

ADDENDUM NO. 1

CAMILLA GYMNASIUM

ISSUE DATE: June 26th, 2025

Bid Date: Wednesday, 07/14/2025
Bid Time: 2:00 P.M.
Bid Location: Camilla City Hall, 30 E. Broad Street, Camilla, GA 31730
Owner: City of Camilla, GA

THE FOLLOWING ITEMS ARE HEREBY INCORPORATED INTO THE PLANS, SPECIFICATIONS, AND CONTRACT DOCUMENTS FOR THE ABOVE-REFERENCED PROJECT.

CHANGES TO DRAWINGS:

1. SHEET E001 – ELECTRICAL NEW WORK SITE PLAN
 - a. Delete Sheet E001 in its entirety and replace with sheet E001, revised 06-24-2025 included herein.
2. SHEET E301 – ELECTRICAL LOW VOLTAGE PLAN
 - a. Delete Sheet E301 in its entirety and replace with Sheet E301, revised 06-24-2025 included herein.
3. SHEET E801 – ELECTRICAL SCHEDULES AND LEGEND
 - a. Light Fixture Schedule: Fixture Types M, N & W – NOT USED – DELETE.

SPECIFICATIONS

1. Add the revised Bid Proposal Form.
2. Delete 14 E on page 00 21 13-5 (Instructions to Bidders) which states 'Bidder shall not subcontract more than 40 percent of the construction work to others.'
3. SECTION 281300 – SECURITY SYSTEMS (BURGLAR)

- a. Add Micro Technologies, Warner Robins, GA and Preventia Security, Albany, GA as prior approved installers.
4. SECTION 281301 – SECURITY ACCESS (ACCESS CONTROL) – CARD ACCESS (AURORA KEYSCAN CARD READER, BASIS OF DESIGN PER DOOR HARDWARE SPECIFICATION 087110)
 - a. Add Micro Technologies, Warner Robins, GA and Preventia Security, Albany, GA as prior approved installers.
5. SECTION 282300 – VIDEO SURVEILLANCE
 - a. Add Micro Technologies, Warner Robins, GA and Preventia Security, Albany, GA as prior approved installers.

PRODUCT/MANUFACTURER APPROVAL

1. Nucor, Vulcan is a prior approved and acceptable substitution Steel Structures 13 34 19 – Metal Building Systems.
2. Steel Building Systems is a prior approved and acceptable substitution Steel Structures 13 34 19 – Metal Building Systems.
3. Pinnacle Structures is a prior approved and acceptable substitution Steel Structures 13 34 19 – Metal Building Systems.
4. Draper is an acceptable substitution for 11 66 23 – Gymnasium Equipment.
5. Micro Technology Consultants (Warner Robins, Ga) is a prior approved installer to the following listed Specifications:
 - a. Specification 28 23 00 – Video Surveillance,
 - b. Specification 28 13 00 – Security System.
 - c. Specification 281300 – Security Access (Access Control)
6. Preventia Security (Albany, Ga) is a prior approved installer for the low voltage.
7. Babymedi is a prior approved supplier of baby changing stations. Representative Contact:

QUESTIONS/ANSWERS:

1. *Who does the Owner prefer for low-voltage systems?*

Answer: Preventia Security (Albany, GA) is the vendor who provides and monitors security system for the City's properties.

2. *Type N-M and W on the light fixture do not appear on the E-A or other sheets, can we ask if these are being used and if so can they show or tell us count?*

Answer: These fixture types, M,N & W are not used.

3. *The site or LV drawing shows no size or route for low-voltage conduits to right away or demarcation point, need locations where to carry conduit/s to.*

Answer: For Bid, route communication conduits (3) per detail on sheet E701, concrete encased 200' from IT room #105 to nearest utility pole on Perry Street. See Sheet C105 utility plan and Sheet A101 for IT room location.

4. *Is the Owner contracting separately with low voltage vendors or is the GC to include all low voltage?*

Answer: GC to provide all low voltage, with Preventia Security (Albany, Ga) being the vendor who is monitoring other City's properties. The contact person for Preventia Security is Jarvis Cruce 229-395-1886.

5. *Is the Owner providing any of the sports equipment?*

Answer: The City will provide the equipment for the Fitness room at a future date.

6. *What is the anticipated start date of construction.*

Answer: If the bid amount comes within the budget amount, then it can start as early as September 2025.

7. *Is the permit fees paid by the Owner?*

No, the GC or prime Contractor is responsible for all fees.

8. *Is the project tax exempt.*

No.

9. *Is the cost of the primary electricity transformer paid directly by the Owner?*

The Owner will purchase the transformer 500 KVA 480/277 volts, three-phase, four wire, 60 Hertz for the Service Entrance.

10. *Is the grease trap cost to be included in base bid or only in Alternate #1 cost?*

Only in the Alternate #1.

11. *Does the City have any Buy American policy?*

Answer: Currently, the City does not have a Buy American policy.

12. *Review the signage part for the Camilla Gym, please have architect advise size and material for letters shown on sheet attached A621*

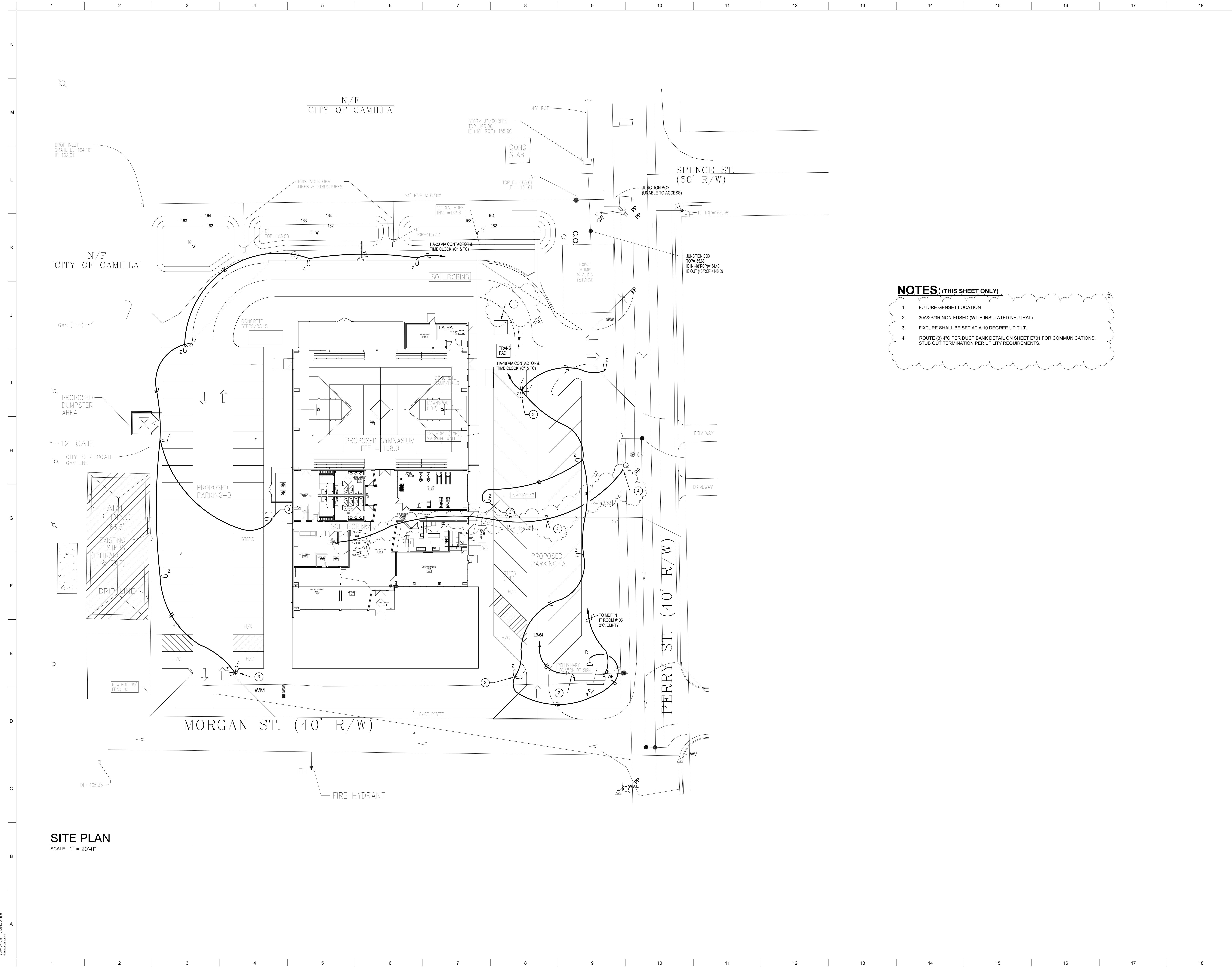
Answer: Please provide 6" aluminum channel letters with a white finish and a thickness of ½" max.

13. Steel Building Systems is a prior approved and acceptable substitution Steel Structures 13 34 19 - Metal Building Systems.

Answer: A uniform superimposed dead load of 10 psf can be used in lieu of 15 psf. The 10 psf includes the weight of the standing seam metal roof, insulation, MEP (duct, wiring, lights, etc.), ceiling, and a small miscellaneous contingency. The weight of the PEMB structure is not included.

CURRENT PLAN HOLDERS LIST IS ATTACHED.

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SITE PLAN
SCALE: 1" = 20'-0"

NOTES: (THIS SHEET ONLY)

1. FUTURE GENSET LOCATION
2. 30A/2P/3R NON-FUSED (WITH INSULATED NEUTRAL).
3. FIXTURE SHALL BE SET AT A 10 DEGREE UP TILT.
4. ROUTE (3) 4" C PER DUCT BANK DETAIL ON SHEET E701 FOR COMMUNICATIONS. STUB OUT TERMINATION PER UTILITY REQUIREMENTS.

beyondq
ARCHITECTURE



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YORK & ASSOCIATES ENGINEERING, INC. / CIVIL
ACE-P.A. / STRUCTURAL
B9 ARCHITECTURE / ARCHITECTURE / INTERIORS
AHP ENGINEERING / MECHANICAL, ELECTRICAL,
AND PLUMBING

Owner
CAMILLA GYMNASIUM
171 PERRY STREET, CAMILLA, GA 31730

CONSTRUCTION DOCUMENT DATE: 05/07/2025
ISSUED FOR CONSTRUCTION



2 ADDENDUM 1 06-24-2025

No. REVISION/SUBMISSION DATE

PROJECT No:

ELECTRICAL SITE PLAN

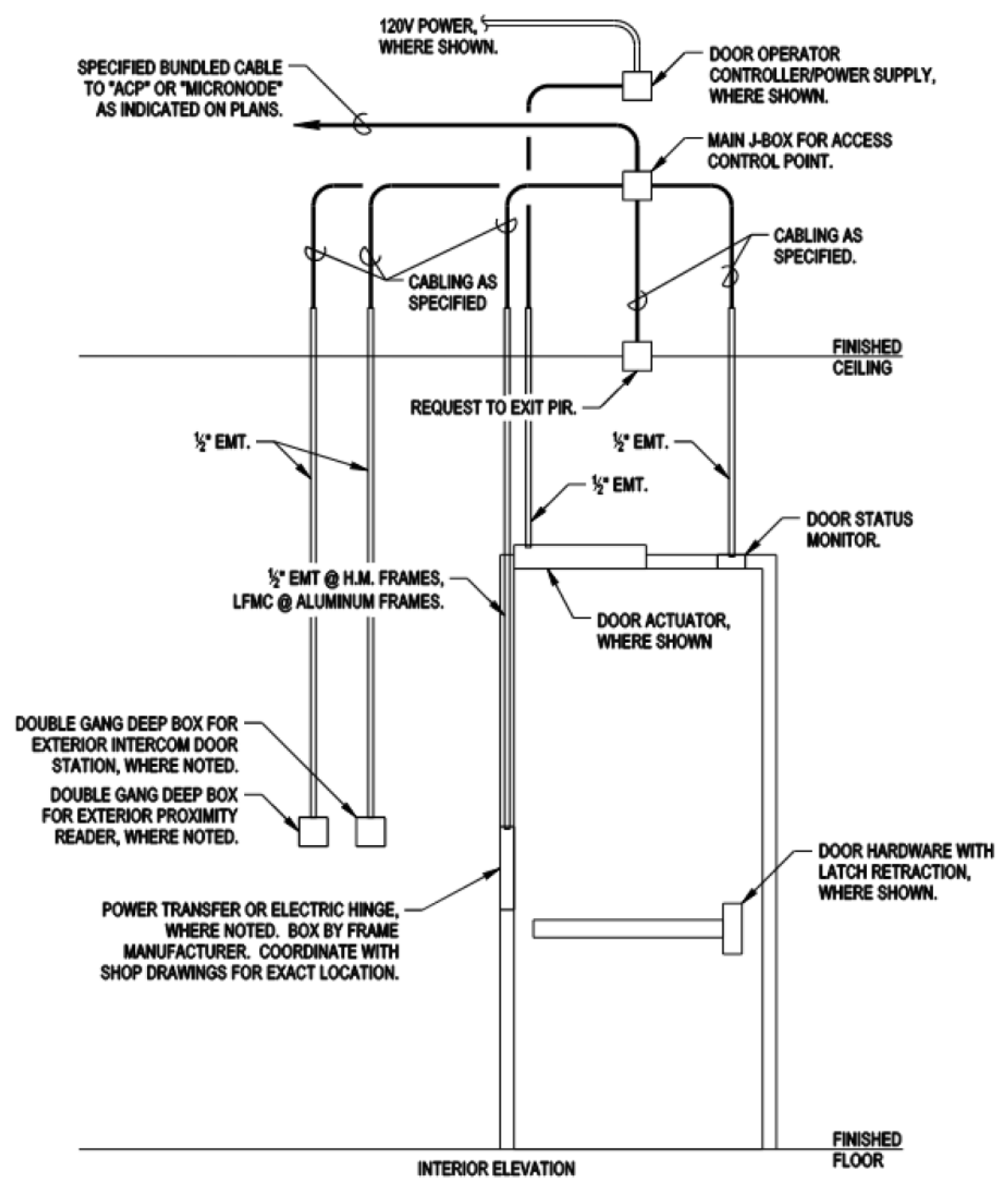
E001

NOTES: (THIS SHEET ONLY)

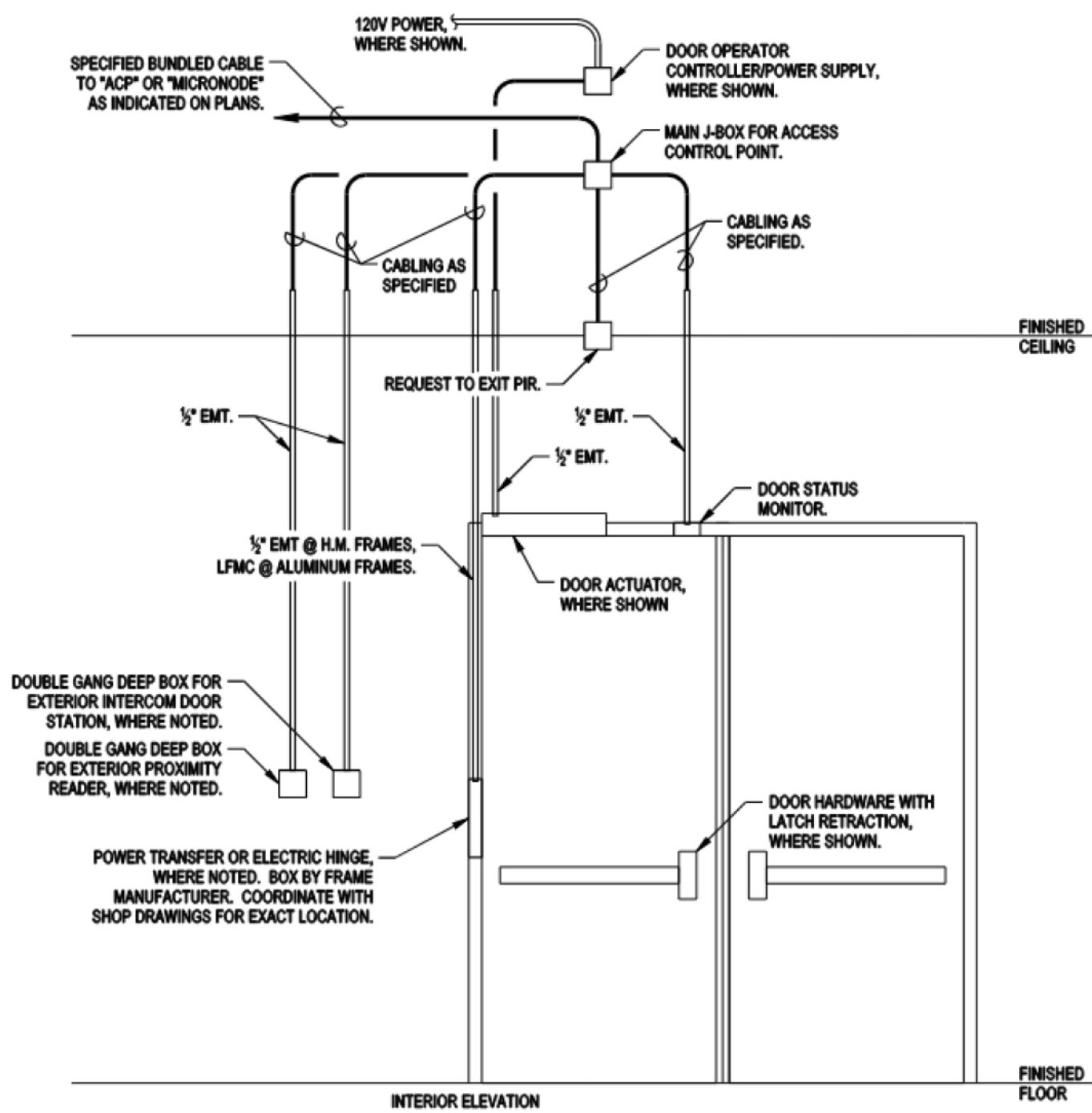
- DUCT MOUNTED SMOKE DETECTOR PROVIDED BY ELECTRICAL AS PART OF FIRE ALARM SYSTEM AND INSTALLED BY MECHANICAL.
- MAKE CONNECTION TO SPRINKLER FLOW & TAMPER SWITCHES BY OTHERS.
- PROVIDE MICROPHONE JACK PER SPECIFICATION 275123.
- SECURITY KEYPAD PER SPECIFICATION 281300.
- MOTION DETECTION PER SPECIFICATION 281300.
- PROVIDE AN 80" TV2 PER SPECIFICATION 274133, 2003.E. ALSO PROVIDE PEERLESS TILTING WALL BRACKET PER SPECIFICATION.
- PROVIDE A SECURITY CAMERA SYSTEM (CCTV) PER SPECIFICATION 282300-VIDEO SURVEILLANCE.
- MAKE FIRE ALARM CONNECTION TO KITCHENHOOD FIRE SUPPRESSION SYSTEM.
- PROVIDE A VOICE EVACUATION FIRE ALARM SYSTEM PER SPECIFICATION 283110.
- THE ENTIRE ROOM SHOULD BE BACKED WITH 3/4" BACKBOARD.
- PROVIDE CARD ACCESS PER SPECIFICATION 281301- SECURITY ACCESS & DETAIL, THIS SHEET.
- PROVIDE SPEAKERS AND SOUND SYSTEM PER SPECIFICATION 275120 - GENERAL PAGING & BACKGROUND MUSIC SYSTEM.
- MASTER DOOR INTERCOM STATION & PUSH BUTTON DOOR RELEASE PER SPECIFICATION 281301.
- AIPHONE DOOR INTERCOM STATION PER SPECIFICATION 281301.

GYMNASIUM SOUND SYSTEM EQUIPMENT LIST-PA-1

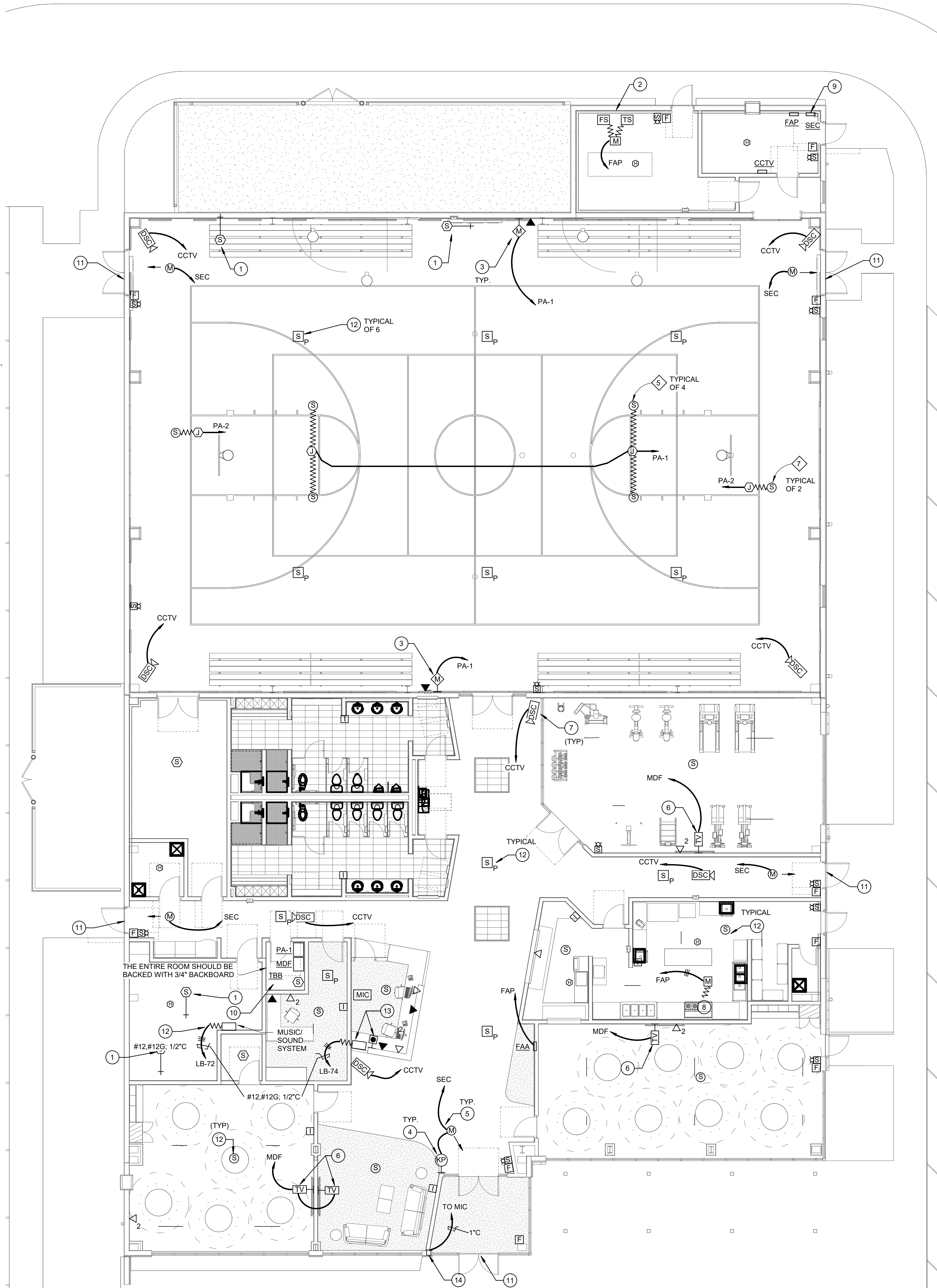
ITEM #	MANUFACTURER	QUANTITY	PART #	DESCRIPTION
1	LOWELL, CP, SOUNDOLIER	1	LOWELL #60-61	CABINET
2	BIAMP, RANE, RAULAND	1	BIAMP #ADVAN801	MIXER, 8 MICROPHONE INPUTS
3	BIAMP, RANE, RAULAND	1	BIAMP #MSP11	PROCESSOR
4	MACKIE, QSL, TOA	1	MACKIE #M1400 (PA-2)	AMPLIFIER #2 (FOR FLOOR SPEAKER)
5	OAP AUDIO, JBL, ELECTRO VOICE	4	OAP #T152	FULL RANGE SPEAKERS (2 EACH SIDE FOR SEATING) #1, 2, 3&4
6	WEST PENN, BELDEN, ALPHA	AS REQD	WP #296	SPEAKER CABLE BLEACHER (2 PR #12 SHIELDED, 1 PAIR EACH BLEACHER SIDE)
7	OAP AUDIO, JBL, ELECTRO VOICE	2	OAP #T152	FULL RANGE SPEAKER (FOR FLOOR AREA) #5, #6
8	MACKIE, QSL, TOA	1	MACKIE #M850 (PA-3)	AMPLIFIER #1 (FOR FLOOR SEATING AREA)
9	WEST PENN, BELDEN, ALPHA	AS REQD	WP #296	SPEAKER CABLE (1 PR #12 FOR SPEAKER(S))



SINGLE DOOR PROVISIONS DETAIL
SCALE: NONE



DOUBLE DOOR PROVISIONS DETAIL
SCALE: NONE



ELECTRICAL NEW WORK LOW VOLTAGE PLAN

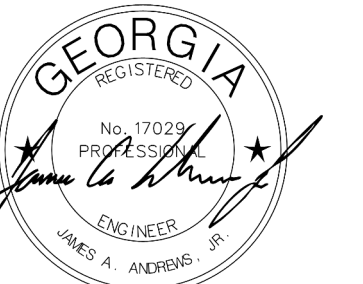
SCALE: 1/8" = 1'-0"

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AND PLUMBING

Owner
CAMILLA GYMNASIUM
171 PERRY STREET, CAMILLA, GA 31730
CONSTRUCTION DOCUMENT DATE: 05/07/2025

ISSUED FOR CONSTRUCTION



1	REVISION NO.1	05-07-2025
2	ADDENDUM 1	06-24-2025

No. REVISIONS SUBMISSION DATE

PROJECT No:
ELECTRICAL LOW VOLTAGE
FLOOR PLAN

E301

SECTION 00 21 13

INSTRUCTIONS TO BIDDERS

1. RECEIPT AND OPENING OF BIDS

The **City of Camilla**, Georgia (herein referred to as "OWNER"), invites Bids on forms attached hereto. All blanks must be appropriately filled in. Bids will be received by OWNER at the address stated in Section 00 11 13. Bids will be publicly opened and read aloud by OWNER at said time and place.

OWNER may consider informal any Bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities in the Bids received, may reject any and all Bids, and may accept any Bid which is deemed most favorable. Any Bid may be withdrawn prior to the above scheduled time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified will not be considered. No Bidder may withdraw a Bid within **60** days after the date of the opening thereof.

2. PREPARATION OF BID

Each Bid must be submitted on the prescribed Bid Form and accompanied by the following documents:

- Bid Form (Section 00 41 00)
- Bid Schedule (Section 00 41 43)
- Bid Bond (00 43 13)
- Subcontractor List (Section 00 43 36)
- Bidder Experience Statement (Section 00 45 13)
- Non-collusion Affidavit of Prime Bidder (Section 00 45 19)
- Non-collusion Affidavit of Sub-Contractor (Section 00 45 19.1)
- Partnership, Corporate or Individual Certificate
(Sections 00 45 43.1, 00 45 43.2, and 00 45 43.3)
- SAVE and E-Verify Affidavits (Sections 00 45 46.1 and 00 45 46.1)
- Statement of Equipment (Section 00 45 47)
- Suppliers Data Sheet (Section 00 45 48)

The following documents will be completed after the Contract has been awarded:

- Notice of Award (Section 00 51 00)
- Agreement (Section 00 52 00)
- Notice to Proceed (Section 00 55 00)
- Performance Bond (Section 00 61 13.13)
- Labor & Material Payment Bond (Section 00 61 13.16)

All blank spaces for unit prices, lump sum prices, and alternate bid price schedules must be filled in, in ink or typewritten, in both words and figures (in case of discrepancy, unit prices shown in words will govern), and the foregoing items must be fully completed and executed when submitted.

Bids shall have original signatures, and must be submitted in a SEALED ENVELOPE bearing on the outside, the name and address of the bidder, **the BIDDER'S State of Georgia Contractor License Number**, and name of the project for which the Bid is submitted. The OWNER has the right to reject any bid that does not contain the above information.

BID MODIFICATIONS WRITTEN ON THE OUTSIDE OF ENVELOPE WILL NOT BE ACCEPTED

3. CONTRACT DOCUMENTS, SPECIFICATIONS AND DRAWINGS

Bidders are advised to carefully examine the CONTRACT DOCUMENTS, Specifications, and Construction Drawings for the proposed WORK. Construction Drawings indicate the surface and underground structures likely to affect the prosecution of the WORK insofar as they have been determined, but the information indicated is not guaranteed as being correct and complete. Bidders are expected to examine the Construction Drawings and the location of the WORK, verify all information with authorities concerned, to inform themselves of all laws, ordinances and regulations of all authorities having jurisdiction, and to judge for themselves all the circumstances affecting the cost of the WORK and the time required for its completion.

The Bidder shall assume all risks concerning latent physical conditions at the site that may affect his costs, progress or performance of the work.

4. SUBCONTRACTS

Bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract, must be acceptable to the OWNER. All Subcontractors must submit a Non-Collusion Affidavit.

5. TELEGRAPHIC MODIFICATIONS

BID MODIFICATION BY TELEGRAPHIC COMMUNICATION WILL NOT BE ALLOWED.

6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

The successful Bidder, upon his failure or refusal to execute and deliver the Contract and required Bonds within fifteen (15) days after he has received the "Notice of Award", shall forfeit to OWNER as liquidated damages the security deposit submitted with his Bid.

7. TIME OF COMPLETION, START OF WORK AND LIQUIDATED DAMAGES

Bidder must agree to commence work within ten (10) days after a date to be specified in a written "Notice to Proceed" from the Owner and to fully complete the Project within 364 calendar days thereafter. The bidder must agree also to pay as liquidated damages, the sum of \$1,000.00 for each and every consecutive calendar day thereafter the completion date, for which the completion of the project is delayed, as hereinafter provided in the General Conditions.

8. METHOD OF BIDDING

Unit prices for each Bid item in the proposal shall include its pro rata share of overhead and profit so that the Base Bid price given on Bid Summary Sheet represents the total bid. Any bid not conforming to this requirement may be rejected as informal.

The correct amount bid for each unit price item is defined as the correct product of the quantity listed for the item multiplied by the unit price in words. The correct total amount bid for the complete work is defined as the correct sum total of the correct amounts bid for the individual items in the bid form.

9. QUANTITIES OF WORK

The quantities of Work as given for each unit price item in the bid schedule are approximate and are assumed solely for comparison of the bid proposals. They are not guaranteed to be accurate statements or estimates of quantities of work that are to be performed under the Contract, it being presumed that the Bidder has verified the quantities necessary to complete the Work of the Contract as intended, any departure therefrom will not be accepted as valid grounds for any claim for damages, for extension of time or for loss of profits; nor will any additional payment other than the bid under the Unit Prices, be made regardless of the actual quantities required or ordered to complete the Work.

10. QUALIFICATIONS OF BIDDER

Each Bidder must submit qualifications with Bid on the prescribed forms provided in the CONTRACT DOCUMENTS. OWNER or OWNER's Representative may make such investigations as it deems necessary to determine the ability of Bidder to perform the WORK and Bidder shall furnish to OWNER all such information and data for this purpose as OWNER may request. OWNER reserves the right to reject any Bidder if the evidence submitted by or investigation of such Bidder fails to satisfy OWNER, or that such Bidder is not properly qualified to carry out the obligations of the Contract and to complete the WORK contemplated therein within the time constraints.

Each Bidder must furnish in his qualification statement, information relative to the facilities, ability, and financial resources available for the fulfillment of the Contract. Before award is made to a Bidder who is not a resident of the State of Georgia, such Bidder shall designate a proper agent in the State of Georgia on whom service can be made in event of litigation. Conditions, limitations, or provisions attached by Bidder to the Bid may cause its rejection. Bids containing items not included in the Form of Bid will be considered irregular.

11. BID SECURITY

Each Bid must be accompanied by certified check, cashier's check, or a Bid Bond prepared on the Form of Bid Bond attached hereto, duly executed by Bidder as principal and having as Surety thereon a surety company acceptable to the OWNER, in the amount of five percent (5%) of the Bid. All bonds furnished for the project shall be countersigned by an agent who is a resident of the State of Georgia. The Power of Attorney for such signature shall be attached. Deposits accompanying Bids shall be sealed in the Bid envelope. Except for the three (3) lowest bidders, the Bid security will be returned to the bidder by certified mail within thirty (30) days after the bid opening.

The three lowest bid securities will be returned by certified mail within ten (10) days after the

execution of the contract between the OWNER and the successful bidder. If no award has been made within the number of days after the date of bid opening as specified in Article 1 of this section, bidder may demand the immediate return of his bid security.

12. EXECUTION OF BID DOCUMENTS

Bids which are not signed by individuals making them shall have attached thereto a power-of-attorney evidencing authority to sign the Bid in the name of the person for whom it is signed.

Bids which are signed for a partnership shall be signed by all of the partners or by an attorney-in-fact. If a bid is signed by an attorney-in-fact, there shall be a power-of-attorney executed by the partners attached to the Bid evidencing authority to sign the Bid.

Bids which are signed for a corporation, shall have the correct corporate name thereof and the signature of the President or other authorized officer of the corporation manually written below the corporate name following the wording "By_____". Such Bids shall also carry the corporate seal of said corporation.

Bidder shall furnish all data required by these CONTRACT DOCUMENTS. Failure to do so may result in the Bid being declared non-responsive. Acceptance of Bidder's documentation and substantiation or Contract Award by OWNER does not relieve Bidder of Liability for nonperformance as covered in the CONTRACT DOCUMENTS, nor will Bidder be exempted from any other legal recourse OWNER may elect to pursue.

13. POWER-OF-ATTORNEY

Attorneys-in-fact who sign Bid Bonds or Contract Bonds must file with each bond a certified and effectively dated copy of their power-of-attorney.

14. METHOD OF AWARD

Upon careful review and consideration of the Qualifications and Bid Summary, OWNER will award Contract to Prime/General CONTRACTOR deemed the lowest responsive and responsible bidder as required by Georgia law. Bidder to whom the award is made will be notified at the earliest possible date. OWNER reserves the right to reject any and all bids and to waive any informalities in bids received whenever such rejection or waiver is in OWNER's best interest. A responsive Bidder shall be one who submits his bid in the proper form as called for in the CONTRACT DOCUMENTS, and who binds himself on behalf of this Bid to OWNER with the proper Bid Bond or certified check completed and attached, and who properly completes all forms required to be completed and submitted at the time of bidding.

A responsible Bidder shall be one who fulfills the following requirements:

- A) Bidder shall maintain a permanent place of business. This requirement applies to Bidder where Bidder is a division or a corporation, or where Bidder is fifty percent (50%) or more owned by a person, corporation or firm.
- B) Bidder shall demonstrate that he has adequate construction management experience and sufficient equipment resources to properly perform the work under and in conformance with

these CONTRACT DOCUMENTS. This evaluation will be based upon a list of completed or active projects and a list of construction equipment available to Bidder to perform the WORK.

- C) Bidder shall demonstrate that he has financial resources of sufficient strength to meet the obligations incidental to the performance of the WORK covered by these CONTRACT DOCUMENTS. The ability to obtain the required Performance and Payment Bonds will not alone demonstrate adequate financial capability.
- D) Bidder shall have a history of consistently paying suppliers and subcontractors in a timely fashion.
- E) ~~Bidder shall not subcontract more than 49 percent of the construction work to others.~~

15. ADDENDA AND INTERPRETATIONS

Oral interpretations will not be made to any bidders as to meaning of Drawings and Specifications.

Should bidder find discrepancies or ambiguities in, or omissions from Drawings or Specifications, or in doubt as their meaning, he shall notify the Architect or Engineer. All requests for such interpretation shall be in writing addressed to **York & Associates Engineering, Inc., 308 E. Water Street, Bainbridge, Georgia 39817**, or email to tyork@yorkassociates.net and to be given consideration, must be received at least ten (10) calendar days prior to the date fixed for the opening of bids. Every interpretation made to a Bidder will be in the form of an Addendum to the CONTRACT DOCUMENTS, and when issued, will be on file in the office of the ENGINEER at least two (2) days before bids are opened. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications. Failure of any Bidder to receive any such addendum or interpretation shall not relieve such Bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the CONTRACT DOCUMENTS.

16. COORDINATION OF CONTRACTS

Each CONTRACTOR shall be responsible for fully understanding the requirements of each contract and how the other contract(s) relate(s) to and affects the work of his contract. Failure to coordinate his contract with the other contract(s) shall in no way lessen or relieve the CONTRACTOR of his responsibilities, nor shall it be cause for claims for additional payment.

17. CONDITIONS OF WORK

Each Bidder must inform himself fully of the conditions relating to the construction of the Project and the employment of labor thereon. Failure to do so will not relieve a successful Bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his Contract. Insofar as possible, the Contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any Contractor.

18. SITE CONDITIONS

Bidders are requested to visit the site, compare Drawings and Specifications with any work in place, and inform themselves of all conditions, including other work, if any, being performed. Subject to

the convenience of the Owner, prospective Bidders will be permitted to explore the site by making borings or digging test pits. In such event, the Work shall be done at the sole expense and risk of the Bidder, and he shall maintain and restore the site its original condition.

OWNER does not make any representation as to the soil conditions to be encountered or as to foundation materials. The CONTRACTOR must assume all risk as to the nature and behavior of the soil which may be encountered or of soil, or water, or rock, which underlies the Work or is adjacent thereto, including any difficulties that may be due to quicksand or other unfavorable conditions that may be encountered in the WORK, whether apparent upon surface inspection or disclosed only in the process of carrying forward the WORK.

19. INDEMNIFICATION

The CONTRACTOR shall indemnify and hold harmless the OWNER, ARCHITECT, ENGINEER and their subconsultants, agents and employees from and against all claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from the performance of the WORK, provided that any such claim, damage, loss, expense or attorney's fees is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom, and is caused in whole or in part by any negligent act or omission of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not the negligent act is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Clause. In any and all claims against the OWNER or the ENGINEER (York & Associates Engineering, Inc.) or any of their subconsultants, agents or employees, by any employee of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation set forth in this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under workers' or workman's compensation acts, disability benefit acts or other employee benefit acts.

20. CONTRACTOR'S AVAILABILITY

The CONTRACTOR shall have a responsible representative (that speaks English) on call at all times. The name and phone number of the representative shall be given to the OWNER and ENGINEER at the pre-construction conference. The CONTRACTOR will also maintain a crew with the necessary tools and equipment available on call after normal working hours, on weekends, during inclement weather, or other times when work is not in progress to perform any necessary emergency repair work which may occur as a result of the work under his contract. All costs for emergency repair shall be at the CONTRACTOR's expense and shall be factored into the bid price. In the opinion of the OWNER, negligence on the part of the CONTRACTOR to satisfy such situations will be just cause for the OWNER to take whatever action necessary to remedy the situation. All costs incurred by the OWNER to remedy such situation will be back charged to the CONTRACTOR.

21. CONSTRUCTION CLEARING

Whole clearing of construction rights-of-way, easements, or construction sites will not be allowed. Clearing shall be minimized, and the CONTRACTOR shall make every effort to save trees, shrubs

and bushes that are within the construction limits. Timber which is cut shall remain the property of the land owner where the cutting occurred.

All trees within the working easements shown on the CONTRACT DOCUMENTS are property of the existing land owners. If the property owner wishes to keep the timber, the CONTRACTORS shall cut the timber in reasonable lengths and stack such timber on OWNER's property. If the property owner does not wish to keep the timber, the timber shall become the property of the CONTRACTOR and shall be removed from the site and disposed of at the CONTRACTOR's expense. All stumps, rubbish, and other material, not suitable as timber, shall be removed from the site at the CONTRACTOR's expense.

22. SANITARY FACILITIES

Reference Section 01 50 00 Temporary Facilities and Controls.

23. FIELD OFFICE SPACE

Reference Section 01 50 00 Temporary Facilities and Controls.

24. BUILDINGS AND SHANTIES

No shanties, camps, or buildings for the housing of men employed on the WORK shall be erected on land owned or leased by the OWNER without written permission of the OWNER. Should permission be asked and granted, the CONTRACTOR must comply with all Local and County regulations regarding the construction and maintenance of such buildings.

25. INTOXICATING LIQUORS AND DRUGS

The CONTRACTOR shall neither permit nor suffer the introduction or use of intoxicating liquor or illegal drugs upon or about the WORK specified in this Contract or upon any of the grounds occupied by him or his employees.

26. MEASURES AND WEIGHTS

To aid the ENGINEER in determining all quantities, the CONTRACTOR shall, whenever so requested, provide scales, equipment, and assistance for weighing or for measuring any of the materials.

It is understood and agreed that a "ton" shall mean the short ton of two thousand (2,000) pounds.

Weights and measures of quantity for payment will be the actual weight or actual measure, and no special or trade or so-termed customary allowances will be made, nor will any material which is lost or misplaced be included for payment.

27. ENVIRONMENTAL REQUIREMENTS

Contractor will comply with Clean Air and Water Acts.

A. Air Pollution

1. The CONTRACTOR shall be responsible for any necessary burning permits.

B. Stream Pollution

1. Conduct all work in such a manner as to prevent stream siltation.
2. No discharges for untreated or partially treated wastewater to streams is allowed.

C. NPDES Storm Water Monitoring

1. If a NPDES Permit for storm water monitoring is required, the Contractor will monitor and report to the EPD. The Contractor will be responsible for compliance with the NPDES Permit.

28. NONSEGREGATED FACILITIES

Bidder agrees that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. Bidder agrees that a breach of this agreement will be a violation of the Equal Opportunity Clause in any Contract resulting from acceptance of this bid. The term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom or otherwise. Bidder agrees that (except where he has obtained certification from proposed subcontractors for specific time periods) he will obtain certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000.00 which are not exempt from the provisions of the Equal Opportunity Clause, and that he will retain such certifications in his files.

29. SOILS REPORT

Section 02 06 14 of the specifications is a soils investigation report that was prepared for the project. Bidders are encouraged and expected to make their own test pits to verify the attached report and gain first hand knowledge of soil conditions for this project.

END OF SECTION

SECTION 00 41 00

BID FORM

Project: CAMILLA GYMNASIUM

-

THIS BID IS SUBMITTED TO:

CITY OF CAMILLA

30 E. Broad Street

Camilla, Ga 31730

(Telephone) 229-336-2220

(Hereinafter called "OWNER")

THIS BID IS SUBMITTED BY:

(Name)

(Address)

(Telephone)

*(Name, Address and Telephone Number
of Prime/General CONTRACTOR)*

(Hereinafter called "Bidder")

BIDDER, in compliance with the Advertisement for Bids for the construction of this project, having examined the Drawings and Specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project, including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies, and to construct the project in accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the price(s) stated below. This price(s) is to cover all expenses including overhead and profit incurred in performing the Work required under the CONTRACT DOCUMENTS, of which this proposal is a part.

BIDDER hereby agrees to commence work under this contract on or before a date to be specified in a written “Notice to Proceed” from the OWNER and to fully complete WORK within a total construction time of 364 consecutive calendar days.

BIDDER acknowledges receipt of the following addenda:

Addenda No.	Date Received

BIDDER agrees to perform all of the construction of the project complete with appurtenances and accessory work described in the Specifications and shown on the Drawings for the above scheduled price(s).

The above scheduled price(s) shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

BIDDER understands that OWNER reserves the right to reject any or all bids and to waive any informalities in the bidding.

BIDDER agrees that his bid shall be good and may not be withdrawn for a period of **60** calendar days after the scheduled closing time for receiving bids.

The undersigned having become familiar with the project plans and specifications for the Camilla Gymnasium Project provides the following lump sum price:

BASE BID	\$ _____
ALETERNATE #1	\$ _____
ALETERNATE #2	\$ _____
GRAND TOTAL	\$ _____

Upon receipt of the written notice of the acceptance of this bid, BIDDER will execute the formal Contract attached within ten (10) days and deliver a surety bond or bonds, as required by the General Conditions. The bid security attached in the sum of five (5%) percent of the total bid is to become the property of the OWNER in the event the Contract and bond are not executed within the time set forth, as liquidated damages for the delay and additional expense to the OWNER caused thereby.

Respectfully Submitted: Name: _____

Address: _____

Phone No.: _____

FEDERAL TAX NO. OR
SOCIAL SECURITY NO.: _____

Signature of Principal: _____

Title: _____

Date: _____

Telephone: _____

ATTEST:

Signature: _____

Corporate Secretary/Partner/Notary (SEAL)

Name: _____

(Please type)

NOTE: **Attest for a corporation must be by the corporate secretary; for a partnership by another partner; for an individual by a Notary.**

END OF SECTION

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SECTION 00 43 13
BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, (name, address & phone number)

as Principal, and (name, address & phone number)

held and firmly bound unto the City of Camilla, Georgia, as OWNER in the penal sum of five (5%) percent of the total bid which equals _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of the above obligation is such that whereas the Principal has submitted to the OWNER a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing for the work described as follows:

PROJECT DESCRIPTION:

CAMILLA GYMNASIUM.

NOW, THEREFORE,

- (a) If said Bid shall be rejected, or in the alternate,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and Surety have executed this Bond by causing their respective names to be hereunto subscribed and their seals to be hereunto affixed by their duly authorized officers, on this the _____ day of _____, 20__.

CONTRACTOR - PRINCIPAL:

BY _____

Name _____
(Please Type)

Title _____

ATTEST:

Name _____
(Please Type)

Title _____

(SEAL)

Note: Attest for a Corporation must be by the corporate secretary; for a partnership by another partner; for an individual by a Notary.

SURETY:

BY _____

Name _____
(Please Type)

Title _____

ATTEST:

Name _____
(Please Type)

Title _____

(SEAL)

Note: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

END OF SECTION

SECTION 00 43 36

SUBCONTRACTOR LIST

Names of all subcontractors proposed by the bidder at the time of bid submittal are listed below:

(Bidder shall include Name & Address of Subcontractor, Type of WORK, Approximate % of Work and the Approximate Dollar Amount - Please Type)

NAME/ADDRESS/PHONE NUMBER	TYPE OF WORK	%	\$ AMOUNT	FEDERAL ID or SOCIAL SECURITY NUMBER

(USE ADDITIONAL PAGES IF NEEDED. PLEASE ATTACH HERETO)

END OF SECTION

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SECTION 00 45 13

BIDDER EXPERIENCE STATEMENT

All questions must be answered and the date given must be clear and comprehensive. This instrument must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he desires. Attach all additional sheets to these Contract Documents.

1. Name of Bidder: _____

2. Permanent main office address: _____

3. When organized: _____
4. If a corporation, where incorporated: _____

Federal I.D. Number: _____
5. How many years have you been engaged in the contracting business under your present firm or trade name? _____
6. General character of work performed by your company: _____

7. Have you ever failed to complete any work awarded to you? _____
If so, where and why? _____

8. List any project of similar scope and complexity that your organization has completed or has in progress as of the date of receiving Bids: (Please include the name of project and person that can be contacted and phone number if possible).

Location	Contract Amount	Date Complete	% Complete	Name & Address of Owner's Architect/Engineer	Phone

(Use additional pages if needed. Please attached hereto)

9. Background and experience of the principal members of your organization, including officers. (Include Company Resume if available)
10. Credit available: \$ _____
11. Give Bank reference: _____
12. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by OWNER? _____
13. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by OWNER in verification of the recitals comprising this Statement of Bidder's Qualifications.

Dated this ____ day of _____, 20__.

Name of Bidder

By _____

Title _____

State of _____

County of _____

_____ being duly sworn deposes and says that he is
_____ of _____ and that the answers to the foregoing questions and
all statements therein contained are true and correct. Subscribed and sworn to before me this ____ day of
_____, 20 ____.

Notary Public

(SEAL)

My Commission Expires: _____

END OF SECTION

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NONCOLLUSION AFFIDAVIT OF SUBCONTRACTOR

State of _____}

County of _____}

_____, being duly sworn, deposes and says that:

1. He is _____ (owner, partner, officer, representative, or agent) of _____ the Bidder that has submitted the attached Bid.
2. He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid.
3. Such Bid is genuine and is not a collusive or sham Bid.
4. Neither the said Bidder, nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person, to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the OWNER (Local Public Agency) or any person interested in the proposed Contract.
5. The price or prices quoted in the attached Bid are fair and proper and not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

Signature _____

Title _____

Subscribed and Sworn to before me this _____ day of _____, 20_____

Notary Signature _____

(Seal)

My Commission Expires:

Date

END OF SECTION

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SECTION 00 45 19

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

State of _____}

County of _____}

_____, being duly sworn, deposes and says that:

1. He is _____ (owner, partner, officer, representative, or agent) of _____ the Bidder that has submitted the attached Bid.
2. He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid.
3. Such Bid is genuine and is not a collusive or sham Bid.
4. Neither the said Bidder, nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person, to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the OWNER (Local Public Agency) or any person interested in the proposed Contract.
5. The price or prices quoted in the attached Bid are fair and proper and not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

Signature _____

Title _____

Subscribed and Sworn to before me this _____ day of _____, 20 _____

Notary Signature _____

(Seal)

My Commission Expires:

Date

END OF SECTION

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PARTNERSHIP CERTIFICATE

STATE OF }
COUNTY OF } SS

On this _____ day of _____, 20____, before me personally appeared _____
 _____ known to me to be the person who executed the
 above instrument, who, being by first duly sworn, did depose and say that he is a general partner in the firm
 of _____ and that firm consists of himself
 and _____
 and that he executed the foregoing instrument on behalf of said firm for the uses and purposes stated therein,
 and that no one except the above named members of the firm have any financial interest whatsoever in said
 proposed contract.

PARTNER

PARTNER

PARTNER

PARTNER

Subscribed and sworn to before me, this _____ day of _____, 20____.

NOTARY PUBLIC

(SEAL)

My Commission Expires:

_____ (Date)

NOTE: If only one partner signs, a power of attorney executed by all other partners authorizing him to act in the name of the Company must be attached, otherwise, all partners must sign.

END OF SECTION

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SECTION 00 45 43.2

CORPORATE CERTIFICATE

I, _____, certify that I am the Secretary of the Corporation named as CONTRACTOR in the foregoing bid; that _____, who signed said bid in behalf of the CONTRACTOR was then _____ of said Corporation; that said authority was duly signed for and in behalf of said corporation by authority of its Board of Directors, and is within the scope of its corporate powers; that said Corporation is organized under the laws of the State of _____.

This _____ day of _____, 20_____.

CORPORATE SECRETARY

(SEAL)

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SECTION 00 45 43.3

INDIVIDUAL CERTIFICATE

STATE OF }
 }SS
COUNTY OF }

On this _____ day of _____, 20____, before me personally came and
appeared _____

to me known, and known to me to the person described in and who executed the foregoing instrument
and acknowledged that he executed the same.

NOTARY PUBLIC

(SEAL)

My Commission Expires

(Date)

(SEAL)

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SECTION 00 45 46.1

SAVE AFFIDAVIT

(SYSTEMATIC ALIEN VERIFICATION FOR ENTITLEMENTS)
AFFIDAVIT FOR PUBLIC BENEFIT AS REQUIRED BY THE GEORGIA SECURITY AND
IMMIGRATION COMPLIANCE ACT

By executing this affidavit under oath, as an applicant for public benefit as referenced in the Georgia Security and Immigration Compliance Act (O.C.G.A. §50-36-1), I am stating the following:

- 1) _____ I am a United States Citizen
- 2) _____ I am a legal permanent resident of the United States
- 3) _____ I am a qualified alien or non-immigrant under the Federal Immigration and Nationality Act with an alien number issued by the Department of Homeland Security or other federal immigration agency.

My alien number issued by the Department of Homeland Security or other federal immigration agency is: _____.

The undersigned applicant also hereby verifies that he or she is 18 years of age or older and has provided at least one secure and verifiable document, as required by O.C.G.A. §50-36-1 (e)(1), with this affidavit. Some examples of secure and verifiable document: driver's license, passport, military identification.

In making the above representation under oath, I understand that any person who knowingly and willfully makes a false, fictitious, or fraudulent statement or representation in an affidavit shall be guilty of a violation of O.C.G.A. §16-10-20, and face criminal penalties as allowed by such criminal statute.

Executed in _____ (city) _____ (state).

(Signature of Applicant)

(Printed Name of Applicant)

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____, 20 ____

(NOTARY PUBLIC)

My Commission Expires: _____

END OF SECTION

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SECTION 00 45 46.2

E-VERIFY AFFIDAVIT

The City of Camilla and the Contractor agree that compliance with the requirement of O.C.G.A. §13-10-91 are conditions of the agreement for the physical performance of services. By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. §13-10-91 stating affirmatively that the individual, firm, or corporation which is contracting with the City of Camilla has registered with and is participating in the federal work authorization program known as "E-Verify" to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 in accordance with the applicability provisions and deadlines established in O.C.G.A. §13-10-91. The undersigned Contractor also verifies use of the federal work authorization program throughout the contract period.

The Undersigned Contractor agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services pursuant to the contract with the City of Camilla. Contractor will secure from such subcontractor(s) similar verification of compliance with O.C.G.A. §13-10-91 on the Subcontractor Affidavit provided by the Georgia Department of Audits and Accounts or a substantially similar form. Contractor further agrees to advise the City of Camilla of the hiring of a new subcontractor and will obtain a Subcontractor Affidavit within five (5) days of hiring before the Subcontractor begins working on the project. Contractor agrees to maintain all records of such compliance for inspection by the City of Camilla at any time and provide a copy of each such verification to the City of Camilla at the time the Subcontractor(s) is retained to perform such services.

Contractor Affidavit Under O.C.G.A. §13-10-91(b)(1)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. §13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of the City of Camilla has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. §13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. §13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

(E-Verify Number)

(Name of Project)

(Date of Authorization)

(Name of Public Employer)

(Name of Contractor)

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____ in _____, _____.
(Date) (City) (State)

(Signature of Authorizing Officer or Agent)

(Printed Name of Authorized Officer or Agent)

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____, 20 ____

(NOTARY PUBLIC)

My Commission Expires: _____

END OF SECTION

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SECTION 00 45 47

STATEMENT OF EQUIPMENT

List Machinery and Other Equipment Available to CONTRACTOR for Prosecuting the Work Included in Contract. (To be filled in by CONTRACTOR and Submitted with Bid.)

Available Machinery and Other Equipment Kind - Size - Capacity	Location	Ownership	Date Proposed To Be Placed On Work Site

The above is a true statement of the equipment available to the undersigned Bidder for prosecuting the work included in the contract. Where it is shown that the equipment is not owned by the Bidder, arrangements have been made with the equipment owners to furnish the equipment.

Signed_____

Name_____

Title_____

END OF SECTION

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SECTION 00 45 48

SUPPLIERS DATA SHEET

Names of all equipment or material suppliers who will furnish \$5,000 or more on the project are listed below:

(Bidder shall supply Name and Address of Supplier, Item Supplied and Approximate Dollar Amount to be Supplied by each - Please Type)

(Use additional pages if needed. Please attach hereto)

ANY REVISION TO THIS SUPPLIERS DATA SHEET REQUESTED BY THE CONTRACTOR AFTER THE DATA SHEET HAS BEEN SUBMITTED IS SUBJECT TO A DEDUCTIVE AMOUNT IN THE CONTRACT PRICE.

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SECTION 28 13 01

SECURITY ACCESS (CARD ACCESS)

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes a security access system consisting of a Central Network Station, one networked workstation computer, operating system and application software, all required licensing, and field-installed Controllers connected by a high-speed electronic data transmission network. The security access system shall have the following:
 - 1. Access Control:
 - a. Regulating access through doors.
 - b. Visitor assignment.
 - c. Time and attendance.
 - d. Surge and tamper protection.
 - e. Secondary alarm annunciator.
 - f. Credential cards and readers.
 - g. Credential creation and credential holder database and management.
 - h. Monitoring of field-installed devices.
 - i. Reporting.

1.02 DEFINITIONS

- A. ABA Track: Magnetic stripe that is encoded on track 2, at 75-bpi density in binary-coded decimal format; for example, 5-bit, 16-character set.
- B. Controller: An intelligent peripheral control unit that uses a computer for controlling its operation. Where this term is presented with an initial capital letter, this definition applies.
- C. CPU: Central processing unit.
- D. Credential: Data assigned to an entity and used to identify that entity.
- E. dpi: Dots per inch.
- F. File Server: A PC in a network that stores the programs and data files shared by users.
- G. GFI: Ground fault interrupter.

- H. Identifier: A credential card, keypad personal identification number or code, biometric characteristic, or other unique identification entered as data into the entry-control database for the purpose of identifying an individual. Where this term is presented with an initial capital letter, this definition applies.
- I. I/O: Input/Output.
- J. LAN: Local area network.
- K. LED: Light-emitting diode.
- L. PC: Personal computer. This acronym applies to the Central Station, workstations, and file servers.
- M. PDF: (Portable Document Format.) The file format used by the Acrobat document exchange system software from Adobe.
- N. RF: Radio frequency.
- O. ROM: Read-only memory. ROM data are maintained through losses of power.
- P. TCP/IP: Transport control protocol/Internet protocol incorporated into Microsoft Windows.
- Q. TWAIN: (Technology without an Interesting Name.) A programming interface that lets a graphics application, such as an image editing program or desktop publishing program, activate a scanner, frame grabber, or other image-capturing device.
- R. UPS: Uninterruptible power supply.
- S. WAN: Wide area network.
- T. WAV: The digital audio format used in Microsoft Windows.
- U. Wiegand: Patented magnetic principle that uses specially treated wires embedded in the credential card.
- V. Windows: Operating system by Microsoft Corporation.
- W. Workstation: A PC with software that is configured for specific limited security system functions.
- X. WYSIWYG: (What You See Is What You Get.) Text and graphics appear on the screen the same as they will print.

1.03 COORDINATION

- A. Door Hardware Interface: Coordinate with Division 8 Sections that specify door hardware required to be monitored or controlled by the security access system. The cabling and components in this Section shall have electrical characteristics that match the signal and power requirements of door hardware. Integrate door hardware specified in Division 8 Sections to function with the controls, cabling and hardware in this Section.

1.04 SUBMITTALS

- A. Product Data: For each type of product indicated. Include operating characteristics, furnished specialties, and accessories. Reference each product to a location on Drawings.
- B. Shop Drawings:
 - 1. Wiring Diagrams. Show typical wiring schematics including the following:
 - a. Workstation outlets, jacks, and jack assemblies.
 - b. Patch cords.
 - c. Patch panels.
 - 2. Cable Administration Drawings: As specified in Part 3 "Identification" Article.
- C. Project planning documents as specified in Part 3.
- D. Operation and Maintenance Data: For security system components to include in emergency, operation, and maintenance manuals.
 - 1. Hard copies of manufacturer's specification sheets, operating specifications, design guides, user's guides for software and hardware, and PDF files on CD-ROM of the hard-copy submittal.
 - 2. System installation and setup guides, with data forms to plan and record options and setup decisions.

1.05 SYSTEM DESCRIPTION - BASIS DESIGN OR ENGINEER APPROVED EQUAL

- A. The S2 NetBox™ Security Management System shall be implemented through network appliance architecture with a three-tiered modular hardware hierarchy and embedded three-tier software architecture.
 - 1. The network appliance shall be capable of running on an existing TCP/IP network and shall be accessible, configurable, and manageable from any network-connected PC with a browser.

2. Browser access for configuration and administration of the system shall be possible from a PC on the same subnet, through routers and gateways from other subnets, and from the Internet. Control and management of the system shall therefore be geographically independent.
 3. Security of the data communicated over the network to and from the browser, Network Controller, and nodes shall be protected by encryption (SSL 128-bit) and authentication (SHA-1).
 4. The top hardware tier shall be the Network Controller. Embedded on the Network Controller shall be an operating system, a web server, security application software, and the database of personnel and system activity.
 5. The middle hardware tier shall be the Network Node. The Network Node shall make and manage access control decisions with data provided by the Network Controller, and it shall manage the communication between the Network Controller and Application blades connected to the system's inputs, outputs, and readers. This modular design shall make it possible, even during network downtime, for the system to continue to manage access control and store system activity logs. When network connectivity is re-established, the system activity logs shall be automatically re-integrated.
 6. The bottom hardware tier is the Application Blades. Four unique Application blades shall be available:
 - a. Access Control Blade: shall support two readers, four supervised inputs, and four relay outputs.
 - b. Alarm Input Blade: shall support eight supervised inputs.
 - c. Relay Output Blade: shall support eight relay outputs.
 - d. Temperature Blade: shall support eight analog temperature sensor inputs.
- B. The S2 system shall integrate, within a browser interface, access control, alarm monitoring, video monitoring, and temperature monitoring applications. These applications shall be embedded in a three-tier software architecture.
1. The database tier shall use PostgreSQL. This shall provide a small footprint, low administration, and high reliability relational database that is embedded without requiring the use of a separate PC server.
 2. The web server tier shall be based on an Apache™ embedded web server. This shall provide a graphically rich security management application through a standard web browser.
 3. The web browser shall provide UL 1076 compliant browser-based monitoring and incorporate asynchronous Javascript™ and XML technology (AJAX) for a faster user experience.
 4. The security application software tier shall contain the business logic. This application shall also be embedded on the network device and requires no additional memory or processing power.
 5. This three-tiered embedded software design shall run within an embedded Linux operating system and shall require no client-side software other than a web browser.
- C. All equipment and materials used shall be standard components, regularly manufactured, and regularly utilized in the manufacturer's system.
- D. All S2 systems and components shall have been thoroughly tested and proven in actual use.

1.06 OVERALL SYSTEM CAPABILITY

- A. The S2 Security Management System shall meet the requirements of educational facility access control systems. The system shall monitor and control facility access, and shall perform alarm monitoring, camera and video monitoring, communications loss monitoring, and temperature monitoring. The system shall also maintain a database of system activity, personnel access control information, and system user passwords and user role permissions. The system shall be controlled from a web browser and require no software installation or client licenses. The system shall provide control and access to users on Local Area Networks (LAN), Wide Area Networks (WAN), wireless networks, and the Internet. The system shall provide email and/or text message alerts for all alarm conditions and threats.
- B. Widget Desktop: The S2 system shall provide a widget-based user interface that enables users to create custom monitoring layouts by selecting and arranging widgets on a desktop. Each widget shall provide easy access to a frequently used function—allowing users to, for example, view an activity log, a camera view, or real-time web content. System administrators can save custom layouts for subsequent call up by users, who can then arrange the widgets as desired on their desktops. The administrator shall determine which widgets are available in a layout and the extent to which users can customize the layout.
- C. The S2 system shall provide the following Access Control capabilities:
 - 1. Integrated photo ID creation capability with video verification.
 - 2. User interface secured access under encrypted password control.
 - 3. Region occupancy counting and control.
 - 4. “First-in-unlock” rule enforcement.
 - 5. Multiple access levels and cards per person.
 - 6. 128-bit card support for Weigand card readers.
 - 7. Detailed time specifications.
 - 8. Simultaneous support for multiple card data formats.
 - 9. Elevator control.
 - 10. Access privileges variable by threat level.
 - 11. Scheduled portal unlock by time and threat level.
 - 12. Card format decoder quickly discovers unknown card formats.
 - 13. Card enrollment by reader or keyboard.
 - 14. Compatibility with various input devices, including biometric readers.
 - 15. Activation/expiration date/time by person with one-minute resolution.
 - 16. Access level disable for immediate lockdown.
 - 17. Use of Threat Levels to alter security system behavior globally.
 - 18. Multiple holiday schedules.
 - 19. Timed unlock schedules.
 - 20. Scheduled actions for arming inputs, activating outputs, and locking and unlocking portals.
 - 21. Card enrollment reader support.
 - 22. Counted-use access control.
 - 23. Dual-reader portal support.
 - 24. Wiegand Reader support.
 - 25. Magnetic-stripe reader support with cards using ABA Track 2 format for up to 200 bits.

26. Wiegand keypad PIN support for 4-digit or 6-digit PINs.
27. 8-bit and 4-bit burst keypad support for 4-digit or 6-digit PINs.
28. Integration with supported alarm panels.
29. Optional storage and recall of ID photos and personal/emergency data.
30. Up to 60,000-person records.

D. The S2 system shall provide the following Monitoring capabilities:

1. Common alarm panel integration for disarm on access, and arm on egress.
2. Integrated alarm monitoring and event management with alarm panels.
3. Support for the direct viewing of IP cameras.
4. Integrated real-time IP, and NVR systems with stored video replay for events.
5. Provides alarms on video loss, video motion detection, and video restore events.
6. Virtual inputs for video loss and building-occupancy-limits-exceeded.
7. Provides alarms on communication loss and temperature variation.
8. Support for the creation of custom sets of alarm event actions.
9. Provides the ability to record video and link to video for alarm events.
10. Available video control and playback through the S2 System user interface.
11. Provides the ability to assign threat levels to various alarms according to severity.
12. Provides the ability to select up to 20 levels of priority for event actions.
13. Support for electronic supervision of alarm inputs.
14. Support for the use of output relays for enabling circuits under alarm event control.
15. A monitoring desktop that integrates video, system activity logs, floor plans, ID photos, and alarm notifications.
16. Support for the creation of unlimited customized monitoring layouts through the use of widgets.
17. Graphic floor plans with active icons of security system resources.
18. System user permissions to grant whole or partial access to system resources, commands, and personal data.
19. Secure access to the user interface under encrypted password control
20. Delivery of alerts via browsers, email, and text messages.

E. The S2 system shall provide the following Video Management capabilities:

1. Real-time video monitoring displays, including unlimited cameras simultaneously.
2. Playback of event-related video.
3. Video switching and video widget pop-ups based on access activity or event activation.
4. Integrated alarm inputs from the video management system.
5. Digital playback of video events.
6. Linking of video and events based on triggers provided by the S2 system or video system.
7. Support for multiple NVR systems.
8. Multiple pre-programmed supported cameras.
9. Recall of photo ID and real-time image for comparison.
10. Monitoring and control through a web browser interface.

11. System user permissions to grant whole or partial access to system cameras and video resources.
- F. The S2 system shall provide the following Security Database capabilities:
1. Maintain data of system activity, personnel access control information, system user passwords and custom user role permissions for whole or partial access to system resources and data.
 2. Built-in Open Database Connectivity (ODBC) compliant database for personal data.
 3. LDAP integration for single-user logon authentication.
 4. Up to 60,000-person records.
 5. Network-secure API for external application integration.
 6. Extensive and easy to use custom report generator.
 7. User-defined data fields in personnel records.
 8. Record recall by vehicle tag, name, or card.
 9. ODBC compliant Database.
 10. An API for adding to, deleting from, and modifying the database.
 11. Storage of system user passwords and permissions.
 12. Storage and recall of ID photos and emergency personal information.
 13. Pre-defined reports on system configuration, system activity history, and people.
 14. English-based query language for instant custom reports.
 15. Custom report writer interface that allows the interactive creation of custom reports. Reports may be saved for later reuse. No third-party software (such as Crystal Reports) shall be necessary.
 16. Periodic backup to on-board flash ROM and optional network attached storage (NAS), including FTP servers.
 17. Periodic archive creation for historical custom reporting and improved on-board database performance.
 18. Email and text messaging (SMS) alert notifications.

1.07 HARDWARE REQUIREMENTS

- A. The S2 Security Management System shall employ a modular hardware concept that enables simple system expansion and utilizes a three-tiered hardware hierarchy:
1. At the top tier is the Network Controller, which shall contain the database engine, web server, application software, and configuration data. It is at this level that System Users, through a browser interface, shall interact with the S2 system, set configurations, monitor activities, run reports, and manage alarms.
 2. At the second tier is the Network Node, an intelligent device with native TCP/IP support, which shall make and manage access control decisions.
 3. At the third tier are the application extension blades. Each of these blades shall connect to and manage a set of inputs, outputs, readers, cameras, or temperature monitoring points.

4. The network device shall run on existing building TCP/IP networks and shall be configurable for access from separate subnets, through gateways and routers, and from the Internet. A MicroNode shall also be available that combines an Access Control blade and Network Node.
- B. The Network Node shall contain the operating system, database engine, web server, application software, and configuration data.
 - C. A solid-state Network Node shall consist of a blade-style, circuit card that also combines a Network Node on the card. The Network Controller portion of the card shall contain a processor, flash memory, and a network switch. The Network Node shall be supplied with 12V DC at a minimum of 3 amps. Internal battery backup shall supply sufficient power to provide for an orderly shutdown of the system in case of loss of external power. External battery backup shall be used to provide uninterrupted operation in the event of external power loss. The Network Node portion shall contain a serial port for communication with the Application blades and a network interface port.
 - D. The Network Node shall make and manage access control decisions with data provided by the Network Controller, and it shall manage the communication between the Network Controller and Application blades connected to the system's inputs, outputs, and readers. The Node shall be supplied with 12V DC at a minimum of 3 amps. The Node blade shall supply all Application blades in the node with power. The Network Node shall be available in three configurations: a combined Network Controller/Network Node blade; a standalone Network Node blade, and a MicroNode with included Access Control blade. Each Network Node shall support up to seven Application blades except for the MicroNodes. Communications between the node and Network Controller shall be encrypted and authenticated (SHA-1).
 - E. The Application blades shall interface with the Network Node. The Application blades shall be blade-style circuit cards. There shall be four types of Application blades:
 1. Access Control blade: shall support 2 readers (input devices such as keypads, RFID devices or Biometric readers), 4 supervised inputs and 4 relay outputs.
 2. Supervised Input blade: shall support 8 supervised inputs. Supervised input connectors are 2-pin. The system shall support a wide variety of input supervision types including normally-open circuit and normally-closed circuits, and zero, one or two resistor configurations.
 3. Relay Output blade: shall support 8 relay outputs. Relay output connectors are 3-pin. Both normally-open circuit and normally-closed circuit output devices are supported. The relay outputs shall support any output devices that operate on the following maximum electrical ratings: 30 Volts DC or AC, 2.5 Amps inductive or 5.0 Amps non-inductive.
 4. Temperature blade: shall support 8 analog temperature sensor inputs. Temperature range shall be 32° to 158° F (0° to 70° C). Temperature precision within that range shall be ±1.0° F (±0.5° C).

- F. The MicroNode shall combine a Network Node and an Application blade capability in one enclosure. The Access Control blade portion of the MicroNode shall support two readers, one temperature input, four supervised inputs and four relay outputs. A MicroNode shall utilize Power over Ethernet (PoE) at the 802.3AF standard and be capable of supplying direct power to 2 readers, 2 motion REXs, and 2 door strikes.

1.08 HARDWARE PACKAGING REQUIREMENTS

- A. The S2 NetBox™ Security Management System shall have various hardware enclosures and configurations available to support different installation requirements.
- B. The S2 4U Rack-Mount enclosure shall support one standalone Network Node blade and seven Application blades.
- C. The S2 MicroNode enclosure shall support a solid-state Node, its Access Control blade, and one temperature point.
 - 1. It shall be a wall-mount enclosure with dimensions of 7" (178 mm) H x 7" (178 mm) W x 3.5" (89 mm) D.
 - 2. It shall be possible to power the MicroNode with a PoE that conforms to the IEEE 802.3af standard. This provides nominal 48VDC at a maximum of 400mA.
- D. The solid-state Network Node shall be powered by 100-240V AC at 50-60 Hz. Power must come from a separate circuit with an isolated earth ground. It shall be possible to backup power supplied to the S2 system with an Uninterruptible Power Supply (UPS).

1.09 QUALITY ASSURANCE

- A. Installer Qualifications: Installer shall be S2 Access Control certified as a company, no exceptions.
- B. Acceptable Prequalified Installer: A3 Communications – Atlanta, GA
- C. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- E. Comply with NFPA 70, "National Electrical Code."
- F. Comply with SIA DC-03.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Components:

1. Store in temperature- and humidity-controlled environment in original manufacturer's sealed containers. Maintain ambient temperature between 50 and 85 degrees F, and not more than 80 percent relative humidity, noncondensing.
2. Open each container; verify contents against packing list, and file copy of packing list, complete with container identification for inclusion in operation and maintenance data.
3. Mark packing list with designations that have been assigned to materials and equipment for recording in the system labeling schedules that are generated by cable and asset management system specified in Part 2.
4. Save original manufacturer's containers and packing materials and deliver as directed under provisions covering extra materials.

1.11 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Access Control Blades: Quantity one (1).
2. Alarm Input Blades: Quantity one (1).
3. Relay Output Blades: Quantity one (1).
4. Card Readers: Quantity two (2).
5. Door Status Monitoring Contacts: Quantity two (2).
6. Request-to-Exit Devices: Quantity two (2).

1.12 PROJECT CONDITIONS

A. Environmental Conditions: System shall be capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:

1. Interior, Controlled Environment: System components, except central-station control unit, installed in air-conditioned interior environments shall be rated for continuous operation in ambient conditions of 36 to 122 deg F dry bulb and 20 to 90 percent relative humidity, noncondensing. NEMA 250, Type 1 enclosure.
2. Interior, Uncontrolled Environment: System components installed in non-air-conditioned interior environments shall be rated for continuous operation in ambient conditions of dry bulb and 20 to 90 percent relative humidity, noncondensing. NEMA 250, Type 3R enclosures.

3. Exterior Environment: System components installed in locations exposed to weather shall be rated for continuous operation in ambient conditions of minus 30 to plus 122 degrees F dry bulb and 20 to 90 percent relative humidity, condensing. Rate for continuous operation where exposed to rain as specified in NEMA 250, winds up to 85 mph. NEMA 250, Type 3R enclosures.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

2.02 SECURITY ACCESS SYSTEM

- A. Manufacturer: S2 Security or Engineer approved equal.

2.03 SURGE AND TAMPER PROTECTION

- A. Surge Protection: Protect components from voltage surges originating external to equipment housing and entering through power, communication, signal, control, or sensing leads. Include surge protection for external wiring of each conductor-entry connection to components.
- B. ACCESS CONTROL SYSTEM (ACS) HARDWARE
- C. S2 NetBox Network Nodes: Provide rack mountable Network Nodes, S2-NN-E14R-RM, with 64 GB SSD storage option. The quantity of Network Nodes shall be determined by the number of card readers shown on the drawings plus five card reader spare capacity. The Network Nodes shall be mounted in a 19" equipment rack.
- D. UPS: Self-contained static Uninterruptible Power Supply (UPS).
 1. Size: Provide a minimum of 1 hour of operation of the controller equipment.
 2. Batteries: Sealed, valve regulated, recombinant, lead calcium.
 3. Accessories:
 - a. Transient voltage suppression.
 - b. Input-harmonics reduction.
 - c. Rectifier/charger.
 - d. Battery disconnect device.
 - e. Static bypass transfer switch.
 - f. Internal maintenance bypass/isolation switch.
 - g. External maintenance bypass/isolation switch.
 - h. Output isolation transformer.

- i. Remote UPS monitoring.
- j. Battery monitoring.
- k. Remote battery monitoring.

2.04 MICRONODE

- A. Provide S2 Netdoor MicroNode in enclosure. The MicroNode shall operate with 120V power supply and over an IP network using Power over Ethernet (PoE).

2.05 CARD READERS

- A. Card readers are specified in the Door Hardware specifications.
- B. Enclosure: Suitable for recessed, semi flush, or pedestal mounting as noted on the drawings. Mounting types shall additionally be suitable for installation in the following locations:
 - 1. Indoors, controlled environment.
 - 2. Indoors, uncontrolled environment.
 - 3. Outdoors, with built-in heaters or other cold-weather equipment to extend the operating temperature range as needed for operation at the site.

2.06 MASTER INTERCOM STATION

- A. Manufacturer: Aiphone.
- B. Master intercom station shall be provided for communication between the main entrance door and the general office or receptionist's desk area. The station shall be desk mountable.
- C. Provide Aiphone LEM-1DL Master station with desk stand and power supply.

2.07 DOOR INTERCOM STATION

- A. Manufacturer: Aiphone.
- B. Door intercom station shall be provided for communication between the main entrance door and the general office area master intercom station. The station shall be recessed mountable in wall in a single gang box.
- C. Provide Aiphone LE-D surface mount door station weather and vandal resistant door station with mechanical call button.

2.08 PUSH-BUTTON SWITCHES

- A. Manufacturers: Securitron Magnalock Corporation; an ASSA ABLOY Group Company.

- B. Push-Button Switches: Momentary-contact back-lighted push buttons, with stainless-steel switch enclosures.
 - 1. Electrical Ratings:
 - a. Minimum continuous current rating of 10 A at 120 V ac.
 - b. Contacts that will make 720 VA at 60 A and that will break at 720 VA at 10A.
 - 2. Enclosures: Flush or surface mounting. Push buttons shall be suitable for flush mounting in the switch enclosures.
 - 3. Enclosures shall additionally be suitable for installation in the following locations:
 - a. Indoors, controlled environment.
 - b. Indoors, uncontrolled environment.
 - c. Outdoors.
- C. Power: Push-button switches shall be powered from their associated Controller, using dc control.

2.09 DOOR HARDWARE INTERFACE

- A. Exit Device with Alarm: Operation of the exit device shall generate an alarm. Exit device and alarm contacts are specified in Division 8 Section "Door Hardware."
- B. Exit Alarm: Operation of a monitored door shall generate an alarm. Exit devices and alarm contacts are specified in Division 8 Section "Door Hardware."
- C. Electric Door Strikes: Use end-of-line resistors to provide power line supervision. Signal switches shall transmit data to Controller to indicate when the bolt is not engaged and the strike mechanism is unlocked, and shall report a forced entry. Power and signal shall be from the Controller. Electric strikes are specified in Division 8 "Door Hardware."

2.10 CABLES

- A. Manufacturers:
 - 1. Anixter, Inc.
 - 2. Belden Inc.; Electronics Division.
 - 3. West Penn Wire/CDT; a division of Cable Design Technologies.
- B. Multiconductor access control banana peel composite cable. The composite cable shall consist of the following conductors in plenum rated jacket:
 - 1. Card Reader – 6 conductor 22 AWG BC overall shield with drain wire.
 - 2. Door Contact - 4 conductor 22 AWG BC unshielded.
 - 3. Request-to-Exit - 4 conductor 22 AWG BC unshielded.
 - 4. Electric Door Strike (Lock/Power) - 4 conductor 18 AWG BC unshielded.

- C. Provide Belden 658GMS Composite access control cable.
- D. Intercom Cable: 22 AWG two (2) wires, non-twisted and non-polarized, shielded, plenum rated.
 - 1. Provide larger gauge cable for long distance cable run. The cable shall be sized for the distance and pathway shown on the drawings.
- E. LAN Cabling: Comply with Division 27 Section "Data Cabling System"
 - 1. NFPA 262.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine pathway elements intended for cables. Check raceways, cable trays, and other elements for compliance with space allocations, installation tolerances, hazards to cable installation, and other conditions affecting installation.
- B. Examine roughing-in for LAN and control cable conduit systems to PCs, Controllers, card readers, and other cable-connected devices to verify actual locations of conduit and back boxes before device installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Comply with recommendations in SIA CP-01.
- B. Comply with EIA/TIA-606, "Administration Standard for the Telecommunications Infrastructure of Commercial Buildings."
- C. Obtain detailed Project planning forms from manufacturer of access-control system; develop custom forms to suit Project. Fill in all data available from Project plans and specifications and publish as Project planning documents for review and approval.
 - 1. Develop cable and asset management system details; input data from construction documents. Include system schematics and Visio Technical Drawings.
- D. In meetings with Architect and Owner, present Project planning documents and review, adjust, and prepare final setup documents. Use final documents to set up system software.

3.03 CABLING

- A. Comply with NECA 1, "Good Workmanship in Electrical Contracting."
- B. Install cables and wiring according to requirements in Division 27 Section "Voice and Data Cabling."
- C. Wiring Method: Install wiring in raceway and cable tray except within consoles, cabinets, desks, and counters. Conceal raceway and wiring except in unfinished spaces.
- D. Wiring Method: Install wiring in raceway and cable tray except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used. Use NRTL-listed plenum cable in environmental air spaces, including plenum ceilings. Conceal raceway and cables except in unfinished spaces.
- E. Install LAN cables using techniques, practices, and methods that are consistent with Category 6E rating of components and that ensure Category 6E performance of completed and linked signal paths, end to end.
- F. Install cables without damaging conductors, shield, or jacket.
- G. Boxes and enclosures containing security system components or cabling, and which are easily accessible to employees or to the public, shall be provided with a lock. Boxes above ceiling level in occupied areas of the building shall not be considered to be accessible. Junction boxes and small device enclosures below ceiling level and easily accessible to employees or the public shall be covered with a suitable cover plate and secured with tamperproof screws.
- H. Install end-of-line resistors at the field device location and not at the Controller or panel location.

3.04 CABLE APPLICATION

- A. Comply with EIA/TIA-569, "Commercial Building Standard for Telecommunications Pathways and Spaces."
- B. Cable application requirements are minimum requirements and shall be exceeded if recommended or required by manufacturer of system hardware.
- C. Card Readers and Keypads:
 - 1. Install number of conductor pairs recommended by manufacturer for the functions specified.
 - 2. Unless manufacturer recommends larger conductors, install No. 22 AWG wire.
 - 3. For greater distances, install "extender" or "repeater" modules recommended by manufacturer of the Controller.

- D. Install minimum No. 18 AWG cable, bundled as specified, from Controller to electrically powered locks. Do not exceed 500 feet.

3.05 GROUNDING

- A. Comply with Division 26 Section "Grounding and Bonding for Electrical Systems."
- B. Comply with IEEE 1100, "Power and Grounding Sensitive Electronic Equipment."
- C. Ground cable shields, drain conductors, and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.
- D. Bond shields and drain conductors to ground at only one point in each circuit.
- E. Signal Ground:
 - 1. Terminal: Locate in each equipment room and wiring closet; isolate from power system and equipment grounding.
 - 2. Bus: Mount on wall of main equipment room with standoff insulators.
 - 3. Backbone Cable: Extend from signal ground bus to signal ground terminal in each equipment room and wiring closet.

3.06 INSTALLATION

- A. Push Buttons: Where multiple push buttons are housed within a single switch enclosure, they shall be stacked vertically with each push-button switch labeled with 1/4-inch- high text and symbols as required. Push-button switches shall be connected to the Controller associated with the portal to which they are applied, and shall operate the appropriate electric strike, electric bolt, or other facility release device.
- B. Install card readers.
- C. Install mater intercom door station to unlock door hardware.

3.07 IDENTIFICATION

- A. In addition to requirements in this Article, comply with applicable requirements in Division 26 Section "Identification for Electrical Systems" and with TIA/EIA-606.
- B. Using cable and asset management software, develop Cable Administration Drawings for system identification, testing, and management. Use unique, alphanumeric designation for each cable, and label cable and jacks, connectors, and terminals to which it connects with same designation. Use logical and systematic designations for facility's architectural arrangement.

- C. Label each terminal strip and screw terminal in each cabinet, rack, or panel.
 - 1. All wiring conductors connected to terminal strips shall be individually numbered, and each cable or wiring group being extended from a panel or cabinet to a building-mounted device shall be identified with the name and number of the particular device as shown.
- D. At completion, cable and asset management software shall reflect as-built conditions.

3.08 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections. Report results in writing.
- B. Perform the following field tests and inspections and prepare test reports:
 - 1. LAN Cable Procedures: Inspect for physical damage and test each conductor signal path for continuity and shorts. Use Class 2, bidirectional, Category 6 tester. Test for faulty connectors, splices, and terminations. Test according to TIA/EIA-568-1, "Commercial Building Telecommunications Cabling Standards - Part 1 General Requirements." Link performance for UTP cables must comply with minimum criteria in TIA/EIA-568-B.
 - 2. Test each circuit and component of each system. Tests shall include, but are not limited to, measurements of power supply output under maximum load, signal loop resistance, and leakage to ground where applicable. System components with battery backup shall be operated on battery power for a period of not less than 10 percent of the calculated battery operating time. Provide special equipment and software if testing requires special or dedicated equipment.
- C. Remove and replace malfunctioning devices and circuits and retest as specified above.

END OF SECTION

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