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ADDENDUM NO. 2

TO THE DRAWINGS AND SPECIFICATIONS FOR:

Population Management NLEF Fence- Phase 4
DRC-21F020
Date: November 27, 2023

Location: Ross Correctional Institution
16149 St Rt 104
Chillicothe, Ohio 45601

THE ADDENDUM MUST BE ACKNOWLEDGED FOR ON THE BID FORM.

TO ALL BIDDERS:
This addendum supplements and amends the original drawings and specifications and shall be considered in preparing your proposal. It is a part of the Contract Documents and is a part of the Rebid process. Some items below are answers from questions during the original bidding process that were not addressed in that bid duration. For the Specifications Book a table of contents is provided with highlighted sections showing the revised Addendum 2 sections for quick reference.

General Requirements

ITEM 1: This Addendum 2 provides for the rebidding of the DRC-21F020 project based on the original bid documents and Addendum 1. The rebidding process allows for one bid advertisement and a bid opening 8 days thereafter. The project is the same scope and same documents noted above minus the changes made in this addendum. Estimates, bid dates, and construction durations have been revised.

Revised documents attached: 001000.EB-Solicitation, 001113 Public Bid Advertisement (eBid), 004113 EB-Bid Form,

ITEM 2: Specifications Section 013200 Construction Schedule: Base Bid Construction Duration Extension / Milestone Completion Date change: Milestone M1: Substantial Completion of all work is ~~240~~ ***254*** consecutive days from Notice to Proceed.

Milestone M2: Contract Completion of the Entire Contract is ~~301~~ ***315*** consecutive days from the Notice to Proceed.

Revised documents attached: Specifications Section 013200 Construction Schedule, 004113 EB-Bid_Form, 005200-Agreement_Form.

ITEM 3: Added ***Alternate 6:*** Provide for an accelerated schedule as follows:
Milestone M1: Substantial Completion of all work is ~~254~~ ***120*** consecutive days from Notice to Proceed.
Milestone M2: Contract Completion of the Entire Contract is ~~315~~ ***181*** consecutive days from the Notice to Proceed.

Revised documents attached: Specifications Section 012300 "Alternates", 004113 EB-Bid Form, 005200-Agreement_Form, 013200_Construction Schedule.

ITEM 4: Sequencing/Phasing of Work revised to allow access to the full perimeter, no restrictions to phasing a half of the perimeter at a time. The contractor can have access to the full perimeter with typical security requirements to phase the work as they need to provide the quickest construction duration within the available 2 Officer Escorts provided the project for the base bid. Note that work on the exterior side of the fence will not require an officer escort. Any work on the interior of the perimeter fence including between the fences will require the officer escorts.

Revised Documents: See Addendum 1 with portions of Item 2 crossed out that no longer apply. Specification Section 01 10 00 "Summary" has revisions that account for this change and Addendum 1 revisions as well.

ITEM 5: Clarification of No Man's Land (NML) Aggregate work. Specification Section 01 10 00 "Summary" paragraph 1.4.A.1.iii.b, 1.4.A.1.a.vi.

Revised Documents: Specification Section 01 10 00 "Summary", Section 024000 Selective Demolition.

ITEM 6: *Owner Provided Materials*: Clarification of materials at MaCI, the 15,000 ft of 4" PVC located at MaCI is still bundled together and not in loose pieces and is in 20' pieces.

Note: The material is located at the Madison Correctional Institution not to be confused with the London Correction institution which is across the street and is a different Institution. The address is in the Specifications Section 01 10 00 "Summary".

Revised Documents: Appendix C2 provides images of MaCI Owner material to be provided, Specification Section 01 10 00 "Summary" 1.4.A.1.ix.a.iii.4.

ITEM 7: Specification Section 01 10 00 "Summary" paragraph 1.4.A.1.a.ix.d, assume all weed inhibitor fabric is new material. Owner material is not useable.

Revised Documents: Specification Section 01 10 00 "Summary".

ITEM 8: Can you clarify the height of the chain link fabric that is being owner supplied? The MACI Credit from the specifications state that the chain link fabric is "hot dip 2 oz 2x9x84in KT 50ft/roll" but 96" tall fabric is needed to meet the detail of having 7'-6" above grade and 6" below grade.

Answer: Change to the drawings and specification: Any drawing and specification section referencing the fence fabric height is to read 7' tall fabric buried 6" in No Man's Land gravel for a fence fabric height of approximately 6'-6" above top of gravel (grade). Provide associated horizontal rail heights accordingly.

Change to specific specifications: Section 32 31 13 Security Chain Link Fence 1.3(A)(3)(a) to read as follows:

3. Fence fabric to be 7' tall material.

a.6'-6"+/- to be exposed above the NML aggregate with 5" to 6" extending into and buried in he existing no man's land (NML) aggregate for security / tunneling protection.

Revised Documents: Specification Section 01 10 00 "Summary" 1.4.A.1.b.i.(several subitems), Section 32 31 13 Security Chain Link Fence, several fence details on the drawings.

ITEM 10: Clarification: What manufacturer and part number of doppler are to be included?

Answer: The existing devices in use on site are Pyramid SDI076XL-MIL. The new components should be the modern equivalents of these products. Refer to coded notes #7 and #8 on drawing sheet ES2.2

Revised Documents: Specification Section 01 10 00 "Summary" paragraph 1.4.A.1.c.x.f.

ITEM 11: Section 287090 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System". Paragraph 1.2 System Description Item A.3 has been revised to review Gallagher policy on Gallagher representation at inspections and Channel Partner requirements for testing and certifications. Follow Gallagher's most recent requirements.

Revised Documents: Section 287090 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System"

ITEM 12: Clarification, Specification Section 287090 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System". – There are several references to "PLC" systems/equipment in this specification (Section 2.3). There should be no PLC equipment provided as part of this project. Paragraph 2.3 has been revised to remove reference to PLC.

Revised Documents: Section 287090 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System".

ITEM 13: Clarification, Specification Section 287090 – 2.22, B, 3, are NEMA 4X cabinets required, or are NEMA 4 acceptable (WCI has NEMA 4 cabinets)?
Answer: NEMA 4X are required for corrosion resistance. Warren CI has had concerns with Field Cabinet component failures, this change in ODRC's specifications for this project are to mitigate concerns brought about from WCI.

Revised Documents: No changes to the documents are required.

ITEM 14: Clarification, Specification Section 287090 – 2.22, C, this calls for a custom UL listing of each assembled cabinet. Why is this required? This is an expensive, lengthy process and not necessary.
Answer: The UL listing is also a means to mitigate concerns with the field cabinet components that occurred at WCI and have been present at other ODRC sites, although minimal elsewhere. This requirement will remain.

Revised Documents: No changes to the documents are required.

ITEM 15: Clarification, Specification Section 287090 – 2.24, B, would like to confirm that single mode fiber cable is required in lieu of multi-mode fiber cable.
Answer: Single mode fiber is required. The concern is the distance of the last return leg of the loop.

Revised Documents: No changes to the documents are required.

ITEM 16: **Bidder Question:** Mobile Maps (Alternate 4): The manufacturer is asking if the facility has a FCC frequency. If not, they have to apply for

one." I have a request to RCI to answer this however have not heard back from them.

Answer: Change to Specifications: '28 70 90 – Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System'. Revise as follows:
Part 2.27 (A)(1)(b)(4): add subpart 'c' as follows:
'c) The vendor shall prepare FCC license paperwork and pay initial licensing fees covering the first year of system operation on the communication frequency proposed by the vendor for use with the system. '

Revised Documents: Section 287090 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System".

ITEM 17: Specification Section 287090 – 3.6, A, 1, this describes fiber as being home run from each NLEF cabinet to the electronic security equipment room, which is not what the riser drawing shows.

Answer: Change to Specifications: '28 70 90 – Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System'. Revise as follows:
Part 3.6 (A)(1) – replace the following text: "The ESC shall install a fiber home run from each site NLEF cabinet to the facility Electronic Security Equipment Room. Refer to Construction Drawings for locations." With the following text: *"The ESC shall install fiber between each site NLEF cabinet and back to the facility Electronic Security Equipment Room. Refer to Construction Drawings for locations."*

Revised Documents: Section 287090 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System".

ITEM 18: Specification Clarification: Appendix Item B Soils Resistivity Report was provided in the Project Manual at the end of the Soil test Report and not after the Appendix B cover sheet. It is attached to this Addendum just as a clarification of what the report contains.

Drawings Note: Revised items on the plans for Addendum 1 and 2 are noted with revision marker 1 and revision clouds.

ITEM 19: Drawing G1:

1. Revised Security Note section Officer Escorts line item to show the number of Officer Escorts available for Alternate 6.
2. Sheet Index revised to show sheets with revisions provided per Addendums 1 and 2.

Revised Documents: Drawing G1.

ITEM 20: Drawing SD3.1:

1. Detail 1/SD3.1 revision showing 1-5/8" rails (addendum 1), and revised fence fabric height of 7' per Item 8 spec revisions above.
2. Detail 4/SD3.1, now shows locations of the traffic bollards detailed in 6/S5.0. Four (4) needed per field cabinet enclosure.

Revised Documents: Drawing SD3.1

ITEM 21: Drawing SD3.2:

1. Detail 7/SD3.2 clarification of the bolt used for NLEF fence post attachment….use ¼" diameter through bolt and not a ½" diameter bolt.

Revised Documents: Drawing SD3.2

ITEM 22: Sheet ES2.1: The two (2) proposed dopplers at the Entry building have been moved from the roof to the inside face of the Entry building, see attached sheet ES2.1.
Sheet ES2.2: Proposed and existing dopplers at the VSP have some notes added and notes revised, see attached sheet ES2.2.

Revised Documents: Drawing ES2.1 and ES2.2.

ITEM 22: Sheet E5.1: Detail 1/E5.1, added notes to provide option for a single trench providing the same separation of the card reader conduit.

Revised Documents: Drawing SD3.2

ITEM 23: Subcontract Form, address revised.

Revised Documents: 005214 Subcontract Form

END OF ADDENDUM 2

Attachments:
Specifications
Table Of Contents 001000.EB-Solicitation, 001113 Public Bid Advertisement (eBid), 004113 EB-Bid Form, 005200 Agreement Form", 005214 Subcontract Form, Specification Section 011000 "Summary", Specification Section 012300 "Alternates", Specification Section 013200 "Construction Schedule", Specification Section 024000 "Selective Demolition", Specification Section 287090 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System", Specification Section 323113 "Security Chain Link Fence".

Drawing Sheets

G1, SD3.1, SD3.2, ES2.1, ES2.2, and E5.1, Soils Resistivity Report, Appendix C2 Images, Addendum 1.

Document 00 01 10 - Table of Contents (General Contracting Project)
State of Ohio Standard Requirements for Public Facility Construction

Division 03 – Concrete
03 30 00.....Miscellaneous Cast-In-Place Concrete

Division 05 – Metals
05 10 00.....Structural Metal Framing
05 50 00.....Metal Fabrication

Division 07 – Thermal and Moisture Control
07 92 00.....Joint Sealants
07 84 13.....Penetration Firestopping

Division 08 – Openings
083113 .....Access Doors and Frames

Division 09 – Finishes
09 90 00.....Painting and Coatings

Division 10 – Specialties
10 14 00.....Signage

FACILITY SERVICES SUBGROUP

Division 26 – Electrical
26 00 10.....Electrical General Requirements
26 00 25.....Electrical Demolition
26 05 19.....Low-Voltage Electrical Power Conductors and Cables
26 05 26.....Grounding and Bonding for Electrical Systems
26 05 29.....Hangers and Supports for Electrical Systems
26 05 33.....Raceways and Boxes for Electrical Systems
26 05 44.....Sleeves and Sleeve Seals for Electrical Raceways and Cabling
26 05 53.....Identification for Electrical Systems
26 22 13..... Low-Voltage Distribution Transformers
26 27 26.....Wiring Devices

Division 28 – Electronic Safety and Security
28 70 90.....Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System

SITE AND INFRASTRUCTURE SUBGROUP

Division 30 – Not Used

Division 31 – Earthwork
31 10 00.....Site Clearing
31 20 00.....Earthwork

Division 32 – Exterior Improvements
32 31 13.....Security Chain Link Fencing
32 92 19.....Seeding

Appendix
Item A.....Geotechnical Report
Item B.....Soil Resistivity Report
Item C1.....MaCI Owner Material list
Item C2.....Owner Material list with pictures

END OF DOCUMENT

Document 00 10 00 - Solicitation (General Contracting / Electronic Bid)
State of Ohio Standard Requirements for Public Facility Construction

Electronic bids will be received by:

Ohio Facilities Construction Commission
https://bidexpress.com

for the following Project:

Project:
DRC-21F020
Population Management NLEF Phase 4
Ohio Department of Rehabilitation and Corrections
Chillicothe, Ohio Ross County

in accordance with the Contract Documents prepared by:

Schorr Architects, Inc.
230 Bradenton Ave, Dublin, Ohio 43017
614-798-2097
614-798-2096
Dan Miller, Project Manager
dmiller@schorrarchitects.com
http://www.schorrarchitects.com/

In compliance with Section 153.08 of the Ohio Revised Code and Section 153:1-8-01 of the Ohio Administrative Code, Bids for this Project are being received, opened, and published through electronic means using the State's electronic bidding service.

To access this Project through the electronic bidding service, you must first register at https://bidexpress.com by clicking on the "REGISTER FOR FREE" button and following the instructions. In order to bid, you must create and enable a digital ID within the service. This process requires the submission of notarized paperwork and may take up to five business days to complete. There are no fees to register, create and enable a digital ID, or to download bid documents. There is a small expense on a monthly or per bid basis to submit a bid. The electronic bidding service offers customer support that may be reached at 888.352.2439 or via email at support@bidexpress.com.

For rebidding purposes there will be no substitutions allowed during the bidding process as there is no time for a full review.

From time to time, the Commission issues new editions of the "State of Ohio Standard Requirements for Public Facility Construction" and may issue interim changes. Bidders must submit Bids that comply with the version of the Standard Requirements included in the Contract Documents.

Prevailing Wage rates and Equal Employment Opportunity requirements are applicable to this Project.

This Project is subject to the State of Ohio's Encouraging Diversity, Growth, and Equity ("EDGE") Business Development Program. A Bidder is required to submit with its Bid and with its Bidder's Qualifications form, certain information about the certified EDGE Business Enterprise(s) participating on the Project with the Bidder. Refer to **Section 6.1.10** of the **Instructions to Bidders**.

The EDGE Participation Goal for the Project is **5.0 percent**.

The percentage is determined by the contracted value of goods, services, materials, and labor that are provided by EDGE-certified business(es). The participation is calculated on the total amount of each awarded contract. For more information about EDGE, contact the Business Certification Compliance Manager at Stacy.Cornett@development.ohio.gov, or at 77 South High Street, 28th Floor, Columbus, Ohio 43215; or by telephone at (614) 728-0088.

The Bidder may be subject to a Pre-Award Affirmative Action Compliance Review in accordance with Section 123:2-5-01 of the Ohio Administrative Code including a review of the Bidder's employment records and an on-site review.

The Bidder must indicate on the electronic Bid Form, the locations where its services will be performed in the spaces provided or by attachment in accordance with the requirements of Executive Order 2019-12D related to providing services only within the United States and the requirements of Executive Order 2022-02D prohibiting purchases from or investment in any Russian institution or company. Failure to do so may cause the Bid to be rejected as non-responsive.

DOMESTIC STEEL USE REQUIREMENTS AS SPECIFIED IN OHIO REVISED CODE SECTION 153.011 APPLY TO THIS PROJECT. COPIES OF OHIO REVISED CODE SECTION 153.011 CAN BE OBTAINED FROM ANY OF THE OFFICES OF THE OHIO FACILITIES CONSTRUCTION COMMISSION.

Bidders are encouraged to be enrolled in and to be in good standing in a Drug-Free Safety Program ("DFSP") approved by the Ohio Bureau of Workers' Compensation ("OBWC") prior to submitting a Bid and provide, on the Electronic Bid Form with its Bid, certain information relative to their enrollment in such a program; and, if awarded a Contract, shall comply with other DFSP criteria described in **Section 1.6** of the **General Conditions**.

Electronic bids will be received for:

Trade	Estimate
General Contract	**$ 4,800,000.00**
Alternate 1	**$ 34,000.00**
Alternate 2	**$ 78,000.00**
Alternate 3	**$ 23,000.00**
Alternate 4	**$ 68,000.00**
Alternate 5	**$ 45,000.00**
Alternate 6	**$ 1,300,000.00**

until **Friday, December 15, 2023 at 1:00 p.m.,** when all Bids will be electronically opened. Bid tabulations will be posted no later than 5:00 p.m. on the day Bids are opened.

There will be no Pre-bid meeting.

The Contractor is responsible for scheduling the Project, coordinating the Subcontractors, and providing other services

The Contract Documents may be downloaded as electronic PDF files from the State's electronic bidding service at https://bidexpress.com at no charge.

END OF DOCUMENT

00 11 13 Public Bid Advertisement (Electronic Bidding)
State of Ohio Standard Forms and Documents

DRC-21F020
Population Management NLEF Phase 4
Ross Correctional Institution (RCI)
16149 St Rt 104
Ross County
Chillicothe, Ohio 45601

Bids Due: 1:00 p.m. local time, Friday, December 15, 2023; through the State's electronic bidding system at https://bidexpress.com

EDGE Participation Goal: 5% of contract
Domestic steel use is required per ORC 153.011.

Description: Base scope work includes installation of 6800 linear feet of 14' tall chain link fence and 17' tall Non-Lethal Electric Fence (NLEF) system and all associated electrical and data requirements at Ross Correctional Institution (RCI).

Contract	Estimated Cost
General Contract	$4,800,000.00
Alternate 1	$ 34,000.00
Alternate 2	$ 78,000.00
Alternate 3	$ 23,000.00
Alternate 4	$ 68,000.00
Alternate 5	$ 45,000.00
Alternate 6	$ 1,300,000.00

There will not be a PreBid meeting. This is a rebidding of the project originally bid out on October

Bid Documents: Downloadable electronically as a PDF for free at https://bidexpress.com

More Info: A/E contact: Dan Miller, Phone: 614/798-2096, Email: dmiller@schorrarchitects.com
More Info: OFCC Contacts: Sylvia Slivo 614/307-3563 and Michael Covault, Phone: 614/579-6496

-------- end of advertisement—do not publish this line ----------

APPROVED FOR PUBLICATION
In: Chillicothe Gazette
On: Tuesday, December 5, 2023
Ohio Facilities Construction Commission

Kimberly Jacobs
Project Coordinator

Date

RECEIVED BY:

Type or print name of authorized representative

Signature

Date

END OF DOCUMENT

Document 00 41 13 - Bid Form (General Contract / Electronic Bid)
State of Ohio Standard Requirements for Public Facility Construction

THIS SAMPLE BID FORM IS PROVIDED WITH THE PROJECT MANUAL AS A PLACEHOLDER ONLY – SUBMIT YOUR BID USING THE ELECTRONIC BID FORM ON HTTPS://BIDEXPRESS.COM

General Info

Alt Total: Bid Total:

Deadline
December 15, 2023 1 PM EST

Advertised
12/5/2023

Number
DRC-21F020

Business Name
Ohio Department of Rehabilitation and Corrections

Description
Base scope work includes Non-Lethal Electric Fence (NLEF) installation at Ross Correctional Institution (RCI). RCI scope includes the installation of 6800 linear feet of 14' tall chain link fence and Non-Lethal Electric Fence (NLEF) system and all associated electrical and data requirements.

Procurement Documents

00 11 13 Public Bid Advertisement (eBid)
→ Public Bid Advertisement

00 10 00 Solicitation-GC (eBid)
→ Notice to Bidders

DRC-21F020 Bid-Specifications
→ Procurement & Contracting Requirements and Specifications

DRC-21F020 Bid-Drawings
→ Plans, elevations, sections, details, and schedules

4 Attachments

Contract Times and Addenda

Contract Times

The time for Milestone M1: Substantial Completion of all Work is 254 consecutive days from the Notice to Proceed.

The time for Milestone M2: Contract Completion of the Entire Contract is 315 consecutive days from the Notice to Proceed.

Acknowledgement of receipt of Addenda

Date Addendum #1 Received	Date Addendum #2 Received	Date Addendum #3 Received	Date Addendum #4 Received

Allowance Instructions

Allowance amounts are fixed and no entry of data is required by the Bidder. Include each and every Allowance amount in the Base Bid. The Bidder's Fee (overhead and profit) and costs for unloading and handling on the Site, labor, installation costs, and other expenses contemplated for the Allowance must be included in the Base Bid and NOT in the Allowance amount.

Allowances (General Contract)

Item	Description	Allowance Amount*	Extension
Allowance A-1	NML Aggregate (ODOT Item 703 Type D) 20% replacement, 495 CY	$110.00/CY	$54,450.00
Allowance A-2	Moving existing microwaves in NML, lump sum	$10,000.00	$10,000.00
Allowance A-3	All-Terrain lift	$40,000.00	$40,000.00
2 Items		**Total:**	104,450.00

Unit Price Instructions

Enter the price per unit of measure in the Bid Form and the extension will be automatically calculate. Include the Extension for each and every Unit Price in the Base Bid. Unit prices will be used solely for the purpose of determining the adjustment to the Contract Sum for differences between the estimated quantities on the electronic Bid Form and the actual quantities provided.

Unit Prices (General Contract)

Item	Description	Quantity	Unit Price*	Unit of Measure	Extension
Unit Price U-1	NML Aggregate (ODOT Item 703 Type D) per cubic yard (CY) for aggregate above or below the A-1 Allowance amount.	N/A	_____	Cubic Yards	
1 Item				**Total:**	

Base Bid Instructions

Enter the amount of the Base Bid for ALL LABOR AND MATERIALS to complete the scope of Work. Include the amount of each Allowance (if applicable) and the subtotal of each Unit Price Extension (if applicable) in the Base Bid amount. Failure to include Allowance or Unit Price Extensions in the Base Bid is the responsibility of the Bidder and will not be sufficient reason for adjustment of the Bid amount after the Bid deadline. Do not include Alternates (if applicable) in the Base Bid amount.

Base Bid (General Contract)

Item	Description	Base Bid Amount*	Extension
Base Bid	All Labor and Materials (include Allowances and Unit Price Extensions above)	_____	
1 Item		**Total:**	

Alternate Instructions

Enter the amount of each and every Alternate to ADD TO or DEDUCT FROM the Base Bid. Indicate amounts to DEDUCT FROM the Base Bid by entering a minus sign (-) before the amount entered. Do not include Alternate amounts in the Base Bid.

Alternates (General Contract)

Item	Description	Alternate Amount*	Extension
! Alternate: Owner-agency may award independently from entire bid.			
! Alternates are not included in bid total.			
Alternate 1 (Alt-1)	Add aggregate walk ways to all Field Cabinets and Reset Devices at fence perimeter		
Alternate 2 (Alt-2)	Option to Alt-1: Add concrete walk ways to all Field Cabinets and Reset Devices at fence perimeter (either Alt 1 or Alt 2 would be taken, not both)		
Alternate 3 (Alt-3)	Add replacement of existing inner perimeter road chain link day fence gate at north side of Entry building providing a larger 14'x14' chain link fence gate.		
Alternate 4 (Alt-4)	Provide Mobile Maps software, installation integration		
Alternate 5 (Alt-5)	Provide 14' tall security fence enclosure around existing VSP light poles		
Alternate 6 (Alt-6)	Accelerate the schedule for Contract Time as follows: **The time for Milestone M1: Substantial Completion of all Work is 120 consecutive days from the Notice to Proceed.** **The time for Milestone M2: Contract Completion of the Entire Contract is 181 consecutive days from the Notice to Proceed.**		
6 Items	**Alternate Total:**		**Total:**

Bidder Affirmation and Disclosure

The Bidder acknowledges that by submitting its Bid, the Bidder has read and understands the applicable Executive Orders regarding the prohibitions of performance of offshore services, locating State data offshore in any way, or purchasing from Russian institutions or companies. If awarded a Contract, the Bidder will become the Contractor and affirms that both the Contractor and its Subcontractors shall perform no services requested under this Contract outside of the United States.

The Bidder shall provide the locations where services under this Contract will be performed in the spaces provided below or by attachment. Failure to provide this information as part of its Bid may cause the Bidder to be deemed non-responsive and no further consideration will be given to its Bid. If the Bidder will not be using Subcontractors, indicate "Not Applicable" in the appropriate spaces.

1. Principal business location of Contractor:

Contractor Address*

City, State, and Zip*

Name / Principal business location of Subcontractor(s), if known at time of Bid deadline:

Subcontractor Name*

Address, City, State, and Zip*

2. Location(s) where services will be performed by Contractor (Project Sites):

Name*

Address, City, State, and Zip*

Name(s) / Location(s) where services will be performed by Subcontractors (Project Sites):

Subcontractor Name	Address, City, State, and Zip

3. Location(s) where State data will be located by Contractor:

Address*	City, State, and Zip*

Location(s) where State data will be located by Subcontractor(s), if known at time of Bid deadline:

Subcontractor Name	Address, City, State, and Zip

Bidder also affirms, understands and agrees that the Contractor and its Subcontractors are under a duty to disclose to the State any change or shift in location of services performed by the Contractor or its Subcontractors before, during and after execution of any Contract with the State. Bidder agrees it shall so notify the State immediately of any such change or shift in location of its services. The State has the right to immediately terminate the contract, unless a duly signed waiver from the State has been attained by the Contractor to perform the services outside the United States.

On behalf of the Bidder, I acknowledge that I am duly authorized to execute this electronic Bid Form including this Bidder Affirmation and Disclosure form and have read and understand that this form is a part of any Contract that Bidder may enter into with the State and is incorporated therein.

EDGE Program Commitment to Participate

Option A

The Bidder commits to meet or exceed the advertised EDGE Participation Goal of the Contract award amount, calculated as a portion of the Base Bid plus all accepted Alternates, by using EDGE-certified Business(es).

The Bidder agrees that if selected for consideration of the Contract, it shall provide (if not provided with the Bidder's Bid) to the Contracting Authority, at the location required and within 3 business days after receiving notice from the Contracting Authority, its fully completed Bidder's Qualification Form, including an EDGE Affidavit form for each EDGE-certified Business proposed for use by the Bidder if awarded the Contract for this Project.

Option B (indicate percentage of participation below)

The Bidder declares that it does not meet the advertised EDGE Participation Goal percentage, but, if awarded the Contract for this Project, commits to provide the percentage of the Contract award amount, indicated above, calculated as a portion of the Base Bid plus all accepted Alternates, by using EDGE-certified Business(es).

The Bidder acknowledges it understands the requirement for it to provide and agrees to provide to the Contracting Authority, if selected for consideration of the Contract, within 3 business days after notice from the Contracting Authority, a detailed Demonstration of Good Faith form describing its efforts undertaken prior to submitting its Bid to meet the advertised EDGE Participation Goal percentage for the Contract for this Project.

The Bidder commits to provide to the Contracting Authority at the location required, and within 3 days after receiving notice from the Contracting Authority, its fully completed Bidder's Qualifications Form, including an EDGE Affidavit form for each EDGE-certified Business proposed for use by the Bidder if awarded the Contract for this Project.

Option C

The Bidder declares that the Bidder is an EDGE-certified Business and that if awarded this Contract, the EDGE Participation percentage will be 100 percent of the Contract award amount.

Select EDGE option above*	If option B selected, enter percentage
Choices…	

Certifications (State Prevailing Wages)

1. The Bidder has read and understands the proposed Contract Documents and agrees to comply with all requirements of the proposed Contract Documents, regardless of whether the Bidder has actual knowledge of the requirements and regardless of any statement or omission made by the Bidder, which might indicate a contrary intention.

2. The Bidder represents that the Bid is based upon the Basis of Design and Acceptable Components specified by the proposed Contract Documents.

3. The Bidder has visited the Site, become familiar with local conditions, and has correlated personal observations about the requirements of the proposed Contract Documents. The Bidder has no outstanding questions regarding the interpretation or clarification of the proposed Contract Documents.

4. The Bidder understands that the execution of the Project will require sequential, coordinated, and interrelated operations, which may involve interference, disruption, hindrance, or delay in the progress of the Bidder's Work. The Bidder agrees that the Contract Sum, as amended from time to time, shall cover all amounts due from the State resulting from interference, disruption, hindrance, or delay that is not caused by the State or its agents and employees. The Bidder agrees that any such interference, disruption, hindrance, or delay is within the contemplation of the Bidder and the State and that the Contractor's sole remedy from the State for any such interference, disruption, hindrance, or delay shall be an extension of time in accordance with the proposed Contract Documents.

5. During the performance of the Contract, the Bidder agrees to comply with Ohio Administrative Code ("OAC") Chapters 123:2-3 through 123:2-9 and agrees to incorporate the monthly reporting provisions of OAC Section 123:2-9-01 into all subcontracts on the Project, regardless of tier. The Bidder understands the State's Equal Opportunity Coordinator or the Contracting Authority may conduct pre-award and post-award compliance reviews to determine if the Bidder maintains nondiscriminatory employment practices, maintains an affirmative action program, and is exerting good faith efforts to accomplish the goals of the affirmative action program. For a full statement of the rules regarding Equal Employment Opportunity in the Construction Industry, see OAC Chapters 123:2-1 through 123:2-9.

6. The Bidder and each Person submitting a Bid on behalf of the Bidder certifies, and in the case of a Bid by a joint venture each member thereof certifies as to such member's entity, under penalty of perjury, that to the best of the undersigned's knowledge and belief: (a) the Base Bid, any Unit Prices, and any Alternate bid in the Bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition as to any matter relating to such Base Bid, Unit Prices or Alternate bid with any other Bidder; (b) unless otherwise required by law, the Base Bid, any Unit Prices and any Alternate bid in the Bid have not been knowingly disclosed by the Bidder and shall not knowingly be disclosed by the Bidder prior to the bid opening, directly or indirectly, to any other Bidder who would have any interest in the Base Bid, Unit Prices, or Alternate bid; (c) no attempt has been made or shall be made by the Bidder to induce any other Person to submit or not to submit a Bid for the purpose of restricting competition.

7. The Bidder shall execute the Agreement with the Contracting Authority, if a Contract is awarded on the basis of this Bid, and if the Bidder does not execute the Agreement for any reason, other than as authorized by law, the Bidder and the Bidder's Surety are liable to the State as provided in Article 5 of the Instructions to Bidders.

8. The Bidder certifies that the upon the award of a Contract, as the Contractor it shall make a good faith effort to ensure that all of the Contractor's employees, while working on the Site, shall not purchase, transfer, use, or possess illegal drugs or alcohol or abuse prescription drugs in any way.

9. The Bidder acknowledges that it read all of the Instructions to Bidders, and in particular, Section 2.10 - Submittals With Bid Form, and by submitting its Bid certifies that it has read the Instructions to Bidders and it understands and agrees to the terms and conditions stated in them.

10. The Bidder agrees to furnish any information requested by the Contracting Authority or the Architect/Engineer to evaluate the responsibility of the Bidder.

11. The Bidder agrees to furnish the submittals required by Section 6.1 of the Instructions to Bidders for execution of the Agreement within 10 days of the date of the Notice of Intent to Award.

12. When the Bidder is a corporation, partnership or sole proprietorship, an officer, partner or principal of the Bidder, as applicable, shall enter the legal name of the Bidder and the name of the officer, partner or principal of the Bidder (in lieu of signing the Bid Form) in the data fields provided.

13. When the Bidder is a joint venture, an officer, partner or principal, as applicable, of each member of the joint venture shall enter the legal name of the applicable member and the name of the officer, partner or principal (in lieu of signing the Bid Form) in the data fields provided.

14. The Bidder understands that the Contract is subject to all the provisions, duties, obligations, remedies and penalties of Ohio Revised Code Chapter 4115 and that the Bidder shall pay any wage increase in the locality during the term of the Contract.

15. The Bidder represents that the individual that is submitting and digitally signing the electronic Bid is legally authorized to do so.

16. Bidder acknowledges that by the act of submitting an electronic Bid that it is digitally signing the actual Bid, which shall serve as the Bidder's authorization for the further consideration and activity in the bidding and contract process.

The Bidder hereby acknowledges that the above representations in this Bid are material and not mere recitals.*

The Bidder hereby acknowledges that the above representations in this Bid are material and not mere recitals.*

Procurement Forms

Document 00 43 13 - Bid Security Form
→ Upload below and provide original document within 3 days

Document 00 45 13 - Bidder's Qualifications
→ Upload below or provide within 3 days of request

Document 00 45 39 - EDGE Affidavit
→ Upload below or provide within 3 days of request

3 Attachments

Instructions for Providing Bid Submittals

Submission of Electronic Facsimile of Bid Guaranty with Electronic Bid

The Bidder SHALL UPLOAD and ATTACH TO ITS BID an ELECTRONIC FACSIMILE (scanned PDF document) OF ITS BID GUARANTY, payable to the Contracting Authority, in the form of either: (1) the signed and sealed Document 00 43 13 - “Bid Security Form” contained in the Contract Documents (and provided for the Bidder's convenience in the block above) for the amount of the Base Bid plus all additive Alternates; or (2) a certified check, cashier's check, or letter of credit, for 10 percent of the Base Bid, plus all additive Alternates – a letter of credit shall expressly provide that it is revocable only by the Contracting Authority. Refer to Sections 2.10.1.1 and 5.1 of Document 00 21 13 - "Instructions to Bidders."

Submission of Original Bid Guaranty

In addition to the Electronic Facsimile above, the Bidder SHALL DELIVER ITS ORIGINAL UNALTERED BID GUARANTY to the Project Coordinator at the address identified below WITHIN 3 BUSINESS DAYS AFTER THE BID DEADLINE as provided in Ohio Administrative Code Section 153:1-8-01(H). THIS REQUIREMENT APPLIES TO ALL BIDDERS. Refer to Section 2.10.1.2 of the Instructions to Bidders.

Sylvia Slivo
Project Coordinator
Ohio Facility Construction Commission
30 West Spring St
Columbus, Ohio 43215

Non-responsive Bid for Failure to Submit Bid Guaranty

Each Bidder MUST SUBMIT BOTH THE ELECTRONIC FACSIMILE AND THE ORIGINAL UNALTERED BID GUARANTY as described above. The Contracting Authority SHALL REJECT A BID AS NON-RESPONSIVE if the Bidder fails to submit BOTH elements of the Bid Guaranty. The checkboxes below are to identify that you have uploaded the other form of Bid Guaranty. DO NOT CHECK ALL BOXES. Refer to Section 2.10.1 of the Instructions to Bidders.

Submission of Bidder's Qualifications and EDGE Affidavit

The Bidder is encouraged to submit background information with its Bid using Document 00 45 13 - "Bidder’s Qualifications" and Document 00 45 39 - "EDGE Affidavit" with the EDGE-certified Business(es) the Bidder proposes to use on the Project (forms provided for the Bidder's convenience in the block above). If the Bidder does not submit the Bidder's Qualifications form and/or the EDGE Affidavit form and related information attached to the electronic Bid Form, the Bidder shall provide it within 3 days of request. Refer to Sections 2.10.3 and 3.5.4 of the Instructions to Bidders.

Required Bid Guaranty Upload

Name	File*
Document 00 43 13 - Bid Security Form → Upload a scan of the fully executed Bid Security Form AND submit the original document to the Contracting Authority within 3 days of the bid deadline	Select file... no file selected I am NOT enclosing this document because the omission terms have been met. (Bidder submitted a Cashier's check below)
Power of Attorney → Upload a scan of the fully executed Power of Attorney AND submit the original document to the Contracting Authority within 3 days of the bid deadline	Select file... no file selected I am NOT enclosing this document because the omission terms have been met. (Bidder submitted a Cashier's check below OR included with the Bid Security Form above)
Cashier's Check for 10% of the Bid → Upload a scan of the Cashier's Check AND submit the original check to the Contracting Authority within 3 days of the bid deadline	Select file... no file selected I am NOT enclosing this document because the omission terms have been met. (Bidder submitted the Bid Security Form AND Power of Attorney above)
3 Required Documents	

Bidder's Qualifications and EDGE Affidavit Upload

Name	File*
Document 00 45 13 - Bidder's Qualifications → Upload fully completed form and attachments	Select file... no file selected I am NOT enclosing this document because the omission terms have been met. (Must be submitted to the Contracting Authority within 3 days of request)
Document 00 45 39 - EDGE Affidavit → Upload a completed form for each EDGE business	Select file... no file selected I am NOT enclosing this document because the omission terms have been met. (Must be submitted to the Contracting Authority within 3 days of request)
2 Required Documents	

Bidder Signatory Information

Bidder Signatory

Name of Bidder's Authorized Signatory:*

Title of Authorized Signatory:*

All Bidders complete all information in this form. Duplicate and complete the block below for each Joint Venturer:

Bidder Information

Business Name:*

Business Mailing Address, City, State, Zip:*

Telephone Number:*

Facsimile Number:

Email Address:*

Federal Tax ID Number:*	**State of Incorporation (if applicable):**
Contact person for Contract processing:*	**Date enrolled in an OBWC-approved DFSP (month/date/year):**
President or Chief Executive Officer's Name:*	**President or Chief Executive Officer's Title:***

END OF DOCUMENT

Document 00 52 00 - Agreement Form
State of Ohio Standard Requirements for Public Facility Construction

This Agreement is made as of the date set forth below between the State of Ohio, acting by and through the Contracting Authority, and the Contractor in connection with the Project.

Project Number:	**DRC-21F020**
Project Name:	**Population Management NLEF Phase 4**
Site Address:	Ross Correctional Institution (RCI), 16149 St Rt 104, Chillicothe, Ohio 45601 Ross County
Owner:	**Ohio Department of Rehabilitation and Corrections (ODRC)**
Owner's Representative:	Annette M. Chambers-Smith, Director
Address:	4545 Fisher Rd Ste D Columbus, Ohio 43228
Contracting Authority:	**Ohio Facilities Construction Commission**
Project Manager:	Cheryl J. Lyman, Executive Director
Address:	30 West Spring Street, 4th Floor Columbus, Ohio 43215
Contractor:	**«insert name»**
Contractor's Principal Contact:	«insert name»
Address:	«insert street address» «insert city, state zip code»
Architect/Engineer ("A/E"):	**Schorr Architects, Inc.**
A/E's Principal Contact:	Dan Miller
Address:	230 Bradenton Avenue Dublin, Ohio 43017

ARTICLE 1 - SCOPE OF WORK; EDGE COMMITMENT

1.1 The Contractor shall perform and provide all of the Work described in the Contract.

1.2 The project delivery method for this Project shall be «insert project delivery method».

1.3 The Contractor shall contract with EDGE-certified Business(es) for not less than «insert Contractor's EDGE commitment» percent of the Contract Sum.

ARTICLE 2 - COMPENSATION

2.1 The Owner shall pay the Contractor the Contract Sum for the Contractor's proper, timely, and complete performance of the Contract. The Contract Sum is **$«insert amount»**, subject to Modifications as provided in the Contract Documents. The Contract Sum is comprised of the following:

2.1.1 Base Bid: .....$«Insert Base Bid Amount»

2.1.2 Alternate «Insert Alternates Awarded»: .....$«Insert Alternate Amount»

2.1.3 Alternate «Insert Alternates Awarded»: .....$«Insert Alternate Amount»

2.1.4 Alternate «Insert Alternates Awarded»: .....$«Insert Alternate Amount»

2.1.5 Alternate «Insert Alternates Awarded»: .....$«Insert Alternate Amount»

2.1.6 Alternate «Insert Alternates Awarded»: .....$«Insert Alternate Amount»

2.1.7 Alternate «Insert Alternates Awarded»: .....$«Insert Alternate Amount»

ARTICLE 3 - CONTRACT TIMES

3.1 The Contract Times are the periods established in the following table for the achievement of the associated Milestones:

Construction Stage Milestone(s) to which Liquidated Damages apply	**Contract Time**	**Projected Date** (as of the date of this Agreement)
Milestone M1: Substantial Completion of all Work	254 days (120 days for Alt 6)	«insert date»
Milestone M2: Contract Completion of the Entire Contract	315 days (181 days for Alt 6)	«insert date»

3.1.1 The projected dates listed under "Projected Date (as of the date of this Agreement)" are provided only for convenient reference during consideration of the Agreement. The durations listed under "Contract Time" define the Contract Times and take precedence over the projected dates.

ARTICLE 4 - KEY PERSONNEL

4.1 The Contractor's key personnel for the Project are:

4.1.1 «insert name», Project Manager;

4.1.2 «insert name», Lead Scheduling Engineer;

4.1.3 «insert name», General Superintendent.

4.2 The Contractor's key personnel are authorized to act on the Contractor's behalf with respect to the Project and all matters concerning the Project.

ARTICLE 5 - GENERAL PROVISIONS

5.1 Effectiveness.

5.1.1 It is expressly understood by the Contractor that none of the rights, duties, and obligations described in the Contract Documents shall be valid and enforceable unless the Director of the Office of Budget and Management first certifies that there is a balance in the Owner's appropriation not already encumbered to pay existing obligations and until all relevant statutory provisions of the Ohio Revised Code, including ORC Section 126.07, have been complied with, and until such time as all necessary funds are available or encumbered and, when required, such expenditure of such funds is approved by the State Controlling Board, or other applicable approving body.

5.1.2 In addition, if federal funds are to be used to pay fees and expenses under this Agreement, none of the rights, duties, and obligations contained in this Agreement shall be binding on any party until the Owner gives the Contractor written notice that such funds are available from the Owner's funding source.

5.1.3 Subject to **Section 5.1.1**, the Contract shall become binding and effective upon execution by the Contracting Authority, Owner, Contractor, and Ohio Attorney General.

5.1.3.1 If the Contractor is a joint venture, **(1)** each individual joint venturer shall **(a)** sign the Agreement in its own name and **(b)** be a party to the Contract, and **(2)** the Contract and the Performance and Payment Bond shall be binding on and apply to all joint venturers jointly and severally.

5.1.3.2 If the Contractor is a limited liability company, which the Contracting Authority reasonably believes to be a special purpose or similar entity, the Contracting Authority may in its discretion require the limited liability company and each member of the limited liability company to **(1)** sign the Agreement in its own name and **(2)** be a party to the Contract. In that case, the Contract and the Performance and Payment Bond shall be binding on and apply to the limited liability company and to all of its members jointly and severally.

5.1.4 This Agreement may be executed in several counterparts, each of which shall constitute a complete original Agreement, which may be introduced in evidence or used for any other purpose without production of any other counterparts.

5.2 Representations.

5.2.1 The Contractor represents and warrants that it is not subject to an unresolved finding for recovery under ORC Section 9.24. If this representation and warranty is found to be false, the Contract is void, and the Contractor shall immediately repay to the Owner any funds paid under this Contract.

5.2.2 The Contractor hereby certifies that neither the Contractor nor any of the Contractor's partners, officers, directors, shareholders nor the spouses of any such person have made contributions in excess of the limitations specified in ORC Section 3517.13.

5.2.3 The Contractor, by signature on this Agreement, certifies that it is currently in compliance with, and will continue to adhere to, the requirements of Ohio ethics laws and conflict of interest laws and will take no action inconsistent with those laws.

5.2.4 The Contractor affirms to have read and understands Executive Order 2019-12D and shall abide by those requirements in the performance of this Contract. Notwithstanding any other terms of this Contract, the State reserves the right to recover any funds paid for services the Contractor performs outside of the United States for which it did not receive a waiver. The State does not waive any other rights and remedies provided the State in this Contract.

5.2.5 The Contractor affirms to have read and understands Executive Order 2022-02D regarding the prohibition of purchases from or investment in a Russian institution or company and shall abide by those requirements in the performance of this Contract. Notwithstanding any other terms of this Contract, the State reserves the right to recover any funds paid to the Contractor for purchases or investments in a Russian institution or company in violation of this paragraph. The provisions of this paragraph will expire when the applicable Executive Order is no longer effective.

5.2.6 During the performance of this Contract, if the Contractor changes the location(s) disclosed on the **Affirmation and Disclosure Form** (a page in its **Bid Form**), the Contractor must complete and submit a revised **Affirmation and Disclosure Form**.

5.2.7 Pursuant to ORC Section 9.76(B), the Contractor warrants that it is not boycotting any jurisdiction with whom the State of Ohio can enjoy open trade, including Israel, and will not do so during the term of this Contract.

ARTICLE 6 - Enumeration of Documents

6.1 The Contract Documents constitute the substance of the Contract, and include this Agreement, Drawings, Specifications, Addenda if any, **Contracting Definitions**, **General Conditions**, Supplementary Conditions if any, **Bid Form**, **Wage Rate Requirements**, **Bid Guaranty and Contract Bond** or **Performance and Payment Bond**, and Change Orders if any.

SIGNATURES

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date set forth below:

«INSERT CONTRACTOR'S NAME»	**STATE OF OHIO**
_____	_____
Signature	*Signature*
_____	_____
Printed Name	*Printed Name*
_____	_____
Title	*Title*
OWNER'S CONCURRENCE by «insert Owner's name»	**OHIO ATTORNEY GENERAL** Approval as to Form
_____	_____
Signature	*Signature*

Printed Name

Title

Printed Name

Title

Date

If the Contractor is a corporation, partnership, sole proprietorship, or limited liability company, use the table above. If the Contractor is a joint venture or special purpose entity, use the table below. Then delete the unused table and this note.

«INSERT CONTRACTOR'S NAME»
by «insert Joint Venturer/Member's name»

Signature

Printed Name

Title

by «insert Joint Venturer/Member's name»

Signature

Printed Name

Title

by «insert Joint Venturer/Member's name»

Signature

Printed Name

Title

STATE OF OHIO
by «insert Contracting Authority's name»

Signature

Printed Name

Title

OWNER'S CONCURRENCE
by «insert Owner's name»

Signature

Printed Name

Title

OHIO ATTORNEY GENERAL
Approval as to Form

Signature

Printed Name

Title

Date

END OF DOCUMENT

Document 00 52 14 - State of Ohio Subcontract Form
State of Ohio Standard Requirements for Public Facility Construction

This Agreement is made as of the date set forth below between the Contractor and the Subcontractor in connection with the Project.

Project Number:	**DRC-21F020**
Project Name:	**Population Management NLEF Phase 4**
Site Address:	Ross Correctional Institution (RCI), 16149 State Rt 104, Chillicothe, Ohio 45601
Contractor:	**«insert name»**
Contractor's Principal Contact:	«insert name»
Address:	«insert street address» «insert city, state zip code»
Subcontractor:	**«insert name»**
Subcontractor's Principal Contact:	«insert name»
Address:	«insert street address» «insert city, state zip code»
Public Authority:	**Ohio Facilities Construction Commission**
Public Authority Contact:	Cheryl J. Lyman, Executive Director
Address:	30 West Spring Street, 4th Floor Columbus, Ohio 43215

ARTICLE 1 - NATURE OF SUBCONTRACT

1.1 The Subcontractor shall perform the entire Subcontract Work as specified in Exhibit «N» and described in the Contract Documents for the Project.

ARTICLE 2 - COMPENSATION

2.1 The Contractor agrees to pay for the performance of this Subcontract, subject to additions and deductions as provided in the Contract Documents, the Subcontract Sum of «insert Subcontract Sum», comprised of the following:

«insert Subcontract Sum component» ..... $«insert amount»

«insert Subcontract Sum component» ..... $«insert amount»

«insert Subcontract Sum component» ..... $«insert amount»

«insert Subcontract Sum component» ..... $«insert amount»

ARTICLE 3 - TIME OF PERFORMANCE

3.1 Time is of the essence. The Subcontractor shall diligently prosecute and complete all Subcontract Work in accordance with the construction progress schedule agreed between the parties.

ARTICLE 4 - CONTRACT DOCUMENTS

4.1 To the extent that the contract between the Public Authority and the Contractor applies to the Subcontract Work:

4.1.1 The Contractor and the Subcontractor agree to be mutually bound by the terms of the Contract Documents;

4.1.2 The Contractor assumes toward the Subcontractor the rights, remedies, obligations, and responsibilities that the Public Authority has and assumes toward the Contractor;

4.1.3 The Subcontractor assumes toward the Contractor the rights, remedies, obligations, and responsibilities that the Contractor assumes toward the Public Authority; and

4.1.4 The Subcontractor agrees to perform its portion of the Work in accordance with the Contract Documents.

4.2 The Subcontract and any modifications, amendments, or alterations thereto shall be governed, construed, and enforced by and under the laws of the State of Ohio.

4.3 If any term or provision of the Subcontract, or the application thereof to any Person or circumstance, is finally determined, to be invalid or unenforceable by a court of competent jurisdiction, the remainder of the Subcontract or the application of such term or provision to other Persons or circumstances, shall not be affected thereby, and each term and provision of the Subcontract shall be valid and enforced to the fullest extent permitted by law.

4.4 The Subcontract shall be binding on the Contractor and Subcontractor, their successors and assigns, in respect to all respective covenants and obligations contained in the Contract Documents, but the Subcontractor may not assign the Subcontract without the prior written consent of the Contractor and the Public Authority.

ARTICLE 5 - EFFECTIVENESS

5.1 The Subcontract shall become binding and effective upon execution by the Contractor.

5.2 This Subcontract has been executed in several counterparts, each of which shall constitute a complete original Subcontract, which may be introduced in evidence or used for any other purpose without production of any other counterparts.

5.3 Any signatory may deliver a copy of its counterpart signature page to this Subcontract via fax or e-mail. Each signatory shall be entitled to rely upon a signature of any other signatory delivered in such a manner as if such signature were an original.

ARTICLE 6 - REPRESENTATIONS

6.1 Contingent Assignment. The Contractor's contingent assignment of this Subcontract to the Public Authority, as provided in the Contract, is effective after termination of the Contractor by the Public Authority and the Public Authority's acceptance of the assignment in writing to the Subcontractor. The Subcontractor consents to the assignment and shall be bound at the same price and terms as in the Subcontract to the Public Authority. Unless the Public Authority takes assignment of the Subcontract, the Subcontractor will not have any contractual rights against the Public Authority.

6.2 Intended Third-Party Beneficiary. The Public Authority is an intended third party beneficiary of the Subcontract, entitled to enforce any rights thereunder for its benefit.

6.3 Insurance. The Subcontractor shall maintain insurance in accordance with the Contract Documents. Exhibit «N» sets forth the minimum limits of liability for the insurance required in the Contract Documents.

6.4 Right to Audit. The Subcontractor agrees that the Public Authority or any agents designated by the Public Authority have access to and the right to audit and the right to copy at the Public Authority's cost all of the Subcontractor's books, records, contracts, correspondence, instructions, drawings, receipts, vouchers, purchase orders, and memoranda relating to the Work for a period of not less than 3 years following completion of the Work consistent with Ohio Revised Code ("ORC") Section 149.43 with regard to the Public Authority's obligation to maintain confidentiality of trade secrets.

6.5 Indemnity. To the fullest extent permitted by law, the Subcontractor shall indemnify, defend, and hold harmless the Public Authority, the Contractor, their consultants and employees from all claims and expenses for bodily injury and property damage other than to the Work itself that may arise from the performance of the Subcontract Work, including reasonable attorneys' fees, costs and expenses, but only to the extent caused by the negligent acts or omissions of the Subcontractor or a person or entity for whom the Subcontractor may be liable. This Subcontract does not require a Subcontractor to waive its immunity under the Workers Compensation laws of Ohio from claims brought against the Subcontractor by the Subcontractor's employees.

6.6 Prompt Pay. The Contractor shall at a minimum make payments to the Subcontractor in accordance with Applicable Law, including ORC Section 4113.61. Progress payments to the Subcontractor for satisfactory performance of Subcontract Work shall be made no later than 10 days after receipt by the Contractor of payment from the Public Authority for Subcontract Work.

6.7 Retainage. Subcontractor retainage shall be at a rate equal to the percentage retained from the Contractor's payment by the Public Authority for the Subcontract Work, unless a lesser percentage is otherwise specified.

6.7.1 Labor Payments.

6.7.1.1 Partial payments to the Subcontractor for labor performed shall be made at the rate of 92 percent of the amount invoiced through the Subcontractor's request for payment that shows the Work of the Subcontractor is 50 percent complete.

6.7.1.2 After the Work of the Subcontractor is 50 percent complete, as evidenced by payments of at least 50 percent of the total amount due under the Subcontract, no additional funds shall be retained from payments for labor.

6.7.2 Material Payments.

6.7.2.1 The Contractor shall pay the Subcontractor at the rate of 100 percent of the scheduled value for materials incorporated into the Project.

6.7.2.2 The Contractor shall pay the Subcontractor at the rate of 92 percent of the invoice cost, not to exceed the scheduled value, for materials delivered to the Site, or other off-site storage location approved by the A/E, provided the Subcontractor provides the following information with its request for payment:

- **.1** a list of the fabricated materials consigned to the Project, giving the place of storage, together with copies of invoices, in order to verify quantity and cost; and
- **.2** a certification of materials stored off-site, prepared by the Subcontractor and signed by the A/E to evidence that the materials are in conformity with the Specifications and have been tagged with the Project name and number for delivery to the Project. The Subcontractor shall reimburse the A/E, through the Contractor, for all costs incurred to visit a storage site, other than the areas adjacent to the Project.
- **.3** The Contractor shall pay the balance of the scheduled value when the materials are incorporated into and become a part of the Project.

6.8 Warranty. The Subcontractor fully warrants, for the benefit of the Public Authority, that all materials and equipment shall be new unless otherwise specified, of good quality, in conformance with the Contract Documents and free from defective workmanship or materials.

6.9 Non-Waiver of Lien Rights or Payment Bond Rights. This Subcontract shall not prohibit a Subcontractor from exercising its rights under ORC Chapter 1311 or under any Contractor-provided payment bond.

6.10 Non-Discrimination. The Subcontractor agrees to fully comply with Applicable Law regarding equal opportunity, including ORC Section 153.59 and, to the extent applicable, all Executive Orders issued by the Governor of the state of Ohio.

6.11 Dispute Resolution. The supplemental conditions to this Subcontract shall provide for a dispute resolution process comparable to the Contract's dispute resolution process in terms of timing, notice, substantiation, and informal dispute resolution efforts. The dispute resolution process provided in the supplemental conditions shall result in prompt access to the ultimate dispute resolution mechanism selected by the parties.

6.12 In the event that any supplemental conditions or other Subcontract terms conflict with the **State of Ohio Subcontract Form**, the **State of Ohio Subcontract Form** takes precedence and this Subcontract shall be read and enforced to include the provisions of the **State of Ohio Subcontract Form**.

6.13 The following exhibits are attached to and are a part of this Subcontract:

6.13.1 Exhibit A:

6.13.2 Exhibit B:

6.13.3 Exhibit C:

6.13.4 Exhibit D:

SIGNATURES

IN WITNESS WHEREOF, the parties have executed this Subcontract Form.

«INSERT SUBCONTRACTOR'S NAME»	«INSERT CONTRACTOR'S NAME»
Signature	*Signature*
Printed Name	*Printed Name*
Title	*Title*
	Date

END OF DOCUMENT

SECTION 011000 – SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.

B. Related Requirements:
1. Section 00 73 10 Security Guidelines for Contractors.
2. Section 28 70 90 “Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System”
3. Section 32 31 13 “Security Chain Link Fencing”

1.3 PROJECT INFORMATION

A. Project Identification: DRC-21F020, Population Management NLEF Phase 4

B. Project Location: Ross Correctional Institution (RCI), 16149 St Rt 10, Ross County, Chillicothe, Ohio 45601

C. Contracting Authority: Ohio Facilities Construction Commission, 30 West Spring St., 4th Floor, Columbus, Ohio 43215, 614/644-7160.

1. Project Manager: Michael Covault, 614/579-6496(cell), michael.covault@ofcc.ohio.gov

D. Owner: Ohio Department of Rehabilitation and Corrections, 4545 Fisher Rd, Columbus, Ohio 43228

1. Owner's Representative: Patrick Love, CAMS Project Manager, Ohio Department of Rehabilitation and Corrections, 4545 Fisher Rd, Columbus, Ohio 43228, 614/282-1915 larry.e.parker@odrc.state.oh.us

E. Architect: Schorr Architects, Inc., Tony Schorr, AIA, 230 Bradenton Ave., Dublin, Ohio 43017, 614/798-2096, tschorr@schorrarchitects.com.

1. Project Manager: Schorr Architects, Inc., Dan Miller, 230 Bradenton Ave., Dublin, Ohio 43017, 614/798-2096, dmiller@schorrarchitects.com.

F. Type of Contract:

1. Project will be constructed under a General Contracting method (also known as a Design, Bid, Build delivery method or Single Prime).

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The project includes new Chain Link Fence and Non-Lethal Electric Fence (NLEF) and associated electrical, data, and systems integration work at the Ross Correctional Institution (RCI) in Chillicothe, Ohio. The new NLEF system is to be provided by Gallagher as sole sourced in Section 287090 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System" of these specifications. Note: all work described below is also shown on the contract document drawings in graphic form and/or otherwise further described in the specific specification section herein. **Note: RCI has some Owner provided fencing and electrical conduit duct bank materials that they wish to utilize on this project. The material list is included in Paragraph 1.a.ix Materials by Owner below and shipping lists attached to this Project Manual as Appendix C. The contractor is to utilize these items as part of the project and provide bidding accordingly. The successful bidder will be required to take inventory of existing material with A|E present to provide a final quantity review of the Owner provided material. The Owner and A|E understand that these items will not carry any material warranties. One-year workmanship warranties will remain in place for installing the material.**

Rebid Note: The Owner has allowed work to be provided at the full perimeter of the institution's perimeter fence. Work is not limited to one side of the institution or the other. The work schedule, however, will still be limited by the amount of Officer Escorts provided to the contractor as noted herein. (Addendum 2)

1. **Ross Correctional Institution (RCI):** Purpose: To provide a third level of perimeter fence protection of approximately 6800 linear feet between the existing double perimeter security fence.

a. Existing conditions:

i. The General Contractor shall video document existing conditions ahead of performing any work onsite, including but not exclusive to adjacent concrete areas, fencing, buildings, perimeter roads, area of work in each building, etc.

ii. The existing double perimeter fence consists of approximately 6,800 linear feet of double perimeter fence with 12' tall inner perimeter fence, and 14' tall outer perimeter fence. The fences are separated by approximately 20'-6".

iii. The existing outer perimeter fence has several rows of barbed tape in the area between the fences also known as the No Man's Land (NML) and on the fence. The lower two rows of barbed tape to the inside of the NML will need to be removed to provide space for the new construction as follows:
   a. Both rows are to be removed and handed over to RCI.
   b. There are no restrictions on when this razor ribbon wire can be removed. It can be removed when the contractor feels necessary within their construction schedule. (Addendum 2)

iv. The existing inner perimeter fence has an existing shaker detection system on the fence that is to remain. This shaker detection system connects into the facility's Control Room in building C and is programmed into 22 fence zones for ease of detection purposes and notification to fence security breach location. These zones are provided on the Shaker system computer program and as zone signs on the existing exterior side of the exterior

perimeter fence readable from the security perimeter road. Scope of Shaker system work is as follows:

a. The new NLEF system is a similar perimeter fence detection system to the existing fence Shaker system and will have NLEF zones like the Shaker system zones. The intent is to integrate the two systems into the same fence zones. The NLEF system will govern the zone locations due to maximum length requirements. Therefore, the Shaker system will need reprogrammed to match the new NLEF system zones.
   i. Reprogram the Shaker system after the NLEF system is operational. Review schedule with A|E and Owner during the construction scheduling phase.
b. Also, existing Shaker system zone signs will need to be removed and new zone larger signs will be required.
   i. Remove Shaker zone signs after the NLEF zone signs have been installed and after the Shaker system has been reprogrammed.
c. Each new NLEF fence zone is approximately 300’ to 400’ in length.

v. The NML is separated into north and south halves by the Entry building on the east side and the vehicular sally port (VSP) on the west side.
   a. Access to the NML is provided at the VSP through a 14’ wide chain link fence swing gate (double 7’ wide gates) at the north and south sides of the VSP.
   b. These gates will need to be removed and reconfigured into smaller separate gates as a part of this project, however, are the only means of access to the NML for this scope of work.
      i. Removal and reconfiguration of these gates would assume to be later in the contractor’s schedule to provide the larger access into the NML for the longest amount of time.
   c. There are two other accesses to the NML at each side of the Entry building that are personnel gates in a sally port configuration that will not be used for this construction.

vi. The existing distance between the two fences is approximately 20’-6”. This 20’-6” wide NML consists of 6” deep compacted aggregate over a weed barrier fabric. Where the new fence will be installed (reference the drawings) it is assumed that this aggregate and associated weed barrier will need to be removed to provide for the fence post and associated foundation installation. Contract documents indicate about 6’-8” of aggregate and weed barrier being removed to achieve the chain link fence installation and then new weed fabric installed and reinstall the aggregate. (Addendum 2)
   a. The NML aggregate and associated weed fabric will need moved/removed as needed (6’ to 6’-8” wide swath as noted above) to install the new chain link fence foundations, posts, framework, and fabric.
   b. The intent of the NML aggregate removal and reinstallation is more of a known need for means and methods and for security requirements. Reference specifications section 024000 “Selective Demolition” 1.2 (A) for additional information. (Addendum 2)

   c. Means and methods note: Previous projects saw this aggregate being windrowed back and remaining in the NML however, this creates a security risk with a mound of aggregate in each zone creating a blind spot if piled over 3” high. This method is not approved due to the security risk. (Addendum 2)

vii. A utility locator was provided in the design phase of this project to locate existing underground utilities in the areas of work for this project. See Civil sheets in the contract document set for documentation of that utility locate effort.
   a. New construction will require the contractor to provide a private utility location service at the time of construction as well as hydrovac operations to locate the utilities in the path of new construction to ensure against utility disruptions.

i. Hydrovac scope can be limited to specific area as shown on the set of drawings and where main utility lines are located and/or a highly concentrated amount of underground lines are located.

viii. Fence detection system controls:
a. Existing shaker system controls are in the Control Room in building C on the east side of the facility just west of the Entry building.
b. The new NLEF system will be controlled from this room as well with electrical and data terminations in or close to this room in Building C.

ix. **Materials by Owner** to be used for this project with estimated quantities are as follows:
a. Division 26 Electric: Electrical Duct Bank Conduit and Pull Boxes.

	Item	Manufacturer	Qnty
i.	4" PVC Conduit:	Atkore / Allied Tube Steel	15,000 lf
ii.	2'x2' Pull Boxes	Old Castle	9

iii. Items are located off site at MaCI and will require Contractor to ship to RCI:
1. Madison Correctional Institution (MaCI), 1851 St Rt 56, London, Ohio 43140.
2. MaCI main phone: 740/852-9777
3. Contact: Brian Dille, Facility Construction Manager
a. Mobile: 740/505-2869
b. Email: brian.dille@odrc.state.oh.us
4. See Appendix Item C for full list of items at MaCI and RCI and pictures of items at MaCI. Conduits at MaCI are bundled in 20' lengths. (Addendum 2)

b. Division 32: Chain Link Fence material:
i. 4800 lineal feet of chain link fence material for the 14' tall between the fence detail shown on 1/SD3.1 and 8 fence enclosures per details 2, 3, and 4 sheet SD3.1 of the contract document drawings.
ii. **RCI:** Chain link fence material is mostly stored at RCI's laydown area as located on the contract document drawings. **Reference Appendix Item C2 for quantities shipped to RCI.**
iii. **MaCI:** Some 6", 4" and 1.625" fence posts and rails are located at MaCI and will require this contractor to ship the items from MaCI to RCI (see address and contact information above). **Reference Appendix Item C1 for quantity of items reviewed onsite at MaCI by the A|E.**
c. **RCI:** Fence post footing blocks. **Reference Appendix Item C2 for quantities shipped to RCI.**
d. ~~**MaCI:** weed inhibitor fabric. **Reference Appendix Item C1 for quantity of items reviewed onsite at MaCI by the A|E.** **Assume all new weed inhibitor fabric is required.**~~(Addendum 2)

e. Note: These items were provided from the Madison Correctional Institute's (MaCI) NLEF project from 2021-2022. That project was canceled in mid-2022. MaCI's fence is 4800 linear feet in length. The A|E took a quick observational review of the materials to confirm base quantities were provided from the lists shown in Appendix C1.

b. Chain Link Fence scope: (Section 323113 "Security Chain Link Fencing")

i. Provide new 14' tall chain link fence between the existing double perimeter fence in, what ODRC refers to as, the no-man's land (NML).

a. New fence posts to be 4" diameter line post and 6-5/8" diameter strain posts, gate posts, and relief posts set in appropriate foundations as noted in the contract document drawings. Provide associated chain link gates and gate posts as noted in the contract documents.
b. Fence to have 7' (Addendum 2) of chain link fence fabric buried 6" +/- into the existing NML aggregate.
c. Chain link fence to have a bottom rail, also buried 6" +/- in the NML aggregate, and a mid-rail to support the chain link fence fabric at the top of the 7' (Addendum 2) fabric and an intermediate rail to support the fence fabric in the middle of the fabric height. There will be no top rail on the fence except at the strain post panel locations for specific structural bracing at those designated locations.
d. Strain panels to be provided to support the new NLEF system wire array tensioning locations and consist of a strain post, relief post, top, mid, and bottom rails with diagonal cross bracing between each rail (note the diagonal bracing will support the fence fabric as needed in these panels and thus a horizontal intermediate rail is not required in these panels).
    i. The strain panels are specifically located on the contract document drawing plans for bidding purposes; however, locations are to be verified on site with Gallagher, A|E, and Chain link fence installer, and Certified Gallagher NLEF installer to verify final zone locations.
    ii. The strain posts and associated bracing are detailed on the structural drawings and will require welded connections to meet proper structural requirements for the associated tension loads and wind loads imposed in consideration of the NLEF system attachment to this new fence.
    iii. The strain post panel at either side of the Entry Building is a specific panel and also specifically detailed on the contract documents.

ii. Entry building security fencing:

a. The double perimeter fence dies into the one-story Entry building (Building A) at the east side of the facility. The perimeter fence extends across the Entry building's exterior wall at the secure side by means of posts attached to the upper third of the exterior wall extending approximately 20' above grade (6'-9" +/- above the building) and hold several rows of barbed tape. This construction also extends to the north and south sides of the entry building at the NML.
b. The posts and barbed tape are to be removed, and new posts installed closer to the face of the building, in the same locations.
    i. Razor Ribbon Fabric is to be installed atop these posts in lieu of chain link fence fabric.
c. The new NLEF system components will attach to these posts to allow a continuous installation of the NELF system at the full exterior perimeter.
d. The existing conditions has shorter posts to the east side of the Entry building and transitions approx. where the new NLEF fence will intersect the Entry building. The intent is to remove all posts and RRW and install new posts and razoe ribbon fabric. The shorter posts will be on the east/outer side of the NLEF and will not receive the NLEF. See the Architectural drawings sheets SD2.2 series for clarification.

iii. Vehicular Sally Port (VSP):

a. The double perimeter fence also dies into the existing VSP at the west side of the facility. The VSP consists of a 14' tall chain link fence construction with vertical and horizontal barbed tape, reference contract document drawings for additional detailing.
b. The new NLEF system will die into the VSP at the 14' wide gates (two 7' wide x 14' tall gates) noted earlier. Those gates and transoms (at each side north and south) of the VSP will need to be removed leaving the gate posts. A chain link

fence panel approximately 24”-36” wide and 14’ tall is to be installed to allow the new fence to terminate. New fence gate panels will be installed at each side of the new middle fence effectively separating the NML into two NML’s with new shorter gates being installed, one gate accessing the outer NML and the second gate accessing the inner NML. The gates will be of differing widths, reference detail 1/SD3.2.

c. To support the perimeter continuity of the NLEF system installation, the new NLEF will need to attach to the secure side of the VSP fence. This will necessitate removal of the existing vertical and horizontal barbed tape where the new NLEF will be installed. Reference the contract document drawings for additional detailing.
d. This will also necessitate the existing VSP fence to be structurally enhanced with strain post bracing welded to the existing posts in locations as noted on the contract document drawings.
e. The inner VSP personnel and vehicular gates are to have new galvanized rectangular welded wire fabric installed atop these gates to increase gate security. This is designated as anti-climb fabric, however, differs from the anti-climb fabric on the VSP’s upper portion of fence.
f. The existing anti-climb fence fabric at the upper portion of the existing VSP fence is to remain and is of 3/8” diamond pattern using 9 ga material.
g. The existing VSP light poles are close enough to the VSP corners on the east side of the VSP that they will require removal. A new double head security light post is to be installed in the middle of the VSP. Reference contract documents SD2.3 series and electrical sheets.
    i. **Alternate 5**: Existing VSP lights to remain and no new light is to be provided in the VSP (Addendum 1): The existing VSP light poles are close enough to the VSP corners on the east side of the VSP that they will require the VSP fence to continue around these light poles. The construction of this fence will be the same as the existing VSP as noted on the drawings. A gate for access to the lights will be required. This is referred to as the VSP light pole enclosures and will require a personnel gate as well as the galvanized rectangular welded wire fabric installed atop these gates. The NLEF will wrap these enclosures. And continue onto the VSP. Reference contract documents SD2.3 series and electrical sheets.
h. The new NLEF system will not be installed on the west portion of the VSP west of the new NLEF location in the middle of the NML.
i. The new NLEF will not be installed on the east personnel gate nor the east vehicular gate. Both gates will receive the galvanized rectangular anti-climb fabric noted above.
j. The NLEF system will provide for the inclusion of 4 dopplers in the VSP area to cover the east side of the VSP and west side.
k. Reference SD2.3 series of contract drawings for detailed descriptions of the VSP.

iv. Provide new chain link Field Cabinet enclosure fence and associated fence gates:

a. The NLEF system requires electric and data field cabinet locations around the perimeter fence to facilitate data collection and electrical requirements to each NLEF zone. Each NLEF Field Cabinet (FC) provides for energizing and data collection/detection for two (2) NLEF zones. The FC is then located at each zone split and thus located approximately 600’-800’ apart.
b. With only 20’-6” between the fences these NLEF FCs need to be located outside of the NML. For security purposes these will be located on the exterior side of the outer perimeter fence and will require additional fencing to enclose each FC for security purposes.
c. The FC enclosures are 12’x10’ area of and 8’ tall chain link fence installations and will have a 36” wide personnel gate with strong arm latch, barbed tape at the top of the fence, and a gravel base.
d. Note that each FC enclosure receives four (4) vehicular bollards.

e. Reference contract document drawings for installation details.

v. **Provide NLEF FC post supports for Electrical Unistrut installation.**
   a. This consists of two chain link fence posts at each FC location to support the new FC, transformer, and disconnect installation. Reference Architectural and Electrical sheets of the contract document drawings.

c. <u>NLEF/Gallagher Section 287090 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System"</u>

i. The Gallagher NLEF system is a sole sourced system for this project and consists of the following located in the noted areas.
   a. Control Center (Building C): Gallagher NLEF software, computer, printer.
   b. Communications Room (Building C): Head end Cabinet (1)
   c. Exterior Perimeter Fence: Field Cabinets (11 total)
   d. Exterior Perimeter Fence: Card Readers / Reset Devices (11 total)
   e. Between the exterior and interior perimeter fences: 17' tall NLEF fence / wire array. Approx. 6,800 linear feet installed atop a new 14' tall chain link fence.
   f. Reference specification Section 287090 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System" for full requirements of the NLEF system.

ii. All Gallagher components are to be installed by a Certified Gallagher installer or as Section 287090 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System" calls this contractor, and hereinafter known as, the Electronic Security Contractor or ESC for short.
   a. Contact Gallagher directly for a current / up to date list for certified Gallagher ESCs.
   b. Reference specification Section 287090 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System" for a list of some certified Gallagher ESCs. That list is current as of the time of bidding.

iii. The contract documents require a delegated design be provided by the chosen Certified Gallagher ESCI.
   a. The A|E and Gallagher will engage the ESC in the delegated design process to fully review the A|E design and aid in the delegated design process.
   b. The ESC is expected to work together with the Chain Link Fence Sub contractor's delegated design effort to ensure all fence components will support and provide safety and security requirements of the NLEF system.
   c. The A|E design in the bid documents takes into consideration much of these items and the delegated design process is to ensure a coordinated effort.
   d. The result of the delegated design effort may result in slight detail changes to the bid documents and is intended to provide for final Conforming Documents.

iv. Offsite work would consist of, but not limited to, the following:
   a. Building of the Head End and Field Cabinets.
   b. Programming the system on the computers.
   c. Testing the full system with the head end, field cabinets and computer.
   d. Provide an onsite review of the system with an initial training / review session for the RCI Staff to ensure final design is as expected.
   e.

v. **Initial on-site work is to locate the Field Cabinets and thus the NLEF zones.**

a. This will also set the strain post location for the chain link fence components noted above and will require coordination with the chain link fence subcontractor and the electrical subcontractor.
b. This also sets the location where the new perimeter electrical and data trench needs a handhole/pullbox to access electrical and data wiring from the trench to extend to the Field Cabinets
c. This location will also be where conduit direct boring is required from the FC location to the new chain link strain posts to extend electrical and data wiring to the new NLEF fence wire arrays.
d. The delegated design process noted above will focus in on the location of the NLEF Zones / FC locations as well as detailing around the VSP and Entry building and will be an important precursor to this initial on-site task.

vi. NLEF Field Cabinet (FC) installation:

a. The NLEF FC is attached to Unistruts set on posts set as located between zones.
b. The FC consists of an exterior grade metal electrical/data cabinet and NLEF, Data, and electrical components.
c. The Certified Gallagher ESC will design and install all of the NLEF /data/communication components in the FC and test the cabinet with the full NLEF system at their facilities.
d. The FC enclosure fence, gate, etc. installed by the chain link fence installer is to be installed in full prior to the NLEF FC being installed on site to ensure security of the cabinet.
e. The Electrical contractor will pull the data and electrical cabling from the new perimeter trench and connect all electrical items including transformers and disconnects, see electrical scope below.
f. A Gallagher T120 keypad is to be provided in each Field cabinet. (Addendum 2)

vii. NLEF Fence posts and wire array system.

a. Consists of galvanized NLEF posts totaling 17’ tall, extending 3’ above, each of the new 14’ tall chain link fence posts with spacers and through bolts as detailed on the contract document drawings and as otherwise required by Gallagher for a certified installation.
b. NLEF posts have wire array insulators installed at approx. 3.5” on center with the top 3’ of the post receiving breakaway insulators.
c. 12 gage wire arrays install at each insulator and stretch a full zone length (300’ to 400’) and have associated accessories that allow wire termination and tensioning at each zone. The bottom wire 3.5” off grade will be the ground wire for the array.
d. Associated electrical and data cabling are installed from the FC to the wire array system and the NLEF Card Reader / Zone Reset Devices.
e. At each FC location a weather head mast will be located on the new chain link fence to carry the electrical and data to/from the wire array to/from the FCs and to the head end cabinet.
f. At each FC lightning arrestors and an electrical grounding system array is to be installed.
    i. The grounding array can be installed inside the NML or outside the exterior perimeter fence in the new electrical trench. This shall be determined and finalized in the delegated design phase if not otherwise dictated by these specifications and drawings.
    ii. Lightning arrestors to be located on the weather head mast per the electrical drawings.

viii. NLEF Head End Cabinet and NLEF Command Center:

a. The NLEF Head End cabinet is like the Field Cabinet, and the Certified ESC designs and installs the components in that system.
b. This Head End Cabinet is to be in the Communication room located adjacent to the Control Room in Building C.
c. The Command Center is the means to operate the system and is to be located in the Control Room, and consists of a computer, keyboard, touch screen, printer and Gallagher Command Center software.

ix. NLEF System Reset Devices

a. The NLEF system requires the perimeter patrol officer to clear the Zone that is in alarm prior to the Control Room officer being able to clear the alarm. This consists of a rest device in the form of a card reader installed in the middle of each NLEF Zone on the exterior of the outer fence.
b. This device will be provided by Gallagher and is to be installed onto the middle zone sign. Electrical contractor is to provide conduit from the new perimeter electrical and data trench/duct bank to each of the zone reset device locations at the outer perimeter fence and to the height up the fence as noted in the contract documents.

x. Doppler microwave devices:

a. At the Entry building and VSP locations the NLEF will not be able to provide for a full 17' of coverage and will require the doppler devices to cover those areas.
b. These devices will mount on to the VSP guard shack and/or fence posts and to the Entry building and point to the areas not fully covered by the NLEF wire arrays.
c. These areas will be provided their own zones.
d. This is similar to the Shaker system's microwave locations and will be named the same zone designation as the corresponding Shaker system / microwave zone.
e. Reference the contract documents for these exact location and number of dopplers required.
f. Two existing dopplers are located in the vehicular sally port on the east side of the guard shack and are Pyramid SDI076XL-MIL nits. The intent is to match these models or if outdated then provide the modern equivalent. (Addendum 2)

d. <u>Electrical scope:</u>

i. Electrical power requirements are minimal for the NLEF system and consist of two 40 amp circuits from an existing electrical panel with available circuits and capacity and that is on the Institution's backup generator.

a. For this project one electrical panel will be utilized in Building C's Visitation Office area. This panel is near the Control Room and Communication Room in building C.
b. New rigid conduits will be required from that panel to the Communication Room where data conduit will be run adjacent from that point to the exterior under the canopy between Bldg. C and the Roll Call Building, through the Roll Call Building in a new underground duct bank, under the double perimeter fence, this will require direct boring conduit under the double fences, and to the exterior of the outer fence just south of the Entry Building.

ii. From that point the new electrical and data duct bank will run underground approximately 7' off the outer perimeter fence for the full perimeter.

a. At least two areas will require direct boring for this duct bank to pass through the VSP and the Entry Building areas to minimize impact to the existing asphalt and concrete pavement as well as the existing underground utilities in these areas.
b. Several handholes (Quazite boxes) will be required around the perimeter to provide for the electrical and data cable pull and at FC and Reset Device locations.

i. All handhole boxes are to have covers anchored to the boxes with security bolts, 5-sided bolt heads.
ii. All handhole structures are to be installed 6" below grade and have GPS locations as well as landmark/dimensional locations provided on an as built plan.

c. Pull all fiber and electric cabling and terminate in designated areas.
d. Data to pull into the cabinets and to the NLEF wire array fence.
e. ESC to provide final connections with electrical contractor aiding to verify connections test, this scope can be worked out in the delegated design phase.
f. Landscape / yard repairs to be provided at disturbed areas.

iii. **Field Cabinet**:

a. FC locations require step down transformers and disconnect installations on the same Unistrut and post structure as the FC.
b. Additional items require electrical connections inside the FC including but not limited to the NLEF system, cabinet AC, Vent, and Heating units.

iv. Reset devices:

a. Pull fiber from perimeter trench hand box to the device on the fence.

e. <u>Excavation and concrete flatwork scope:</u>

i. Provide any seeding and grading repairs disturbed form this construction.
ii. Alternate work:
a. Walkways from the asphalt perimeter security road to the reset devices and the field cabinet locations.
b. Alt-1: Aggregate walkways.
c. Alt-2: Concrete walkways.

1.5 EXISTING SITE CONDITIONS

A. THE RCI SITE WILL REMAIN IN OPERATION DURING CONSTRUCTION AND ALL SECURITY MEASURES ARE TO BE MAINTAINED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION. ALL ROADWAYS ARE TO REMAIN ACCESSIBLE AND ARE TO BE CLEANED OF DEBRIS DAILY. TAKE ALL NECESSARY PROVISIONS TO MAINTAIN DUST CONTROL.

B. THE CONTRACTOR WILL NEED TO NOTIFY THE OWNER/RCI (2) WEEKS PRIOR TO THE INTERRUPTIONS OF ANY UTILITIES. THE CONTRACTOR WILL NEED TO PROVIDE ADEQUATE TEMPORARY POWER, ETC. TO ENSURE SECURITY MEASURES ARE MAINTANED OR COORDINATE WITH EACH INSTITUTION'S SECURITY TO ENSURE OTHER PROVISIONS ARE MADE TO MAINTAIN SECURITY MEASURES.

C. THE EXISTING DOCKS ARE NOT TO BE UTILIZED FOR THE DELIVERY OF MATERIALS, EQUIPMENT, ETC. THE CONTRACTOR IS TO SCHEDULE AND ACCEPT ALL DELIVERIES. THE OWNER WILL NOT ACCEPT ANY DELIVERIES.

D. LARGE EQUIPMENT SUCH AS A FORKLIFT AND THE DUMPSTER CAN ONLY BE STORED IN THE DESIGNATED STAGING AREA INDICATED ON THE DRAWINGS. LARGE EQUIPMENT WILL NEED TO BE DISENGAGED SO IT WILL NOT BE ABLE TO OPERATE AT THE END OF EACH DAY. ALL MATERIALS AND OTHER EQUIPMENT ARE TO BE LOCATED OUTSIDE OF THE INSTITUTION, EXCEPT THAT WHICH IS TO BE USED THAT DAY. JOB TRAILERS AND PARKING WILL ALSO TAKE PLACE OUTSIDE THE INSTITUTION. THE LEAD/GERNERAL CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE THIS AREA AND IS TO KEEP THE AREA CLEAN AND ORGANIZED. IF WET CONDITIONS PERSIST THE LEAD CONTRACTOR IS TO PROVIDE HARD SURFACE OR GRAVEL TO ALLOW FOR MOBILITY.

1. See drawing sheet G1 for location of the staging areas. These areas are on the Institution's property but out of the secured perimeters.

E. RCI may require some work to be limited to a certain number of zones at a time due to the need to minimize construction impacts to RCI's required security protocols. This will be reviewed and verified in the delegated design phase.

F. RCI:
   a. Background Checks, Officer escorts, etc. The background check submittal information is attached to Section 00 73 10 Security Guidelines for Contractors.
   b. Hazardous abatement remediation work will not need to be a part of this contract.

1.6 ACCESS TO SITE

A. Reference Section 00 73 10 Security Guidelines for Contractors.

B. The site is outside of the secure perimeter and ODRC has stated that it is not subject to Officer Escort needs.

C. It is the Contractor's option to have a Job trailer located onsite. The Owner can provide space in the existing building for meetings as may be required throughout the construction duration.

D. Contractor access to site is shown on the G2 sheet of the drawings.

E. For security purposes, coordinate all site visits, scheduled contractor work dates, and delivery dates with the Owner's Site representative on a daily basis.

F. Job trailer, Staging, and Storage areas are to be in designated areas outside of the secure perimeter as located on the G2 sheet of the drawings.

G. All tools and materials to be cleared around the building and moved to the designated storage/staging area at the end of each day and locked in a storage box or gang box per Institution's protocols. Site is to be cleaned at the end of each day with all debris and trash removed from inside the secure perimeter.

H. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight and secure condition throughout construction period. Repair damage caused by construction operations. **CONTRACTOR WILL BE REQUIRED TO PROVIDE TEMPORARY MEASURES (ROOFING, TEMPORARY WALLS, JOINT SEALANT, ETC.) TO KEEP WATER FROM ENTERING BUILDING. ALL TEMPORARY WATERTIGHT PROVISIONS ARE TO BE FLASHED-IN, WATERTIGHT, AND SECURED AT THE END OF EACH DAY OR AS OTHERWISE REQUIRED DUE TO WEATHER CONDITIONS.**

1.7 COORDINATION WITH BUILDING AND INSTITUTION'S OCCUPANTS

A. Reference Section 00 73 10 Security Guidelines for Contractors.

B. RCI will be in full operation and full occupancy during the construction period.
   1. Means and methods are to be considered and bid such that minimal facility impact time frames are provided.
   2. Coordinate any work impacting occupancy and building use with Owner and Architect no less than 48 hours prior to scheduled work. This work shall be noted on the baseline schedule to allow for early understanding of impacts.

1.8 WORK RESTRICTIONS

A. Reference Section 00 73 10 Security Guidelines for Contractors.

B. All contractors working inside the secure perimeter and between the perimeter security fences will require an escort officer be assigned to them daily.

C. On-Site Work Hours: Contractor can work from 6:00 a.m. to 4:00 p.m., Monday through Thursday. (Addendum1)

1. Only in extenuating circumstances will Friday, Weekend, or off hours be allowed and only as approved by the Contracting Authority, Owner, and A/E, with final approval being by the Owner (ODRC). Contractor will not be able to work on Sundays or Federal Holidays (several of which are on a Monday). Contractor to verify local governmental restrictions. Contractor is not to depend upon Saturday or Friday hours to build and/or maintain the Construction Schedule.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify A/E and Owner not less than two days in advance of proposed disruptive operations.
2. Obtain A/E's and Owner's written permission before proceeding with disruptive operations.
3. Radios will not be permitted.

E. Contractor training and contractor badge requirements.

1. Prior to any contractor mobilization background paperwork will be required for each contractor, sub-contractor, or personnel that will be on site on a regular basis to DRC. Background checks typically take two (2) to (3) weeks to clear and another week to plan the training session. Prior to mobilization, all contractors will then be required to attend contractor training which will be held onsite by ODRC. This job will require Contractor Badges. Training sessions are typically 4 hours long.

2. Contractor badges will be required. The contractor will need to keep a list of contractors, and subcontractors who have had the training and those that are on site each day.

3. Attached in section 007310 Security Guidelines for Contractors of these specifications is ODRC background paperwork packet for the background checks. At the pre-construction meeting or prior to that meeting, the A/E and Owner will provide contact information of the ODRC individual to whom the background check paperwork is to be sent.
   a. It is in the Contractor's best interest to provide timely paperwork for background checks knowing the time frames listed above.
   b. ODRC/RCI can provide for approximately 10 contractors in each training session and can provide 1 training session per month.
   c. Contractor to coordinate with RCI training staff to verify subcontractor training prior to each subcontractor's mobilization onto the site and any new crew members needed during construction.
   d. The intent is to minimize the total number of training sessions required, however with this type of project spread out over this amount of time RCI will provide monthly training sessions as needed. Contractor to coordinate closely with RCI during the construction duration to ensure subcontractors are trained as required to meet the Contractor's schedule.

4. ODRC will provide for the background checks after the proper paperwork has been provided. These background checks will be required prior to the personnel attending the training.

   a. Suppliers or delivery personnel who will be onsite only periodically will not be required to go through this training.

5. As ODRC conducts these trainings, please minimize the number of trainings needed during the course of construction. This will be reviewed more in depth during the pre-construction meeting.

F. Officer Escorts

1. RCI can guarantee **2 Officer Escorts** throughout the course of construction for the full construction duration. RCI will make every effort to work with the construction schedule and provide additional Officer Escorts as may be required under very extenuating circumstances only, however only 2 Officer Escorts are guaranteed. The Contractor is to work with RCI daily to determine officer escort needs if less than 2 Officer Escorts are needed.

   a. Officer Escorts will be needed for each individual and/or group of workers in a specified area of response for that officer per security guidelines. In several instances this will limit the number of contractors/workers to certain rooms or areas at any one time. If a contractor needs to leave that area for any reason one of the designated Officer Escorts will need to move with them.
   b. An Officer Escort will be needed to escort each vehicle in and out of the facility. This would be one of the designated Officer Escorts provided for this job. For example, if a dump truck full of material or a dumpster needs removed from the site one Officer Escort will be required to leave the work area and move with that vehicle to the vehicle sally port. If at the same time another delivery truck is needed to enter or leave the facility for the project a second, Officer Escort is required. As there are two Officer Escorts made available to this project this would leave only no one to look after the contractor's working force if that work force is inside the secure perimeter. Contractor will need to understand and take this into consideration in the scheduling and means and methods of work.
   c. RCI will accommodate for two vehicles in the secured perimeter at any one time, however no more than two will be allowed.
   d. The General Contractor will need to consider in their means and methods as well as their schedule the number of Officer Escorts for each of the activities happening during each workday to ensure it considers the designated Officer Escorts and no more.
   e. Any work scheduled that requires more than the designated escorts will not be allowed and any lost time or costs due to such scheduling will be at the cost of the General Contractor and not the Owner.
   f. The RCI and the A/E will make every effort at the pre-bid and pre-construction meeting to answer any questions and provide for a clear understanding of what implications RCI's specific security requirements will have on a typical contractor's workday. Please use these opportunities to ask questions as needed.

1.9 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications are a part of the Project Manual and use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
3. Specifications for this project pertain to both drawings sets for the Lebanon Armory construction and the Lebanon Administration Addition construction.

B. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections. See the General Conditions for definitions.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012300 – ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include, as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation, whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other Work of the Contract.

C. Schedule: A Part 3 "Schedule of Alternates" Article is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1: Aggregate walkways from perimeter security road to the outer perimeter fecne at the proposed NLEF field cabinet and reset device locations.

1. Alternate Work: Provide grading and installation of aggregate walkways at each of the NLEF Field Cabinets and Reset Devices from the exterior of the outer fence to the security perimeter road as located on the SD1 series of sheets and detailed and with sopt grade markers on the Civil sheets C1.2 and C1.3.

B. Alternate No. 2: Concrete walkways

1. Alternate Work: Provide grading and installation of aggregate walkways at each of the NLEF Field Cabinets and Reset Devices from the exterior of the outer fence to the security perimeter road as located on the SD1 series of sheets and detailed and with sopt grade markers on the Civil sheets C1.2 and C1.3

C. Alternate No. 3: Replace existing inner perimeter road chain link day fence gate just north of the entry building with a new 14'x14' chain link fence gate as noted on the contract document drawings.

1. Alternate Work: Replace existing inner perimeter road double chain link day fence gate just north of the entry building with a new larger /14'x14' (double 7' wide) chain link fence gate as noted on the contract document drawings. Provide utility locator and hydro-vac to locate existing underground utilities in the area. Work is close to the main entry builifng (Building A) and will require close coordinatino with the RCI security staff.

D. Alternate No. 4: Provide Mobile Maps software, installtion integration…etc….
1. Alternate Work: Furnish and install software and hardware in the Control Center in building C. Program software for RCI requirements. Train RCI staff on software use.
2. The vendor shall prepare FCC license paperwork and pay initial licensing fees covering the first year of system operations on the communication frequency proposed by the vendor for use with the system. (Addendum 2)

E. Alternate No. 5: Existing light poles at east corners of VSP to remain. Delete new light pole in the VSP from the base bid (Addendum 1). Provide 14' tall security fence enclosure around existing 30' tall vehicular sally port (VSP) light posts and provide 3'x8' gate into existing VSP. Run new NLEF atop this fence as part of the VSP NLEF.

F. (Addendum 2) Alternate No 6: Provide for an accelerated schedule to provide completion of the project in 120 days from date of Notice to Proceed.

MILESTONE ACTIVITY	DURATION (CALENDAR DAYS)	MILESTONE
Submittal Process/ Lead Times*	N/A	N/A
Substantial Completion M1	120	**120**
Final Completion/Closeout Docs M2	61	**181**
	Total	181 days

1. Officer Escorts for this Alternate will be increased from 2 to 6.
2. The Owner understands the need for 10-hour days and a 5-day work week Monday through Friday as required to be able to meet this accelerated schedule.
   a. Saturday work is understood as possibly required however, not guaranteed and will require special approval by the A|E and Owner. No Holiday work.

3. Overtime work is understood as possibly required to provide for this accelerated schedule's time frame.
4. It is understood that at least two crews will be required, one on the south side and one on the north side to achieve this accelerated schedule. It is also understood that in some time periods a third crew may be required to work on the VSP and/or Entry building areas simultaneously with the North and South perimeter fences and may require additional Officer Escorts than the 6 noted above at specific times.
5. Note that work at the exterior of the perimeter fence will not require an Officer Escort, however requires coordination and notice to perimeter patrol.

END OF SECTION 012300

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SECTION 013200 – CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. 013216 "Construction Progress Schedule" for additional information about project scheduling.

C. 012300 "Alternates" for accelerated schedule alternate description.

1.2 SUMMARY

A. Reference General Conditions, paragraph 6.5, Construction Progress Schedule. Critical path scheduling will be required.

B. This Section provides project specific information for milestone dates, weather station location, project sequencing, etc. Reference 013216 "Construction Progress Schedule" and 00730 "Supplementary Conditions (GC)" for additional information on project scheduling.

C. By submitting the Bid, the bidder agrees that the periods for performing the Work are reasonable, and that the bidder's work can be complete by the applicable dates for completion.

D. Milestone dates are defined in calendar days following the date set forth in the Notice to Proceed and are required to be met by all Contractors. Time is of the essence for the completion of Milestones and for the Contract Completion date.

1. **Base Bid:** The following Milestone dates are defined in calendar days from the Notice to Proceed, and shall be adhered to by each Contractor.

MILESTONE ACTIVITY	DURATION (CALENDAR DAYS)	MILESTONE
Submittal Process/ Lead Times	30	30
Substantial Completion M1	225	**254**
Final Completion/Closeout Docs M2	61	**315**
	Total	315 days

(Addendum 2)

2. Expected Adverse Weather days have been factored into the above schedule per Section 007300 "Supplementary Conditions (GC)".

3. For daily weather tracking Weather Station Three Creeks-KOHGROVE16 (Rickenbacker International Airport Station) through The Weather Underground, Inc. (wunderground.com).

4. (Addendum 2) **Alternate 6:** The following Milestone dates are defined in calendar days from the Notice to Proceed, and shall be adhered to by each Contractor. (Addendum 2)

MILESTONE ACTIVITY	DURATION (CALENDAR DAYS)	MILESTONE
Submittal Process/ Lead Times*	N/A	N/A
Substantial Completion M1	120	**120**
Final Completion/Closeout Docs M2	61	**181**
	Total	181 days

* Efforts to be made by the Owner to provide for an early Notice of Commencement of work to allow for the Submittal Process and Lead Time activity to be moved prior to the Notice to Proceed.

E. The completion dates/time frames above, shall be adhered to unless modified by mutual agreement between the Contractor, Owner and A/E. The Contractor is responsible to maintain progress so as to achieve the milestones including shift work, overtime work, weekend work, supplemental labor and equipment, etc. at no additional cost to the Owner.

F. **CONTRACTOR IS TO PROVIDE DAILY CONSTRUCTION REPORTS TO THE ARCHITECT ON A WEEKLY BASIS. IF THESE FORMS ARE NOT PROVIDED WEEKLY, THE CONTRACTOR'S APPLICATIONS FOR PAYMENT WILL NOT BE PAID AND THE WORK WILL BE STOPPED.**

1.3 SCHEDULE OF WORK

A. If at any time the Contractor's working force and equipment, in the opinion of the Architect shall be inadequate for securing the necessary progress or required quality of work as herein stipulated, the Contractor shall, if so directed, at his own expense, increase or supplement the working force and equipment and/or perform the work on an overtime or multiple shift basis to such an extent as to give reasonable assurance of compliance with the schedule of completion and the required quality of the work. When so directed, the Contractor shall submit for approval such supplementary construction schedules as may be necessary to demonstrate the manner in which such compliance will be established. Failure to make such demands shall not relieve the Contractor of his obligation to secure the quality and the rate of progress required by the Contract; and the Contractor alone shall be and remain liable and responsible for the efficiency and adequacy of his methods, materials, working force, and equipment, irrespective of whether or not he makes any change as a result of any order or orders received.

END OF SECTION 013200

SECTION 024000 – SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
   1. Section 01 10 00 “Summary” for description of overall construction and security requirements for work in the institution.
   2. Section 012200 “Unit Prices” for NML aggregate reinstallation.

1.2 DESCRIPTION

A. (Addendum 2) Provide all demolition as shown on the drawings and as specified below. The demolition shown on the drawings and as specified is only a guide. Provide any demolition that is not shown on the drawings or in the specifications which is required to complete the full scope of work indicated on the Contract Documents. There is no per zone or per side limitation or restriction as to the work done in the NML other than the 3” high max piling of aggregate in the NML as described in the Specification Section 01 10 00 Summary.
   1. Demolition is limited to the project scope and as outlined, but not limited to, the following:
      a. Removal of two rows of barbed tape at the inner portion of the NML’s exterior fence for the full 6,800 linear foot perimter.
         1) Carefully remove both rows and hand over to RCI.
         2) This can be removed all out once around the full perimeter, or as otherwise needed for the contractor’s means and methods.

      b. Removal of no man’s land (NML) aggregate and geotextile weed inhibitor/barrier for installation of new fencing between the double perimeter fence, reinstall the aggregate over new weed barrier. Assume 20% of the aggregate will not be able to be reused.
         1) This existing NML aggregate is 6” deep and similar to ODOT 703 Type D.
            a) Provide unit cost to provide new ODOT 703 Type D aggregate. Reference Section 012200 “Unit Prices”.
         2) The intent is that an approximate 6’-8” wide area of aggregate is to be removed for the full length of the perimeter. The weed barrier is to be removed in a 6’ wide area for the full perimter with the intent of the new weed inhibitor be installed lapping the existing at each side by 8” to 12” thus the 6’-8” width of aggregate removal.
         3) Intermediate storage of initial aggregate removal to be stored in the staging area or in a separate area onsite outside the secure perimter as directed by the A|E and Owner.
         4) The above is a suggested means and method for aggregate removal and replacment and is not meant to hold the contractor to this specific means and method. The contractor can provide for a differing means and method with the following criteria needing to be met for this aggregate removal due to security purposes:
            a) The aggregate must be removed from the NML. It cannot be windrowed in the NML and left in the NML for any length of time.
            b) No mounds of aggregate larger than 3” above the existing NML aggregate grade can exist in the NML at anytime.

      c. Removal of the gates and transom above the gates from the Vehicular Sally Port (VSP) to the NML at both sides of the VSP.
         1) These gates and transoms are to be carefully removed and handed over to the facility.

2) One set of gates and transom can be used to provide for the Alternate 3 gate installation if Alternate 3 becomes part of the project. Alternate 3, however, is to be priced as a fully new installation.

d. Removal of Entry building exterior barbed tape and associated building mounted posts.
   1) These items are to be carefully removed and handed over to the facility.
   2) The smaller posts to the east at either side of the Entry building are to remain as are the assocaited rows of barbed tape. However, the barbed tape and at least two fo the posts will need to be removed nd reinstalled in order to properly install the new NLEF system.

e. Removal of Vehicular Sally Port (VSP) barbed tape as follows:
   1) 2 rows at top of VSP fence at area to receive NLEF. Carefully remove and turn over to RCI.
   2) Vertical columns at VSP corners at areas to receive NLEF. Carefully remove and turn over to RCI.

f. It is anticipated that Hydro-Vac operations will be required to provide for some trenching and spot locations for key underground utility locations.
   1) Any over spoils can be disposed of onsite in areas as approved by the Architect.

g. Any earthen spoils to be disposed of onsite in an area as directed by the Architect.

h. Heavy duty concrete paement removal at the Vehicular Sallyport area east corners at new light pole fencing. Minimal concrete removal where new fence posts are to be installed.

i. Removal of existing VSP light poles and associated concrete footings at the east corners. Carefully remove and salvage the poles and lights. Give to RCI.

j. Alternate 3: Day Fence gate at entry building.
   1) These gates are to be carefully removed and handed over to the facility.
   2) Any posts, footings, etc are to be disposed of by the contractor.

B. All items to be removed are to be removed and disposed of, offsite, by the Contractor, unless otherwise noted.

C. Work stipulated herein affects prime and subcontractors, and is a general description; such applies to similar conditions arising throughout, even though not stated.

D. No attempt is made to stipulate every required item of demolition and patching, either on drawings or in specifications. General contractor and subcontractors must visit and study physical conditions at site, review drawings, and reach their own conclusions on work necessary to accomplish intended results described by drawings and specifications.

E. Certain work to be removed is designated on drawings and outlined in specifications for benefits of bidders, but even at such areas, complete list of work items required shall be bidder's responsibility.

F. Structural demolition will require temporary shoring and bracing.
   1. No structural demolition is expected on this project.

G. Refer to Section 017300 Execution for procedures for cutting and patching and temporary shoring and support.

1.3 PROTECTION

A. Complete demolitions and patching throughout so that at no time shall any portion of existing work be in danger. Maintain weather tight at all times.

B. Provide weather tight, dust-tight, insulated barricades at exterior and interior locations approved by Owner's representative to isolate demolition work when continuing operations in existing structure could be adversely affected by the work. No dust/weather barricades permitted overnight. New work must be

installed immediately in openings in order to maintain secure integrity of facility. If required due to unforeseen conditions, the opening cannot be made secure before the end of the work day, a temporary security barricade is to be installed at the opening; its use and installation is to be approved by the Owner's representative.

C. At completion, remove barricades, debris, dust, etc. and perform required clean-up stipulated elsewhere for each section of work.

1.4 UTILITIES

A. Rules and regulations governing the respective utilities shall be observed in executing work.

B. Active utilities shown on drawings shall be adequately protected from damage, and moved or relocated only as indicated or specified.

C. Active utilities not shown on the drawings shall be protected or relocated according to written instructions of the Owner's representative and Architect.

D. Inactive or abandoned utilities encountered in operations shall be removed to at least 18" distant from new work, and plugged or capped. Report to the Owner's representative and Architect in writing the location of such abandoned lines.

1.5 TASKS

A. Secure and pay for required demolition permits.

B. Perform exterior and interior removals such as wood, masonry, steel and/or concrete, framing, etc., including cutting new openings together with whatever shoring, needling, lintel placement, or other work as necessary to accomplish same. Openings necessary for plumbing, electrical and HVAC work will be performed by their respective trades, or as directed no the project drawings.

C. Off-site disposal of debris resulting from demolition.

D. Overall repair of general items, such as patching raw or cut edges of gypsum board, etc.

E. Patching of interior finishes such as plaster, gypsum board, flooring and base, acoustical tile, etc. required at cut-into locations as well as any new such shown in existing constructions. This work shall match existing work throughout, and be in accordance with appropriate sections of project specifications.

F. Painting and like finishing of patched or new surfaces, either to match present abutting finishes.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PREPARATION

A. Provide, erect and maintain temporary barriers and security devices.

B. Take precautions to protect the existing floors, walls, etc. that are to remain. The Contractor will be held responsible for any damage to the building, its contents or the site during the construction process.

C. Prevent movement of structure. Provide required bracing and shoring.

D. Mark location of existing utilities.

3.2 REQUIREMENTS

A. Conduct demolition to minimize interference with adjacent building areas.

B. The Contractor is responsible to provide temporary shoring as required to maintain the existing structure. The method of shoring is the responsibility of the Contractor.

C. Cease operations immediately if structure appears to be in danger. Notify A/E. Do not resume operations until directed.

D. Conduct operations with minimum interference to public or private accesses. Maintain protected egress and access at all times.

3.3 PROCEDURE

A. Disconnect, remove or cap and identify designated utilities within demolition areas.

B. Demolish in an orderly and careful manner. Protect existing supporting structural members.

C. Except where noted otherwise, remove demolished materials from site. Do not burn or bury materials on site.

D. Remove equipment and materials to be re-installed in a manner to prevent damage. Store and protect.

E. Conduct an inventory of equipment and materials to be retained. Remove items designated by the Owner as salvageable, in a manner to prevent damage.

F. Remove demolished materials from site as work progresses. Upon completion of work, leave areas in clean condition.

G. Remove temporary work.

END OF SECTION 024000

SECTION 287090 – ELECTRONIC SECURITY SYSTEMS NON-LETHAL ELECTRIC FENCE PERIMETER DETECTION SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Related work specified elsewhere:
1. Section 017900 “Demonstration and Training for additional requirements on system operation training.
2. Section 323113 “Security Chain Link Fencing”

B. Reference Specifications, Materials, and/or Codes:
1. Equipment: Equipment shall meet the requirements of the International Electrotechnical Committee Specification IEC 60335-1 and IEC 60335-2-76. Proof of adherence to this standard must be provided.
2. Installation: All equipment and material will be installed by the ESC as required by the National Electric Code, local codes and Authorities Having Jurisdiction.

1.2 SYSTEM DESCRIPTION

A. General Overview:
1. This project involves the furnishing and installation of a Non- Lethal Electrified Fence Perimeter Deterrent/Detection System (hereinafter: NLEF) to the existing perimeter fence line, wall, or other perimeter line of demarcation at Ross Correctional Institution. The NLEF shall extend 3’-0” minimum above the existing fence height. Refer to drawings for approximate length (Contractor to field verify) of fenced perimeter in the scope of work to which the NLEF is to affix to. The NLEF shall also include doppler detection systems covering pedestrian and vehicular sallyports.
2. The installation of the complete NLEF System, fiber optic communications, cabinetry, wiring and associated electrical work will be performed by the Electronic Security Contractor (ESC). Include the conduit, back boxes and cable for the communication and power around the site. The ESC will be responsible to coordinate with the Owner for the NLEF requirements associated to these items. The ESC will also coordinate with the system manufacturer (Gallagher) to provide full training, system certification, on-site project support and all materials necessary for the installation of the system. The ESC must provide a manufacturer’s representative with specialized training in system operations and installation to work and serve as a project manager for a minimum of (20) full calendar days of onsite project support during installation of the NLEF system. The NLEF Project Manager must have supervised the installation of at least two (2) complete Highly Secured Facility NLEF systems (Gallagher) and currently be employed as a full time employee with the ESC as a project/ installation manager. The ESC shall maintain the same Project Manager on this project for the duration of the project. On-Site support days do not include the final site walkthrough/certification, mandatory training, head end programming or 2 day certification course.
3. Provide a letter of certification from NLEF manufacturer that the first NLEF zone has been inspected and accepted before scheduling reviews by the owner, Construction Manager, and Architect. Provide a final written certification from the NLEF manufacturer that the entire perimeter has been tested and accepted by the manufacturer before scheduling final reviews by the Owner, Construction Manager, and Architect. (Addendum 2)

   NOTE: If Gallagher has revised their policies and Standards of Practice to allow the Channel Partners to provide for their own testing and certifications, it will be acceptable to provide as such with the

provisions from Gallagher provided and verified as set standards. Gallagher has indicated to the Architect that they can be present for the Channel Partner's inspection. The Architect will coordinate Gallagher's attendance at the time of the inspections. (Addendum 2)

4. The ESC is to coordinate with the Owner to maintain security of the site while installing the NLEF system.
5. The ESC shall provide a computer based system to accomplish the alarm communications as specified herein. The ESC will be responsible for all coordination as required to ensure that the entire scope of work of this Project will be carried out in an orderly, complete and coordinated fashion.
6. All products and components associated with the NLEF must be specifically designed for use in conjunction with security systems for the specific purpose of deterrence, detection, delay and/or the control of people in a context appropriate with the intent of this project.
7. The work defined in these specifications and drawings will take place in an occupied facility. The ESC shall communicate daily the work activity and get direction from the Construction Manager and Owners operational staff regarding any security concerns.
8. **If Alternate #4 is accepted**: Provide a mobile maps interface for integration into security patrol vehicles for alarm reporting to roving security personnel at the institution.

B. Work Included:
1. Delegated Design: Engage Gallagher to provide a complete Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System.
2. Furnish all materials and labor necessary to complete the installation of specific systems described herein and integration of all systems as specified. The work includes the following, as well as work not listed below but described elsewhere:
    a. Provide a complete and fully operational Non-Lethal Electrified Fence (NLEF) detection system as defined in the construction documents.
    b. All products and components associated with NLEF must be specifically designed for use in conjunction with security systems for the specific purpose of deterrence, detection, delay and/or the control of people in a context appropriate with the intent of this project.
    c. Furnish and install a NLEF System by Gallagher as herein specified. The NLEF System is to be installed complete with appropriate controls, wiring, fiber optic cable, and mounting hardware. All installation work shall be accomplished in a professional manner by installers trained by the manufacturer. The ESC shall furnish and install all miscellaneous components, posts, brackets and supports needed to attach its system to the existing substrate (perimeter fence line, wall, or other perimeter line of demarcation at the referenced facility) for the proper and complete installation of the NLEF System without additional work by others, except as noted on the drawings.
    d. In the case of localized system damage or attack, the NLEF wires must be configured so as to ensure that deterrence and detection is maintained on the portions of the system that are not compromised.
    e. Each horizontal alarm detection zone of the NLEF shall feature two (2) vertical detection and deterrence channels.
        1) One (1) channel shall make up the primary fence area
        2) One (1) channel shall be interlaced in between every seventh NLEF wire through the entire horizontal zone.
        3) The primary fence area channel shall be capable of being controlled separately and the interlaced channel shall be controlled and associated with the primary channel of the next adjacent zone primary channel.
        4) The channels utilize both a positive and negative pulse. Every wire on the array shall be pulsed hot.
    f. All controller detection and deterrence circuits must be user replaceable. Replacement must be able to be accomplished without requiring re-programming the system controller.
    g. One circuit is in no way dependent upon the continued function of the other circuit, or any other circuit on the NLEF system.

h. All NLEF horizontal and vertical detection circuits must respond to operator inputs, (such as arming and disarming commands), independently of any other detection circuits. System operators must be able to disarm any single circuit, or multiple circuits, while maintaining detection for the remainder of the circuits in the system not selected for disarming.

i. **If Alternate #4 is accepted**: Integrate mobile maps systems with NLEF systems for annunciate any security zone in alarm to the mobile maps system.

1.3 QUALITY ASSURANCE

A. Cooperation with other trades:

1. The ESC shall provide coordination of the Work in this Section with that of other Sections to ensure that the entire work of this Project will be carried out in an orderly, complete and coordinated fashion.

1.4 CODES AND GUIDELINES

A. Equipment: Equipment shall meet the requirements of the International Electrotechnical Committee Specification IEC 60335-1 and IEC 60335-2-76. Proof of adherence to this standard must be provided.

B. Installation: All equipment and material will be installed by the ESC as required by the National Electric Code, local codes and the Authority Having Jurisdiction.

1.5 SUBMITTALS

A. Data sheets on each component of the system including cabinets and fiber optic cabling.

B. Installation details and diagrams adapted for this specific site.

C. Submit a letter confirming the system will not exceed the specified false alarm rate

D. A listing by model numbers, descriptions, and quantities for each system component.

E. A detailed description of system operation.

F. Video screen display submittal in electronic format, able to be loaded on an Owner computer terminal for review and comment.

G. Submit documentation verifying NLEF equipment has been tested by a 3rd party source and is in compliance with all IEC 60335 referenced standards.

1.6 DESIGN DEVIATIONS

A. Any deviation to the design as shown on drawings and/or as defined in these specifications shall be submitted in detail at time of BID. This includes, but is not limited to, functions, operation, equipment, materials, and layout. The Owner shall be the sole judge if a deviation is acceptable.

1.7 SPARE PARTS

A. Furnish to the Owner the following including tools, spare parts, extra materials, and similar items, and deliver to the Facility Maintenance Superintendent (BMS2) only to a location designated by Owner. Label with manufacturer's name and model number:
1. 1 fence energizer cabinets (complete)
2. (10) spare fiber connectors
3. (2) of each type of fiber to ethernet converter switch installed
4. (2) of each type of fiber or ethernet to serial communication protocol converters installed
5. (2) of each system field security controller / device
6. (2) of each system keypad terminal
7. (2) of each field card reader / reset module
8. (1) of each system headend network swittch
9. (1) spool (500ft. min) high conductivity fence wire
10. 1% of each small fence part component used (clamps, springs, tensioners, insulators, mounting block, etc.)
11. 10% of each lightning diverters provided
12. (1) computer terminal - fully redundant
13. (2) high voltage NLEF meter
14. 80 spare proximity smart cards of the type specified herein.

B. Spare parts shall be packaged in appropriate protective packing material.

C. Box spare parts for easy storage and clearly identify the contents of each box on all four sides of each container.

1.8 WARRANTY

A. Warranty shall cover the installation against all defects in material and workmanship. The warranty shall cover the installation against all damage due to lightning.

B. During the twenty four (24) month warranty period, all repair parts shall be provided by the manufacturer/installer. Institutional spare parts used for emergency repairs, during the warranty period, shall be replaced immediately at no cost to the Owner.

C. The warranty shall include the entire NLEF scope of work including all equipment, devices, materials, cable/wire, software and installation.

D. Provide all software updates published by the manufacturer for a two (2) year period to the Owner at no additional cost. The two year period is the period of the ESC's workmanship warranty. At the end of the warranty the ESC is to provide the latest update for the software and any associated training. (Addendum 1)

E. Work shall be warranted to be free from defects. Any defective materials or workmanship shall be replaced or repaired as directed by the Owner for a period of two years from the date of Owner final acceptance. The ESC shall provide written warranties for the entire NLEF system to the Owner.

F. Acceptance by a manufacturer of an order for equipment for this contract signifies acceptance of this warranty. During the warranty period there shall be no charge to the Owner for equipment, material, software, etc. for guarantee work.

G. During the warranty period, there shall be no charges to the Owner for service calls (mileage, labor, travel, expenses, etc.) for warranty work.

H. The ESC must have full-time employees trained and certified to the maintenance and repair of systems and equipment furnished.

I. Manufacturer/installer shall, within eight (8) hours after notification of a problem (which cannot be handled over-the-phone) with the system, have a qualified, trained technical repair person on site with adequate repair material to resolve the problem, starting from the original notification.

J. The manufacturer shall notify the Owner, in writing, of any changes, modifications or upgrades to the electronic equipment, and shall make these changes, modifications, upgrades, or software changes free of charge to the Owner. The manufacturer shall provide 24/7 call-in (phone service) for over-the- phone technical service at no cost to the Owner.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Gallagher North America Inc.

B. **If Alternate #4 is accepted:** Mobile Maps System: Communications and Document Technologies (CDT) of Pineview California. (contact: Loretta Simon 619-478-2600, http://cdtco.com/)

2.2 NLEF PERIMETER DETECTION SYSTEM

A. The NLEF System is to be supplied complete with appropriate controls, wiring, power, fiber optic cable, and mounting hardware. Installation work shall be supervised in a professional manner by the manufacturer.

B. The NLEF System shall be comprised of four (5) core components:
1. Command Center
2. Fence Energizer (FE)
3. Head End Control System (CS)
4. Wire Fence Array (WFA)
5. Proximity card based system reset stations.

2.3 SYSTEM DESCRIPTION (ADDENDUM 2)

A. General
1. Provide a computer based system that is manufactured by the same manufactured of the fence detection system. The product of a single company which has regularly manufactured this equipment for a minimum period of 15 years.
2. Provide only Gallagher approved components and that are normally recognized industry standards and regularly sold to industrial installations.
3. Provide components that meet security fencing international standards.
4. Provide visual and audible status indication of backup battery on the CS system. Provide alarm in the event of low battery voltage before battery failure.
5. Provide visual indication of NLEF system on a computer monitor. The visual indication must indicate where the problems are via a graphical design of the facility.
6. All software to manage the NLEF shall be Gallagher.

7. Provide 25% spare parts of the NLEF 1/0 module capacity at the completion of the project. Calculate inputs and outputs separately when figuring capacities.
8. Gallagher shall provide 5 years of software upgrades as they become available.
9. All input and outputs are to be run through the NLEF software computer system.
10. No serial communication devices are to be used other than remote Input/Output (1/0) devices as manufactured by the same maker as the NLEF system (Addendum 2)
11. The time between any user input command and the start of the resulting action is not to exceed 0.5 seconds.
12. Any system failure is to result in a lock down, fail secure mode. With the exception of life safety devices which are to fail safe.
13. Provide Central Processing I/O unit at the Electronic Equipment room. It is to be a dedicated standalone expandable I/O unit, Power Supply, back plane, and 1/0 points.
14. CPU is to control the I/O directly, without additional ladder programming.
15. Provide all CPUs, Power Supplies, Communication Modules, 1/0 devices, racks and miscellaneous equipment needed for a fully operational system.
16. The NLEF Computer system and associated equipment in the Electronic Security Equipment Room shall include a local back-up power source (UPS) to insure uninterrupted function for a minimum of four (4) hours under load. UPS activation must occur automatically in the event of primary electrical service failure without any disruption of system operation or integrity. During this time period the NLEF system shall remain fully functional to include the reporting of and detecting of system alarms and the energizing of all electric fence wires. The system must be capable of switching back to primary electrical service automatically without disruption of system operation or integrity.
17. UPS system provided in Main Electronic Security Equipment room below Master Control to meet the following minimum requirements:
    a. 10kVA three phase UPS
    b. 4 hour minimum run time at 10kVA load
    c. Maintenance bypass panel
    d. Provide a back-up copy of the NLEF system programing in case of computer failure
18. Provide all system component status on the administrative workstation. Include the CS software for that workstation.
19. Approved Manufacturers
    a. Gallagher
        1) Configuration
            a) Provide a complete Computer based software system custom configured for the NLEF system.
            b) Head end system and CS Ethernet communications to be an Industrial Dual Redundant Class A 1OOOBaseT (minimum) Ethernet network. No two faults in the communication network shall hinder the operation of the system. Provide a minimum of four (2 ports at each NLEF cabinet.
            c) Provide network around facility comprised of two self-healing bi-directional loops.
20. Components
    a. Central Processor Unit
        1) Processors shall have a minimum published MTBF of 100,000 HRS.
        2) Provide chassis and power supply module with each processor assembly. Processors are to be removable under power without damage to the module or chassis.
    b. Digital Inputs and Outputs
        1) Each input or output module is to be a self-contained unit.
        2) Input and output modules are to be externally/internally electrically fused respectively with blown fuse indicators.
        3) It is to be possible to replace any 1/0 module without disturbing or removing user field wiring
    c. Remote Inputs and Outputs

1) The remote Input/Output (I/O) system is to be compatible with all of the head end software manufacturers modular processors.No special power supply is to be required for system operation. Power is to be provided by an Altronix SMP 3 or greater.
2) If stand-alone I/O blocks are used, the method of communication is to be a highly noise-immune, producer/consumer protocol to allow multiple PLCs to share inputs without messaging for tighter interlocking control. Provide remote I/O network which is a schedule base network that guarantees updates from the entire I/O system based on user settings.
3) All remote I/O devices are to be of the same manufacturer as the head end system. No custom I/O devices will be accepted.

B. Head End Interface Devices
1. All Inputs and Outputs to the computer based system are to be switched through interface devices with the following minimum requirements:
   a. Electro-mechanical relays, rated with a minimum of 1.5 times the rated inrush of the load.
   b. Provide relays with LED indication.
   c. Electro-mechanical control relays are to do the actual switching of the power. Relays contacts are to be U.L. listed for a continuous current greater than 1.5 times the inrush of the device being controlled. Each controlled device is to be individually fused.
   d. The electro-mechanical control relays are to have gold/nickel contacts and matching sockets. Relays are to be socketed with diode protection across coils and LED indication of activated coil circuit.
   e. Class 2 wiring in relay cabinet is to be separated from Class1 wiring and all wiring is to be color coded and marked with approved wire markers. Control wiring is to be routed through plastic wire duct and landed on Phoenix type terminal blocks.
   f. All terminal Blocks for field connections are to be clearly labeled and cross referenced to as built wiring diagrams.
   g. All terminal blocks for field connection of door control and monitoring is to be labeled with the door number of the device.
   h. Relays are to be controlled directly by the system (Addendum 2). Peripheral interface cards with active circuitry will not be approved.
2. Input Devices
   a. Each input is to be pre-wired to terminal blocks for field terminations.
3. Class 2 wiring in relay cabinet is to be separated from Class1 wiring and all wiring is to be color coded and marked with approved wire markers. Control wiring is to be routed through plastic wire duct and landed on Phoenix type terminal blocks.
4. All terminal Blocks for field connections are to be clearly labeled and cross referenced to as built wiring diagrams.
5. All terminal blocks for field connection of door control and monitoring is to be labeled with the door number of the device.

2.4 SECURITY MANAGEMENT SYSTEM (SMS)

A. The Software is used to download event data, maintain password settings, data storage and report generation. The SMS is to provide a means of archiving event data in a SQL Server relational database. The SMS is to provide packaged data reporting programs to generate reports based on user selectable search criteria. All reports are to be displayed in chronological order.
1. The system is to allow the user to create custom programs to retrieve data from the database and generate custom reports.
2. The SMS is to have a network connection to the head end system. The database can be used by correctional staff to compile reports and graphs.

3. The system is to record all of the operations activity on the hard disk to allow for computerized sorting and report generation. The recorded information for each activity is to include the time, date, point description, and the activity.
4. System activity shall be defined as the following:
    a. Changes in state of all inputs and outputs including motion sensors, alarm zones, alarms enabled, alarms disabled, alarms reset etc. that are displayed to the operator of any monitor.
    b. Operator activity including acknowledging alarms, resetting alarms log on functions (who logged on when and for how long, who has the ability of logging on where), etc.
    c. Also included as part of the system is a method of recording which CS actually performed the operations.
    d. Provide printing ability for all system activity and information. Custom and standard report generation, printing and sorting is to be part of the system.
5. Control System Network Printer
    a. Color-capable network LED Multifunction Printer
    b. 15 pages per minute mono/12 ppm color
    c. 150-sheet paper input bin
    d. 128MB RAM
    e. USB and Ethernet interface
    f. 5 cases of paper.
    g. Provide printer network sharing solution so that all security CPUs can access printer.
6. Control System Local Area Network Switch
    a. Incorporate a modular switch design so that any fiber link can be upgraded when necessary. Provide data center class layer 3 switches.
    b. Provide Gigabit SFP Fiber ports.
    c. Ethernet communications to be an Industrial Grade Dual Redundant Class A 1000BaseT (minimum) Ethernet network. No two faults in the communication network shall hinder the operation of the system. Provide a minimum of two network switches in the main equipment cabinet. Switches to operate in automatic fail over mode should one switch or communication network fail. Report system communication faults and network communication loss to the Control Systems with location information of communication loss. Log network failure reports on the SMS.
    d. Provide network switches with a minimum of 20% spare ports on each switch at the project completion.
    e. Provide network around facility as a self-healing bi-directional loops.

2.5 SYSTEMS ACCESSORIES

A. All electronic equipment furnished and installed by the ESC (LCDs, CPU, etc.) is to be protected by transient voltage surge suppression.

2.6 POWER SUPPLIES

A. All system power supplies are to be fed from UPS equipment.

B. Provide System Power Supplies as necessary to accommodate all required system power. Power Supplies and all wiring shall conform to the NEC Article 725 for Class 2 limited low voltage circuits. No power source or transformer for control or indication is to be rated for more than 1OOVA. Distribute power evenly and circuit appropriately in order to maintain this requirement.

C. Provide separation between Class 1 and Class 2 Control wiring as called for by the NEC.

D. Provide power supplies for NLEF equipment and indication power.

E. Each power supply output shall be individually fused.

F. System power supplies are to have the following minimum requirements:
1. Continuous operation at rated load.
2. UL Recognized, CSA Certified.
3. Size power supplies with a minimum 25% spare capacity.
4. Provide fusing on the inputs and outputs.
5. Power Supplies to be intrinsically safe, rated and UL labeled for Class 2 operation.
6. Power Supplies to have no more than 100VA capacity.

2.7 FENCE ENERGIZER (FE)

A. In those applications where the utilization of the integral deterrent impulse delivery capabilities of the NLEF system are required, each FE must fully comply with the applicable national and international standards regulating the performance and safety of such devices (IEC 60335-1, IEC 60335-2-76). Proof and documentation that NLEF equipment adheres to this standard must be provided.

B. FEs must provide alarm detection and monitoring of every wire simultaneously. Monitoring capabilities for every wire in the NLEF must include the ability to detect and report the following types of alarm conditions:
1. Circuit opens
2. Conductor-to-conductor shorts -spreading of wires
3. Conductor to ground shorts
4. Circuit resistive loading
5. Partial opening of a perimeter gate (i.e. a three (3) inch or greater movement).

C. Reliance on earth or reference ground wire shorting to a monitored wire is not sufficient to meet the detection criteria. All wires must be continuously monitored to report a dead or partial short to earth ground.

D. The detection component, of the NLEF, must not report an alarm from the momentary contact of wildlife conductive and non-conductive materials, (including vegetation), with the NLEF security system.

E. Each FE must provide outputs through the Command Center Software to indicate the alarm condition listed in the specification and report the information on alarms to the CS in real time.

F. Additional controller monitoring features must include:
1. Real time alarm indication by each horizontal zone and each vertical detection circuit with individual alarm silence, acknowledge, shunt and reset.
2. Remote on/off control by horizontal detection zone and by vertical detection circuit of Electricity.
3. Real time voltage monitoring by each horizontal zone and each vertical detection circuit;
4. Primary power source failure notification (monitored by the PLC system); Low battery notification (monitored by the PLC system);
5. Tamper detection on all system enclosures (provide through tamper switch on the enclosure to the PLC system).

G. The FEs shall power all wires with stored energy being released onto all system wires within the NLEF wire array simultaneously.

H. All wires in the entire vertical wire array shall be "hot" and capable of delivering a deterrent pulse.

I. Each wire shall be alternating in potential. No two adjacent wires are to be of the same potential.

J. Each horizontal alarm detection zone of the NLEF shall feature two (2) vertical detection and deterrence channels, one (1) channel shall make up the primary area of the fence, and one (1) channel shall be interlaced in between every seventh NLEF wire through the entire horizontal zone. The primary channel shall be capable of being controlled separately and the interlaced channel shall be controlled and associated with the next adjacent primary fence zone. All controller detection and deterrence circuits must be user replaceable. Replacement must be able to be accomplished without requiring re-programming the system controller.

K. Provide a minimum of two - 2 channel energizers per NLEF equipment enclosure. There is to be voltage on the fence in the event of the loss of up to two complete energizers in any NLEF enclosure.

L. The FEs must be capable of generating regulated high voltage impulses at a maximum of 2.5 joules discharged energy throughout the entirety of each detection channel.

M. The FE high voltage output circuits shall be clamped or otherwise inherently limited from exceeding a threshold voltage in order to avoid the release of dangerous voltage levels during controller failure modes.

N. Each FE shall provide an industrial switch to isolate and disable high-voltage output circuits, should the application require isolation in order to ensure proper operational safety.

O. Each FE shall support horizontally defined zone lengths as defined in the construction documents.

P. The failure of any single energizer or communication module must not affect the operation and full functionality of all other energizers or communication modules within the NLEF system.

Q. FEs shall be located at the intersection of every horizontally defined alarm detection zone or every two (2) horizontally defined alarm detection zones and shall be located in such a position that the system lead-out cables connecting each FE to the NLEF do not exceed a maximum of thirty (30) feet of total length.

R. NLEF cabinets shall be installed in locations as defined in the construction documents.

S. Alarm conditions must be transmitted to the institution's CSs and Master Control. Each FE must deliver outputs for alarming required to be monitored and receive inputs for arming I disarming.
1. Each FE must supply an output for each alarm detection circuit
2. Each FE must supply an output for armed / disarmed status of each circuit
3. Each FE must receive an input for arm / disarm each circuit
4. A minimum of six (6) spare form "C" relay contacts at each NLEF enclosure for the monitoring of ancillary functions.
5. All provided form "C" relay contacts shall be digitally assignable to any reportable event or status of the system.
6. All provided form "C" relay contacts shall be digitally programmable to be either normally open or normally-closed.

T. All FE relay outputs shall feature a status LED to provide visual indication of relay state.

U. Each FE must feature a UL listed mains power disconnect switch that is physically located within the secure FE enclosure.

V. System controller shall accept the following input power types.
1. 110-240 VAC 50/60HZ

2. 12/24 VDC

W. FEs must have a local back-up power source (UPS) to ensure their uninterrupted function for a minimum of seven (7) hours under load and at the normal pulse rate. UPS activation must occur automatically in the event of primary electrical service failure without any disruption of system operation or integrity. During this time period the NLEF system shall remain fully functional to include the reporting of and detecting of system alarms and the energizing of all electric fence wires. The system must be capable of switching back to primary electrical service automatically without disruption of system operation or integrity.

X. All equipment including heaters, communication equipment, energizers, etc. are to be on UPS power.

Y. The network equipment in each NLEF enclosure must be able to monitor the following power related status items and to report them in real-time, independently, to the head-end control.
1. UPS Voltage
2. Mains power presence r
3. FE Power Supply Operation or Failure

Z. The NLEF system shall include the ability to be disabled to allow for the powering of the system from a 12 VDC car type battery feed local to the NLEF cabinets.

AA. FE power overload control must be accomplished with self-resetting fuses.

BB. Each FE shall feature a 12 VDC auxiliary power output which may be utilized to power ancillary devices. Power may not fluctuate such that the system reports low voltage or power supply failure at low end of power output range.

CC. At a minimum, each FE shall provide the following output data:
1. Real time alarm indication by each horizontal alarm zone.
2. Alarm indication if any of the following occur (at a minimum: human contact, circuit open, wire-to-wire short, wire to ground short, barrier climbing, barrier penetration).
3. Real time channel arming supervision and status notification for each channel within each system alarm zone.
4. Real time feed / return voltages for each detection channel (to be monitored within the enclosure).
5. Real time reference ground voltage (to be monitored within the enclosure).
6. Current FE operating mode.
7. Abnormal operating conditions or equipment failures.
8. Primary power source failure notification.

DD. At a minimum, the Command Center touchscreen system shall provide the following:
1. Primary power source failure notification
2. FE power supply failure notification.
3. Back-up UPS voltage.
4. Tamper detection on FE enclosure.
5. Time and date of all events.
6. FE serial number.
7. All assigned TCPIIP configuration settings.
8. Indication of network failure with location
9. Indication of loss of primary power and location
10. Indication of system failure and location
11. Indication of battery status and location

EE. Each FE must provide the ability to be field reprogrammed to change the existing operating parameters, or enable newly developed features to be added to the system.

FF. The Command Center shall continually monitor the performance of the FE. Any system trouble indication shall generate the associated alarm condition to the CS and provide an event log of the activity.

GG. All high voltage capable components mounted on the FE process control board must be segregated by a twenty-five (25) millimeter isolation band from low voltage components.

HH. All data communications across said isolation band shall be accomplished optically.

II. FE operating environment shall be -20F to 140F, 0-100% humidity (non-condensing).

JJ. Each FE shall feature integral lightning protection on all system feed and return channels. Lightning protection circuitry must be able to dissipate a 3000 amp surge without damage to the FE.

KK. All alarm detection components of the FE must register an alarm condition under the following conditions:

1. Climbing on the wire array.
2. Cutting a wire.
3. Shorting the wire array (partially or fully).
4. Placing electrically conductive material between the wires.

LL. The alarm detection components of the FE must not report an alarm from the momentary contact of wildlife, conductive and non-conductive materials (including vegetation).

MM. All energizers shall be synchronized so that power is discharged onto fence array at the same time around the facility. A synchronization signal is to be sent around the perimeter to each of the energizers used for the main fence. All energizers are to be synchronized. Synchronization source is to be an independent source, not connected to or component of an energizer used to power the main fence. Synchronization signal and Synchronization source is to be fully monitored for status and failure and reported to each of the control stations.

NN. Synchronization shall be monitored; loss of synch shall generate an alarm condition on the CS.

OO. Fence to remain energized if communications is lost.

PP. Synchronization to remain active if communications is lost.

QQ. All FEs must be user replaceable. Replacement must be accomplished without re-wiring FE connections (use of plug type connectors are not acceptable). Replacement of FEs must be accomplished without disabling any other FE. All unaffected detection circuits must remain active and armed during the replacement process. ·

RR. The NLEF Security System must be capable of generating regulated high voltage impulses at a minimum of two and one-half (2.5) joules measure into a three hundred (300) ohm non- inductive load, with a duration of three hundred (300) milliseconds, at a frequency of one (1) pulse per every 1.5 seconds discharged throughout the entirety of each detection circuit.

SS. All zones must be independently energized by separate FEs which are distributed around the perimeter of the facility.

TT. Each FE cabinet must be provided with an alarm keypad interface (Gallagher T20 Alarms Terminal) installed inside of the cabinet for diagnostic and troubleshooting purposes. (Addendum 1)

2.8 SYNCHRONIZED DIGITAL CLOCK SYSTEM

A. Provide a digital clock on all CSs. The digital clock shall be a minimum of 0.5 inch high by 1.25 inch long. The digital clock shall have the capability of displaying both twenty four (24) hour (military time) and twelve hour formats. Mode and time settings will be through the system utilities function. Provide the equipment and programming to automatically set the clock system on all remote devices including but not limited to the CSs, NLEF system, programmable logic controllers and all other electronic security systems not specifically mentioned.

2.9 HEAD END CONTROL SYSTEM (CS)

A. Provide CS stations at the following:
   1. For monitoring and control of the NLEF System at Master Control.

B. The CS at Master Control shall consist of a computer, thirty-two (32”) inch flat screen monitor, appropriate cards, programming and all software and hardware necessary for a complete system serving as an operator interface. The CS shall have a graphic display of the institution with the alarm zones layout as required for proper operation. The graphics for the CS shall fit the screen size to display the entire perimeter, configuration and icon functions as described herein.

C. The CPU shall have a built-in DVD-RW, and be programmed to burn all events that occurred in a twenty-four (24) hour period of time automatically.

D. CSs must have a local back-up power source (UPS) to ensure their uninterrupted function for a minimum of four (4) hours under load. UPS activation must occur automatically in the event of primary electrical service failure without any disruption of system operation or integrity. During this time period the NLEF system shall remain fully functional to include the reporting of and detecting of system alarms and the energizing of all electric fence wires. The system must be capable of switching back to primary electrical service automatically without disruption of system operation or integrity.

E. Global Function Operations:
   1. All electrically controlled hardware and security subsystem end-of-line devices as indicated herein shall provide status and control by use of symbolic icons and status indicators. All control icons (switch functions) that are used shall be of a size that will facilitate a positive selection point; the minimum size of 0.25 inches square shall be required. All status indicators shall be a minimum of three-sixteenths inch·in diameter or a large, square or rectangle symbol may be used of a comparable size. All symbols shall provide status by its color and/or associated text, both the control icons and its associated status indicators. Global function icons shall be located on the bottom of each graphic screen. These icons, if active, shall control global functions for the associated graphically displayed area.
   2. Alarm Display Mode: All areas of the perimeter will be graphically represented displaying all monitored and controlled zone icons as required for proper operation. The graphics for the site CS shall fit the screen size to display the entire perimeter, configuration and icon functions as described below.

F. System Utilities
   1. Selecting this icon shall cause the system to switch to the System Management Screen.
   2. Provide controls to set the time and date.

G. Utilities Auxiliary Operations
1. General Trouble Condition: There shall be a status icon which will illuminate and flash to indicate a device-initiated trouble condition. The status icon shall disappear when the device returns to normal operation. The following conditions are able to initiate general trouble conditions.
    a. Emergency Power Status
    b. Controller Fault
2. Tone: Sound an audible tone whenever an alarm occurs. Refer to the perimeter system for further operational requirements.

H. The CS shall provide visual and audible annunciation of all specified FE output points as indicated in this document.

I. All System communications and control signals must be transmitted over a fiber optic data network. The fiber optic data network shall report any communication failure with location information. The use of copper conductors is not acceptable in this application. Loss of communications from any single FE cabinet shall not result in the loss of communications from any other FE cabinet
1. Fiber optic cabling run outdoors from the fence to the head-end control station location shall be run in schedule 40 PVC conduit with inner duct.
2. Fiber cable run indoors shall be run in new rigid conduit.

J. All data communications must take place on a supervised and error corrected data network.

K. The use of proprietary communications transport protocols is not acceptable. Commercially- available protocols that have been available for at least twelve (12) months shall be used.

L. The CS application shall run on a rack mounted server PC in the master control technology room. A separate client PC with display and user interface for Master Control shall reside in Master Control. A backup PC configured identically to the client PC located in master control shall be provided as a backup/space client machine.

M. The minimum hardware specification of the PC shall be as follows (provide latest supported version):
1. Processor- 11th Gen Intel Core i9-10900X, 3.7GHz, 20MB Cache
2. Chipset- Intel AHCI SATA 8x 6.0Gb/s, SW RAID
3. Video – Radeon ProWX2100 2GB, DP, 2mDP
4. Memory- 16GB Dual Channel DDR4 SDRAM at 2666Mhz - UDIMM
5. Hard Disk Drive – 512GB SATA Solid State Drive (SSD) Class 20
6. PORTS - All ports are to be disabled through the system registry once put into operation to prevent any tampering of the unit. ·
    a. USB Ports- 6 x USB 2.0 (4 on 1/0, 2 x USB Front Access)
    b. Serial Ports - 2 x USB-to-Serial RS-232
    c. Ethernet Port - 1 x LAN RJ45 (Gigabit)
    d. Video Out- DL-DVI, SL-DVI, mHDMI
    e. Speakers - Two 2W internal speakers
7. Operating System- Microsoft Windows 10 Pro
8. 32" Display Monitor
    a. 32" diagonal, Active matrix TFT LED LCD
    b. Aspect Ratio - 16:9 wide
    c. Native Resolution: 1920 x 1080 @ 60Hz
    d. Brightness: 270 nits
    e. Response: 5 msec
    f. Viewing Angel
        1) Horizontal: +/- 85 or 170 total
        2) Vertical:+/- 80 or 160 total
    g. Contrast Ratio: 1000:1

h. 16 million color pallet
i. On-Screen Display:
   1) Controls: menu, up, down, select, power
   2) Settings: brightness, contrast, phase, auto adjust, H- position, V-position, clock, sharpness, RGB, OSD H- position, OSD V-position, OSD time, OSD language, recall, power button
j. Real-Time Clock
k. MTBF: 50,000
l. Additional:
   1) Removable base with 1OOmm VESA mounting
   2) Bezel with lockable horizontal and vertical angle adjustments
   3) Built in Speakers

9. All necessary boards for integration to local area network, shall be provided.
10. All CPUs shall be built with identical Manufacturer parts, and shall all be purchased from the same supplier at one time. This is to ensure that all of the supplied system CPUs and all included CPU hardware are identical.
11. The CPUs are to communicate independently with the P.LC system over a Redundant Class A 1OOOBaseT Ethernet network. No CPU station failure is to affect the operation of another CPU station.
12. All alarm, maintenance and control conditions must be displayed on a graphic site-map display, which is integral to the CS The precise location of the alarm condition shall be displayed on the site-map. The site-map display shall show the facility specific perimeter zone layout. The site map must display real time fence voltages of each zone. The site- map must be software based and be easily re-configurable to reflect updated facility perimeter boundaries. The monitor used for the site display shall be the 32" Display Monitor specified herein.
13. The use of proprietary communications transport protocols is not acceptable. Commercially-available protocols that have been available for at least twelve (12) months shall be used.
14. Primary system controls must utilize programmable HMis, (Human Machine Interfaces), or programmable PC based GUI's, (Graphical User Interfaces. PC based GUI's operating system shall be in the current version of Windows
15. The CS shall provide event logging, along with a native mechanism for burning all logged events to compact disc media. Third party CD burning applications that are not completely integrated with the system control application are NOT acceptable in this application.
16. The CS must store all events logging data in a SQL database.
17. The CS components, PC and LCD monitors shall have a minimum of four (4) hours UPS power source provided.

2.10 ZONE RESET DEVICES (CARD READERS)

A. The NLEF system shall be provided with zone reset devices located throughout the field for resetting alarm conditions. Zone reset devices shall be proximity style contactless card readers with the following features:
   1. NFC Compatibility:
      a. Compatible with Apple Wallet and Android Wallet credentials
   2. BLE: Compatible with Bluetooth Low Energy (BLE) with configurable read distance.
   3. Smart Card Compatibility: Compatible with all of the following protocols.
      a. MIFARE DESFire EV3, EV2, and EV1
      b. MIFARE Plus
      c. MIFARE Classic
   4. RFID: Compatible with 125khz proximity cards.
   5. Environmental Performance
      a. Moisture / particulate ingress: IP68 Rating
      b. Temperature: -31 Deg F to +158 Deg F.

6. Power:
    a. 9-16Vdc, supplied from the nearest fence energizer cabinet.
7. Communication
    a. Gallagher HBUS protocol, integrated into nearest fence energizer cabinet.
8. Smart Cards:
    a. Provide 20 programmed smart cards meeting the following critera
        1) Card Protocol: MIFARE DESFire EV1 or better
        2) Physical Requirements
            a) Size: Approximate to typical credit card or identification credentials.
            b) Style: Flat waterproof and abrasion resistant flat PVC clamshell style cards with integral slot punched adjecnt to the narrow edge for attachment to holding devices.
            c) Card Numbering: Provide cards with visible numbers for visual identification purposes. Coordinate numbering format (start number, digit quantity, etc) with owner.
    b. Smart Card Programmer:
        1) Provide 1 smart card programmer with appropriate software and training as required for the owner to generate and integrate new cards into the system as required.

2.11 PRINCIPLE OF OPERATION:

A. The NLEF system shall annunciate any attempt to climb, cut, short, or ground the system. The system shall have a false alarm rate less than one false alarm per zone per month. The system operation shall not be affected by snow, rain, or fog.

B. Event logging: The ESC will be responsible for the event logging with the perimeter NLEF system CS as required by these specifications. Furnish and install outputs to log the following for future report generation. Events shall be stored and available for reporting immediately after they occur. Events shall be logged with event label, time, date, and status change. All events shall be recorded with text nomenclature that clearly identifies the type and area of each event. Features of event logging shall be as follows:
    1. Events shall be stored in a SQL database.
    2. The system shall provide five preconfigured reports as follows:
        a. Alarm events between "Date A" and "Date B" with totals by zone where "Date A" and "Date B" are as entered on the CS by the operator at the time of report generation.
        b. Trouble events between "Date A" and "Date B" with totals by zone where "Date A" and "Date B" are as entered on the CS by the operator at the time of report generation.
        c. All events on "Date" where "Date" is as entered on the CS by the operator at the time of report generation.
        d. All occurrences of a particular event where the operator selects the event on the CS at the time of report generation.
        e. All Events as defined in paragraph C.

C. System Monitoring: The system shall automatically monitor and report any conditions that compromise the system operation or integrity. As a minimum, the system shall report:
    1. Loss of communication by node
    2. Loss of commercial power by field cabinet
    3. UPS load test fail
    4. UPS Low battery
    5. Cabinet Tamper
    6. PLC Low Battery
    7. Loss of Synchronization

8. Real time alarm indication by each horizontal zone and each independent vertical detection circuit

D. Alarm Resound: Each zone shall provide audible and visual annunciation at the NLEF CS when an alarm is activated.
1. Provide control icons to silence the alarm without resetting the alarm. The visual alarm indication for the zone in alarm shall remain until the system is reset.
2. If a second alarm is activated while the initial zone is silenced, the CS shall resound, i.e. provide an audible and visual annunciation for the new alarm.
3. Each new activated zone shall resound.

E. Remote on/off control by horizontal detection zone and by vertical detection circuit.

F. Both visual and audible alarm and trouble notification shall be provided at all CSs.

2.12 WIRE FENCE ARRAY (WFA)

A. The Perimeter Detection system shall consist of a series of tensioned wires (nominally 40 foot- pounds of force per wire or as recommended by manufacturer) stretched between terminal posts supported by intermediate fence posts.
1. There is a maximum allowable space of three and three-quarters inches between each horizontally mounted wire.
2. The vertical on-center dimension of the wire array must not vary with the height of the wire array from established grade and must remain a constant separation of 3 3/4" at all points in the wire array, including the top of the anchored fence bottom rail to the first wire at the bottom of the array.
3. All wire, to include jumpers, must be constructed of high-tensile 12.5 AWG aluminum alloy with no more than an electrical resistance of 17 ohm/mile.
4. The wires must be capable of being easily tensioned by the facility's maintenance staff.
5. Tensioning devices must be located near terminal positions, use of wire type connectors - gripples, joint clamps, line clamps, are strictly prohibited.
6. All electrical wiring connections shall be terminated utilizing a tensioner link system with no joint clamps.
7. Tensioning devices must operate in such a manner that the tensioning process does not permanently distort the form of the individual wires.
8. All nominal wire tensions MUST be maintained automatically by the system's design to compensate for severe changes in climatic conditions (up to two inches of expansion and contraction on each wire in the system's array and greater if the typical weather conditions of the site mandate).
9. Provide the NLEF manufacturers standard hot dipped heavily galvanized single piece security posts to support the NLEF array.
10. The use of tensioning devices that require manual intervention:
    a. Can be adjusted by regular tools;
    b. Shall be a variable tension spring at one end, and a ratcheting mechanism at the other end.
11. Has no detection circuit that exceeds one hundred (100) ohms of electrical resistance
12. A parallel-grounded electrical link-up configuration shall be employed at one end of every zone. All gates, support posts and appendages used in the construction of the electric fence must be grounded.

B. All metal components of the NLEF System must be made of hot-dipped, galvanized steel to meet or exceed the normal standard for outdoor fence products (ASTM F-1083).To avoid the effects of electrolysis, the use of stainless steel and galvanized components in conjunction within system electrical circuits must be avoided. Where welds are used, they must be protected against the environment with an approved quality protective coating (equal to DOD approved military specification).

C. The terminal and intermediate posts shall be attached to the fence posts utilizing plastic insulated space blocks. Brackets for terminal posts and posts used at change of direction of the wire fence array must be

welded to existing corresponding fence posts. Blocks for intermediate posts must be attached with minimum of (3) through-bolts and lock nuts to existing corresponding fence posts. Design of the posts must provide a formidable physical barrier by incorporating the following:

1. Weld free, single cut electric fence posts (height per construction documents) to support wire array.
2. Intermediate support posts that must be mounted no more than 10' horizontally on center. Attach in three locations using a manufactured standoff block made specifically for the post.
3. Roll-formed steel posts that are used to increase strength and reduce sharp corners and bending.
4. Steel posts that are hot dip galvanized to more than 30 microns to prevent corrosion.
5. Steel posts that incorporate pointed tops to prevent intruders from climbing over fence.
6. Steel posts that utilize pre-punched holes to prevent corrosion.
7. Terminal posts and any intermediate posts used at a change of direction of the wire fence array are to be secured to a full length fence post. The full length fence post is to be welded to the existing fence post.
8. Provide bracing on both sides of the Strain Posts to the bottom of the intermediate post. Follow the manufacturer's recommendations for the required supports and bracing.

D. Provide and install Termination posts, Extension Posts, additional posts, post setting, bracing, supports, setting of posts and supports required to support the NLEF installation.

E. All NLEF posts require a 2" standoff from the host fence. This includes both the strain locations and the intermediate post locations. For the strain post locations, a 2" bracket needs to be welded to the NLEF post in locations where there is a "Hole" in the diamond of the fabric. These standoffs need to be welded to the host fence. The intermediate NLEF posts need to be provided with a bracket/standoff made specifically for the NLEF post to attach to the host fence on top of the fabric.

F. Plastic components must be specifically designed for security applications and be:

1. UV stabilized material for long useful life in outdoor use.
2. A self-cleaning design manufactured specifically for security purposes.
3. No components containing ceramic or porcelain materials.
4. Extended shielding to prevent arching to posts under adverse weather conditions.
5. A secured fixing pin to hold in place and speed installation, which cannot be removed without tools, but does not create a permanent installation preventing future replacement.

G. The system must provide a formidable physical barrier by incorporating the following:

1. Anti-Leverage Technology: The NLEF system must feature a system of breakaway insulators supporting the NLEF wires above 12 feet. Any type of rods; either PVC, Fiberglass or metal are strictly prohibited as they tend to bend or break under heavy snow or ice loads. The Anti-Leverage Zone must extend a minimum of forty-two inches (42") (measured in the plane of installation) from its junction with the portion of the NLEF system, which extends down the face of the permanent barrier.

2.13 SYSTEM WIRING

A. Electrical power for the system is provided by the contractor. Refer to Construction Documents four sources of power that shall be extended by the contractor for the NLEF system. Provide conduit, cabling and transformers to provide power out to NLEF equipment cabinets indicated on the drawings. Buried conduit for both power and communications shall comply with applicable codes and be installed at depths as shown on drawings. Provide warning tape 12" above buried conduit. Restore any ground disturbed from conduit installation to its existing condition.

B. Feed Wires (the connecting wires between the system controllers and the NLEF array).

1. Feed wires shall be installed per manufacturer specifications.
2. All system feed wiring is to be of the same gauge, to include jumpers and any wire making contact to the feed wire.

3. All system feed wiring must be run in rigid galvanized steel conduit to within 24 inches of the termination to the wiring array.
4. System feed cables may not be run in conduits containing any other kind of wire.
5. The length of feed wires should be kept to a minimum (no more than 30 feet).
6. Feed wires must be specifically designed for perimeter security applications, be resistant to all environmental and underground direct burial conditions, and include an impact resistant coating.

C. Feed wire resistance must represent no more than ten percent (10%) of the total detection circuit resistance.

D. Ground System: Connection to grounds for Transient Voltage Surge Suppressors shall be 1 ohms or less. All grounds shall be installed as required by the NEC.

E. Field Energizers Common Ground Wire: Bottom wire of fence array shall be utilized as a common ground for the field energizers. This wire shall be continuous (using a jumper wire when required) to connect all field energizers to a common ground loop.

F. Listing: All wiring and raceways shall be listed for the intended installation and installed in strict accordance with the National Electric Code as required by the conditions of where it is stalled. This includes but is not limited to ratings for riser, plenum, or wet installations.

G. All system wiring must:
1. Have all outdoor circuit configurations constructed so as to minimize a person's ability to easily determine circuit design.
2. Be designed and installed in such a manner as to prevent an intruder from using zone and corner termination points as climbing ladders. (anti-climb)
3. Have all connections permanently clamped (bolted or crimped) and, if necessary, soldered in a secure manner. All joints must be protected against corrosion and electrolysis. (Only similar or non-reactive metals may be used at any joint.)
4. All metallic parts of the NLEF system, including support posts and appendages used in the construction of the NLEF system, must be grounded to earth ground.
5. Have no detection circuit that exceeds one hundred (100) ohms of electrical resistance.
6. Have all wires on the NLEF system serve as detection wires, capable of triggering an alarm when cut or otherwise tampered with.
7. The NLEF System must incorporate a horizontal alarm detection zone that features two
8. (2) vertical detection and deterrence channels, one (1) channel shall make up the primary fence area and one (1) channel shall be interlaced in between every seventh NLEF wire through the entire horizontal zone. The primary fence area channel and the interlaced channel shall be controlled and associated with the next adjacent zone primary fence area channel. All controller detection and deterrence circuits must be user replaceable. Replacement must be able to be accomplished without requiring re-programming the system controller.
9. Damage sustained by any single vertical independent circuit, must not affect the operation of any other vertical circuits within the horizontal zone.

H. Supervision of the system causes a supervisory alarm to signal if:
1. An enclosure tamper switch is activated.
2. The system primary power source fails.
3. Controller back-up power levels are low.

I. All controllers must have manual arming/disarming controls as well as alarm and system status indicators inside each controller location.

J. The NLEF System shall be active 24 hours per day, seven days a week.

K. Controller Cabinet: Each controller cabinet shall house the electronics to detect one or two fence zones as indicated on the plans. Each fence cabinet shall provide the logic required to analyze fence conditions and report a zone alarm or trouble over a fiber optic network. Furnish fence cabinets as indicated on the plans. Cabinets shall be sized to provide space for Fiber Optic cables and NLEF equipment.

L. Each cabinet shall have a network controller and input/output capability, to monitor inputs and activate appropriate outputs.

M. Zone Control: Each Fence Cabinet shall have an industrial grade switch inside the cabinet to allow for bypassing the zone during maintenance. Provide with clearly marked labeling.

2.14 INSULATORS AND PULL INSULATORS

A. The insulators and pull insulators must be constructed of non-metallic, non-conductive material (i.e. nylon or ABS), be UV stabilized; and must break away from the post on which they are connected if subjected to excessive force against the insulator. Excessive force shall be defined as any abnormal force in excess of seventy-five (75) pounds (+/- 5%).

2.15 TENSIONING SYSTEM:

A. Can be adjusted by regular tools;

B. Shall be a variable tension spring at one end, and a ratcheting mechanism at the other end.

C. ESC shall check and re-tension all wires of the system twice after initial tensioning. Each spring must have a tension indicator. This is to be witnessed and signed off by the Owner's Representative.

2.16 LIGHTNING PROTECTION.

A. Provide lightning and transient protection for each lead out cable to NLEF, per the manufacturer's recommendations. Additional ground rods must be installed per manufacturer’s requirements.

2.17 POWER CABLE AND CONDUIT

A. Power cables and conduits shall be per the NLEF manufacturer's recommendation.

B. Shall Follow NEC requirements

2.18 PULLBOXES

A. Refer to Division 26 specifications for requirements for pull boxes.

2.19 GROUNDING

A. Provide grounding per the manufacturer's recommendations at each enclosure.

B. Grounding for Lightning protection shall be separate and separated by at least thirty (30) feet from energizer grounds

2.20 NLEF SYSTEM SUPERVISION

A. Supervision of the system causes a supervisory alarm to signal if:
1. An enclosure tamper switch is activated
2. The system primary power source fails
3. Controller battery levels are low.

2.21 EQUIPMENT ENCLOSURES

A. Acceptable Manufacturers:
1. Hoffman Engineering Co.
2. Rittal Inc
3. Saginaw Control and Engineering

B. Wall Cabinets: Furnish and install cabinets to house all system components in the space provided on the plans.
1. Interior wall cabinets shall be rated a minimum of NEMA 1.
2. Furnish and install cabinet heaters and cabinet air conditioners to ensure proper ventilation for the equipment.
3. All cabinet components shall be installed so that one component does not block access to another, or prevent maintenance of another component. No component shall require removal to allow for the maintenance of another component.

C. All cabinets and junction boxes shall be secured with a removable core padlock keyed in accordance with the current Facility key system and with pin torx style security screws.

2.22 EXTERIOR CABINETS:

A. Exterior cabinets shall be weather proofed to protect the electronics. All enclosure raceway penetrations shall utilize weatherproof Myers hubs in order to maintain enclosure environmental ratings.

B. Furnish and install fence cabinets as detailed on the plans with the following minimum features:
1. Cabinets shall be sized to house all components within a single enclosure for each control cabinet location and mounted to unistrut framed pedestals. Provide all necessary structural bracing, concrete foundation (with structural support) and mounting components to insure adequate mounting of the cabinet.
2. All cabinet components shall be installed so that one component does not block access to another, or prevent maintenance of another component. No component shall require removal to allow for the maintenance of another component.
3. Cabinets shall be rated NEMA 4X rated (IP66) outdoor rated enclosure and listed as such by Underwriters Laboratories (UL).
4. Furnish and install all mounting hardware as required to install all energizers, components, fiber modules and UPS equipment in the interior space allowed. Cabinets shall be sized to provide space for Fiber Optic cables as indicated on the construction documents.
5. The system controller enclosure shall feature a UL listed mains power disconnect switch to allow for safe service to the components housed within the enclosure. This switch is to be mounted within the

secure NLEF enclosure is to prevent unauthorized tampering. Include also a power disconnect within NLEF enclosure which allows disconnecting UPS power from system.

6. The system controller enclosure cover shall be secured with a minimum of six (6) detention fasteners featuring an approved security head.
7. All cabinets will be provided with sun shields, industrial heaters and industrial NEMA 4X air conditioners. Insure proper size of the heater and air conditioners to achieve optimum operating temperatures within the enclosures. Provide heat and cooling load calculations with equipment submittal.
8. All cabinets and junction boxes shall be secured with a removable core padlock keyed in accordance with the current Facility key system and with pin torx style security screws. The owner will provide the padlock and keys, this contractor to coordinate and provide cabinet designs that accept the owners' padlocks. (Addendum 1)

C. The ESC is responsible for obtaining a UL listing and label each complete assembled NLEF Equipment Cabinets.

2.23 PERIMETER ZONE SIGNAGE:

A. Furnish and install zone signage at each zone alarm location and at zone breaks indicating the zone numbering per the drawings. Signage shall be submitted during the submittal process, reviewed by the Owner and Architect and approved prior to fabricating and installing.

B. Provide new signage as required to coordinate zoning between the new NLEF system and the existing fence shaker system. Refer to project architectural drawings for requirements.

C. Furnish and install required black and yellow NLEF signage to indicate "HIGH VOLTAGE" at each fence cabinet. Signage will be furnished and installed every 30 feet in accordance with IEC 60335-1, IEC 60335-2-76 Standards, anchored to reduce sideways movement.

2.24 FIBER OPTIC CABLING:

A. Fiber Optic Cable: Furnish and install fiber optic cable from each fence cabinet to the Electronic Security Equipment Room for digital communications. Refer to drawings for required cable routing and strand counts to be provided. Install the fiber optic cable in a raceway around the site out to each NLEF Cabinet.

B. All fibers around the perimeter to the NLEF cabinets shall be single mode for exterior use. Fibers to each NLEF cabinet shall originate in electronic security equipment room and terminate at each NLEF cabinet, and be dedicated to each NLEF cabinet. See construction documents for additional information.

1. Singlemode Fiber Optic Cabling: Provide loose tube gel free, optical glass fiber cores cable:
   a. Laser optimized and suitable for fiber optic Ethernet LAN standards including the point-to-point Fiber Optic Inter-Repeater Link (FOIRL) networks and ANSI standard Fiber Distributed Data Interface (FDDI) networks.
   b. The number of cables and the number of fibers in each cable shall be as specified herein and as shown on the Drawings.
   c. Splitter kits: The cable shall be provided with the necessary number of splitter kits to accommodate the number of terminations shown for each interconnection box on the Drawings.
   d. Cable shall be assembled with inner strength members, polyester core separator tape, Aramid yarn or similar strength members.

e. Jackets: Inner PVC jacket with rip cord and a polyethylene outer jacket with rip cord. Provide a cable outer jacket that is UV inhibited, fungus resistant and flame retardant.
f. Attenuation losses and Bandwidth performance: Exceed OS2 Cable Type Standards
g. Provide cable unaffected by continuous or intermittent submergence in water, damage from lightning strikes. Shall be resistant to fuel, petro-chemicals and other caustic or noxious materials.
h. Cable shall be suitable for indoor and outdoor use conduit installation.
i. Provide continuous inter-and intra-building installation, closet to closet, suitable for passing through inside conduit locations directly from outside conduit.
j. Cable shall be UL listed as type OFN per NEC 770-51 and NEC 770-53.
k. Cable specifications are as follows:
    1) Fiber type/classification: Laser optimized singlemode type OS2
    2) Fiber Size: 8.2 micron/125 micron (core/cladding).
    3) Fiber Count: (refer to drawings for requirements)
    4) Operating Temperature: -40 to +80°C.
    5) Proof Test: 100 kpsa (Minimum)
    6) Maximum Attenuation:
        a) @1310 nm: 0.35 dBikm
        b) @1550 nm: 0.25 dBikm
    7) Gigabit Ethernet Distance
        a) @1300 nm: 5.00 km
        b) All fiber optic cabling shall be Corning.

2.25 PATCH CABLES

A. Flexible jumpers and patch cords utilized to extend optic signals from the LCT to the fiber optic transceivers and equipment. Cables shall be cut to length and factory terminated utilizing terminations compatible with the specified equipment. Cable shall be simplex or duplex zipcord type as required and shall include a high-performance tight-buffer coating on each optical fiber. Cable jacket shall be a flame-spread retardant flexible PVC that is ONFR-rated and color coded per TIA-598-A.

B. All patch cables shall conform to the following specifications as a minimum:
1. Attenuation:
    a. @850 nm: Less than 3.5 dB/km
    b. @1300 nm: 1.5 dB/km
2. Bandwidth:
    a. @850 nm: 500 MHz/km
    b. @1300 nm: 500 MHz/km
3. Cladding Diameter: 125 microns
4. Core Diameter: 62.5 microns/9 microns

2.26 FIBER OPTIC PATCH PANELS

A. All fiber optic rack mount enclosures shall be equal to Corning. All adapter panels shall be Corning as required for Multimode (MM) or Singlemode (SM) applications.
1. Corning CCH-02HU Enclosure
2. Corning CCH-01HU Enclosure
3. Corning CCH-CP06-A8 Adapter Panel (MM)

B. Fiber terminations:
1. All Fiber for security electronics/NLEF systems shall use ST connectors as coordinated with the equipment provider.

2.27 MOBILE MAPS SYSTEM (**If Alternate #4 is accepted**)

A. Provide a mobile maps system which will provide a graphical display of the area protected by the NLEF fence system The mobile maps systems shall be a radio-graphic display system designed to provide graphic indication of an alarm condition to roving personnel located in a vehicle or remote location. The system receives alarm information and visually communicates the alarm type and location to roving personnel. The wireless alarm connection allows the vehicle to rove the facility and receive an alarm regardless of location. The MMP faceplate contains a permanently engraved graphic representation of the monitored area with alarm and status lamps for each zone protected by the system showing the presence of alarm conditions. When such systems are installed in vehicles, audible alarms can be connected to the vehicle horn alerting personnel when they are outside the vehicle. The mobile maps system shall be provided as a complete and tightly integrated system with the new NLEF system to annunciate all alarms in the system to roving security personnel. The system shall be provided as follows:

1. System Components
    a. Mobile Maps Field Unit Enclosure: Provide a drawn metal enclosure to completely contain the visible map and all electronics inside of roving vehicles. The enclosure shall be designed for permanent vehicle mounting, and be provided with mounting brackets as required. Provide a minimum of three mobile maps roving displays and all associated accessories for installation in patrol vehicles. Install systems in vehicles designated by the owner.
        1) Physical Criteria
            a) Dimensions: 8” x 11” x3.5” (excluding sun shield)
            b) Temperature Range: -13 Deg F to 131 Deg F
            c) Power Supply: 12VDC, 1A nominal supplied from vehicle battery.
        2) Mobile Map Graphics: The display unit shall be provided with a laser engraved display substrate which shall include the following:
            a) A graphical depiction of the site, including each specific alarm zone.
            b) Text lettering to identify the name / identifier for each zone for which an alarm is annunciated.
            c) LED indicators which will illuminate to display the alarm or normal status of each zone depicted on the map.
        3) Alarm Signaling
            a) Alarm signaling shall be communicated through a change in LED status on the map display as well as though an audible alarm on the unit.
            b) Hardware for control of vehicle horns shall be provided and turned over to the owner for later installation by the owner at their discretion
    b. Headend Equipment
        1) Alarm signals shall be integrated into the mobile maps system though dry contact signaling between the mobile maps system and associated systems being monitored. Provide dry contact outputs in the NLEF system, raceways, and wiring as required to facilitate integration.
        2) Integrate alarm signals from the mobile maps system back into the NLEF system through dry contacts for monitoring and alarming on detection of tampering, radio frequency jamming, or other abnormal conditions.
        3) Communications requirements:
            a) Communications frequency: 450-470MHz. Exact frequency to be recommended by the vendor based on project location and field conditions.
            b) Signal Encoding: Frequency Shift Keying (FSK). Transmissions shall be encoded by an 8 bit security code.
        4) Communications transmitter:
            a) Power: 12V DC, 1.5A from supplied plug in power supply. Connect to nearest receptacle in the central control IT room on emergency power.

b) Power Output: Minimum 2W output into 50 Ohms. Vendor to determine required power output based on site size and site specific conditions. Provide with matched antenna, antenna cabling, and installation hardware suitable for intended site coverage and conditions.

c) The vendor shall prepare FCC license paperwork and pay initial licensing fees covering the first year of system operation on the communication frequency proposed by the vendor for use with the system. (Addendum 2)

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

A. The entire NLEF intrusion detection system, described in this section, must be provided by Gallagher and all equipment shall be certified by this source as a fully compatible system.

B. All wiring shall be run in conduit and wired in accordance with the manufacturer's specifications and the National Electrical Code.

C. AC electrical power shall be provided by the contractor at the points of connections as indicated on the Construction Drawings.

D. All underground conduits shall be buried at a minimum depths as shown on drawings or required by code, but not less than eighteen (18) inches below finished grade; sizing of conduit shall follow the guidelines and specifications of the National Electrical Code. Conduit type shall be non-metallic PVC, schedule 40, and fittings shall be rigid non-metallic PVC, schedule 40. All coupling-elbows and box connectors shall be glued, and conduit shall be installed in a manner to prevent moisture/water from entering the conduit system.

E. All above ground conduit shall be threaded rigid galvanized steel. All flexible conduits shall be flexible liquid tight type, ALT- lightweight-aluminum core PVC cover. Size shall be size of following the guidelines and specifications of the National Electrical Code a minimum of one (1) inch and shall be installed in a secure manner with a drip loop to prevent water from entering the system.

F. ESC shall provide all of the interconnect wiring as recommended by the manufacturer of the equipment as suitable for a wet environment.

G. ESC shall provide lightning protection devices for AC power connection and data ports as recommended and tested by the manufacturer of system equipment for maximum protection of all system components.

3.2 CS SOFTWARE SUPPORT.

A. Phase I

1. Within one (1) week of receiving the approved shop drawing submittal, the ESC shall request in writing a preliminary meeting with the Owner's Representative to discuss the specific operation and functions of the control system. Extensive analysis outlining all performance possibilities of software design and application will be presented to the Owner's Representative by the ESC.
2. The ESC shall prepare a detailed report, summarizing all software design and function criteria to be submitted to the Owner's Representative for approval by appropriate parties no later than two weeks from the date of the Phase I meeting. The custom software that operates the control system shall be designed specifically from this document.

3. The Phase I meeting shall outline the requirements of the custom software as it relates to integrating all the individual components and devices making up the Control System (CS, 1/0, intercommunications, alarms, etc). Additionally, the ESC shall provide an operating CS at the Phase I meeting (that demonstrates an operating site for this project) to help the Owner with design decisions. This demo shall not include any features or capabilities not found in this project.
4. The ESC shall prepare and present full size color (for each CS) drawings at this meeting. These drawings shall depict all screens with all information to scale. Two extra copies of these drawings shall be prepared for use during the meeting with one set kept by the Owner's Representative. As a minimum, these screen drawings shall depict the following:
    a. Overall site layout screen.
    b. Sally Port monitor I control maps where applicable. (Drawn to represent actual orientation with control staff's view).
    c. All special control and transition screens.

B. Phase II
1. Prior to the scheduled date for jobsite delivery of the CS, the ESC shall request a second meeting with the Owner (2 representative) and the Owner's Representative (2 representatives) at the ESC's manufacturing facility. The ESC shall provide a full demonstration of the completed control consoles with a fully functional simulation of all control software. The design and function of the software shall match the exact performance as specified in the detailed Phase I report. The ESC shall provide all expenses including hotel, meals and travel costs for this meeting.
2. All deviations and needed changes in hardware/software performance up to this point shall be documented at this meeting by the Owner's Representative and ESC on a "pre- punch list" and shall be 100% corrected by the ESC at no additional cost to the owner prior to delivering the equipment to the jobsite.
3. During this time period the ESC shall perform all tests and critical conditioning on the system to prepare the detailed diagnostic information and operational procedures for the service/operations manual.

C. Phase Ill
1. Immediately following the installation of the control system, the ESC shall work with the Owner, facility personnel and the Owner's Representative to correct any hardware problems or operational deviations from the original Phase I software design document. The ESC shall modify the hardware/software as necessary to solve any problems or concerns.
2. Upon achieving a 100% functional control system as determined by the Owner's Representative, a documented release form provided by the ESC shall be signed by the Owner, and retained on file with the Owner's Representative. The ESC shall continue to work on the installed hardware/software at no cost to the Owner until the Owner's Representative has determined the Phase I and II revisions have been 100% corrected and incorporated. The system warranty will begin at this time.

3.3 SYSTEM INITIALIZING AND PROGRAMMING

A. The Systems shall be turned on and adjustments made to meet requirements of the specification and on-site conditions.

B. The Systems shall be programmed to function as specified, and a copy shall be made of the initial program and given to the Owner.

C. Any special programming shall be documented and a written copy given to the Owner.

3.4 CS INSTALLATION

A. Coordination with the Facility/Owner: The ESC shall coordinate the work of this specification section with that of the Owner as required to ensure that the entire work of this Project will be carried out in an orderly, complete and coordinated fashion.

B. Field Wiring: The wiring that extends from the electronic control relay terminal strips shall be class 1, 2, or 3 as defined by Article 725 of the National Electric Code (NEC). All conductors shall be 14 gauge or larger THHN or THWN; 600 volt rated, and shall be installed in raceways and equipment enclosures with other conductors, within limitations defined by Article 725 of the National Electric Code.

C. Ground System: Connection to grounds for Transient Voltage Surge Suppressors shall be 10 ohms or less. All grounds shall be installed as required by the NEC. No electric fence zone shall exceed 100 ohms of electrical resistance when measured from end to end. Galvanized ground rods (minimum of 6 ft) shall be driven into the ground at each fence controller location.

D. Listing: All wiring and raceways shall be listed for the intended installation and installed in strict accordance with the National Electric Code as required by the conditions of where it is installed. This includes but is not limited to ratings for riser, plenum, or wet installations.

E. Programming
1. Testing: All programming will be completely tested and debugged in the factory before being sent to the site for installation. Each response for each point shall be test by an actual device or by software simulation.
2. Personnel: All programmers developing software for the NLEF systems shall be experienced programmers completely trained in the operation of the computers involved.

F. Fabrication
1. All cables between PLC and CS shall be provided with quick disconnect connectors and/or terminals for ease of trouble-shooting and service.
2. All field wiring shall be landed on appropriately labeled terminal strips.
3. All wiring shall be cabled or neatly bundled and secured to the housing with wire ties and internal wire ducts.

G. Field Quality Control
1. All functions specified shall be individually activated and the results documented. Utilize preprinted test sheets with space for comments and indicate "pass" or "fail" for each. These test reports shall be copied and submitted to the owner.
2. All functions shall be demonstrated for the Owner's benefit.

H. Software
1. For each PLC, furnish to the owner uniquely identified:
    a. One (1) printed copy of the source code of the applications software including full instruction documentation and comments for each system defined by panel.
    b. One (1) separate back-up CD or Disc for each PLC with the ladder logic file (programmer's notated file) and the source code. Each disk will be labeled with the project name, programs, PLC, programmer, and revision date.
    c. One (1) copy of the source code of the application software on magnetic media.
    d. One (1) copy of the touchscreen development software with license to make additions/modifications.
    e. Furnish a single Microsoft Word file detailing all passwords required to access the system programming. This file shall also identify the following by system and panel.
2. The file name of each program required to restore each failed PLC.
3. The passwords required for each PLC as well as required programs.
4. The name of the programmers for each custom program.
5. The date of the last program change.

3.5 WIRE ARRAY INSTALLATION

A. NLEF Fence Wire: Install the detection wire as indicated on the plans and required by the NLEF System manufacturer. Any deviation to the design as shown on drawings and/or as defined in these specifications shall be submitted in detail prior to submitting a BID.

B. Fence Cabinet Installation: Furnish and install the fence cabinet as indicated on the plans and as recommended by the manufacturer. Install conduits and as indicated and as recommended by the manufacturer and terminate all wiring and fiber optic connections bundled in the cabinets.
1. Furnish and install concrete footings as recommended by the manufacturer.
2. Furnish and install hardware and supports as recommended by the manufacturer. Cabinets to be anchored into ground with dual posts and cabinet to have a minimum of 12" clearance from ground.
3. Install cabinets between the fence lines in the restricted zone.

C. Wire Termination: All wiring shall be terminated at both ends and labeled for ease of reference by the owner. Wire or optic fiber not energized or connected to active devices shall be terminated and labeled for future use.

D. All conductors shall be numbered and identified at all terminal strips or any other point of connection (designations shall correspond exactly with point-to-point wiring diagrams.
1. Field Wiring:
    a. Installation: Dress wires and cables to provide a neat and orderly appearance within all enclosures, equipment racks, cabinets, and consoles by routing in snap- cover, plastic wiring duct. In locations where wiring duct is not feasible, organize by cable clamping, dressing and tie-wrapping.
    b. Strain Relief: Relieve strain on all loose wire bundles using tie-wrap, supports fastened with machine screws or bolts. Do not use self-adhesive type supports.
    c. Shrink Tubing: Neatly form cable ends and apply shrinkable tubing to shielded cables or where necessary to secure the insulation against fraying or raveling.
    d. Edge Protection: Install edge protection materials on edges, holes, lips of ducts, or any other place where wires or cables cross sharp metallic edges.
    e. Service Loops: Allow sufficient service loops where conductors leave cabinet or transition to door mounted electronics.
    f. Splicing: Field wiring shall not be spliced. All wiring shall be continuous from the field device to the termination in the control panel.
    g. Wire Termination: All wiring shall be terminated at both ends and labeled in accordance with the equipment wiring plans. Wire not energized or connected to active devices shall be labeled for future use.
    h. All wire is to be landed on screw terminal units of size, amp capacity rating, material, type, and class suitable for service indicated.

3.6 FIBER OPTIC SYSTEM INSTALLATION

A. Preparation:
1. The ESC shall install fiber between each site NLEF cabinet and back to the facility Electronic Security Equipment Room. Refer to Construction Drawings for locations. (Addendum 2)
2. Provide a communication link from the Electronic Security Equipment Room to Master Control to allow for the CS Equipment in Master Control.
3. Each fiber optic cable has been sized on drawings to include spare strands. The spare strands shall not be used by the ESC unless written permission is granted by the Owner.

B. Installation
1. All cable shall be factory tested on a reel basis for each cable shipped to the project site.

a. The attenuation in dB/km units shall be recorded for each fiber strand. Conduct tests at 850 nm and 1300 nm for multi-mode strands and at 1310 nm and 1550 nm for single-mode strands.
b. Band width shall be recorded.

2. All fiber optic cable shall be inspected prior to installation.
3. Cable shall be installed in accordance with the fiber optic TIA/EIA/ 568-B standards and with the manufacturer's recommended practices for field installation.
4. All cable shall be continuous with no splicing.
5. All fiber strands shall be terminated with "ST" type connectors at the LCT bulkhead.

C. Testing:
1. The completed system shall be tested by the ESC prior to NLEF Acceptance Test.
2. Each installed fiber cable shall be tested for power through loss to reflect the following:
a. Total end-to-end loss including connectors.
b. All tests shall be based at 850 nm and 1300 nm for multi-modeand 1310 nm and 1550 nm for single-mode fiber.
3. End-to-end loss shall be measured from bulkhead-to-bulkhead to include cable splice jumper and connector losses. Cable loss, excluding connectors, for the multi-mode cables shall not exceed 3.5 dB/km at 850 nm and 1.5 dB/km at 1300 nm. Cable loss, excluding connectors, for the single-mode cables shall not exceed 0.5 dB/km at 1310 nm and 0.5 dB/km at 1550 nm. Cable loss measurements shall be made in conformance with the fiber optic TINEIA 568-B standards and with the cable manufacturer's recommendation. Measurements shall be recorded on a per cable basis with loss measured for each strand. Submit test results in a single binder titled "Fiber Optic Cable Distribution Performance Measurements".

3.7 ACCEPTANCE TEST

A. The final installed operating system must be reviewed and certified by the NLEF manufacturer's representative.

B. Preliminary System Test: The Certified Field Advisor must operate the completed system long enough to assure that it is properly operating as per the system specifications. The purpose of the preliminary test is to:
1. Check and adjust equipment
2. Determine whether the system is in suitable condition to conduct an acceptance test.
3. Test to be run until no system failures occur within a one-week period.

C. System Acceptance Test: The Certified Field Advisor must notify the owner's representatives at least fourteen (14) days prior to the acceptance tests so that arrangements can be made to have facility representatives witness the tests. The following tests must be conducted as an integral part of the system turnover for the NLEF system:
1. Test each detection channel and all annunciation functions as recommended by the manufacturer.
2. Perform all other tests as recommended by the manufacturer.
3. Provide a test log showing all test results.

D. System Testing and Adjusting Warranty Period: After the satisfactory completion of the acceptance test, facility personnel will investigate and record all system alarm systems. False nuisance alarms that are internally generated by the system or caused by environmental factors shall not exceed one (1) per calendar month, over a three (3) month period, for any single horizontal zone.

E. Within a week of notification that any zone does not meet the above criteria, the NLEF system installer must correct the zone and retest the system in accordance with the manufacturer's service procedures.

F. As Built Drawings: As-built drawings shall be provided after acceptance testing. Drawings shall show complete perimeter with location of each device and typical connection on terminal strips.

3.8 MOBILE MAPS SYSTEM TESTING

A. Pre-Testing: Prior to acceptance testing to be witnessed by the owner, complete the following testing:
   1. Demonstrate the mobile maps system responds to and annunciates alarms from each zone to the mobile maps system. Document the testing procedure and sequence. Provide documentation proving testing was completed to the owner.
   2. Drive the all portions of the project site and confirm that the system is able to accurately and repeatedly receive alarm signals from the central station. Provide documentation of times/locations that the system was tested.

B. Acceptance testing:
   1. Following the submission and approval of pre-testing documentation records, conduct a owner's witness test of the system for acceptance. The owners acceptance test shall repeat all testing performed during pre-testing.

3.9 TRAINING

A. The ESC shall provide without additional cost to the Owner, Gallagher representatives specially trained in the operation of security systems provided. The representatives shall train the Owner's personnel in operation, repair, and upkeep of each system. Training shall be conducted in its entirety at both project sites.

B. The ESC shall be responsible for notifying the Architect/Owner five (5) weeks prior to substantial completion of the total security system that training is scheduled. Training cannot occur until after the Preliminary Systems Test is complete and appropriate adjustments are made. The ESC will coordinate the number to be trained with the Owner.

C. The length of training by the electric fence manufacturer is directly related to the size and complexity of the detention facility, but in no case shall the ESC's initial on-site training be less than two (2) days in duration for each site. Provide and review procedures for all owner replaceable components. The Contractor shall schedule a follow-up on-site training session not less than one (1) day in duration approximately six (6) months after Notice of Substantial Completion for each site.

D. Course Structure for electric fence training
   1. ESC shall prepare and present a detailed course outline and schedule that specifies each major training module to be covered one week prior to the start of the first training session for review and comment by the Owner. The training program on the security equipment shall include the sequences and instructions for proper use and maintenance of all hardware, field devices, control and monitoring systems and enclosures. The material content shall be in simple layman's terminology, describe and demonstrate all step-by- step physical operations necessary for proper operation and necessary equipment adjustments. At the time of training, each trainer shall present to the trainees detailed outlines of each training module to be covered and the specific skills and knowledge which the trainee is expected to master within each training module.
   2. At a minimum the training program shall be subdivided into the following training modules:
      a. Principle and Operation of the Perimeter Detection System.
      b. Troubleshooting, General Maintenance, System Electronics, Repair and Replacement of Perimeter Detection System Components.
      c. System and Operator Controls.

d. Descriptive modules organized by specification section.

E. The Contractor shall secure the services of a provisional video recording company to record this training and transfer to standard DVD video; two (2) copies shall be delivered to the institution.

F. Provide all training material.

G. Training Certification:
1. Each facility employee shall receive at the conclusion of the security systems training program a certificate certifying his attendance of the total session or portion thereof.
2. ESC shall maintain attendance records of each class.

END OF SECTION 287090

SECTION 323113 – SECURITY CHAIN LINK FENCING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:
1. Fence framework, fabric, and accessories.
   a. Ground set.
   b. Custom brackets
2. Barbed tape.
3. Excavation for post bases.
4. Concrete anchorage for posts and center drop for gates.
5. Gates and related hardware
6. Reinforcement of existing fences.
7. Field quality control.
8. Coordination with Non-Lethal Electric Fence (NLEF) fence component integration onto the new chain link fence.
9. Welding of fence connections at strain panel locations to achieve proper strength in connections for loads imposed by NLEF fence.
10. Soils Strerilization.

B. Related Sections:
1. Concrete: Section 03 30 00 “Cast-in-place Concrete” for concrete footings for fence posts.
2. Metal: Section 05 10 00 “Structural Metal Framing” for fence components other than typical chain link fence posts, bracings, rails, etc.
3. NLEF: Section 28 70 90 “Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System” for coordination with NLEF system attachment to chain link fence and other NLEF defining factors that affect the fence installation including specific line and termination/strain post/panel locations.

1.2 REFERENCES

A. ASTM A392 Specification for Zinc-Coated Steel Chain-Link Fence Fabric.

B. ASTM A491 Specification for Aluminum-Coated Steel Chain-Link Fabric

C. ASTM A780 Standard Practice for Repair of Damaged and Uncoated Areas of HotDip Galvanized Coatings

D. ASTM A824 Specification for Metallic-Coated Steel Marcelled Tension Wire for Use with Chain Link

E. ASTM F552 Standard Terminology Relating to Chain Link Fencing

F. ASTM F567 Standard Practice for Installation of Chain Link Fence

G. ASTM F626 Specification for Fence Fittings

H. ASTM F900 Specification for Industrial and Commercial Swing Gates

I. ASTM F1043 Specification for Strength and Protective Coatings of Metal Industrial Chain Link Fence Framework

J. ASTM F1083 Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures

K. ASTM F1345 Specification for Zinc-5% Aluminum-Mischmetal Alloy-Coated Steel Chain-Link Fence Fabric

L. ASTM F1910 Specification for Long Barbed Tape Obstacles

M. ASTM F1911 Standard Practice for Installation of Barbed Tape

N. ASTM F2611 Standard Guide for the Design and Construction of Chain Link Security Fencing

O. ASTM F2781 Standard Practice for Testing Forced Entry, Ballistic, and Low Impact Resistance of Security Fence Systems

P. CLFMI SFR 2445 Security Fence Recommendations

Q. CLFMI CLF TPO211 Tested and Proven Performance of Security Grade Chain Link Fence Systems

R. CLFMI WLG2445 Chain Link Fence Wind Load Guide for the Selection of Line Post and Line Post Spacing

1.3 SYSTEM DESCRIPTION

A. Intent of new security chain link fencing construction on this project is to provide a support framework for the new NLEF system. The system is summarized below, and detailed in the contract document drawings.
1. Fence line and termination posts to extend 14’ above grade.
   a. Post diameter to be as follows:
      1) Line posts: 4”
      2) Strain posts: 6-5/8”
      3) Releif posts: 6-5/8”
   b. Verify full post length with dwg details:
      1) Architectural Sheets SD3.1, SD3.2
      2) Structural Sheet(s) S5.0. (for footing depth)
2. Fence to have a 1-5/8” (Addendum 1) bottom, mid, and intermediate rail. There will be an intermediate rail between the bottom and mid rail for fence fabric support. Fence will not have a top rail except at the designated NLEF strain post locations as required for added support for the added strain the NLEF system will impose upon the chain link fence framework.
   a. Bottom rail to be buried in the NML aggregate per contract document drawings.
      1) Reference detail 5/SD3.1.
   b. Mid rail to be located to support the 7’ (Addendum 2) tall fence fabric.
      1) Reference sheet SD3.1 specfically 1/SD3.1 and 6/SD3.1.
   c. Intermediate rail to be located equal distance from grade to mid rail.
      1) Reference sheet SD3.1 specfically 1/SD3.1 and 6/SD3.1.
   d. Rail splits to be located no further than 1/3rd the rail span from the fence posts.
   e. Strain Post locations for NLEF purposes will require diagonal bracing and top rail. All rails, posts, and bracing will require fully welded connections at these locations.
      1) Reference sheets A1.0 through A1.7 for locations of strain panels/posts.
      2) Reference structural sheets specifically detail 1/S5.0 for connections.
3. Fence fabric to be 7’ tall (Addendum 2) material.
   a. 6’-6” +/- (Addendum 2) is to be exposed above the NML aggregate with 5” to 6” extending into and buried in the existing no man’s land (NML) aggregate for security / tunneling protection.

4. All system framework to be as follows:
    a. 4" diameter and below: Type II: Light-wall tubing
        1) Line posts, rails, bracing, gates, transom framework, filler framework, gate frame work, etc.
    b. Greater than 4" diameter: Type I: Heavy-wall pipe
        1) Strain posts, Releif posts, Termination posts, gate posts.

B. Design Requirements:
1. Maximum Unsupported Fabric Area: Not to exceed the following:
    a. Interior Fence Line: 50 square feet.
    b. Exterior Fence Line and Sally Port: 60 square feet.
2. All laps in fabric shall be backed by framing member.

C. Performance Requirements:
1. Delegated Design: Engage a qualified professional engineer registered in the State of Ohio to design chain-link fence and gate frameworks.
    a. Delegated design is to be a part of the NLEF delegated design in coordinating NLEF requirements and final design to chain link fence design.
    b. Bid as designed in the bid documents. Delegated design process will be rectified thorugh change order process as may be needed per final delegated design.
    c. Provide for at least 2 design meetings with the NLEF Sub contractor, Generral Contractor, A|E, RCI Security staff, and ODRC staff.
        1) A|E will run the design meetings and provide meeting minutes.
2. Structural Performance: Chain-link fence and gate frameworks shall withstand the design wind loads and stresses for fence height(s) and under exposure conditions indicated according to the Ohio Building Code, current edition. Include effect of electrified fence in design. Where new electrified fencing is being mounted to existing fences, reinforce the existing fence structure as required to support the new loads in accordance with the building code provisions for new construction.
    a. Design for wind loads and ice loads as specified by ASCE/SEI 7.
    b. For purposes of determining loads, fences shall be taken as Occupancy Category III.
    c. Self-straining forces resulting from the electrified fence shall be considered.
    d. Note: the contract document drawings provide an initial engineered solution for bidding purposes and intent of expectations.
        1) The security chain link fence contractor/delegated design engineer will be required to review the full NLEF and Chain-link fence structure to provide a final coordinated delegated design effort with the certified NLEF fence delegated designer.
        2) The final NLEF system design will impact the chain link fence structure and changes from the design as shown in these contract documents will need to be provided within that coordinated effort.
        3) The A|E will provide assistance to both the chain-link fence delegated designer and the NLEF delegated designer to ensure design intent, specific facility security intent, and code compliance are provided for.

    e. Minimum Post Size: Determine in accordance with ASTM F1043 for post spacing not to exceed 10 feet for Material Group IA, ASTM F1043, Schedule 40 steel pipe, or Group IC, electric-resistance-welded round steel pipe.
    f. Minimum Post Size and Maximum Spacing: Provide line posts of size and in spacing indicated, but not less than sizes and spacings determined in accordance with CLFMI WLG 2445, based on mesh size and pattern specified.

3. Load Resistance / Fence Deflection Limits: Fence deflections shall be within the following limits, components shall return to original position when applied force is released.

a. Fence Post Rigidity: Maximum 3/4 inch when a 50-lbf force is applied at midweight of every eighth post along the fence line. Measure post movement from the relaxed position at the point where the force is applied
b. Fabric Tension: Maximum 2.0 inches when tested by applying a 30-lbf force at midpoint between rails and horizontally between posts for every eighth lower panel along the fence line. Measure fabric movement from the relaxed position at the point where the force is applied.

4. Lightning Protection System: Maximum resistance-to-ground value of 25 ohms at each grounding location along fence under normal dry conditions.
   a. Review with NLEF system requirements. NLEF system will supply lightening protection for the chain link fence components.

5. Strcutural Fence Elements added to existing fences for NLEF support (strain Panels).
   a. Add bracing and rails and provide fully welded connections therein as required by contract documents in order to provide added structural support to existing fecne locations receiving the proposed NLEF system directly atop of the existing fence.
   b. This happens only at the Vehicular Sally Port (VSP) located in the middle of the west side of the perimter fence.
      1) Reference Strcutural sheets.
      2) Reference sheets SD2.3a, SD2.3b, SD2.3c,

6. Structural Fence Elements Attached to Existing Buildings (Entry Building): Structures attached to existing buildings shall be directly connected to structural elements of the building. Nonstructural elements, such as brick veneer, window frames, or architectural trim, shall not be part of the load path.
   a. The chain link fence contractor is to be responsible for the new posts proposed to be attached to the entry building as an extenstion of the chain link fence around the entry building.
      1) Reference Structural sheets, specifcally SD1.1 and 4/SD5.0.
      2) Reference Architectural sheets SD2.1, SD2.2a, and SD2.2b.

7. Corrosion Resistance, Framing: ASTM B 117. Components to withstand salt spray test for time designated below with maximum 5 percent red rust.
   a. Exterior: 1,000 hours.
   b. Interior: 650 hours.

1.4 QUALITY ASSURANCE

A. Manufacturer: Company specializing in industrial quality security chain link fencing with 5 years' experience.

B. Tolerances: Current published edition of ASTM specifications tolerances apply. ASTM specification tolerances supersede any conflicting tolerance.

C. Testing Agency Qualifications: For testing fence grounding; member company of NETA or an NRTL.

1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

D. Mockups / QA review meetings: Intent is to utilize the first zone built as a mock up for the chain link fence and provide foillow up reviews as follows:
1. ESC/NLEF subcontractor to provide coordination and aid in the dual delegated design process and is to understand the scope of the chain link fence installtion and tolerances as needed to provide for the NLEF installtion.

2. First Zone coordination and sign off meeting: ESC/NLEF subcontractor is to review, with the A|E, Chain link fence sub contractor, and the Owner the first zone of chain link fence installation and all parties are to provide a sign off or list of corrective measures as needed to ensure all are in agreement that the chain link fence installation is meeting requirements for the NLEF installtation.
   a. No further chain link fence work can be progressed until the work reviewed in this meeting is approved by the A|E.
3. Periodic revisiting of the chain link fence installation is to be provided by the same parties above to ensure the standards set in the first meeting are being met throughout the installation.
   a. 6 total review meetings to happen as follows:
      1) First zone as noted above, this will set the precedence for the other 5 reviews.
      2) ¼ way through chain link fence construction.
      3) ½ way through chain link fence construction: this should also be to the point of either the Entry building or VSP construction and will then provide a meeting to verify construction in that area as a reminder of the delegated design decisions made.
      4) ¾ way through chain link fence construction.
      5) Completion of main perimeter chain link fence construction: this should also be to the point of either the Entry building or VSP construction and will then provide a meeting to verify construction in that area as a reminder of the delegated design decisions made.
      6) Note: the A|E will be providing weekly Field Reports throughoughte process of construictionand will be reviewing chain link fence construction during this time frame as well.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

A. Shop Drawings: For each type of fence and gate assembly.
   1. Include plan layout, grid, spacing of components, accessories, fittings, hardware, anchorages, and schedule of components.
   2. Identify and show type of fasteners proposed.
   3. Include gate operation, operational clearances, and show details of gate work including keepers and attachment to framing.

B. Delegated-Design Submittal: For structural performance of chain-link fence and gate frameworks, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation. Reference Paragraph 1.3.C above.

C. Product Data and Test Reports: For each type of product.

   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:

      a. Fence and gate posts, rails, and fittings.
      b. Chain-link fabric, reinforcements, and attachments.
      c. Accessories: Barbed tape, Barbed mesh
      d. Gates and hardware.

D. Qualification Data: For professional engineer.

E. Manufacturer’s installation instructions.

F. Sample Warranty: For special warranty.

G. Field quality-control reports.

H. Product Test Reports: For framework strength in accordance with ASTM F1043, for tests performed by manufacturer and witnessed by a qualified testing agency or a qualified testing agency.

I. Product Certificates: For each type of chain-link fence, and gate.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For gate operators to include in emergency, operation, and maintenance manuals.

1.7 PREINSTALALTION MEETINGS

A. Preinstallation Conference:

1. Inspect and discuss electrical roughing-in, equipment bases, and other preparatory work specified elsewhere.
2. Review sequence of operation for each type of gate operator.
3. Review coordination of interlocked equipment specified in this Section and elsewhere.
4. Review required testing, inspecting, and certifying procedures.
5. Review coordination with Div 28 NLEF contractor as noted in 1.7 Field Conditions below.
6. Private utility location as noted in 1.7 Field Conditions below.

1.8 FIELD CONDITIONS / PRE INSTALLATION MEETING

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.
1. Coordinate final delegated design of chain link fence with Electronic Security Contractor (ESC) / Non-Lethal Electric Fence (NLEF) delegated design contractor to verify final locations of strain posts, terminations posts, and other fence components.
2. A Pre Installation meeting will be required with the A|E, General Contractor, and ESC / NLEF installation contractor to finalize and mark NLEF Field Cabinet and zone locations which will determine the chain link fence strain post and other post locations.
3. Coordinate with General Contractor the services of a private utility locator to have underground utilities located and marked onsite prior to the pre-installation meeting. This is a General Contractor scope as it will be needed for the electrical scope as well.
    a. Intent is to hydrovac areas where underground utilities cross the perimeter to ensure location of the utilities prior to the pre installation meeting.

B. Do not interrupt utility service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services.
1. Notify Owner not less than three days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Owner’s written permission.

C. DELIVERY, STORAGE, AND HANDLING
1. Delivery: Deliver products to site per contract requirements.
2. Storage: Store and protect products off the ground when required.

1.9 WARRANTY

A. Workmanship Warranty: Installer agrees to repair or replace components of security chain-link fences and gates that fail in materials or workmanship.

1. Failures include, but are not limited to, the following:

a. Failure to comply with performance requirements.

2. Warranty Period: One year from date of Substantial Completion.

B. Special Warranty: Manufacture agrees to repair or replace components of security chain-link fences and gates that fail in materials within the specified warranty period.

1. Failures include, but are not limited to, the following:
a. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Period: **15** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Framework, posts, rails, bracing and fittings for chain link fence system:
1. Merchants Metals Inc.
a. Type I: Schedule 40
b. Type II: LG-40

2. Wheatland Tube
a. Type I: Schedule 40
b. Type II: WT-40

3. Master-Halco
a. Type I: Schedule 40
b. Type II: DQ 40

4. Stephens Pipe & Steel
a. Type I: Schedule 40
b. Type II: SPS-4

B. Chain-link Fence Fabric: 2”x2” 9ga, and anti-climb 3/8”X3/8” 9ga.
1. Master-Halco
2. Merchants Metals Inc., ArmorLink.
3. Stephens Pipe & Steel
4. Approved equal during bidding period.

C. Barbed Fence Fabric / Welded Razor Wire Mesh Panel: (At Entry Building posts)
1. Atkore International., “Razor Ribbon Mesh Panel”.
2. Approved equal during bidding period.

D. Hardware:

1. Master-Halco.
2. Merchants Metals, Inc.
3. Wheatland Tube
4. Stephens Pipe & Steel

E. Reinforced Barbed Tape: 30”
1. Atkore International., “Supermaze”.
2. Michael Industries, Inc., “Saberazor”
3. Approved equal during bidding period.

F. Welded Wire Fabric (for VSP fence gate hardening)
1. Amiguard 5700 Wire Mesh
2. McNichols
3. Approved equal during bidding period.

2.2 MATERIALS

A. Framework: Closed steel sections, one piece without joints. See FINISHES below.
1. Type I: Heavy-wall pipe, Schedule 40 steel pipe, ASTM F1043 Group I-A, ASTM F1083, Federal specification RR-F-191/3D Class 1 Grade A, AASHTO M-181 Grade 1 and FAA Item F-162.
   a. Provide at termination, strain, and gate posts larger than 4” diameter.
   b. Reference contract document drawings for sizes and locations.

2. Type II: Light-wall tubing, High strength pipe, ASTM F1043-Group I-C, Federal specification RR-F-191/3D, AASHTO M181 Grade 2 and FAA Items F-162.
   a. Provide for all framework, line posts, termination posts, strain posts, and gate posts 4” or less in diameter.
   b. Reference contract document drawings for sizes and locations.

B. Fabric:
1. Fabricate in sizes not less than indicated on the contract document drawings for framing up to 16’-0” in height with post spacing not to exceed 10’-0”. Components not shown shall comply with requirements of ASTM F 669, Table 2 for Heavy Industrial Fence. Chain-Link Fence Fabric.
2. General: Provide fabric in height measured between top and bottom of outer edge of selvage in accordance with "CLFMI Product Manual" and requirements indicated below.
   a. Fabric Height:
      1) One piece 8’-0” tall at NLEF chain link fence runs and Field Cabinet enclosures.
      2) 14’-0” tall at VSP gate modification panel, and at VSP extensions around existing light poles.
      3) 12’ tall at any existing day fence modicifations requried.
   b. Size: 2-inch diamond mesh.
   c. Gage (core): 9 gage (0.148 inch diameter).
   d. Aluminum-Coated Fabric: ASTM A491, Type I, 0.40 oz./sq. ft.
   e. Selvage: Twisted / Barbed top and bottom, (T&T)
      1) Coat selvage ends of metallic-coated fabric before the weaving process with manufacturer's standard clear protective coating.

3. Anti-Climb (Security):
   a. Size: 3/8 inch diamond mesh.
   b. Gage (core): 9 gage (0.148 inch diameter).
   c. Break Strength: ASTM A 817, Table 1.

4. Welded Wire Fabric
   a. Rectangular Mesh, 3” x ½

b. Hot Dipped Galvanized, 0.15" (8 gauge) wire, resistance welded.
c. References: ASTM F2453, ASTM A123, and ASTM B117.
d. Tensile Strength (PSI): 109,000 – 130,000
e. Min. Elongation Agt (%): 10.0

C. Barbed Tape:
1. Wire-Reinforced Tape: ASTM F1910; continuous coil with four-point, needle-sharp barbs permanently cold clenched around a core wire.
2. Form: Single coil, wire-reinforced concertina.
3. Coil Loop Spacing: 12"
4. Tape: Stainless steel, AISI 430 alloy, hardened to Rockwell (30N) 37.
a. Size: 0.025 inch x 1.25 inch wide before fabrication.
b. Configuration: Clusters of 4 barbs at 4-inch centers with individual needle-sharp barbs.
1) Minimum barb length: 1.25 inches; 2.5 inches tip-to-tip.
2) Barb Offset: 0.15 to 0.45 inch from tape centerline.
3) Attachment to Core Wire Reinforcement: Mechanically cold-clenched with minimum 230 degree wrap.
c. Core Wire Reinforcement: Spring austenitic stainless-steel wire, minimum 0.098-inch diameter, with minimum tensile strength of 130,000 psi.
5. Tape Accessories:
a. Coil Clips: For coil-to-coil attachment to create concertina effect. Stainless steel devices with minimum 150 lbf pull resistance without permanent deformation.
1) 30-inch Coils: Minimum 5 clips at 72 degrees.

D. Barbed Fence Fabric:
1. Expanded metal panel with strands of Razor Ribbon on the panel.
2. Panel Width: 8'-0" (Addendum 1)
3. Panel Height: 6'-9" (Addendum 1)
4. Diamond Size: 2" wide x 6" high
5. Material: Galvanized steel.

E. Tension Wire
1. Metallic-Coated Steel Wire: 0.177-inch-diameter, marcelled tension wire in accordance with ASTM A817 or ASTM A824, with the following metallic coating:
a. Type I: Aluminum coated (aluminized).

2.3 SWING GATES

A. General: ASTM F900 for gate posts and single and double swing gate types.

1. Gate Leaf Width: As indicated on the contract document drawings.
2. Framework Member Sizes and Strength: Based on gate fabric height as indicated on the contract document drawings.

B. Pipe and Tubing:

1. Type II Zinc-Coated Steel: ASTM F1043 and ASTM F1083; protective coating and finish to match fence framework.
2. Gate Posts: Round tubular steel.
3. Gate Frames and Bracing: Round tubular steel.

C. Frame Corner Construction: Welded and 3/8-inch-diameter, adjustable truss rods for panels 60 inches or wider.

D. Extended Gate Posts and Frame Members: Fabricate gate posts and frame end members to extend as indicated on the contract document drawings above top of chain-link fabric at both ends of gate frame as required to attach barbed tape assemblies.

E. Provisions for Electronic Detection System: Isolate gate from fencing to prevent transference of vibration. Gate hinge posts and latch posts may share the same footing but shall not be in contact with fence terminal posts.

1. Separation between Hinge and Latch Posts and Fence Termination Posts: 2 inches (50 mm) minimum, 2-1/2 inches (63.5 mm) maximum.

2. Coordinate with NLEF system installer during Delegated Design process to ensure proper gate design for engaging and disengaging the NLEF system.

F. Gate Hardware: Heavy-duty and suitable for size of gate and conditions of use.

1. Hinges: Non-lift-off type, 180-degree inward and outward swing.
2. Latch: Strong arm latch with drop rod and receiver.
   a. Permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.
1. Padlock Provisions: Gates shall be lockable with padlocks with 3/8” diameter shackle. Pad lock to be provided by Owner.
2. Closer: Not required.
3. Other: ASTM F 900

G. Concrete: As specified in Section 03 30 00.

H. Bituminous Paint: #46-457 “Tnemecol” by Tnemec or approved equal by Koppers or Valspar.

I. Accessories:
1. Fittings: ASTM F 626 except tension rods 3/8 inch diameter; ferrous.
2. Tension Wire: ASTM A 824, minimum 7 gage metallic coated steel, marcelled, single strand, finish to match fabric.
3. Sleeves: Galvanized steel pipe or tubing.
4. Custom Brackets: As detailed; steel pipe, steel bars ASTM A 36, steel plate, welded construction, hot-dip galvanized after fabrication. See FINISHES below

2.4 FITTINGS

A. Provide fittings in accordance with ASTM F626.

B. Post Caps: Provide for each post same finish as posts. Set screw to be retained.

1. Provide line post caps. No loop will be necessary as the fence is designed without a top rail or tension wire.
2. Top rails provide at strain posts locations will be welded to the strain posts and adjacent line post.

C. Rail and Brace Ends: For each gate, corner, pull, and end post.
1. At strain post locations, the braces and rails will be fully welded to the strain posts and adjacent line post.

D. Rail Fittings: Provide the following:

1. Top-Rail Sleeves: Not required.
2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails to posts.

E. Tension and Brace Bands, Tension Bars, and Truss Rod Assemblies: In accordance with ASTM F2611.

F. Tie Wires, Clips, and Fasteners: In accordance with ASTM F626.

1. High-Security Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, according to the following:

a. Metallic-Coated Steel:0.192-inch-diameter wire; aluminum coating.

G. Power-Driven Fabric Fasteners: As recommended in writing by manufacturer.

2.5 COMPONENTS

A. Bolts: Carriage bolts typical.
1. Attachment for bands: 5/8 inch x 1-1/2 inch.
2. Boulevard bolts: 3/8 inch diameter.

2.6 FINISHES

A. Framing: Provide finish according to framing type as follows:
1. Type I (heavy-wall pipe): Galvanized, ASTM F 1234, Type A; 1.8 oz/sq.ft. coating.
2. Type II (light-wall tubing):
a. External Finish: Hot dip zinc coating minimum 1.0 oz./sq.ft. followed by a chromate conversion coating and clear acrylic coating minimum 0.5 oz./sq.ft.
b. Internal Finish: Provide one of the following:
1) Hot-dip zinc coating minimum 1.0 oz./sq.ft. or
2) Zinc-rich based coating having a minimum zinc powder loading of 91 percent by weight and capable of providing galvanic protection.

B. Fabric and Wire Products: See MATERIALS above.

C. Accessories:
1. Fittings: Galvanized, minimum, 1.2 oz./sq. ft., ASTM F 626.
2. Hardware: Galvanized, ASTM A 153.
3. Plates, Bars, Locks, Fabrications: Galvanized, ASTM A 123.

2.7 GROUT AND ANCHORING CEMENT

A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout, recommended in writing by manufacturer, for exterior applications.

B. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection

by a sealer or waterproof coating, and that is recommended in writing by manufacturer for exterior applications.

2.8 GROUNDING MATERIALS

A. Comply with requirements in Section 260526 "Grounding and Bonding" and Section 28 70 90 "Electronic Security Systems Non-Lethal Electric Fence Perimeter Detection System" for grounding of chain link fence.

2.9 SOIL-STERILIZATION MATERIALS

A. Soil Sterilant: Commercial herbicide for weed control.

B. Polyethylene Sheeting: 6 mils thick, black, and serving as soil-separation fabric.

C. Stone Ground Cover: ODOT 703 Type D (reference Civil Drawings)
1. Intent is to reuse the existing aggregate between the fences; however, some new stone may need to be provided for replacement.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, NLEF work, and other conditions affecting performance of the Work.

1. Do not begin installation before final direction to do so is provide by the by the Architect and coordinated with the NLEF installer.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, underground structures, benchmarks, and property monuments.
1. Coordinate fence post locations with NLEF system installer and Architect per the Pre Installation meeting and delegated design efforts.

3.3 INSTALLATION OF CHAIN-LINK FENCING

A. General:
1. See "Design Requirements" under SYSTEM DESCRIPTION in Part 1 above.
2. Install framework, fabric, accessories and gates in accordance with ASTM F 567.
3. All framing and threaded connections shall be on the less accessible (secure) side of fence fabric.

B. Posts:
1. Erect ground set posts in concrete footings, in firm undisturbed soil.
2. Tolerances:
a. Plumb: Within 1/4 inch in 10 feet.

b. Line: Within +/- 1/4 inch.

3. Line Posts Spacing:
   a. Ground Set:
      1) 10 feet maximum or as otherwise noted on the drawings.
4. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 30 degrees or more. For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.

C. Concrete Footings:
1. Sizes: As indicated on the contract Document drawings.
2. Reference Strucutral sheets and Architectural sheets for footing placement from grade, size, width, depth, etc.

D. Rails: Provide the following:
1. Bottom, Mid, and Intermediate Rails: Connect to line and terminal posts using boulevards or bands and rail ends.
2. Bottom to be installed below the no man's land aggregate per the contract document drawing details. Ensure concrete footings are provided such that the bottom rail runs true to grade and above the top of the post footings.
3. Mid and Intermediate rails to be installed per drawings.
4. No top rail required.
5. Strain panel/post locations require fully welded connections, review structural andarchitecturla sheets for specific information on construction and locations. Strin panels require bracing as well as top, mid, and bottom rails.

E. Braces:
1. Brace each gate and corner post back to adjacent line post with horizontal center brace rail and diagonal truss rods. Install brace rails, one bay from end and gate posts.
2. Install center and bottom brace rail on corner and gate leaves.

F. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.

G. Tension Wire: Install in accordance with ASTM F567, maintaining plumb position and alignment of fence posts. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch-diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric. Provide horizontal tension wire at the following locations:

H. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

I. Chain-Link Fabric: Apply fabric on the approach side of fence, inside of enclosing framework. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
1. Stretch fabric between terminal posts or at intervals of 100 feet maximum, whichever is less.
2. Fabric to be placed on inside / inmate side of enclosing framework facing the interior perimeter fence.
3. Place fabric at line of fence at the bottom 8' of the fence only and attached to bottom rail and mid rail. If an intermediate rail is placed between the bottom and mid rail to mitigate fence fabric bowing, tie fabric to intermediate rail as well.
4. Place fence fabric 6" below finish grade of no man's land aggregate/gravel. Bury fence fabric in 6" of aggregate. Ensure fabric and bottom rail are set off of the concrete footings by at least 1/2".

5. Overlapping Fabric: Overlap ends of fence fabric at or between posts or rails; overlap 6 inches and secure with wire ties or steel strap method.

6. Attachment:
    a. Attach fabric to ends, corner, and gate posts with tension bars and tension bar clips.
    b. Tie Wires: Power-fastened or manually fastened ties configured to wrap a full 360 degrees around rail or post and a minimum of one complete diamond of fabric. Twist ends one and one-half machine twists or three full manual twists, and cut off protruding ends to preclude untwisting by hand.
        1) Twist to go to outside of the fence, public side, not inmate side.
        2) Maximum Spacing: Tie fabric to line posts, mid rails, and braces at 12 inches o.c.
        3) Where fabric splices occur, attach both layers to rails

J. Barbed Tape:
1. General:
    a. Install in accordance with manufacturer's recommendations and approved shop drawings.
    b. Install coil loops uniformly at manufacturer's recommended spacing with a tolerance of +2 inches, non-cumulative. Maximum clear distance between coils not to exceed 7 inches. Attach barbed tape with stainless steel tie wire. Pull tape in close contact with fence and tension wire to eliminate vibration and rattles caused by wind.
2. Top of Fence: Install on extension arms; see "Posts" above.
    a. Install tension wire in outermost position of arm.
    b. Install barbed tape on top of fence and touching tension wire.
    c. Attach each parallel coil loop to tension wire and top of fence fabric.
3. Side of Fence:
    a. Ground Coil(s): Attach to ground with ground anchors at intervals not to exceed 10 feet. Drive anchors into ground until barb tape is fully captured between anchor hook and ground without distortion. Attach coils to fence where immediately adjacent.
    b. Elevated Coils: Attach to fence.
    c. Attach all adjacent coil rows together, vertically and horizontally, at approximately 36-inch centers throughout the stack.
4. Fence Corners: Wherever a new fence intersects a fence which has barbed tape, install one coil of barbed tape vertically in the newly created corners.
5. Splicing: Connect ends of rolls together by:
    a. Rotate and match curved surfaces of tape.
    b. Align attachment clips at each end for splicing.
    c. Overlap two barb clusters and attach together with wire ties. For 30-inch diameter coils, add two additional ties where clips would have been if coil manufactured in continuous roll.

K. Gates:
1. Install:
    a. Gates with fabric to match fence.
    b. Plumb, level, and secure for full opening without interference.
    c. In accordance with approved shop drawings and referenced ASTM standards except where more stringent requirements of these specifications or drawings apply.
2. Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding. Lubricate hardware and other moving parts.

L. Field Touch-Up: Repair all galvanized surfaces damaged by welding or other causes in accordance with ASTM A 780 including Annexes.

3.4 STRAIN FENCE PANEL

A. Welded installations as indicated on the contract document drawings.

1. Review Section 05 50 00 “Metal Fabrications” for welding requirements.

B. Cut chain link fence pipe bracing to angle required to fit bracing between fence panels as shown on drawings and required in field. Cuts to be provided as to ensure tight fit and consistent weld to existing fence posts.

C. Install all other security fence components same as security fence noted above.

3.5 REINFORCEMENT OF EXISTING FENCE STRUCTURE

A. Where new electrified fences are being mounted to existing fences, reinforce and/or repair the existing fence structure as required to conform to building code provisions for new construction. Also as indicated on the contract document drawings.

B. Review Section 05 50 00 “Metal Fabrications” for welding requirements.

C. Cut chain link fence pipe bracing to angle required to fit bracing between fence panels as shown on drawings and required in field. Cuts to be provided as to ensure tight fit and consistent weld to existing fence posts.

D. Install all other security fence components same as security fence noted above.

3.6 FIELD QUALITY CONTROL

A. Manufacturer’s Representative, Barbed Tape: Contractor to contract with barbed tape manufacturer to furnish representative at beginning of installation to instruct Contractor’s personnel in the proper installation of barbed tape. Manufacturer’s representative to have a minimum of 5 years of experience installing/directing installation of barbed tape work required for this project.

B. Testing Agency: Owner will engage a qualified testing agency to perform tests.

C. Perform the following tests:

1. Fabric Testing: Test fabric tension according to "Deflection Limits" Paragraph in "Performance Requirements" Article.
2. Fence Post Rigidity Testing: Test line posts for rigidity according to "Deflection Limits" Paragraph in "Performance Requirements" Article.
3. Grounding Tests for fence and NLEF grounding.
4. Concrete footing tests.

D. Prepare test reports.

E. Review and present test reports as part of NLEF preinstallation meeting to verify NLEF installer’s acceptance of the chain-link fence system for NLEF installation per coordinated delegated design collaboration.

3.7 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Lubricate hardware and other moving parts.

C. Review any adjustments with A|E, Owner, GC, and NLEF installation contractor.

3.8 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain high-security chain-link fences and gates.

END OF SECTION 323113

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August 19, 2022

Mr. Dan Miller
Schorr Architects, Inc.
230 Bradenton Avenue
Dublin, Ohio 43017

Reference: Electrical Resistivity Testing Results
Non-Lethal Electric Fence – Ross Correctional Facility
Chillicothe, Ohio
GCI Project No. 22-G-26249

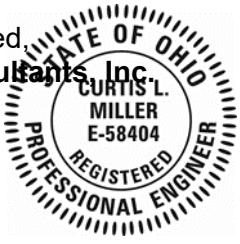
Dear Mr. Miller:

As you authorized on behalf of Schorr Architects, Inc. (Schorr), Geotechnical Consultants, Inc. (GCI) performed a series of electrical resistivity tests at 7 requested locations (see attached test location map) around the existing Ross Correctional Facility. We used a Megger DET4TC2 Ground Resistance tester to complete the electrical resistivity testing following the Wenner four-pin soil resistivity test set-up. We performed the survey along one line at each location, with a requested probe spacing of 20 meters (+/- 65 feet). The electrical resistivity test measurement results are shown below.

Test Location	Spacing "A"	Pin Location				Reading "R"	Resistivity "Ohm-cm"
		C1	P1	P2	C2		
C-1	66.66'	99.99'	33.33'	33.33'	99.99'	.47	6,000
C-2	66.66'	99.99'	33.33'	33.33'	99.99'	.55	7,021
C-3	66.66'	99.99'	33.33'	33.33'	99.99'	.32	4,085
C-4	66.66'	99.99'	33.33'	33.33'	99.99'	.55	7,021
C-5	66.66'	99.99'	33.33'	33.33'	99.99'	0.91	11,617
C-6	66.66'	99.99'	33.33'	33.33'	99.99'	1.42	18,128
C-7	66.66'	99.99'	33.33'	33.33'	99.99'	0.74	9,447

We appreciate the opportunity to provide our services for this project and hope to continue providing our services through construction.

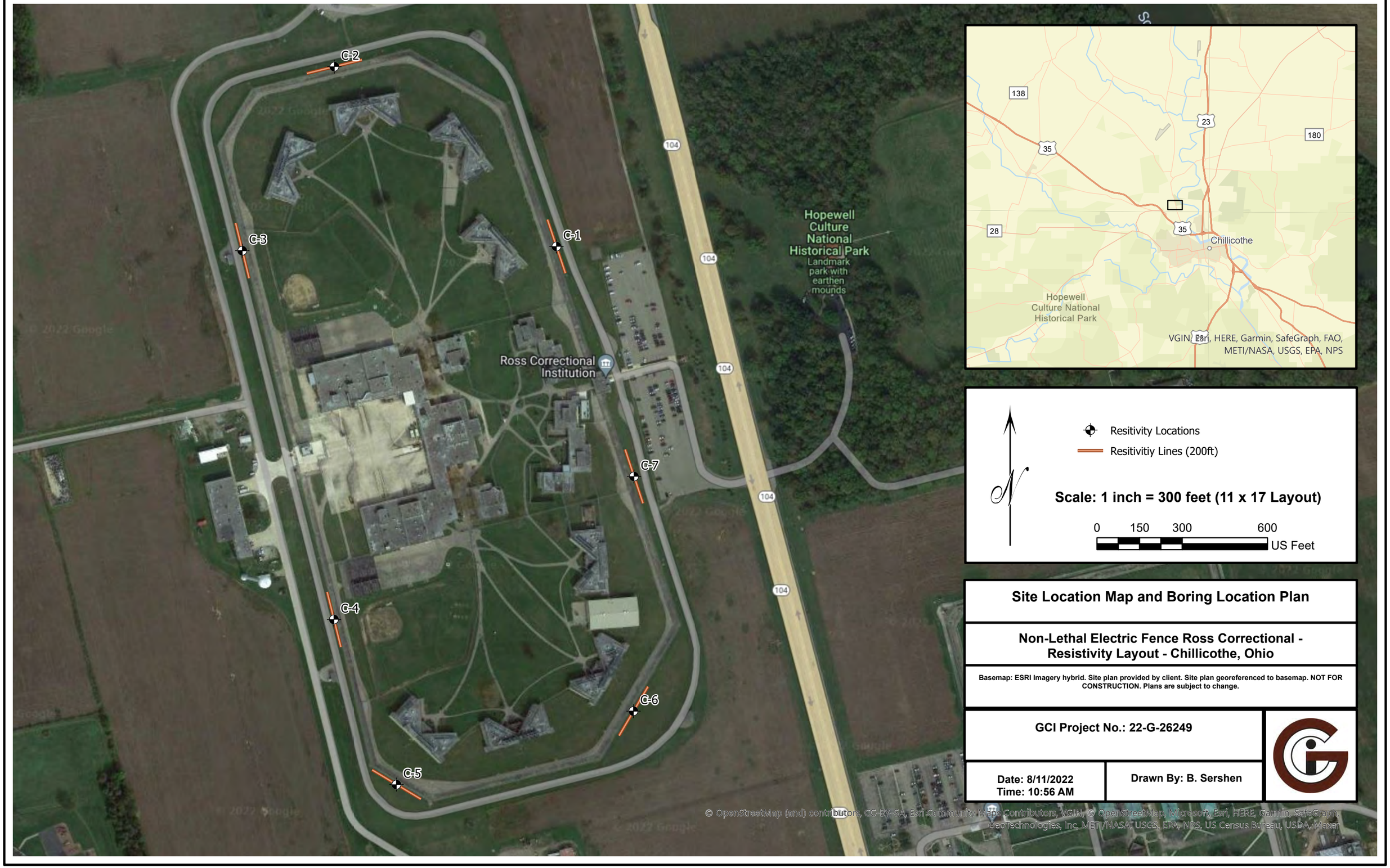
Respectfully submitted,
Geotechnical Consultants, Inc.



Curtis L. Miller, P.E.
Principal

Kevin M. O'Connor, P.E.
In-House Reviewer

Distribution: Mr. Dan Miller @ Schorr – pdf via email
GCI File



Resitivity Locations

Resitivitiy Lines (200ft)

Scale: 1 inch = 300 feet (11 x 17 Layout)

0 150 300 600

US Feet

Site Location Map and Boring Location Plan

Non-Lethal Electric Fence Ross Correctional - Resistivity Layout - Chillicothe, Ohio

Basemap: ESRI Imagery hybrid. Site plan provided by client. Site plan georeferenced to basemap. NOT FOR CONSTRUCTION. Plans are subject to change.

GCI Project No.: 22-G-26249

Date: 8/11/2022
Time: 10:56 AM

Drawn By: B. Sershen

Owner Provided Materials

Pictured below are the materials stored at Madison Correctional Institution which is located across he street from London Correctional Institution.

The conduit stored there is bundled together and is in 20' pieces, see Images A, B, and C below. There are also pictures of the pull boxes in Image D below, and fence components in Image F below.

Image A: Owner provided 4” PVC conduit located at Madison Correctional Institution (MaCI) in London, Ohio.

Image B: Owner provided 4” PVC conduit located at Madison Correctional Institution (MaCI) in London, Ohio.

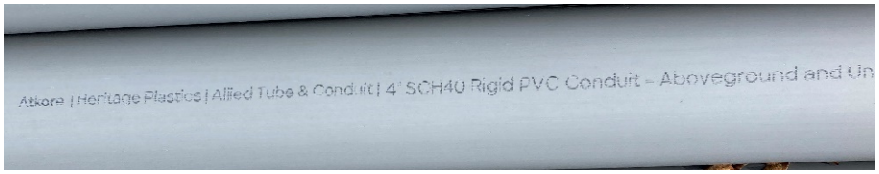


Image C: Owner provided 4” PVC conduit located at Madison Correctional Institution (MaCI) in London, Ohio

Image D: Three pictures of the nine (9) Owner provided electrical pull boxes.

Image F: Three pictures of the fence material at ManCI. The remaining fence material is located at RCI.

GENERAL PROJECT NOTES

SPECIFIC PROJECT ABBREVIATIONS:

CONTROL CENTER:	CC	ROSS CORRECTIONAL INSTITUTION:	RCI	
VEHICULAR SALLY PORT:	VS	NON-LETHAL ELECTRIC FENCE	NLEF	
FIELD CABINET	FC	RESET DEVICE	RD	
RAZOR RIBBON WIRE (BARBED TAPE)	RRW	RAZOR FENCE FABRIC	RFF	

1. THIS CONTRACT IS TO BE A SINGLE PRIME GENERAL TRADES CONTRACT (GENERAL TRADES CONTRACTOR DENOTED AS G.T.C. OR G.C. THROUGHOUT THESE DOCUMENTS) AND INCLUDES BASE SCOPE OF PROVIDING A THIRD PERIMETER FENCE BETWEEN THE EXISTING DOUBLE PERIMETER FENCE. THE PROPOSED THIRD PERIMETER FENCE IS TO BE A 14' TALL CHAIN LINK FENCE WITH NLEF SYSTEM ATTACHED THERETO. THE NLEF SYSTEM IS BOTH A MONITORED SYSTEM THAT WILL REQUIRE 11 FIELD CABINETS SPREAD OUT FAIRLY EVENLY AROUND THE EXTERIOR OF THE EXISTING OUTER PERIMETER FENCE AND A MAIN HEAD END CABINET TO BE LOCATED IN THE EXISTING COMMUNICATION ROOM ADJACENT THE CONTROL ROOM IN BUILDING C. A COMMAND CENTER COMPUTER WILL BE LOCATED IN THE EXISTING CONTROL CENTER WITH A MONITOR AND PRINTER.
2. THE NLEF SYSTEM WILL BE A SOLE SOURCED EQUIPMENT PACKAGE FROM "GALLAGHER" AS DESCRIBED IN DETAIL IN DIVISION 28 SPECIFICATIONS.
3. THE PROJECT WILL REQUIRE THE GC TO PROVIDE A NLEF INSTALLER / INTEGRATOR SUBCONTRACTOR WITH A MINIMUM OF 5 YEARS EXPERIENCE WITH THE INSTALLATION AND INTEGRATION OF THE FULL GALLAGHER NLEF SYSTEM.
4. THE G.T.C. IS TO HAVE PREVIOUS EXPERIENCE WORKING IN CORRECTIONAL INSTITUTIONS AND HAVE UNDERSTANDING OF TOOL CHECKS, COUNT TIMES, OFFICER ESCORT REQUIREMENTS AND AFFECTS TO THE SCHEDULING AND PHASING OF WORK THEREOF, ETC. REFERENCE PROJECT SPECIFICATIONS FOR ADDITIONAL QUALIFICATIONS REQUIREMENTS AND SPECIFIC SECURITY REQUIREMENTS FOR ROSS CORRECTIONAL INSTITUTION.
5. THESE DRAWINGS ARE TO BE TAKEN INTO CONSIDERATION AND IN COORDINATION WITH THE PROJECT MANUAL (SOMETIMES REFEREED TO AS THE SPECIFICATIONS) AND SIGNED CONTRACTS AND ASSOCIATED DOCUMENTS, AS A WHOLE THESE CONSTITUTE THE FULL SET OF CONTRACT DOCUMENTS. THESE DOCUMENTS REFER BACK TO AND RELY ON EACH OTHER AND MUST BE REVIEWED IN FULL BY ALL PARTIES INVOLVED WITH THE PROJECT TO ENSURE A FULL UNDERSTANDING OF THE PROJECT AND IT'S REQUIREMENTS.
6. REVIEW PROJECT MANUAL IN FULL. A SUMMARY OF THE PROJECT IS LOCATED IN SECTION 01 10 00 "SUMMARY" SECTION. OTHER SECTIONS IN DIVISION 1 DESCRIBE SECURITY RELATED, SITE RELATED, AND OVERALL PROJECT REQUIREMENTS. ALL CONTRACTORS ARE TO REVIEW THE PROJECT MANUAL IN FULL INCLUDING ALL DIVISION 0 AND DIVISION 1 SECTIONS.
7. ITEMS NOTED "N.I.C." OR "BY OWNER" ARE NOT IN THIS CONTRACT. BLOCKING FOR SUPPORT OF ALL SUCH ITEMS IS TO BE INSTALLED BY THE GENERAL TRADES CONTRACTOR. THESE ITEMS WILL BE KEPT TO A MINIMUM.
8. ALL DIMENSIONS ON PLANS ARE TO FACE OF EXISTING WALL UNLESS NOTED OTHERWISE. CONTACT THE A/E FOR DETERMINING A REQUIRED DIMENSION THAT IS NOT INDICATED ON THE DRAWINGS.
9. WHERE SLEEVES ARE REQUIRED FOR OTHER TRADES, THE CORRESPONDING CONTRACTOR SHALL FURNISH THE APPROPRIATE SLEEVE TO THE G.T.C., WHO WILL SET THE SLEEVE INTO HIS WORK. COORDINATE EXACT LOCATIONS.
10. GENERAL TRADES CONTRACTOR SHALL PROVIDE ALL BLOCKING REQUIRED TO ANCHOR ALL ELECTRICAL CONDUIT, JUNCTION BOXES, FENCE BRACKETS, ETC. ANY WOOD BLOCKING USED IS TO BE FIRE-RETARDANT TREATED (F.R.T.W.).
11. DETAILS ARE GENERALLY TYPICAL AND ARE NOT TO BE CONSTRUED AS LIMITED TO THOSE AREAS SPECIFICALLY INDICATED. REVIEW ANY QUESTIONS WITH THE A/E.
12. DOMESTIC STEEL USE REQUIREMENTS AS SPECIFIED IN OHIO REVISED CODE SECTION 153.011, APPLY TO THIS PROJECT.
13. OWNER SHALL MAINTAIN THE RIGHT TO RETAIN ANY ITEMS OR MATERIALS REMOVED FROM THE EXISTING SITE/BUILDING DURING DEMOLITION. ANY ITEMS OR MATERIALS NOT DESIRED TO BE RETAINED BY THE OWNER SHALL BE PROPERLY DISPOSED OF AS PART OF THE WORK. EVERY EFFORT WILL BE MADE TO DESIGNATE THESE ITEMS IN THESE DOCUMENTS AND/OR DURING THE PRE-CONSTRUCTION MEETING.
14. ALL WOOD PRODUCTS PROVIDED UNDER SPECIFICATIONS SECTION 06 10 00 SHALL BE FIRE-RETARDANT TREATED WOOD PRODUCTS (F.R.T.W.) MINIMAL IF ANY ARE EXPECTED ON THIS PROJECT.
15. THE DRAWINGS ARE INTENDED TO GRAPHICALLY DEPICT THE GENERAL REQUIREMENTS FOR THE SCOPE OF WORK REQUIRED TO COMPLETE THE PROJECT. THEY DO NOT SHOW OR IDENTIFY EACH AND EVERY COMPONENT, MATERIAL, ITEM OR INSTALLATION METHOD NECESSARY TO MEET MANUFACTURERS OR REGULATORY REQUIREMENTS. SPECIFIC REGULATORY COMPLIANCE ITEMS OR PROVISIONS ARE IDENTIFIED AND/OR REFERRED TO BY INDICATION OF THE APPROPRIATE ASSEMBLY DESIGNATION OR GENERAL TERMINOLOGY. THE CONTRACTOR SHALL BE REQUIRED TO FAMILIARIZE THEMSELVES WITH THE APPLICABLE CODE PROVISIONS, ASSEMBLY DESIGNATION OR MATERIAL IDENTIFIED AND SHALL COMPLETE THE PROJECT IN COMPLIANCE WITH THE APPLICABLE REQUIREMENT.
16. THE CONTRACTORS SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, SEQUENCING AND SAFETY REQUIREMENTS FOR THE PROJECT. EACH CONTRACTOR, SUBCONTRACTOR, LABORER OR OTHER PERSONS PERFORMING WORK ON THE PROJECT SITE SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE WORKPLACE AND CONSTRUCTION SAFETY REGULATIONS PROMULGATED BY FEDERAL, STATE OR LOCAL AUTHORITIES, INCLUDING BUT NOT LIMITED TO, US DEPT. OF LABOR OCCUPATIONAL SAFETY & HEALTH ACT (OSHA), THE INDUSTRIAL COMMISSION OF THE STATE OF OHIO OR OTHER INDUSTRY REQUIREMENTS APPLICABLE TO CONSTRUCTION SITES AND SAFETY. THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR ASSURING THAT SITE SPECIFIC SAFETY REQUIREMENTS ARE DOCUMENTED AND DISSEMINATED TO ALL PARTIES AND SHALL MAINTAIN ALL REQUIRED RECORDS, FORMS, MANUALS, RULES OR OTHER DOCUMENTS AT THE SITE.
17. EACH SHEET CONTAINED IN THIS SET OF DRAWINGS, IS AN INTEGRAL COMPONENT OF THE CONSTRUCTION DOCUMENTS FOR THE PROJECT. PORTIONS OF THE WORK DESCRIBED ON ONE SHEET MAY IMPACT, BE IMPACTED BY, OR RELY UPON INFORMATION OR WORK SHOWN ON THE OTHER SHEETS WITHIN DRAWINGS. EACH CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE SCOPE OF WORK REQUIRED FOR THE ENTIRE PROJECT AND SHALL BE RESPONSIBLE FOR COORDINATION OF THEIR RESPECTIVE PORTIONS WITH OTHER TRADES TO ASSURE THAT THE WORK PROGRESSES IN AN ORDERLY AND TIMELY FASHION.
18. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE AUTHORITIES HAVING JURISDICTION (AHJ) OVER THE PROJECT, REFERRED TO AS THE "PERMIT SET" ALONG WITH ANY SUBSEQUENTLY APPROVED DOCUMENTS DUE TO CHANGE ORDER OR OTHER A/E, OWNER, AND AHJ APPROVAL THROUGHOUT THE COURSE OF CONSTRUCTION. EACH CONTRACTOR, SUBCONTRACTOR OR OTHER PERSON PERFORMING WORK ON THE PROJECT SHALL REFER TO THE APPROVED DOCUMENTS/PERMIT SET FOR THE SCOPE OF WORK REQUIRED. USE OF BID SETS, LOOSE SHEETS OR OTHER ITEMS/DOCUMENTS NOT PART OF THE APPROVED DOCUMENTS IS DONE AT THE RESPECTIVE PARTIES SOLE RISK. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND SAFEKEEPING OF THE APPROVED DOCUMENTS. APPROVED PERMIT DRAWINGS ARE TO BE KEPT ONSITE IN THE JOB TRAILER AND ACCESSIBLE TO ALL PARTIES FOR REVIEW.
19. DO NOT SCALE DRAWINGS. IF ANY DISCREPANCY IS FOUND OR ANY INFORMATION OR CLARIFICATION IS NEEDED WHICH CANNOT BE REASONABLY DETERMINED BY THE CONSTRUCTION DOCUMENTS, CONTACT THE A/E FOR RESOLUTION. IN CASE OF DISCREPANCY REGARDING THE QUANTITY OR QUALITY, THE HIGHER QUALITY OR GREATER QUANTITY SHALL BE PROVIDED.
20. EACH CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AND DIMENSIONS PRIOR TO COMMENCEMENT OF WORK. DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS THAT CAUSE MINOR RELOCATIONS IN THE FIELD WILL NOT BE CAUSE FOR ADDITIONAL PAYMENT.
21. EACH CONTRACTOR IS TO TAKE PRECAUTIONS TO PROTECT THE EXISTING BUILDING(S), ITS CONTENTS, AND EXISTING SITE IMPROVEMENTS SUCH AS, ASPHALTIC PAVEMENT, LANDSCAPING, ETC. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING AND/OR REPLACING DAMAGED IMPROVEMENTS RESULTING FROM THE CONSTRUCTION PROCESS TO MATCH EXISTING AT NO COST TO THE OWNER.
22. DURING THE CONSTRUCTION PROCESS, EACH CONTRACTOR IS TO INFORM THE ARCHITECT OF ANY UNSTABLE CONDITIONS PRIOR TO PROCEEDING WITH THE WORK IN PROGRESS.
23. EACH CONTRACTOR SHALL DAILY CLEAN UP ALL TRASH AND DEBRIS AND PLACE IN PROPER CONTAINERS ON THE SITE DURING CONSTRUCTION WORK.
24. EACH CONTRACTOR JUST PRIOR TO OCCUPANCY, SHALL PROVIDE FINAL NORMAL CLEANING, INCLUDING REMOVE ACCUMULATED TRASH, POLISH GLASS, HARDWARE AND FIXTURES, VACUUM, CLEAN FLOORS, REMOVE ALL STAINS OR DIRT. THE GROUND ABOUT OR ADJACENT TO THE SITE SHALL BE LEFT RAKE CLEAN.
25. ALTERNATES: REFERENCE SECTION 01 23 00 "ALTERNATES" OF THE PROJECT MANUAL FOR A LIST OF ALTERNATES AND NOTES THROUGHOUT THE DRAWING SET. ALTERNATES ARE DESIGNATED AS **"ALT-1", "ALT-2", ETC.**
26. ITEMS INDICATED TO BE IN BASE BID ARE NOT DELETED IN ALTERNATES UNLESS SPECIFICALLY STATED AS SUCH. ALTERNATE PRICING SHALL NOT DUPLICATE WORK ALREADY PROVIDED IN BASE BID.
27. HAZARDOUS MATERIAL ABATEMENT IS NOT EXPECTED ON THIS PROJECT DUE TO THE AGE OF THE ORIGINAL CONSTRUCTION (LATE 1980'S EARLY 1990'S. THE CONTRACTOR IS TO CONTACT THE A/E IMMEDIATELY IF ANY HAZARDOUS MATERIALS ARE ENCOUNTERED.
28. OVERALL THE INSTITUTION WILL REMAIN IN FULL OPERATIONS DURING THE COURSE OF

GENERAL PROJECT NOTES CONT'D

CONSTRUCTION.

29. NOTE: BARBED TAPE & RAZOR RIBBON WIRE (RRW) ARE USED INTERCHANGEABLY THROUGHOUT THE DRAWINGS AND SPECIFICATIONS, THESE REFER TO THE SAME ITEM.
30. THIS CONTRACTOR IS TO PROVIDE A VIDEO DOCUMENTATION OF EXISTING CONDITIONS PRIOR TO ANY EXCAVATION, DEMOLITION OR CONSTRUCTION WORK STARTING. VIDEO DOCUMENTATION IS TO INCLUDE BUT NOT BE LIMITED TO THE SECURITY PERIMETER ROAD, PERIMETER FENCE, VSP AND VSP GUARD SHACK, ENTRY BUILDING, CONTROL CENTER, COMMUNICATINO ROOM, BUILDING C ELECTRICAL ROOM AND ANY AREAS OF WORK. REFERENCE SPECIFICATION SECTION 013233 "PHOTOGRAPHIC DOCUMENTATION".

SECURITY NOTES

1. A LARGE PORTION OF THE PROJECT TAKES PLACE INSIDE OF THE SECURED PERIMETER OF THE FACILITY AND WILL REQUIRE CLOSE COORDINATION WITH THE RCI WARDEN, MAJOR, BUILDING MAINTENANCE SUPERVISOR (BMS), AND OFFICERS THROUGHOUT THE ENTIRETY OF THE PROJECT.
2. JOB TRAILERS, STORAGE, DUMPSTER, AND LAYDOWN AREA IS IN AN AREA OUTSIDE OF THE SECURE PERIMETER FENCE AS LOCATED ON THE SITE KEY/STAGING PLAN ON SHEET G2. THIS AREA IS ACROSS FROM THE VEHICULAR SALLY PORT WHICH IS THE MAIN ENTRANCE INTO THE SECURE PERIMETER FOR CONTRACTORS.
3. THE VEHICULAR SALLY PORT IS THE MAIN DAY-TO-DAY ENTRANCE POINT INTO THE SECURE PERIMETER FOR ALL CONTRACTORS.
4. EACH CONTRACTOR WORKING INSIDE THE SECURE PERIMETER WILL BE REQUIRED TO TAKE CONTRACTOR TRAINING IN ORDER TO RECEIVE A CONTRACTOR'S BADGE PRIOR TO PERFORMING ANY WORK AT THE INSTITUTION. CONTRACTOR TRAINING IS APPROXIMATELY A 4 HOUR TRAINING BY THE INSTITUTION'S STAFF HELD AT A DESIGNATED AREA IN THE INSTITUTION. AS A PREREQUISITE TO THE CONTRACTOR TRAINING, BACKGROUND CHECKS, ON FORMS PROVIDED IN THE SPECIFICATIONS, FOR ALL WORKERS WORKING INSIDE THE INSTITUTION WILL BE REQUIRED TO BE SUBMITTED TO THE INSTITUTION PRIOR TO THE CONTRACTOR'S TRAINING BEING SCHEDULED. BACKGROUND CHECKS GENERALLY TAKE 2-3 WEEKS TO CLEAR WITH ANOTHER WEEK FOR THE BACKGROUND TRAINING TO BE SCHEDULED AND COMPLETED. THIS APPROX. 4 WEEK PROCESS WILL BE REVIEWED AND COORDINATED AT THE PRE-CONSTRUCTION MEETING.
5. VENDORS DELIVERING MATERIAL INSIDE THE SECURE PORTION OF THE INSTITUTION NO MORE THAN 3-4 TIMES DURING THE COURSE OF CONSTRUCTION WILL NOT BE REQUIRED TO ATTEND THE CONTRACTOR'S TRAINING OR RECEIVE A CONTRACTOR'S BADGE. HOWEVER, THE INSTITUTION WILL REQUIRE A 24 HOUR MIN. NOTICE OF THE VENDOR ENTERING THE SECURE PERIMETER IN ORDER TO PROVIDE A DAY PASS.
6. A TOOL CHECK IS REQUIRED UPON ENTERING AND LEAVING THE SECURE PERIMETER EACH DAY. COORDINATE BEST PRACTICE METHODS FOR TOOL CHECKS WITH THE INSTITUTION'S SECURITY AND MAJOR AT THE PRE-CONSTRUCTION MEETING AND EARLY ON IN THE CONSTRUCTION PROCESS. THIS PROCESS GENERALLY TAKES 30-45 MINUTES EVERY DAY AND DEPENDS UPON HOW QUICKLY THE CONTRACTORS WORK WITH THE INSTITUTION'S TOOL CHECK AND OVERALL SECURITY PROCESS.
7. ALL WORK IN THE INSTITUTION WILL REQUIRE AN OFFICER ESCORT(S) ASSIGNED TO THE WORKER(S). EACH OFFICER ESCORT CAN COVER A CERTAIN AMOUNT OF WORKERS BASED ON AN AREA OF COVERAGE WHICH IS DETERMINED BY VISUAL CAPABILITIES AND RESPONSE TIMES. BASICALLY THE OFFICER NEEDS TO MAINTAIN FULL VISUAL ON THE CONTRACTOR(S) AT ALL TIMES. IF ONE WORKER IN THE GROUP NEEDS TO MOVE OUT OF SITE OF THE OFFICER, THAT WORKER NEEDS TO COORDINATE THAT MOVE/WORK WITH THE OFFICER WHICH THEN WILL REQUIRE 2 OFFICERS, ONE TO STAY WITH THE MAIN WORK GROUP AND THE OTHER TO ESCORT THE WORKER MOVING OUT OF THE VISUAL WORK AREA. THIS WILL BE TRUE FOR ANY DELIVERIES INTO AND OUT OF THE SECURE PERIMETER, AN OFFICER WILL NEED TO ESCORT EACH DELIVERY TO AND FROM THE VEHICULAR SALLY PORT.
8. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING WORK AND PRICING THE PROJECT AROUND THE OFFICER ESCORT(S) PROVIDED. THE OFFICER ESCORTS PROVIDED ARE NOTED AT THE END OF THIS SECURITY NOTES SECTION.
9. WORK WILL BE LIMITED TO A 4 DAY WORK WEEK MONDAY THROUGH THURSDAY WITH A 10 HR/ 7:00 AM TO 5:00 PM WORK DAY. THERE WILL BE NO WEEKEND WORK OR HOLIDAY WORK ALLOWED. MAKE UP FOR WEATHER DAYS AND/OR SCHEDULE DELAYS CAN BE HANDLED ON FRIDAY AS APPROVED BY THE WARDEN, MAJOR, AND A/E NO MORE THAN 5 WORKING DAYS PRIOR TO THE THE FRIDAY IN QUESTION. FRIDAY WORK IS TO BE KEPT TO A MINIMUM AND USED ONLY AS NEEDED TO MAKEUP TIME ON THE SCHEDULE. THE 5TH WORK DAY IS NOT GUARANTEED AND WILL BE A WEEK TO WEEK APPROVAL BASIS. THE CONTRACTOR IS NOT TO BASE THEIR BASE SCHEDULE ON FRIDAY WORK.
10. THE WORK ASSOCIATED WITH THIS PROJECT IS SPREAD THROUGHOUT THE FULL PERIMETER OF THE INSTITUTION, REFERENCE SHEET G2 KEY SITE AND STAGING PLAN, AND **SD1.0** SITE DEVELOPMENT PLAN FOR SCOPE ASSOCIATED WITH THIS WORK.
11. THE PROJECT DEALS WITH THE DOUBLE PERIMETER SECURITY FENCE, THIS BEING THE LAST LINE OF DEFENSE. ANY BARBED TAPE OR FENCE COMPONENTS THAT ARE REMOVED FROM THE FENCE WILL BE REQUIRED TO BE PUT BACK IN PLACE AT THE END OF THE DAY TO MAINTAIN A REQUIRED LEVEL OF SECURITY OR OTHERWISE PLANNED IN ADVANCE WITH RCI SECURITY TO REQUIRE A 24 / 7 SECURITY WATCH BY RCI IF THE SECURITY ITEMS CANNOT BE REPLACED AT THE END OF THE WORKING DAY. EVERY EFFORT FROM THE CONTRACTOR IN THEIR BASE SCHEDULE IS TO BE MADE TO MINIMIZE THESE WATCHES AND TO SECURE THE PERIMETER AT THE END OF EACH DAY. SECURITY WATCHES ARE BY RCI SECURITY. A PLAN IS TO BE PROVIDED BY THE CONTRACTOR AT THE PRE-CONSTRUCTION MEETING TO ACCOUNT FOR THESE POSSIBLE 24 HOUR WATCHES IN THE CONSTRUCTION SCHEDULE. THE PLAN WILL BE REVIEWED AND APPROVED BY THE A/E, OWNER (RCI) AND OFCC.
12. THE INSTITUTION HAS TWO (2) INMATE COUNTS DURING THE GIVEN WORK HOURS, TYPICALLY THESE COUNT TIMES ARE TYPICALLY AT 11:00 TO 11:30, AND ANOTHER AT 4:00 TO 4:30 (VERIFY TIMES WITH EACH INSTITUTION). SOME COUNT TIMES WILL LAST 30 MINUTES HOWEVER MAY LAST LONGER. DURING THESE COUNT TIMES WORK IN THE INSTITUTION CAN CONTINUE HOWEVER THERE WILL NOT BE ANY MOVEMENT ALLOWED IN OR OUT OF THE INSTITUTION. SOME INSTITUTIONS WILL ALLOW MOVEMENT INTO BUT NOT OUT OF THE INSTITUTION AT THESE TIMES, VERIFY WITH RCI.
13. ALL TOOLS, MATERIALS, VEHICLES, EQUIPMENT, AND DEBRIS ARE TO BE REMOVED FROM INSIDE THE INSTITUTION AT THE END OF EACH DAY AND EITHER TAKEN OFF SITE OR STORED IN A SECURE MANNER AS APPROVED BY THE INSTITUTION, IN THE DESIGNATED STAGING AND STORAGE AREAS OUTSIDE OF THE SECURE PERIMETER.
14. REVIEW **SECTION 00 73 10 "SECURITY GUIDELINES FOR CONTRACTORS" AND 01 10 00 "SUMMARY"** FOR ADDITIONAL SECURITY REQUIREMENTS FOR WORKING AT AN ODRC INSTITUTION.
15. ACCESS TO THE SECURITY PERIMETER ROAD IS LIMITED AND IS ONLY ALLOWED IN RARE CIRCUMSTANCES AND WITH DAILY APPROVAL REQUIRED. THIS PROJECT WILL REQUIRE ACCESS TO THE SECURE PERIMETER ROAD, THEREFORE OVERALL PLANNING IN THE BASE SCHEDULE AND DAILY NOTIFICATIONS BETWEEN THE CONTRACTOR AND THE RCI CONSTRUCTION REPRESENTATIVE WILL BE REQUIRED. RCI HAS AN INNER PERIMETER AGGREGATE ROAD THAT IS 12' WIDE OR WIDER CLEAR OF THE BARBED TAPE AT THE INNER FENCE AND WAS DESIGNED AS A ROAD BED TO HANDLE LARGER CRANES AND CONCRETE TRUCKS FOR PROJECTS LIKE THIS. THE INNER PERIMETER ROAD HAS SEVERAL ACCESS GATES THAT ARE 14'x14' AND REQUIRE KEYS FOR ACCESS THROUGH THE GATES THUS REQUIRING OFFICER ESCORTS. REVIEW ACCESS THROUGH THESE GATES ON A DAILY BASIS AS THE OFFICER ESCORT WILL NEED TO DRAW THE SPECIFIC GATE KEYS FROM CONTROL CENTER FOR ACCESS EACH DAY. THIS CONTRACTOR IS TO UTILIZE THAT INNER PERIMETER ROAD AS MUCH AS POSSIBLE. THE OUTER PERIMETER ROAD IS ONLY TO BE UTILIZED IF ABSOLUTELY NEEDED SUCH AS THE ELECTRICAL TRENCHING WORK, FIELD CABINET AND CARD READER WORK.

~~OFFICER ESCORTS:~~

OFFICER ESCORTS AVAILABLE FOR THIS PROJECT :

BASE BID: 2

ALTERNATE 6: 6

△1

THERE WILL NOT BE ANY MORE OFFICER ESCORTS MADE AVAILABLE FOR THIS PROJECT. THE CONTRACTOR IS TO TAKE THIS INTO CONSIDERATION FOR PRICING, SCHEDULING, MEANS AND METHODS, ETC.

NOTE: OFFICER ESCORTS, AS NOTED ABOVE WILL DEFINE YOUR SCHEDULE AS THEY DEFINE YOUR WORK CREW AND LOCATION OF YOUR WORK CREW AND YOUR DELIVERY SCHEDULING IF INSIDE THE SECURE PERIMETER.

RCI HAS ALLOWED FOR THE POSSIBILITY TO FLEX A THIRD OFFICER INTO THE PROJECT, HOWEVER ONLY AS THE NEED ARISES AND ONLY IF PROVIDED ADVANCED NOTICE OF 72 HOURS. THIS THIRD OFFICER IS AT RCI'S DISCRETION AND IS NOT TO BE UTILIZED IN THE CONTRACTOR'S BASE SCHEDULE.

RCI NOTED THAT A TWO SEAT WIDE GATOR VEHICLE IS AS WIDE AS THE NO MAN'S LAND (AREA BETWEEN THE DOUBLE PERIMETER SECURITY FENCES) CAN FIT AND ALLOW SPACE TO TURN AROUND.

TOOLS OUTSIDE OF THE SECURE PERIMETER BUT ON RCI PROPERTY WILL BE TREATED AS IF INSIDE THE SECURE PERIMETER. PLEASE ENSURE ALL TOOLS ARE ACCOUNTED FOR AND LOCKED IN PROPER CONEX AND/OR JOB BOXES.

SHEET INDEX

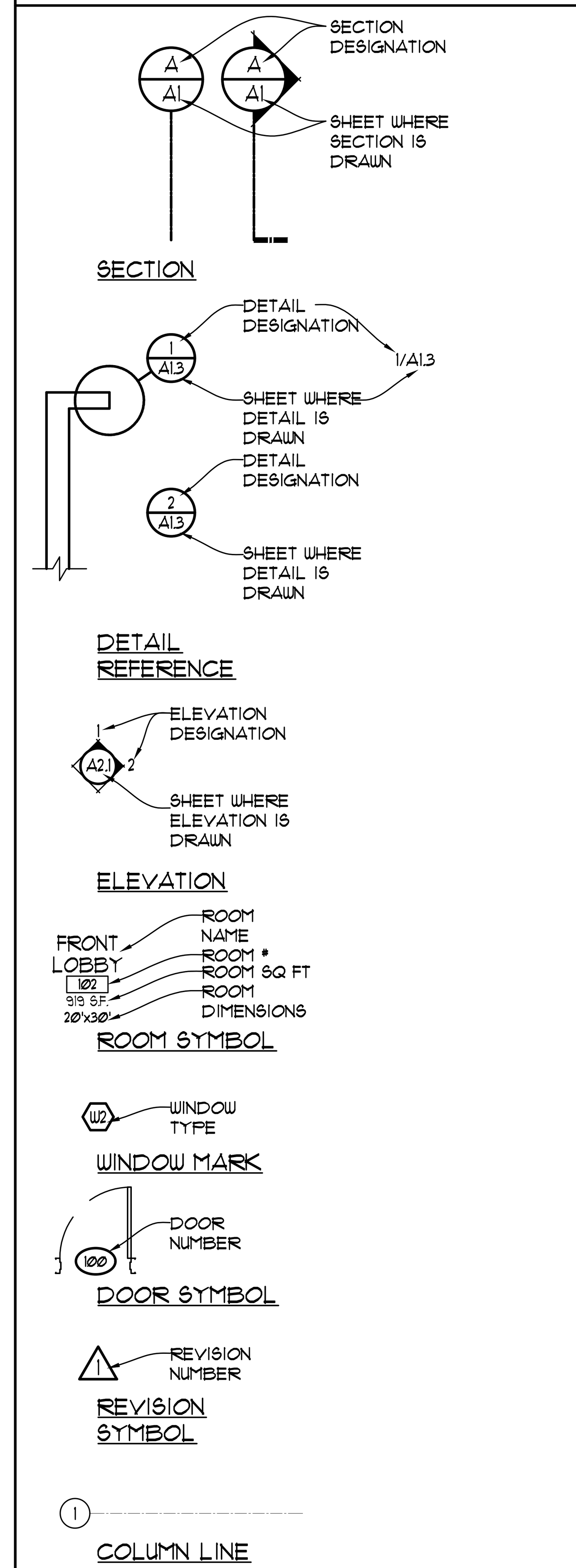
ABBREVIATIONS

A.B.	ANCHOR BOLT
A.P.	ACCESS PANEL
ACOUS	ACOUSTICAL
A.F.F.	ABOVE FINISH FLOOR
ADJ	ADJACENT
AGGR	AGGREGATE
A.C.	AIR CONDITIONING
ALT	ALTERNATE
AL	ALUMINUM
L	ANGLE
APPD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
A.D.	AREA DRAIN
ASPH	ASPHALT
@	AT
BRG	BEARING
BM	BEAM
BITUM	BITUMINOUS
BLK	BLOCK
BLKG	BLOCKING
BD	BOARD
BOT or BTM	BOTTOM
BLDG	BUILDING
C.B.	CATCH BASIN/FIELD DRAIN
C.J.	CONTROL JOINT
CLKG	CAULKING
CLG	CEILING
CEM	CEMENT
C.O.	CLEAN OUT
CTR	CENTER
CL	CENTER LINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONTR	CONTRACT or CONTRACTOR
CRS	COURSE
DEMO	DEMOLITION or DEMOLISH
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DR	DOOR
D.O.	DOOR OPENING
DBL	DOUBLE
DWG	DRAWING
D.F.	DRINKING FOUNTAIN
E	EAST
EA	EACH
ELEC	ELECTRICAL
EWC	ELECTRIC WATER COOLER
EP	ELECTRICAL PANELBOARD
EL	ELEVATION
ELV	ELEVATOR
EMER	EMERGENCY
EQ	EQUAL
EQPT	EQUIPMENT
EXIST	EXISTING
EXP	EXPANSION
E.J.	EXPANSION JOINT
EXPO	EXPOSED
EXT	EXTERIOR
F.O.C.	FACE OF CONCRETE
F.O.F.	FACE OF FINISH
F.O.S.	FACE OF STUD
F.C.	FIELD CABINET
FIN	FINISH
F.A.	FIRE ALARM
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
FPRF	FIREPROOF
FLG	FLASHING
F.B.	FLAT BAR
FL	FLOOR
F.D.	FLOOR DRAIN
FLUOR	FLUORESCENT
FT	FOOT or FEET
FTG	FOOTING
FDN	FOUNDATION
FRM	FRAME
FRMG	FRAMING
F.S.	FULL SIZE
FRTW	FIRE RETARDANT TREATED WOOD
FSW	FIRE SEPARATION WALL
FURR	FURRING
GA	GAUGE
GALV	GALVANIZED
G.C. OR G.T.C.	GEN. TRADES CONTRACTOR
GEN	GENERAL
GL	GLASS or GLAZING
GD	GRADE or GRADING
GND	GROUND
GYP	GYPSUM
HDW	HARDWARE
HDR	HEADER
HTG	HEATING
HVAC	HEATING, VENTILATING, AIR CONDITIONING

HGT	HEIGHT
H.C.	HOLLOW CORE
H.M.	HOLLOW METAL
HR	HOUR
INCL	INCLUDE
I.D.	INSIDE DIAMETER
INS	INSULATE or INSULATION
INT	INTERIOR
JT.	JOINT
L.H.	LEFT HAND
LGTH	LENGTH
LTL	LINTEL
MFR	MANUFACTURER
MAS	MASONRY
M.O.	MASONRY OPENING
MTL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MTL	METAL
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
MUL	MULLION
NOM	NOMINAL
N	NORTH
N.I.C.	NOT IN CONTRACT
N.M.L.	NO MAN'S LAND
N.T.S.	NOT TO SCALE
NO or #	NUMBER
O.C.	ON CENTER
OPNG	OPENING
OPP	OPPOSITE
O.D.	OUTSIDE DIAMETER
OA	OVERALL
PR	PAIR
PNL	PANEL
P L	PLATE
PLYWD	PLYWOOD
PT	POINT
P.S.I.	POUNDS PER SQUARE INCH
P.C.	PRECAST CONCRETE or PORTLAND CEMENT
R	RADIUS
REF	REFERENCE
REINF	REINFORCED
REQD	REQUIRED
RES	RESILIENT
R.A.	RETURN AIR
R.H.	RIGHT HAND
R.O.W.	RIGHT OF WAY
R	RISER
R.D.	ROOF DRAIN
RM	ROOM
R.O.	ROUGH OPENING
R.R.W.	RAZOR RIBBON WIRE
SECT	SECTION
SCHED	SCHEDULE
SHTG	SHEATHING
SHT	SHEET
SH	SHELL
SIM	SIMILAR
S.C.	SOLID CORE
S	SOUTH
S.F.	SQUARE FEET OR FOOT
SPEC	SPECIFICATIONS
SQ	SQUARE
SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRL	STRUCTURAL
SYM	SYMMETRICAL
TEL	TELEPHONE
THK	THICK
T.C.	TOP OF CURB
T.P.	TOP OF PAVEMENT
T.W.	TOP OF WALL
T & G	TONGUE AND GROOVE
TYP	TYPICAL
UNF	UNFINISHED
U.N.O.	UNLESS NOTED OTHERWISE
V.B.	VAPOR BARRIER
VCT	VINYL COMPOSITE TILE
VERT	VERTICAL
VSP	VEHICULAR SALLY PORT
WP	WATERPROOF
WT	WEIGHT
W	WEST
WTD	WIDTH
W/	WITH
W/O	WITHOUT
WD	WOOD

NOTE:
1. ESC: ELECTRONIC SECURITY CONTRACTOR
2. ESC IS USED INTERCHANGEABLY WITH THE TERMS NLEF INTEGRATOR, NLEF CONTRACTOR, AND NLEF INSTALLER THROUGHOUT THE DOCUMENTS AND ALL REFER TO THE SAME SUBCONTRACTOR.

DRAWING SYMBOLS



NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
	4-19-2023	CD 95% REVIEW SET			
	4-13-2022	SD/DD SET	△1	11-21-2023	REBID SET
	3-25-2022	SD/DD PROGRESS 50% SET		8-31-2023	BID SET
	2-15-2022	POR DOCUMENT ITEM 2		5-26-2023	PERMIT SET

SET/REVISIONS

POPULATION MANAGEMENT NLEF FENCE-PHASE 4
ROSS CORRECTIONAL INSTITUTION
16149 STATE ROUTE 104, CHILLICOTHE, OHIO 45601

PREPARED FOR:
OHIO DEPARTMENT OF REHABILITATION & CORRECTION
770 WEST BROAD STREET
COLUMBUS, OHIO 43222

PREPARED BY:
schorr architects inc.
230 BRADENTON AVE.
DUBLIN, OH 43017
614/798-2096

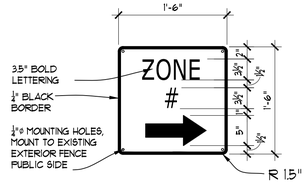
STATE OF OHIO — TONY R. SCHORR 8879 — REGISTERED ARCHITECT

TONY R. SCHORR, LICENSE #8879
EXPIRATION DATE 12/31/2024

SIGNED [signature] DATE 11/20/2023

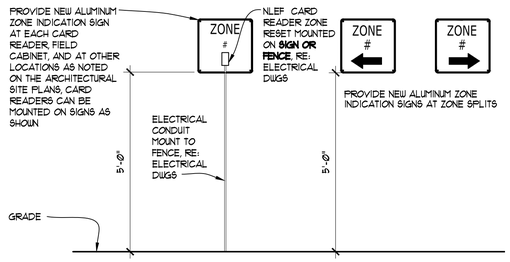
GENERAL NOTES, SECURITY NOTES, ABBREVIATIONS, SYMBOLS

STATE PROJ. NO.	COMM. NO.:	DRAWN BY:	CHECKED BY:	DATE	SHEET
DRC-21F020	2155	SAI	SAI	03-25-2022	G1



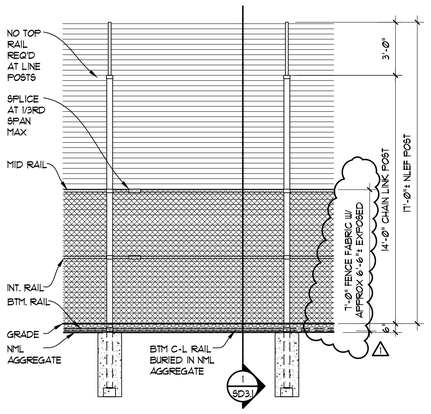
8 FENCE ZONE SIGN DETAIL

1" = 1'-0"



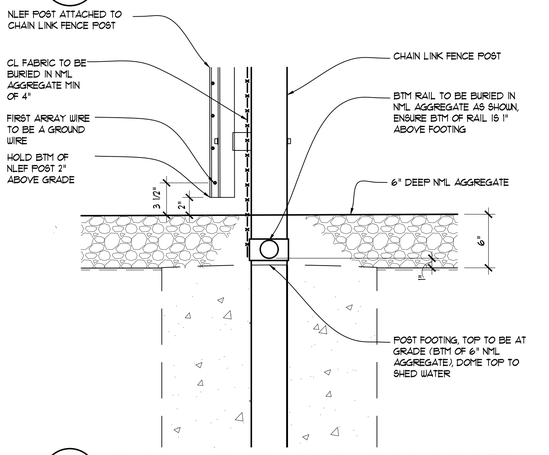
7 FENCE ZONE SIGN ELEVATION

1/2" = 1'-0"



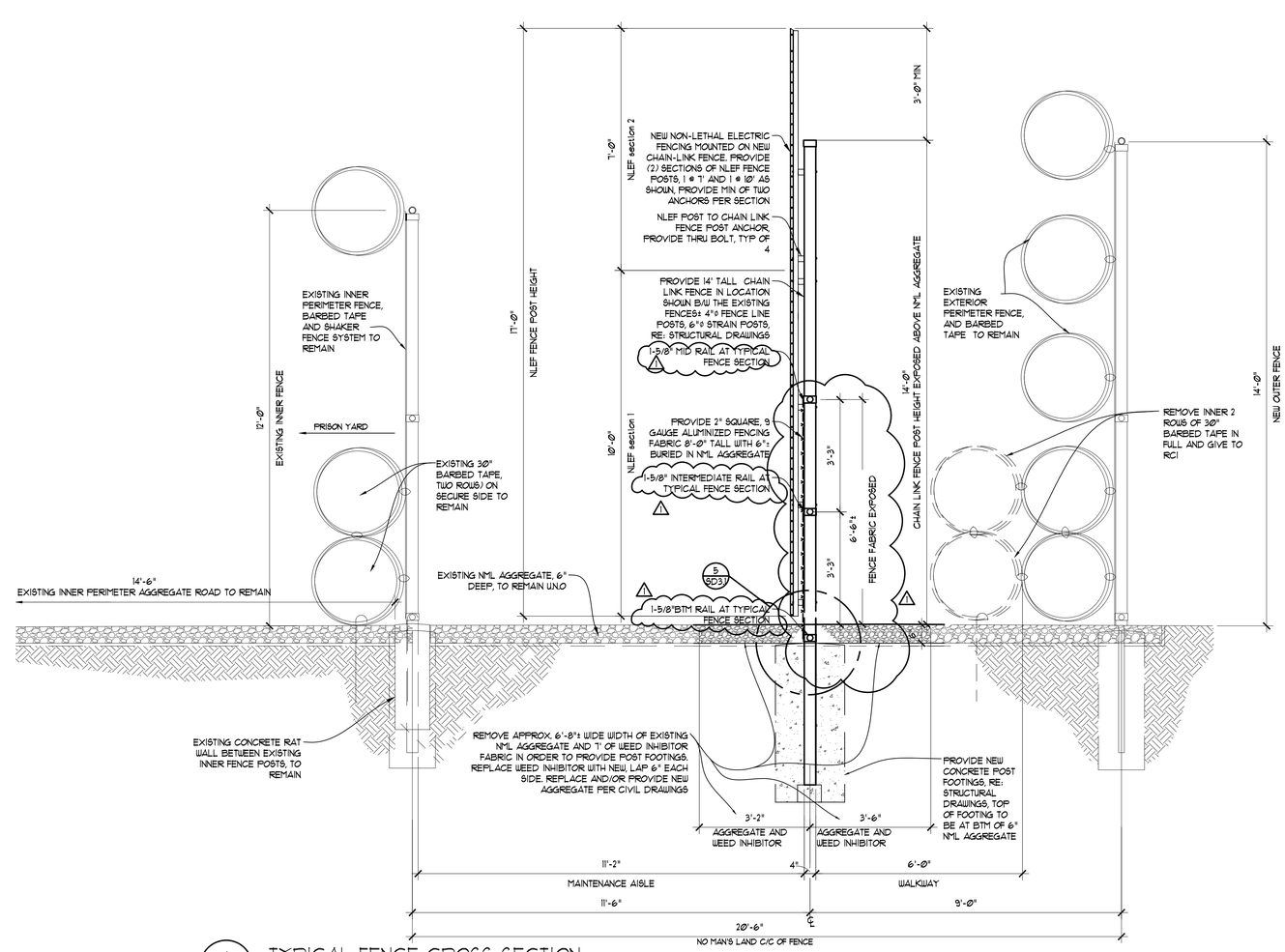
6 TYPICAL FENCE ELEVATION

1/4" = 1'-0"



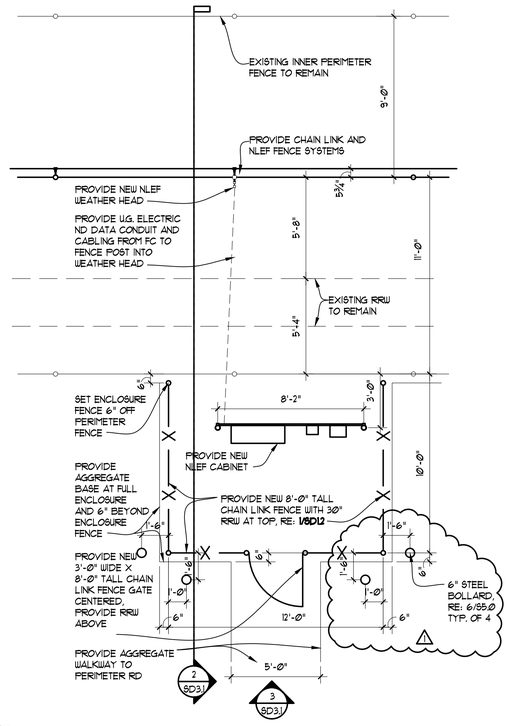
5 TYPICAL FENCE OFFSET AT GRADE DETAIL

1-1/2" = 1'-0"



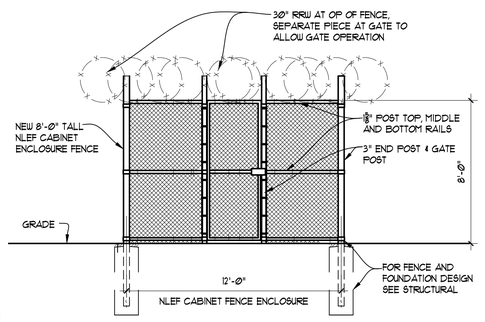
1 TYPICAL FENCE CROSS SECTION

1/2" = 1'-0"



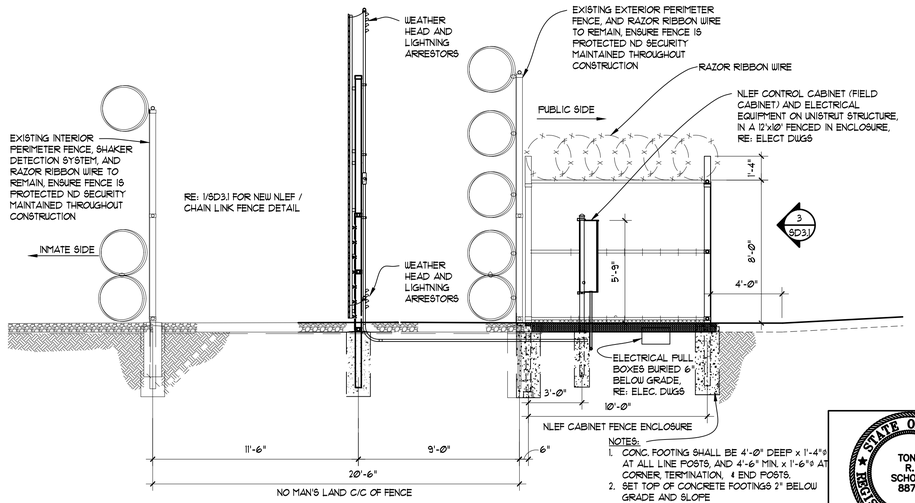
4 FIELD CABINET FENCE ENCLOSURE PLAN

1/4" = 1'-0"



3 FIELD CABINET FENCE ENCLOSURE ELEVATION

1/4" = 1'-0"



2 FIELD CABINET FENCE ENCLOSURE ELEVATION

1/4" = 1'-0"

STATE OF OHIO
TONY R. SCHORR 8879
REGISTERED ARCHITECT

TONY R. SCHORR, LICENSE #8879
EXPIRATION DATE 12/31/2024
SIGNED
11/20/2023
DATE

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
	4-19-2023	CD 95% REVIEW SET			
	4-13-2022	SD/DD SET	1	11-21-2023	REBID SET
	3-25-2022	SD/DD PROGRESS 50% SET		8-31-2023	BID SET
	2-15-2022	POR DOCUMENT ITEM 2		5-26-2023	PERMIT SET

SET/REVISIONS

POPULATION MANAGEMENT NLEF FENCE–PHASE 4
ROSS CORRECTIONAL INSTITUTION
16149 STATE ROUTE 104, CHILLICOTHE, OHIO 45601

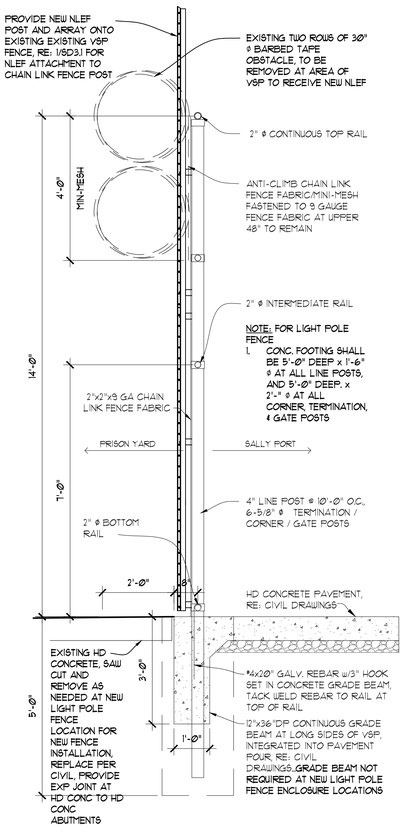
PREPARED FOR:
OHIO DEPARTMENT OF REHABILITATION & CORRECTION
770 WEST BROAD STREET
COLUMBUS, OHIO 43222

PREPARED BY:
schorr architects inc.
230 BRADENTON AVE.
DUBLIN, OH 43017
614/798-2096

SITE DETAILS

SHEET SD3.1

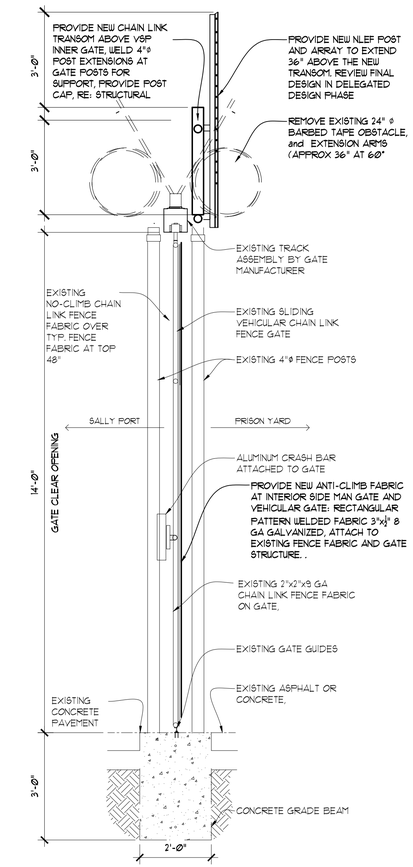
STATE PROJ. NO.	COMM. NO.:	DRAWN BY:	CHECKED BY:	DATE
DRC-21F020	2155	SAI	SAI	03-25-2022



4 TYP. VSP FENCE SECTION

1/2" = 1'-Ø"

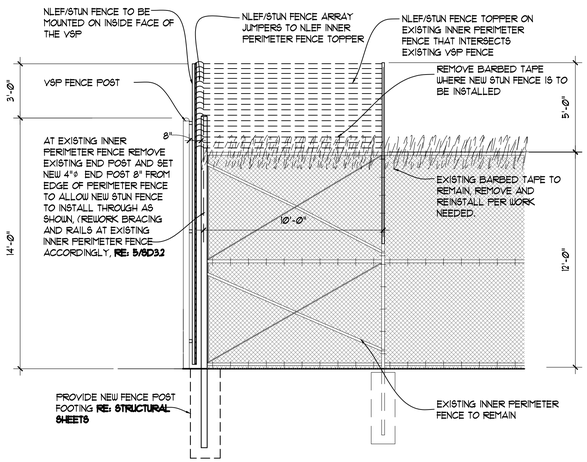
NOTE: USE THIS SECTION FOR NEW VSP FENCE EXTENSION AROUND THE EXISTING LIGHT POLES ON THE VSP'S EAST SIDE. VERIFY EDGE CONDITION AT GRADE IN FIELD, GRADE BEAM WILL NOT BE REQUIRED. AREA IS SURROUNDED BY HD CONCRETE SO AGGREGATE AND GRASS WILL NOT BE REQUIRED. REMOVE EXISTIGN HD CONCREETE AS NEEDED FTO PROVIDE FOR NEW CHAIN LINK FENCE POSTS, PROVIDE NEW HD CONCRETE WHERE REMOVED.



DETAILS 3 AND 4 ARE EXISTING FENCE SECTIONS WITH MINOR MODIFICATIONS SHOWN TO THE EXISTING CONDITION FOR THE NEW NLEF. MOST OF THE NOTES SHOW AS BUILT CONDITION TO INDICATE THE EXISTING CONDITION AND FOR THE USE OF THE NEW VSP TYPE FENCE AT THE LIGHT POLES AS A NEW FENCE INSTALLATION FOR THIS PROJECT.

3 VSP SECTION THROUGH VEHICULAR GATE

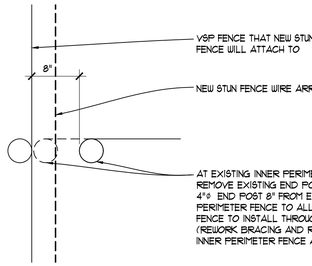
1/2" = 1'-Ø"



2 FENCE TO NLEF FENCE INTERSECTION-TOPPER

1/4" = 1'-Ø"

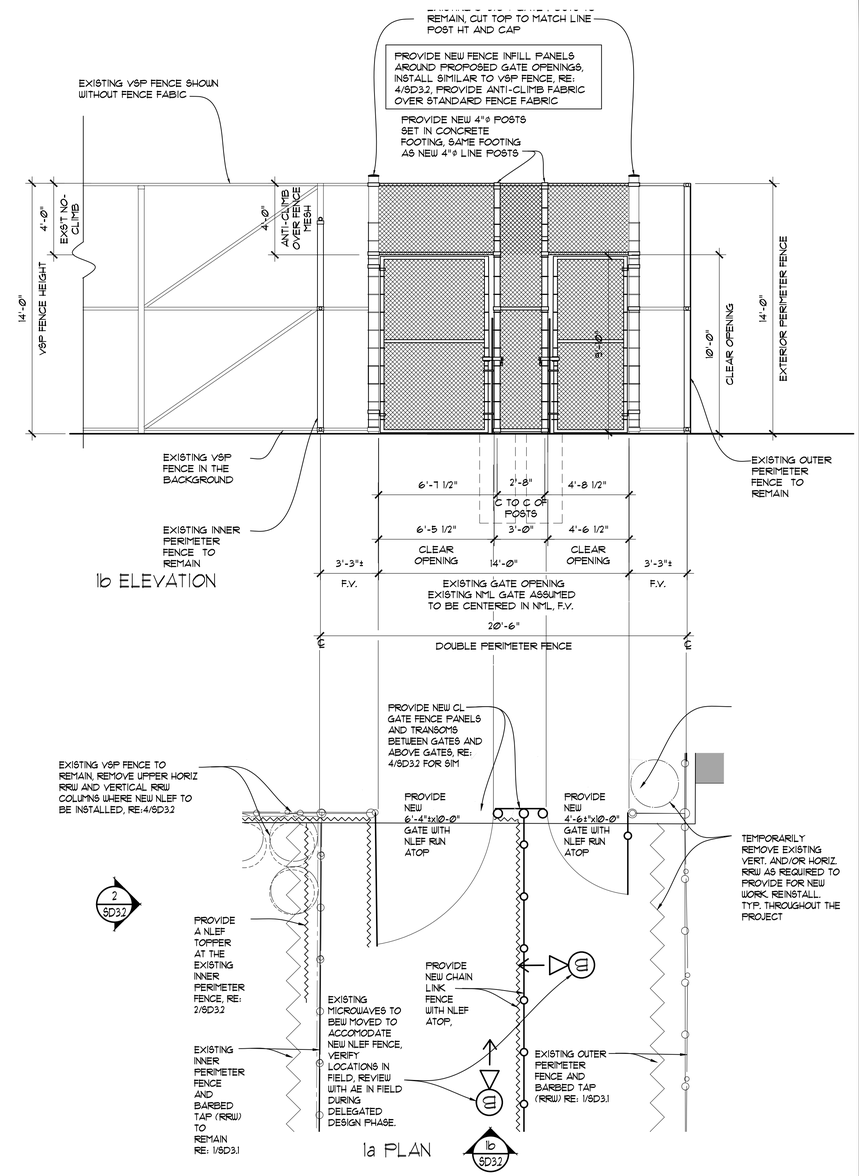
NOTE: ALSO KNOWN AS A NLEF TOPPER FOR ANY NON-NLEF FENCE INTERSECTION INTO A NLEF FENCE.



5 NLEF FENCE THROUGH DETAIL

1/2" = 1'-Ø"

NOTE: THIS DETAIL IS PROVIDED IF NEEDED. PER REVIEW OF SITE AND POSSIBLE NLEF DETAILING IN DELEGATED DESIGN, THIS DETAIL MAY NOT BE REQUIRED.

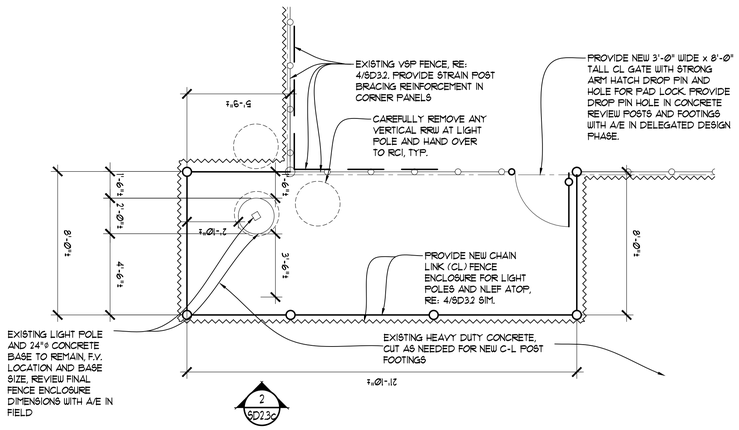


1b ELEVATION

1a PLAN — 1b SD3.2

1 VSP TO NML GATE MODIFICATIONS

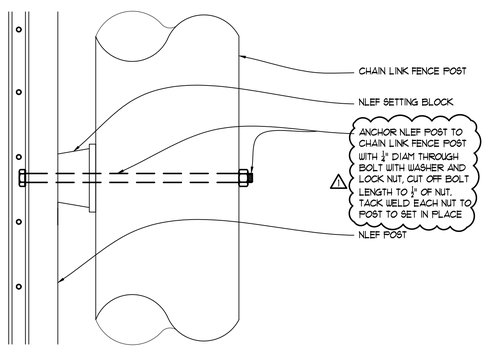
1/4" = 1'-Ø"



6 ALT-3: VSP LIGHT POLE FENCE ENCLOSURE PLAN

1/4" = 1'-Ø"

NOTE:
1. TYPICAL BOTH SIDES OF VSP AT EAST SIDE
2. PROPOSED GATE CANNOT BE PROVIDED IN THE FIRST / CORNER OF THE VSP C-L FENCE DUE TO STRAIN POST BRACING REQUIRED.



7 NLEF FENCE THROUGH BOLT DETAIL

3" = 1'-Ø"

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
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	2-15-2022	POR DOCUMENT ITEM 2		5-26-2023	PERMIT SET

SET/REVISIONS

POPULATION MANAGEMENT NLEF FENCE–PHASE 4
ROSS CORRECTIONAL INSTITUTION
16149 STATE ROUTE 104, CHILLICOTHE, OHIO 45601

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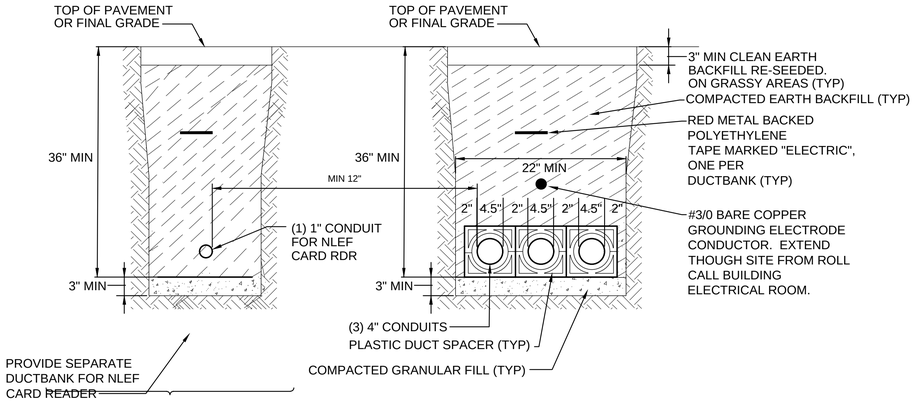
STATE OF OHIO
TONY R. SCHORR 8879
REGISTERED ARCHITECT

TONY R. SCHORR, LICENSE #8879
EXPIRATION DATE 12/31/2024
SIGNED — 11/20/2023 DATE

STIE DETAILS

SHEET SD3.2

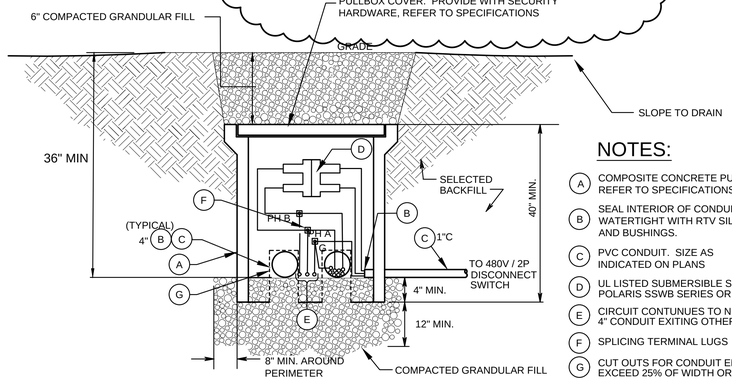
STATE PROJ. NO.	COMM. NO.:	DRAWN BY:	CHECKED BY:	DATE
DRC-21F020	2155	SAI	SAI	03-25-2022



1 DETAIL - DUCT BANK DIRECT BURIED CONDUITS

NTS

NOTE: THE 1" CONDUIT FOR THE NLEF CARD READER MAY OCCUPY THE SAME TRENCH AS THE POWER AND FIBER OPTIC CABLING AS LONG AS A MINIMUM OF 12" SEPARATION FROM POWER CONDUITS IS MAINTAINED AT ALL TIMES. IT IS THE CONTRACTORS OPTION TO PROVIDE TWO TRENCHES OR ONE.

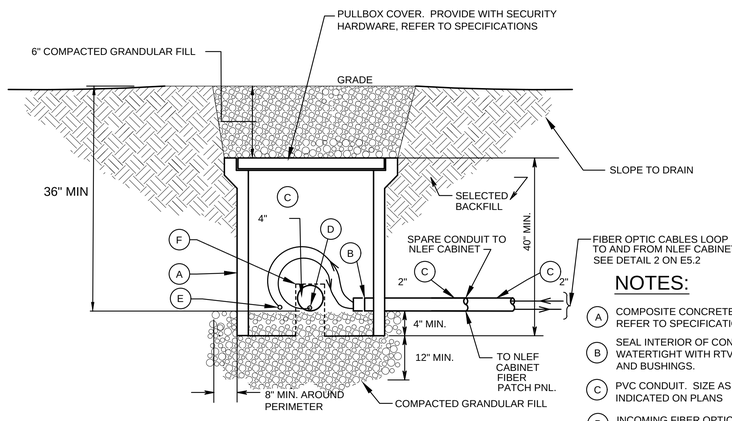


NOTES:

- (A) COMPOSITE CONCRETE PULLBOX REFER TO SPECIFICATIONS
- (B) SEAL INTERIOR OF CONDUITS WATERTIGHT WITH RTV SILICONE FOAM AND BUSHINGS.
- (C) PVC CONDUIT. SIZE AS INDICATED ON PLANS
- (D) UL LISTED SUBMERSIBLE SPLICE TAP CONNECTOR POLARIS SSWB SERIES OR EQUAL
- (E) CIRCUIT CONTUNUES TO NEXT PULLBOX VIA 4" CONDUIT EXITING OTHER SIDE OF THIS PULLBOX.
- (F) SPLICING TERMINAL LUGS
- (G) CUT OUTS FOR CONDUIT ENTRY / EXIT SHALL NOT EXCEED 25% OF WIDTH OR LENGTH OF PULLBOX WALLS

3 DETAIL - POWER PULLBOX AT NLEF CABINET

NTS

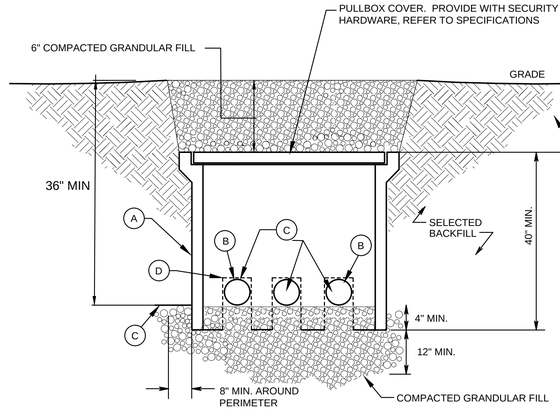


NOTES:

- (A) COMPOSITE CONCRETE PULLBOX REFER TO SPECIFICATIONS
- (B) SEAL INTERIOR OF CONDUITS WATERTIGHT WITH RTV SILICONE FOAM AND BUSHINGS.
- (C) PVC CONDUIT. SIZE AS INDICATED ON PLANS
- (D) INCOMING FIBER OPTIC CABLE FROM PREVIOUS PULLBOX TO AND FROM NLEF CABINET.
- (E) FIBER OPTIC CABLE TO NEXT PULLBOX DOWNSTREAM THRU 4" C EXITING THIS PULLBOX.
- (F) CUT OUTS FOR CONDUIT ENTRY / EXIT SHALL NOT EXCEED 25% OF WIDTH OR LENGTH OF PULLBOX WALLS

5 DETAIL - FIBER PULLBOX AT NLEF CABINET

NTS

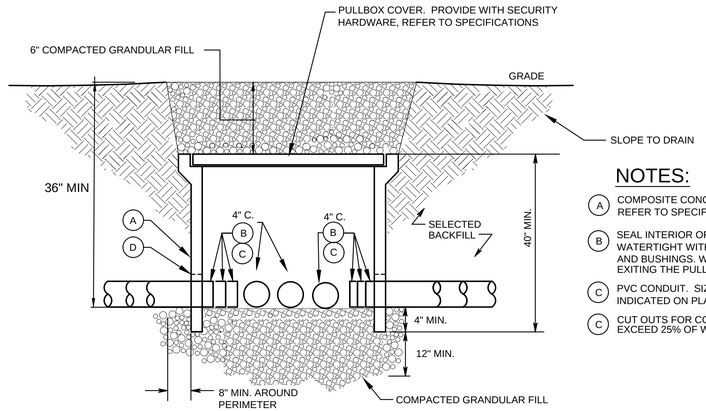


NOTES:

- (A) COMPOSITE CONCRETE PULLBOX REFER TO SPECIFICATIONS
- (B) SEAL INTERIOR OF CONDUITS WATERTIGHT WITH RTV SILICONE FOAM AND BUSHINGS. WHERE ENTERING AND EXISTING EXITING THE PULLBOX.
- (C) PVC CONDUIT. SIZE AS INDICATED ON PLANS
- (C) CUT OUTS FOR CONDUIT ENTRY / EXIT SHALL NOT EXCEED 25% OF WIDTH OR LENGTH OF PULLBOX WALLS

2 DETAIL - POWER & FIBER PULLBOX

NTS

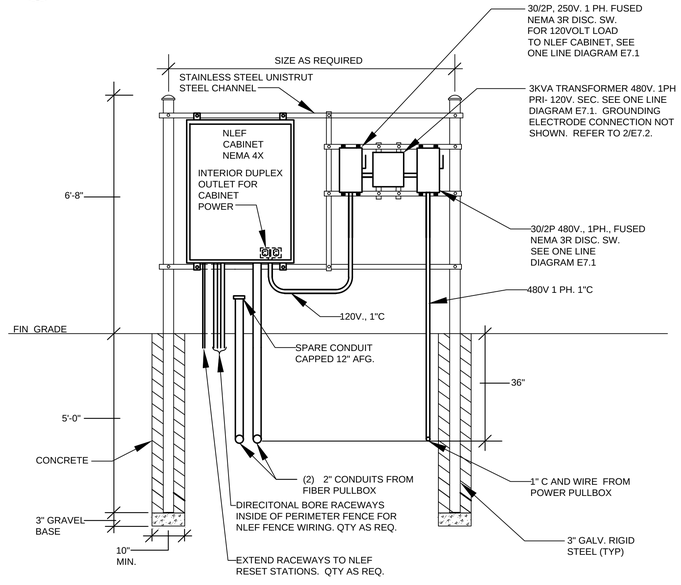


NOTES:

- (A) COMPOSITE CONCRETE PULLBOX REFER TO SPECIFICATIONS
- (B) SEAL INTERIOR OF CONDUITS WATERTIGHT WITH RTV SILICONE FOAM AND BUSHINGS. WHERE ENTERING AND EXISTING EXITING THE PULLBOX.
- (C) PVC CONDUIT. SIZE AS INDICATED ON PLANS
- (C) CUT OUTS FOR CONDUIT ENTRY / EXIT SHALL NOT EXCEED 25% OF WIDTH OR LENGTH OF PULLBOX WALLS

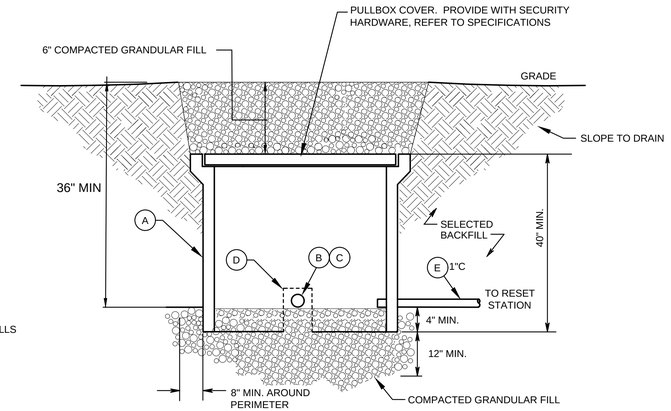
4 DETAIL - THREE WAY POWER & FIBER PULLBOX

NTS



6 DETAIL - NLEF CABINET & TRANSFORMER MOUNTING

NTS



NOTES:

- (A) COMPOSITE CONCRETE PULLBOX REFER TO SPECIFICATIONS
- (B) SEAL INTERIOR OF CONDUITS WATERTIGHT WITH RTV SILICONE FOAM AND BUSHINGS. WHERE ENTERING AND EXISTING EXITING THE PULLBOX.
- (C) 1" PVC CONDUIT FROM FIELD CABINET. SEPARATE NOT LESS THAN 12" POWER CONDUITS.
- (D) CUT OUTS FOR CONDUIT ENTRY / EXIT SHALL NOT EXCEED 25% OF THE WIDTH OR LENGTH OF PULLBOX
- (E) EXTEND 1" PVC CONDUIT TO FENCE SYSTEM RESET STATION.

7 DETAIL - PULLBOX AND RESET STATION RACEWAY

NTS

SHEET NOTES:

1. GROUNDING ELECTRODE CONDUCTOR ROUTING THOUGH PULLBOXES HAS BEEN OMITTED FOR CLARITY. GROUNDING ELECTRODE CONDUCTOR SHALL EXTEND THROUGH ALL COMMON POWER/FIBER PULLBOXES AND EXTEND THROUGH NLEF POWER FEED PULLBOXES FOR EXTENSION TO GROUNDING ELECTRODE SYSTEM AT THE NLEF SYSTEM.

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	2-15-2022	POR DOCUMENT ITEM 2			

SET/REVISIONS

POPULATION MANAGEMENT NLEF FENCE-PHASE 4
ROSS CORRECTIONAL INSTITUTION
16149 STATE ROUTE 104, CHILLICOTHE, OHIO 45601

PREPARED FOR:
OHIO DEPARTMENT OF REHABILITATION & CORRECTION
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COLUMBUS, OHIO 43222

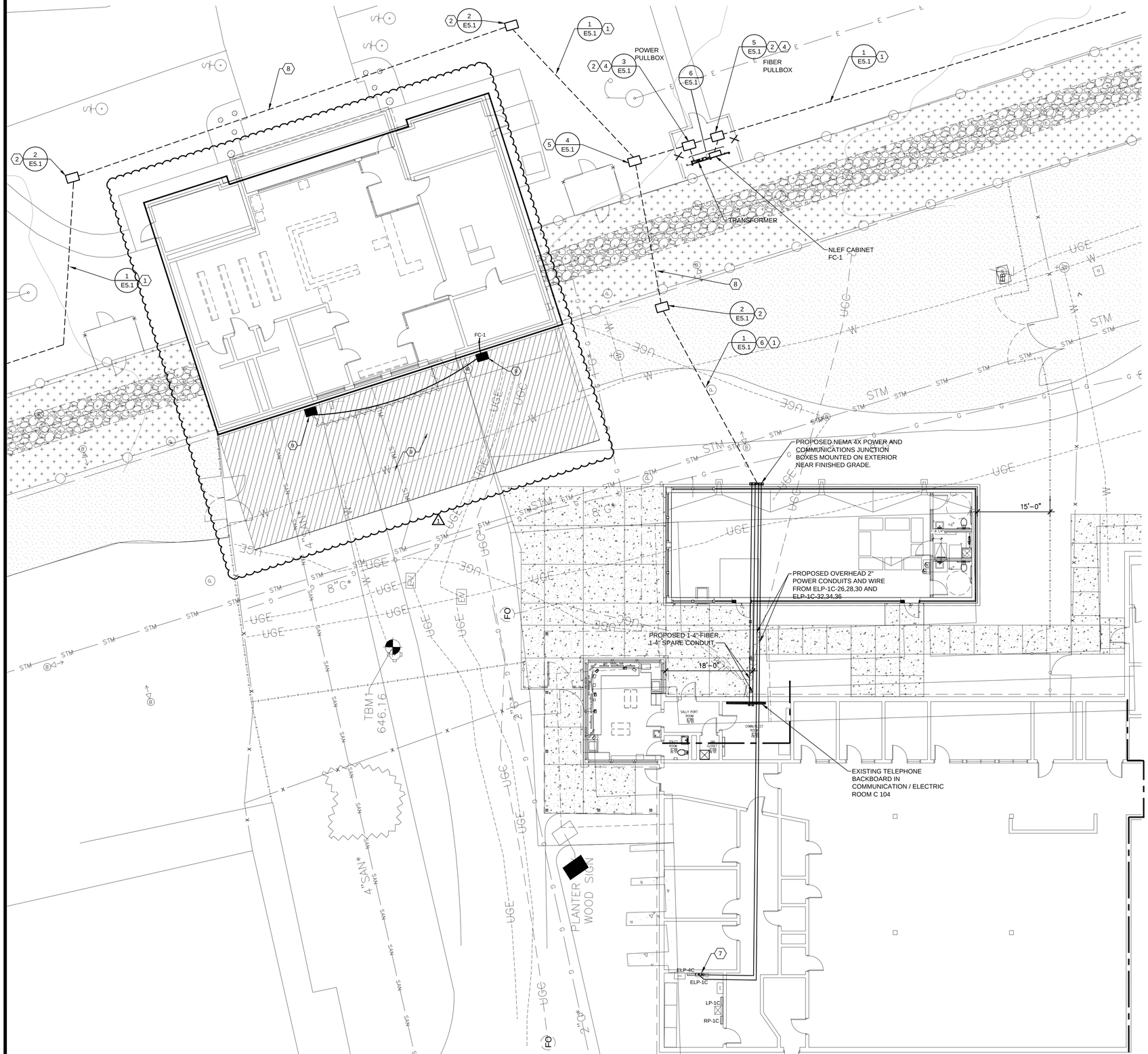
PREPARED BY:
schorr architects inc.
230 BRADENTON AVE.
DUBLIN, OH 43017
614/798-2096

STATE OF OHIO
JASON
JONES
E-76228
REGISTERED
PROFESSIONAL ENGINEER
5/26/2023

DETAILS - ELECTRICAL

SHEET E5.1

STATE PROJ. NO.	COMM. NO.:	DRAWN BY:	CHECKED BY:	DATE
DRC-21F020	2155	BR	JMJ	08-31-23



1 ENTRY AREA ENLARGED SITE PLAN - ELECTRICAL

1"=10'-0"

0 5' 10' 20'

SHEET CODED NOTES (CONTINUED):

9. PROVIDE NEW PIR/DOPPLER BASED INTRUSION DETECTION SYSTEM DEVICES IN LOCATIONS AS SHOWN. NEW COVERAGE SHALL ENSURE FULL INTRUSION DETECTION COVERAGE IN THE AREA HATCHED ON DRAWINGS SHOWN WEST OF THE ENTRY BUILDING TO COVER THE AREA THE NLEF FENCE DOES NOT COVER ON THE FACE OF THE ENTRY BUILDING. REFER TO SPECIFICATIONS. PROVIDE POWER AND MONITORING FROM THE ZONE 22 (FIELD CABINET 1) NLEF FIELD CABINET SERVING THE ENTRY AREA.

SHEET NOTES:

1. REFER TO SITE CIVIL AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL WORK REQUIRED TO SUPPORT THE ELECTRICAL WORK ON THIS PROJECT.
2. REFER TO SHEET G2 FOR INFORMATION AND RESTRICTIONS RELATED TO SITE USE, CONTRACTOR LIMITS OF SITE ACCESS, SITE MOBILIZATION, DAILY SITE ENTRY POINTS, AND ASSOCIATED PROCEDURES.
3. REFER TO ARCHITECTURAL SHEET G2 FOR REQUIREMENTS AND RESTRICTIONS APPLICABLE TO TOOL MONITORING AND USE WITHIN THE SECURE PORTIONS OF THE FACILITY.
4. UTILITY INFORMATION IS INTENTIONALLY OMITTED FROM THESE DRAWINGS FOR CLARIFY. REFER TO CIVIL AND ARCHITECTURAL PLANS FOR LOCATIONS OF EXISTING UTILITIES AROUND THE PERIMETER OF THE FACILITY AS WELL AS UTILITIES IN PROXIMITY TO THE EXISTING SALLYPORT, ENTRY BUILDING, ROLL CALL BUILDING AND ALL OTHER AREAS WHERE SOIL DISTURBANCE IS REQUIRED TO INSTALL WORK ON THIS PROJECT. ALL LOCATIONS OF DUCTBANKS, PULLBOXES AND OTHER IN-GRADE ELEMENTS ARE SHOWN SCHEMATICALLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BASED ON LOCATIONS OF EXISTING UTILITIES AND EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL SECURE THE SERVICES OF A THIRD PARTY UTILITY LOCATING SERVICE TO UTILIZE GROUND PENETRATING RADAR COMBINED WITH VISUAL INSPECTION OF SITE FEATURES AND ELEMENTS TO MARK CONCEALED UTILITIES AND OTHER ELEMENTS IN ALL AREAS OF PROPOSED EXCAVATION AND LOCATIONS WHERE TRENCHLESS INSTALLATION METHODS ARE PROPOSED. THE AREA OF ANALYSIS SHALL INCLUDE 10 FEET BEYOND THE OUTSIDE OF THE EDGE OF EXPECTED EXCAVATION OR SOIL DISTURBANCE AREA AS WELL AS THE PROPOSED DISTURBED AREA. IN ADDITION TO THESE REQUIREMENTS FOLLOW ALL REQUIREMENTS LEGISLATED IN THE OHIO REVISED CODE AS THEY RELATE TO EXCAVATION WORK. IT IS ALSO EXPECTED THAT THE CONTRACTOR CONTACT OUPS FOR LOCATION AND MARKING OF ALL PUBLIC UTILITIES IN THE WORK AREA.
6. THE CONTRACTOR SHALL FOLLOW ALL OHIO REVISED CODE REQUIREMENTS FOR EXCAVATING WHICH REQUIRE EXPOSING OF ALL EXISTING UTILITIES AT PROPOSED UTILITY CROSSINGS. THE CONTRACTOR SHALL UTILIZE POTHOLING EQUIPMENT TO REMOVE SOILS IN THE AREA OF UTILITY CONGESTION IN ORDER TO EXPOSE EXISTING UTILITIES IN THE VICINITY OF NEW TRENCHING OR TRENCHLESS DUCT INSTALLATION. THE CONTRACTOR SHALL ALSO INCLUDE WORK TO COVER/PROTECT EXPOSED OPENINGS UNTIL THEY ARE BACKFILLED, AS WELL AS THE WORK REQUIRED TO RESTORE DISTURBED AREAS TO PREVIOUS CONDITIONS.
7. THE CONTRACTOR SHALL SUBMIT A DETAILED PLAN FOR THE PROPOSED INSTALLATION OF TRENCHLESS DUCTS UNDER SECURITY FENCES. PLANS SHALL INCLUDE EXPECTED SIZE OF TRENCHES NECESSARY ON EITHER SIDE OF THE SECURITY PERIMETER, THE DISTANCES OF THE TRENCHES FROM THE EDGE OF THE SECURE BARRIER, AND OTHER ASPECTS OF WORK THAT COULD POTENTIALLY COMPROMISE THE SECURITY BARRIER. THE CONTRACTOR WILL NOT BE PERMITTED TO UNDERMINED FENCE FOUNDATION SYSTEMS OR CREATE A CONDUIT WHICH WOULD PERMIT ESCAPE UNDERNEATH THE FENCE SYSTEM.
8. CONTRACTOR SHALL PROVIDE SYSTEM ZONE SIGNAGE. REFER TO ARCHITECTURAL DRAWINGS FOR ZONE NAMING AND SIGNAGE REQUIREMENTS.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATIONS AND DETAILS INDICATING THE EXTENT OF THE NLEF SECURITY FENCING TO BE INSTALLED ON THIS PROJECT.

SHEET CODED NOTES:

1. PROVIDE DIRECT BURIED DUCT BANK. REFER TO DETAILS AND PROJECT REQUIREMENTS FOR QUANTITIES AND SIZES OF DUCTS.
2. PROVIDE POLYMER CONCRETE PULLBOX WITH SECURITY HARDWARE CONCEALED BELOW GRADE. REFER TO REFERENCED DETAILS AND SPECIFICATIONS.
3. NOT USED.
4. PROVIDE PULLBOXES AND RACEWAY AND CABLING EXTENSIONS TO NLEF ZONE CONTROLLER. REFER TO REFERENCED DETAILS FOR ADDITIONAL REQUIREMENTS.
5. PULLBOX - 4" CONDUIT EXTENSIONS FROM INSTITUTION FOR DISTRIBUTION TO THE NLEF LOOP POWER/FIBER LOOP.
6. HYDROVAC SOILS IN THIS AREA TO EXPOSE EXISTING UTILITIES AT CROSSINGS FOR INSTALLATION OF NEW DUCTBANK.
7. SEE PANEL SCHEDULE AND ONE LINE DIAGRAM ON DRAWING E7.1, FOR WORK AT THIS PANEL ELP-1C.
8. PROVIDE DIRECTIONALLY BORED DUCT BANK BETWEEN PULLBOXES WITH (4)-4" CONDUITS: (1) POWER, (1) FIBER OPTIC, (1) GROUNDING ELECTRODE CONDUCTOR, (1) SPARE.

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	2-15-2022	POR DOCUMENT ITEM 2			

SET/REVISIONS

POPULATION MANAGEMENT NLEF FENCE-PHASE 4
ROSS CORRECTIONAL INSTITUTION
16149 STATE ROUTE 104, CHILLICOTHE, OHIO 45601

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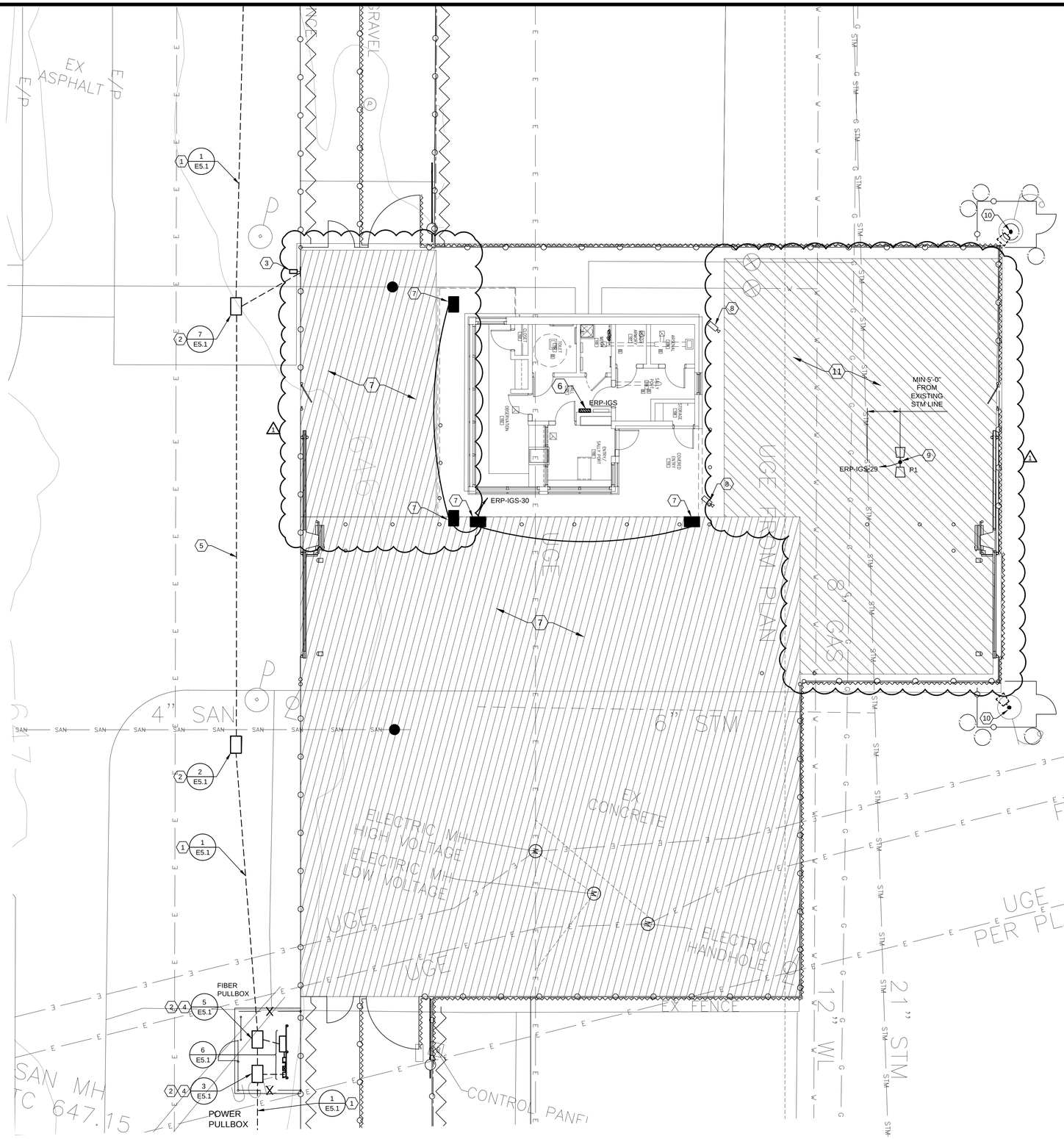
614/798-2096

STATE OF OHIO
JASON JONES
E-76238
REGISTERED PROFESSIONAL ENGINEER
5/26/2023

ENTRY AREA ENLARGED SITE PLAN ELECTRICAL

SHEET ES2.1

STATE PROJ. NO.	COMM. NO.:	DRAWN BY:	CHECKED BY:	DATE
DRC-21F020	2155	BR	JMJ	08-31-23



1 VEHICULAR SALLYPORT ENLARGED SITE PLAN - ELECTRICAL

1/8"=1'-0"

0 4' 8' 16'

SHEET CODED NOTES (CONTINUED):

7. PROVIDE NEW PIR/DOPPLER BASED INTRUSION DETECTION SYSTEM DEVICES IN LOCATIONS AS SHOWN TO SUPPLEMENT EXISTING SALLYPORT DOPPLER COVERAGE. NEW COVERAGE SHALL ENSURE FULL INTRUSION DETECTION COVERAGE IN THE AREA HATCHED ON DRAWINGS FROM GRADE TO 14' A.F.G. REFER TO SPECIFICATIONS. INTEGRATE WITH EXISTING PYRAMID XL SERIES DOPPLER AND MONITORING SYSTEM FOR ALARM NOTIFICATION AND EVENT/STATUS MONITORING.
8. EXISTING PYRAMID MODEL NUMBER SDI076XL-MIL DOPPLER UNITS TO REMAIN.
9. PROVIDE NEW POLE MOUNTED AREA LIGHTING SYSTEM. REFER TO FIXTURE SCHEDULE. REFER TO GENERAL TRADES DRAWINGS FOR CUTTING AND PATCHING OF EXISTING APRON AS REQUIRED FOR INSTALLATION OF NEW BRANCH CIRCUITING. PROVIDE CONTACTOR AS REQUIRED FOR INTEGRATION WITH EXISTING LIGHTING CONTROLS. HAND DIG OR HYDROVAC SOILS BELOW CONCRETE APRON AS REQUIRED TO AVOID IMPACT TO EXISTING UTILITIES CONCEALED BELOW GRADE IN THIS LOCATION.
10. DEMOLISH EXISTING LIGHT POLE AND PATCH APRON AS REQUIRED. REFER TO GENERAL TRADES DRAWINGS AND SPECS FOR PATCHING REQUIREMENTS.
11. EXISTING COVERAGE PROVIDED BY EXISTING TO REMAIN DOPPLER DEVICES.

SHEET NOTES:

1. REFER TO SITE CIVIL AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL WORK REQUIRED TO SUPPORT THE ELECTRICAL WORK ON THIS PROJECT.
2. REFER TO SHEET G2 FOR INFORMATION AND RESTRICTIONS RELATED TO SITE USE, CONTRACTOR LIMITS OF SITE ACCESS, SITE MOBILIZATION, DAILY SITE ENTRY POINTS, AND ASSOCIATED PROCEDURES.
3. REFER TO ARCHITECTURAL SHEET G2 FOR REQUIREMENTS AND RESTRICTIONS APPLICABLE TO TOOL MONITORING AND USE WITHIN THE SECURE PORTIONS OF THE FACILITY.
4. UTILITY INFORMATION IS INTENTIONALLY OMITTED FROM THESE DRAWINGS FOR CLARIFY. REFER TO CIVIL AND ARCHITECTURAL PLANS FOR LOCATIONS OF EXISTING UTILITIES AROUND THE PERIMETER OF THE FACILITY AS WELL AS UTILITIES IN PROXIMITY TO THE EXISTING SALLYPORT, ENTRY BUILDING, ROLL CALL BUILDING AND ALL OTHER AREAS WHERE SOIL DISTURBANCE IS REQUIRED TO INSTALL WORK ON THIS PROJECT. ALL LOCATIONS OF DUCTBANKS, PULLBOXES AND OTHER IN-GRADE ELEMENTS ARE SHOWN SCHEMATICALLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BASED ON LOCATIONS OF EXISTING UTILITIES AND EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL SECURE THE SERVICES OF A THIRD PARTY UTILITY LOCATING SERVICE TO UTILIZE GROUND PENETRATING RADAR COMBINED WITH VISUAL INSPECTION OF SITE FEATURES AND ELEMENTS TO MARK CONCEALED UTILITIES AND OTHER ELEMENTS IN ALL AREAS OF PROPOSED EXCAVATION AND LOCATIONS WHERE TRENCHLESS INSTALLATION METHODS ARE PROPOSED. THE AREA OF ANALYSIS SHALL INCLUDE 10 FEET BEYOND THE OUTSIDE OF THE EDGE OF EXPECTED EXCAVATION OR SOIL DISTURBANCE AREA AS WELL AS THE PROPOSED DISTURBED AREA. IN ADDITION TO THESE REQUIREMENTS FOLLOW ALL REQUIREMENTS LEGISLATED IN THE OHIO REVISED CODE AS THEY RELATE TO EXCAVATION WORK. IT IS ALSO EXPECTED THAT THE CONTRACTOR CONTACT OUPS FOR LOCATION AND MARKING OF ALL PUBLIC UTILITIES IN THE WORK AREA.
6. THE CONTRACTOR SHALL FOLLOW ALL OHIO REVISED CODE REQUIREMENTS FOR EXCAVATING WHICH REQUIRE EXPOSING OF ALL EXISTING UTILITIES AT PROPOSED UTILITY CROSSINGS. THE CONTRACTOR SHALL UTILIZE POTHOLING EQUIPMENT TO REMOVE SOILS IN THE AREA OF UTILITY CONGESTION IN ORDER TO EXPOSE EXISTING UTILITIES IN THE VICINITY OF NEW TRENCHING OR TRENCHLESS DUCT INSTALLATION. THE CONTRACTOR SHALL ALSO INCLUDE WORK TO COVER/PROTECT EXPOSED OPENINGS UNTIL THEY ARE BACKFILLED, AS WELL AS THE WORK REQUIRED TO RESTORE DISTURBED AREAS TO PREVIOUS CONDITIONS.
7. THE CONTRACTOR SHALL SUBMIT A DETAILED PLAN FOR THE PROPOSED INSTALLATION OF TRENCHLESS DUCTS UNDER SECURITY FENCES. PLANS SHALL INCLUDE EXPECTED SIZE OF TRENCHES NECESSARY ON EITHER SIDE OF THE SECURITY PERIMETER, THE DISTANCES OF THE TRENCHES FROM THE EDGE OF THE SECURE BARRIER, AND OTHER ASPECTS OF WORK THAT COULD POTENTIALLY COMPROMISE THE SECURITY BARRIER. THE CONTRACTOR WILL NOT BE PERMITTED TO UNDERMINED FENCE FOUNDATION SYSTEMS OR CREATE A CONDUIT WHICH WOULD PERMIT ESCAPE UNDERNEATH THE FENCE SYSTEM.
8. CONTRACTOR SHALL PROVIDE SYSTEM ZONE SIGNAGE. REFER TO ARCHITECTURAL DRAWINGS FOR ZONE NAMING AND SIGNAGE REQUIREMENTS.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATIONS AND DETAILS INDICATING THE EXTENT OF THE NLEF SECURITY FENCING TO BE INSTALLED ON THIS PROJECT.

SHEET CODED NOTES:

1. PROVIDE DIRECT BURIED DUCT BANK. REFER TO DETAILS AND PROJECT REQUIREMENTS FOR QUANTITIES AND SIZES OF DUCTS.
2. PROVIDE POLYMER CONCRETE PULLBOX WITH SECURITY HARDWARE CONCEALED BELOW GRADE. REFER TO REFERENCED DETAILS AND SPECIFICATIONS.
3. PROVIDE CARD READER ZONE RESET DEVICE AND ASSOCIATED PULLBOX, WIRING AND RACEWAY BACK TO NLEF ZONE PANEL. REFER TO DETAILS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
4. PROVIDE PULLBOXES AND RACEWAY AND CABLING EXTENSIONS TO NLEF ZONE CONTROLLER. REFER TO REFERENCED DETAILS FOR ADDITIONAL REQUIREMENTS.
5. PROVIDE DIRECTIONALLY BORED DUCT BANK BETWEEN PULLBOXES WITH (4)-4" CONDUITS: (1) POWER, (1) FIBER OPTIC, (1) GROUNDING ELECTRODE CONDUCTOR, (1) SPARE.
6. EXISTING ELECTRICAL 208/120V POWER PANEL (SIEMENS CATALOG NUMBER P1C30BH060CBST0). PROVIDE NEW 40A BREAKERS IN EACH OF 2 EXISTING SPACES. REFER TO PANEL SCHEDULE.

NO.	DATE	DESCRIPTION
	8-31-2023	BID SET
	5-26-2023	PERMIT SET
	4-19-2023	CD 95% REVIEW SET
	4-13-2022	SD/DD SET
	3-25-2022	SD/DD PROGRESS 50% SET
	2-15-2022	POR DOCUMENT ITEM 2

SET/REVISIONS

POPULATION MANAGEMENT NLEF FENCE-PHASE 4
ROSS CORRECTIONAL INSTITUTION
16149 STATE ROUTE 104, CHILLICOTHE, OHIO 45601

PREPARED FOR:
OHIO DEPARTMENT OF REHABILITATION & CORRECTION
770 WEST BROAD STREET
COLUMBUS, OHIO 43222

PREPARED BY:
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230 BRADENTON AVE.
DUBLIN, OH 43017
614/798-2096

STATE OF OHIO
JASON JONES
E-76238
REGISTERED
PROFESSIONAL ENGINEER
5/26/2023

VEHICULAR SALLYPORT ENLARGED SITE PLAN - ELECTRICAL

SHEET ES2.2

STATE PROJ. NO.	COMM. NO.:	DRAWN BY:	CHECKED BY:	DATE
DRC-21F020	2155	BR	JMJ	08-31-23