applicable State DOT Standard Specifications.
      b. American Society of Testing and Materials (ASTM).
      c. American Concrete Institute (ACI).

B. The Contractor shall provide and pay for all costs in connection with an approved independent testing facility to determine conformance of materials with the specifications, if at any time during the Work, materials appear unsuitable in the opinion of the Engineer.

1.3 SUBMITTALS

A. Concrete:
   1. The Contractor shall furnish the name and location of the concrete supplier.
   2. Submit the design mix for each class of concrete prior to use in the Work.

B. Product Data:
   1. Submit manufacturer's catalog cuts, specifications, and installation instructions.

C. Test Results:
   1. The testing laboratory shall submit written reports of all tests, investigations, and recommendations to the Contractor and the Engineer.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Concrete:
   1. All cast-in-place concrete shall be ready mixed concrete meeting the following criteria:
      a. 28-day compressive strength-4500 psi
      b. Air entrainment-4% to 8%
      c. Slump-2" to 4"

B. Premoulded Expansion Joint Filler:
   1. Concrete curbing shall be provided with a 1/2 inch premoulded expansion joint filler conforming to ASTM D1751.
   2. The premoulded expansion joint filler shall be "pre-cut" to match the concrete sidewalk cross-sectioned dimensions as detailed on the Drawings.

C. Fabric Reinforcement:
   1. Flat sheets of 6 x 6 - W 2.9 x W 2.9, ASTM A1064, welded wire reinforcement.

D. Sealants:
   1. Joint Sealers: ASTM C920.

E. Forms:
   1. Sidewalk forms shall be of wood or steel, straight of sufficient strength to resist springing during depositing and consolidating concrete, and of a height equal to the full depth of the finished sidewalk.
   2. Wood forms shall be surfaced plank, 2-inch nominal thickness, straight and free from warp, twist, loose knots, splits or other defects. Wood forms shall have a nominal length of 10 feet, with a minimum of three stakes per form, at maximum spacing of 4 feet. Corners, deep sections, and radius bends shall have additional stakes and braces, as required. Radius bends may be formed with 3/4-inch boards, laminated to the required thickness.
   3. Steel forms shall be channel-formed sections with a flat top surface and with welded braces at each end and at not less than two intermediate points. Form ends shall be interlocked and self-aligning. Forms shall include flexible forms for radius forming, corner forms, form spreaders, and fillers. Forms shall have a nominal length of 10 feet, with a minimum of two welded stake pockets per form. Stake pins shall be solid steel rods with chamfered heads and pointed tips, designed for use with steel forms.

PART 3 – EXECUTION

3.1 INSPECTION

A. The Contractor shall notify the Engineer 24 hours before placing concrete in order to give the Engineer an opportunity to inspect the formwork, reinforcing and related items prior to placement of the concrete.

B. Delivery tickets shall show the amount of cement, brand, and amount of all admixtures, in addition to information required by ASTM C94, Section 14. Water added on the job shall be approved and the amount noted on the delivery ticket and initialed by the Contractor.

3.2 SUBBASE PREPARATION

A. Concrete sidewalk shall be constructed on a compacted granular subbase as shown on the Drawings.

B. The completed subbase shall be tested for grade and cross section with a template extending the full width of the sidewalk and supported between side forms.

C. The subbase shall be maintained in a smooth, compacted condition in conformity with the required section and established grade, until the concrete is placed.

D. The subbase shall be in a moist condition when concrete is placed.

E. The subbase shall be prepared and protected so as to produce a subbase free from frost when the concrete is deposited.

3.3 FORMWORK

A. Earth cuts may not be used as forms for vertical surfaces.

B. All forms shall be built mortar tight and of materials sufficient in strength to hold concrete without bulging between supports. Forms shall be maintained to eliminate the formation of joints due to shrinkage of the forms. Concrete, misshapen by bulges or deformations caused by inadequate forms, shall be removed or corrected as ordered by the Engineer. All replacements or corrections shall be made at the Contractor's expense.

C. All surfaces of wooden forms that will be in contact with exposed concrete shall be thoroughly treated with an approved lacquer in the procedure recommended by the manufacturer. Forms so treated shall be protected from being damaged or dirtied prior to placing of the concrete.

D. Metal forms shall be treated with an approved form lacquer or may be treated with an approved form oil. The metal used for forms shall be of sufficient thickness to remain true to shape. All bolt and rivet heads shall be designed to hold the forms rigidly together and to allow removal, without injury to the concrete. Metal forms which do not have smooth surfaces, correct alignment and clean surfaces shall not be used.

E. Side forms shall not be removed for less than 12 hours after finishing has been completed.

3.4 CONCRETE PLACEMENT AND FINISHING

A. Preparation:
1. Set forms true to line and grade and anchor rigidly in position.
2. Transverse expansion joints shall be installed at sidewalk returns and opposite expansion joints in adjoining curbs. Longitudinal expansion joints shall be installed between concrete sidewalk and abutting concrete curb, continuously. Transverse expansion joints shall be installed equally at not more than 25 feet on center, unless otherwise directed by the Engineer, or as detailed on the Drawings.
3. Transverse expansion joints shall be filled with 1/2-inch joint filler strips. Joint filler shall be placed with top edge 1/4 inch below the surface and shall be held in place with steel pins or other devices to prevent warping of the filler during floating and finishing. Protect the top edge of the joint filler during concrete placement with a temporary cap and remove after concrete has been placed.
4. Expansion joints shall be formed about structures and features that project through or into the sidewalk pavement, using joint filler of the type, thickness, and width indicated. The filler shall be installed in such manner as to form a complete, uniform separation between the structure and sidewalk pavement.

B. Placement of Fabric Reinforcement:
1. Prior to placement, clean reinforcement thoroughly of mill and rust scale and of coatings which could destroy or reduce bond. Where there is a delay in depositing concrete after the positioning of reinforcement, reclean reinforcement, if necessary.
2. Place reinforcement midway between top and bottom of the slab and secure against displacement.

3. Lap edges and ends of adjoining sheets of fabric reinforcement at least half the mesh width. Offset end laps in adjacent sheets to prevent continuous joints at ends. Interrupt reinforcement at expansion joints, stopping 2 inches from edges.

C. Concrete Placement:
1. Concrete shall be placed in the forms in one layer of such thickness that when compacted and finished the sidewalk will be of the thickness indicated. After concrete has been placed in the forms, a strike-off guided by side forms shall be used to bring the surface to proper section to be compacted.
2. The concrete shall be tamped and consolidated with a suitable wood or metal tamping bar, and the surface shall be finished to grade with a wood float. Finished surface of the walk shall not vary more than 3/16 inch from the testing edge of a 20-foot straightedge. Irregularities exceeding the above shall be satisfactorily corrected. The surface shall be divided into rectangular areas by means of contraction joints spaced at intervals shown on the drawings.
3. Place concrete in accordance with ACI 301 unless otherwise specified herein.
4. Cold Weather Concreting: Comply with ACI 306 for placement at temperatures of, or expected to be, below 40°F.
5. Hot Weather Concreting: Comply with ACI 305 for placement at temperature of, or expected to be, above 90°F.

D. Concrete Finishing:
1. After straight edging, when most of the water sheen has disappeared, and just before the concrete hardens, the surface shall be finished to a smooth and uniformly fine granular or sandy texture free of waves, irregularities, or tool marks. A scored surface shall be produced by brooming with a fiber-bristle brush in a direction transverse to that of the traffic, or as otherwise shown on the drawings.
2. All slab edges, including those at formed joints, shall be finished carefully with an edger having a radius of 1/8 inch. Corner and edges which have crumbled and areas which lack sufficient mortar for proper finishing shall be cleaned and filled solidly with a properly proportioned mortar mixture and then finished.
3. The completed surface shall be uniform in color and free of surface blemishes and tool marks.

3.5 CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture curing as follows:
1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
a. Water.
b. Continuous water-fog spray.

c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

3.6 SEALING JOINTS

A. At the end of the curing period, expansion joints shall be carefully cleaned and filled with joint sealer. Concrete at the joint shall be surface dry, and the atmospheric and pavement temperatures shall be above 50˚F, at the time of application of joint sealing materials.

B. Joints shall be filled flush with the concrete surface in such manner as to minimize spilling on the walk surface. Spilled sealing material shall be removed immediately and the surface of the walk cleaned. Dummy groove joints shall not be sealed.

3.7 BACKFILLING AND RESTORATION

A. After curing, debris shall be removed, and the area adjoining the concrete shall be backfilled, graded, and compacted to conform to the surrounding area in accordance with lines and grades indicated.

B. All lawns, pavements, driveways, shrubs, or other improvements affected by sidewalk placement shall be restored to their original condition.

3.8 PROTECTION

A. The Contractor shall protect the sidewalk and keep it in “first class” condition until the completion of the Contract. Any sidewalk which is damaged prior to final acceptance of the Work shall be removed and replaced at the Contractor’s expense.

3.9 FIELD QUALITY CONTROL

A. Testing and Inspecting: The Owner will provide an inspecting agency to perform tests and inspections and to submit reports.

B. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., pl us one set for each additional 50 cu. yd. or fraction thereof.
2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.
    a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C23 l, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C I 064/C I 064M; one test hourly when ai r temperature is 40 DegF and below and when 80 DegF and above, and one test for each composite sample.
6. Compression Test Specimens: ASTM C3 l /C3 I M.
    a. Cast and laboratory cure three sets of two standard cylinder specimens for each composite sample.

7. Compressive-Strength Tests: ASTM C39/C39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days. The remaining two cylinders will be held in reserve. If the results of the 28-day tests indicate low strength concrete, the engineer will direct the contractor and laboratory to test the remaining two cylinders at a time directed by the Engineer.
8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
9. Test results shall be reported in writing to Engineer, concrete manufacturer, and Owner within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

END OF SECTION

SECTION 312333 – TRENCHING AND BACKFILLING

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes the excavation of trenching, backfilling, compacting, dewatering, excavation support and disposal, as shown on the Contract Drawings, and as herein specified.

B. The Engineer will determine the suitability of materials that are to be used in the work and should any materials encountered be unsatisfactory for the purpose intended, they shall be removed from the site at the Contractor's expense.

1.2 QUALITY ASSURANCE

A. Reference Standards:
   1. The latest edition of the following standards, as referenced herein, shall be applicable.
      a. State Specific Department of Transportation Construction Standards.
      b. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)."
      c. American Society for Testing and Materials (ASTM).
      d. National Electric Code (NEC).

B. The Contractor shall comply with the requirements for soil erosion and sedimentation control and other requirements of governmental authorities having jurisdiction, including the State.

C. The Contractor shall provide and pay for all costs in connection with an approved independent testing facility to determine conformance of soils and aggregate with the specifications in accordance with Section "Quality Requirements."

1.3 SUBMITTALS

A. Samples:
   1. The Contractor shall furnish representative earth materials to the testing laboratory for analysis and report, as directed by the Engineer, or as outlined in the specifications.

B. Test Results:
   1. The testing laboratory shall submit written reports of all tests, investigations, findings, and recommendations to the Contractor and the Engineer.

1.4 PROJECT REQUIREMENTS

A. Notify the Engineer of any unexpected subsurface condition.

B. Protect excavations by shoring, bracing, sheet piling, or by other methods, as required to ensure the stability of the excavation. Comply with OSHA requirements.

C. Underpin or otherwise support structures adjacent to the excavation, which may be damaged by the excavation. This includes service lines.

D. Protection of Existing Utilities:
   1. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations. Comply with OSHA requirements.
   2. Coordinate interruption and/or termination of utilities with the utility companies and the Owner.
   3. Provide a minimum of 48 hours' notice to the Owner and receive written notice to proceed before interrupting any utility.

E. Demolish and completely remove from the site any existing underground utilities designated to be removed, as shown on the Drawings or as specified.

F. Repair any damaged utilities as acceptable to the Owner, Engineer, and utility company at no additional cost to the Owner.

G. Contractor shall comply with maintenance and protection requirements as approved by the authority having jurisdiction.

H. Protection of Persons and Property:
   1. Barricade open excavations occurring as part of this work and post with warning lights, if required.
   2. Operate warning lights as recommended by authorities having jurisdiction.
   3. Protect structures, utilities, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
   4. Perform excavation within drip-line of trees to remain by hand and protect the root system from damage or dryout to the greatest extent possible. Maintain moist conditions for root system and cover exposed roots with burlap. Paint cut roots of 1-inch diameter and larger with emulsified asphalt tree paint.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Pipe Zone Bedding: Select mixture of graded crushed stone, free from organic, frozen or other deleterious materials, conforming to the requirements of State Specific DOT Standards and meeting the following gradation requirements:

SIEVE	PERCENT PASSING
1-1/2"	100
1"	90 – 100
1/2"	0 – 15

B. Pipe Zone Backfill: Sound, durable sand, gravel, stone or blends of these materials, free from organic, frozen or other deleterious materials, conforming to the requirements of State Specific DOT Standards and meeting the following gradation requirements:

SIEVE	PERCENT PASSING
2"	100
1/4"	30 – 65
No. 40	5 – 40
No. 200	0 – 10

C. Suitable Material: Sound, durable sand, gravel, stone or blends of these materials, free from organic, frozen or other deleterious materials, conforming to the requirements of State Specific DOT Standards and meeting the following gradation requirements:

SIEVE	PERCENT PASSING
4"	100
No. 40	0 – 70
No. 200	0 – 15

1. Run-of-trench material, meeting the above criteria, shall be considered suitable material and shall be used for trench backfill only after tested in accordance with Section "Quality Requirements" and approved by the Engineer. The Contractor shall pay for all additional testing required to determine the conformance of run-of-trench material, if at any time during the Work this material appears to be in non-conformance in the opinion of the Engineer.

PART 3 – EXECUTION

3.1 PRECONSTRUCTION MATERIAL QUALIFICATION TESTING

A. General:

1. Sufficient size samples shall be obtained from the potential borrow source to allow completion of tests listed in paragraph B below. Samples may be obtained from test borings, test pits, or from borrow pit faces provided that surficial dry or wet soil is removed to expose undisturbed earth. Tests listed below shall be performed on each sample obtained. A minimum of 3 representative samples from each potential borrow source shall be furnished to the testing laboratory for prequalification testing. Test data shall be provided to the Engineer a minimum of 2 weeks prior to construction for approval of borrow source. Three test reports completed within three months prior to construction may be submitted for commercial earth borrow sources or suppliers of stone products (crushed stone or graded stone products) in lieu of prequalification tests as approved by the Engineer.

B. Material Tests:

1. Particle Size Analysis:
   a. Method: ASTM D422.
   b. Number of Tests: One (1) per sample; three (3) per potential source.
   c. Acceptance Criteria: Gradation within specified limits.
2. Maximum Density Determination:
   a. Method: ASTM D1557 - Modified Proctor.
   b. Number of Tests: One (1) per sample; three (3) per potential source.
3. Re-establish gradation and maximum density of fill material if source is changed during construction.

3.2 PREPARATION

A. Establish required lines, levels, contours, and datum.

B. Maintain benchmarks and other elevation control points; re-establish if disturbed or destroyed at no additional cost to the Owner.

C. Establish location and extent of existing utilities prior to commencement of excavation.

3.3 EXCAVATION

A. All excavation shall be made to such depth as required and of the width shown on the Drawings to provide suitable room for building the structures and laying the pipe(s) they are to contain and for sheeting, shoring, pumping and draining as necessary, and for removing peat, silt, or any other materials which the Engineer may deem unsuitable. Hand trench excavation may be required to protect existing utilities and structures.

B. Trench excavation for pipes shall be made by open cut to accommodate the pipe or structure at the depths indicated on the Drawings. Excavation shall be made to such a depth and to the width indicated on the Drawings so as to allow a minimum of 8 inches of pipe zone bedding to be placed beneath the bottom of all structures and barrels, bells or couplings of all pipes installed unless otherwise specified on the Drawings.

C. The bottom of the trench shall be accurately graded to provide a uniform layer of bedding material as required for each section of pipe. Trim and shape trench bottoms and leave free of irregularities, lumps, and projections.

D. Stockpile excavated subsoil for reuse where directed or approved.

E. Over excavation/undercut: If, in the opinion of the Engineer, existing material below the trench grade is unsuitable for properly placing bedding material and laying pipe, the Contractor shall excavate and remove the unsuitable material and replace the same with an approved pipe zone bedding material properly compacted.

F. Stability of Excavation: Slope sides of excavations shall comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides and slopes of excavation in safe condition until completion of backfilling.

G. Removal of materials beyond the indicated subgrade elevations, without authorization by the Engineer, shall be classified as unauthorized excavation and shall be performed at no additional cost to the Owner.

3.4 DEWATERING

A. The Contractor shall remove all water from the excavation promptly and continuously throughout the progress of the work and shall keep the excavation dry at all times until the work is completed and excavation is backfilled or have sufficient weight to resist uplift pressures. Groundwater levels shall be depressed to a minimum of 2 feet below excavation subgrade. No pipe or structure is to be laid in water and water shall not be allowed to rise on or flow over any pipe or structure until such time as approved by the Engineer.

B. Provide a suitable point of discharge from dewatering operations shall be conveyed in a non-erosive manner satisfactory to the Engineer.

C. Precautions shall be taken to protect uncompleted work from flooding during storms or from other causes. All pipe lines or structures not stable against uplift during construction or prior to completion shall be thoroughly braced or otherwise protected.

3.5 BEDDING AND BACKFILLING

A. All pipe trenches backfill (pipe zone bedding, pipe zone backfill and trench backfill) shall be compacted by tamping or rolling to achieve a minimum dry density of 90 percent of the modified

Proctor maximum dry density of the material used (ASTM D1557). Backfill in pipe trenches to be covered with pavement shall be compacted to a minimum of 95 percent of modified Proctor maximum dry density. Backfill materials shall be placed with water content within plus or minus 4 percent of optimum moisture content per the modified Proctor method (ASTM D1557). Any water used for compaction shall be provided by the Contractor at his own expense. The Contractor is responsible for the repair of any trench settlement at no expense to the owner.

B. Bedding and backfilling shall be accomplished in three stages unless otherwise specified on the Contract Drawings. The first stage shall involve placement of "pipe zone bedding" as a layer(s) of selected material required to support, or to stabilize unsound or unsatisfactory foundation conditions. The second stage shall involve placement of "pipe zone backfill" from the top of the bedding material up to 1 foot above the pipe. The third stage involves the placement of "trench backfill" in the remainder of the trench up to the surface of the ground or the bottom of any special surface treatment subgrade elevation.

C. The bedding material shall be placed in the trench after the trench has been excavated a minimum of 8 inches below the bell of the pipe to permit the placing of not less than 8 inches of bedding material unless otherwise specified on the Drawings. Where, in the opinion of the Engineer, more than 8 inches of bedding material shall be required, the excavation shall be performed and bedding placed to the depth ordered by the Engineer.

D. Provide uniform bearing and support for each section of pipe at every point along the entire length except where necessary to excavate for bell holes, pipe joints, or other required connections. Dig bell holes and depressions for joints after trench bottom has been graded. Dig no deeper, longer, or wider than needed to make the joint connection properly.

E. The bedding material shall be placed to the full width of trench. The bedding material shall be placed in loose lifts not exceeding 6 inches to the elevation shown on the Drawings or directed by the Engineer. The bedding material shall be tamped and compacted to form a firm and even bearing surface.

F. Pipe zone backfill shall be placed to the elevation shown on the Drawings in loose lifts not-to-exceed 6 inches in thickness, before compaction. The backfill shall be placed on both sides of the pipe at the same time and to approximately the same elevation. Any pipe that is damaged or moved out of alignment, regardless of cause, shall be replaced or realigned at the Contractor's expense. Each layer shall be thoroughly compacted by hand-tamping or mechanical means being careful not to damage the pipe. When the pipe zone backfill reaches 1 foot over the top of the pipe, the entire surface shall be compacted by mechanical means.

G. The remainder, if any, of the trench above the pipe zone backfill shall be backfilled with suitable material in loose lifts not exceeding 6 inches in thickness before compaction. Each layer shall be thoroughly compacted by mechanical means.

3.6 BACKFILLING AROUND STRUCTURES

A. The Contractor shall not place backfill against any structure without obtaining the approval of the Engineer. No dumping shall be allowed where materials would flow against or around such structures. Backfill material shall be deposited in horizontal layers not exceeding 6 inches in loose thickness or as shown on the Drawings and thoroughly compacted by hand or by mechanical means to the satisfaction of the Engineer.

3.7 SUSPENSION OF WORK

A. Whenever the work is suspended, excavations shall be protected and the roadways, if any, left unobstructed. Within or adjacent to private property, material shall be stored at such locations as will not unduly interfere with traffic of any nature and in no case shall materials be stored in locations which will cause damage to existing improvements.

3.8 DISPOSAL OF MATERIAL

A. Excess and unsuitable materials shall be disposed of by the Contractor on the site in an area approved by the Engineer or legally disposed of off- site at the Contractor's expense.

3.9 FIELD QUALITY CONTROL

A. Notify the Engineer at least 3 working days in advance of all phases of filling and backfilling operations.

B. In-place density testing shall be performed to ascertain the compacted density of the fill and backfill materials in accordance with the following methods:
   1. In-place relative density:
      a. Method: AASHTO T310, Nuclear Method.

C. Perform initial density testing to verify that contractors proposed compaction effort will obtain the minimum required densities.

D. In-place density tests on trench backfills shall be provided for every 500 cubic yards of fill or in vertical lifts not exceeding 2 feet and at least once daily.

E. One particle size analysis (ASTM D422) and one modified Proctor compaction test (ASTM D1557) shall be competed for every 5,000 cubic yards of material placed.

F. The Engineer may direct additional tests to establish gradation, maximum density, and in-place density as required by working conditions, at the Contractor's expense.

G. Acceptance Criteria: The criteria for acceptability of in-place fill shall be in-situ dry density and moisture content. If a test fails to qualify, the fill shall be further compacted and re-tested. Subsequent test failures shall be followed by removal and replacement of the material.

END OF SECTION

Identification of HUB Certified/ Minority Business Participation

I,_____,
(Name of Bidder)
do hereby certify that on this project, we will use the following HUB Certified/ minority business as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone #	Work Type	*Minority Category	**HUB Certified (Y/N)

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

The total value of minority business contracting will be ($)_____.

State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of_____

I have made a good faith effort to comply under the following areas checked:

Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- ❑ **1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- ❑ **2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- ❑ **3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- ❑ **4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- ❑ **5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- ❑ **6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- ❑ **7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- ❑ **8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- ❑ **9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- ❑ **10 - (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____ Name of Authorized Officer:_____

Signature:_____

Title:_____

SEAL

State of_____, County of_____

Subscribed and sworn to before me this _____day of _____20____

Notary Public_____

My commission expires _____

State of North Carolina --AFFIDAVIT B-- Intent to Perform Contract with Own Workforce.

County of _____

Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____

_____ contract.
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____

SEAL

State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20___

Notary Public _____

My commission expires _____

Contractor's Statement of NC Sales and Use Tax Paid

Contractor/Subcontrcator Name: _____

Project Name: _____

Period Covered: From _____ Through _____

Invoice Date	Description of Materials	Vendor Name	Invoice #	Purchase Price	Tax Paid	NC County Name
Page Subtotal				-	-	
Total from other pages (if any)						
Plus use tax paid directly to NCDOR on material withdrawn from contractor or subcontractor warehouse stock						
Totals				-	-	

I hereby certify that the above vendors were paid sales tax upon purchases of building materials during the period covered by this construction project and the property upon which such taxes were paid was or will be used in the performance of this contract. No tax on purchases or rentals of tools and/or equipment is included in the above list. All of the materials above became a part of or are annexed to the building or structure being erected, altered, or repaired.

Sworn to and subscribed before me, this day of , 20____.

_____ Authorized Signature _____

Notary Public (seal)

My commission expires: Printed name and title _____

ADDENDUM #1 #148-MAINT-032

PROJECT: **Asheville High Baseball Field Lighting**

The solicitation named above is modified as set forth in this Addendum. The original RFP Documents and any previously issued addenda remain in full force and effect, except as modified by this Addendum, which is hereby made part of the RFP. Bidder shall take this Addendum into consideration when preparing and submitting its Proposal.

This Addendum #1 to the RFP# 148-MAINT-032 addresses questions received from one or more bidders.

QUESTIONS from Construct Connect – ANSWERS are in bold, red font:

1. Is there a Plan Holders list for this project? **No.**

2. Is there a cost estimate or budget? **No, not that we will be sharing with Bidders.**

3. Is there a start date for the project to begin? Is there an end date as well? **We hope to begin the project as soon as possible. We also hope to complete the project as soon as possible, though that may be affected by equipment availability.**

ADDENDUM #2 #148-MAINT-032

PROJECT: **Asheville High Baseball Field Lighting**

The solicitation named above is modified as set forth in this Addendum. The original RFP Documents and any previously issued addenda remain in full force and effect, except as modified by this Addendum, which is hereby made part of the RFP. Bidder shall take this Addendum into consideration when preparing and submitting its Proposal.

This Addendum #2 to the RFP# 148-MAINT-032 contains the following additions, clarifications and/or changes:

- Updates to the date and time for the deadline for bids and public bid opening, which will now be Monday, November 27, 2023 at 12:00pm.
- Adds additional answers to questions compiled from multiple bidders.

PROPOSALS DEADLINE AND PUBLIC BID OPENING

The deadline for proposals and consequent public bid opening is hereby updated to Monday, November 27, 2023 at 12:00pm. The location remains Asheville City Schools, 85 Mountain St, Asheville, NC 28801. Attendance by Bidders at the bid opening remains optional.

Original Bid Opening as posted:	November 16, 2023 at 2:00pm
Current Bid Opening per this Addendum #2:	**November 27, 2023 at 12:00pm**

QUESTIONS compiled from multiple bidders – ANSWERS are in red font:

1. What are the field light foot candle base bid requirements? Infield lighting required is a minimum of 50 fc. Outfield lighting required is a minimum of 30 fc. In excess of the minimum is allowable but not required.

2. What is the minimum warranty period? Warranty period required is a 10-year minimum. In excess of the minimum is allowable but not required.

3. Is the lighting control required to be controlled remotely? Yes.

4. What power company is involved? All connections will be made to future Duke Energy power source.

5. Where is conduit to be located? Conduit is to be direct buried in some location under the existing turf field.

6. What is the pole height? The pole height is 70 feet and is based on the fc photometrics

7. Has Asheville City Schools already obtained the foundation design specifications? No. The foundation design specifications shown are for information purposes only. Each contractor will be required to provide self-performed PE-stamped structural engineer stamp documents.