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Щоб попросити переклад або спеціальні послуги для осіб з особливими потребами, зверніться до нас, скориставшись такими контактними даними: **cseverson@clackamas.us | 503-572-1575.**

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Clackamas County
www.clackamas.us



CLACKAMAS COUNTY SHERIFF

9/22/26

BCC Agenda Item: _____

Board of County Commissioners
Clackamas County

Approval of a Public Improvement Contract with LONG Building Technologies, Inc. for replacement of cameras, wiring, & intercom system at the Clackamas County Jail. Total Agreement Value is \$2,799,560.00 for 1 year. Funding is through budgeted County General Funds from the Facilities Capital Project Fund.

Previous Board Action/Review: Agreement with LRS Architects for architectural & engineering phase signed 10/26/2025. 20251016 V.A.2

Performance Clackamas: Safe, Secure, and Livable Communities

Counsel Review: Yes

Procurement Review: Yes

Contact Person: Jennifer Freeman

Contact Phone: 503-722-6631

EXECUTIVE SUMMARY: The proposed Jail System's Upgrade will include the demolition and replacement of existing outdated cameras and wiring in and around the jail adding new cameras in locations as needed as well as the replacement of the Harding intercom system head-end. The work includes, but is not limited to, site preparation, installation, integration, testing, and commissioning of the camera system, intercom system, and security controls. \$3,500,000 has been allocated over two years, of which \$415,930 were used for design leaving a remaining balance of \$3,084,070 for construction.

RECOMMENDATION: Staff recommends approval of this agreement.

Respectfully submitted,

A handwritten signature in black ink that reads "James A. Rhodes".

Sheriff James Rhodes

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Office: 9101 SE Sunnybrook Boulevard, Clackamas, Oregon 97015

Mailing: 2223 Kaen Road, Oregon City, Oregon 97045

Phone: 503-785-5000 **Fax:** 503-785-5190 **www.ClackCoSheriff.us**



CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT
Contract #0000001855

This Public Improvement Contract (the "Contract") is made by and between Clackamas County, a political subdivision of the State of Oregon ("Owner"), and LONG Building Technologies, Inc. ("Contractor"), both collectively referred to as the "Parties". This Contract shall become effective on the date this Contract has been signed by all the Parties and shall expire upon completion the completion of all obligations under the terms of this Contract unless terminated earlier by the Parties.

All capitalized terms in this Contract shall have the meanings identified in the Clackamas County General Conditions for Public Improvement Contracts (11/21/2024) ("General Conditions") referenced within the Instructions to Bidders.

Project Name: #2025-06 Jail Electronic System Update Remodel

1. Contract Price, Contract Documents and Work.

The Contractor hereby agrees to perform all the work described in, and reasonably inferred from, the Contract Documents, as further defined below ("Work"). In consideration of the Contractor performing the Work in accordance with the terms of the Contract, the Owner agrees to pay the Contractor an amount not to exceed **Two Million Seven Hundred Ninety-Nine Thousand Five Hundred Sixty Dollars (\$2,799,560.00)** (the "Contract Price"). Payment will be made in accordance with the terms and conditions provided in the Contract Documents. The Contract Price is the amount contemplated by the Base Bid adjusted for Alternates 1 and 2, as indicated in the accepted Bid.

The following documents are incorporated by reference in this Contract and made a part hereof ("Contract Documents"):

- | | |
|--|--|
| • Notice of Contract Opportunity | • Instructions to Bidders |
| • Supplemental Instructions to Bidders | • Bid Bond |
| • Bid Form | • Performance Bond and Payment Bond |
| • Clackamas County General Conditions | • Supplemental General Conditions |
| • Prevailing Wage Rates | • Payroll and Certified Statement Form |
| • Plans, Specifications and Drawings | • Addenda 1 |

2. Representatives.

Contractor has named Mike Zamesnik as its Authorized Representative to act on its behalf. Owner designates, or shall designate, its Authorized Representative as indicted below (check one):

☒ Unless otherwise specified in the Contract Documents, the Owner designates Jason LaFarge as its Authorized Representative in the administration of this Contract. The above-named individual shall be the initial point of contact for matters related to Contract performance, payment, authorization, and to carry out the responsibilities of the Owner.

☐ Name of Owner's Authorized Representative shall be submitted by Owner in a separate writing.

3. Key Persons.

The Contractor's personnel identified below shall be considered Key Persons and shall not be replaced during the project without the written permission of Owner, which shall not be unreasonably withheld. If the Contractor intends to substitute personnel, a request must be given to Owner at least 30 days prior to the intended time of substitution. When replacements have been approved by Owner, the Contractor shall provide a transition period of at least 10 working days during which the original and replacement personnel shall be

working on the project concurrently. Once a replacement for any of these staff members is authorized, further replacement shall not occur without the written permission of Owner. The Contractor's project staff shall consist of the following personnel:

Project Executive: Mike Zamesnik shall be the Contractor's project executive, and will provide oversight and guidance throughout the project term.

Project Manager: Narvair Parhar shall be the Contractor's project manager and will participate in all meetings throughout the project term.

Job Superintendent: Gabe Pyle shall be the Contractor's on-site job superintendent throughout the project term.

Project Engineer: Ben Grinchuk shall be the Contractor's project engineer, providing assistance to the project manager and subcontractor and supplier coordination throughout the project term.

4. Contract Dates.

The Contractor agrees to complete the Work in accordance with the following key dates:

COMMENCEMENT DATE: Upon Issuance of Notice to Proceed

SUBSTANTIAL COMPLETION DATE: December 1, 2027

FINAL COMPLETION DATE: December 31, 2027

6. Reserved.

5. Insurance Certificates.

In accordance with Section G.3.5 of the General Conditions Contractor shall furnish proof of the required insurance naming Clackamas County as an additional insured. Insurance certificates may be returned with the signed Contract or may be emailed to the County Contract Analyst.

7. Tax Compliance.

The Contractor shall comply with all federal, state and local laws, regulation, executive orders and ordinances applicable to this Contract. Contractor represents and warrants that it has complied, and will continue to comply throughout the duration of this Contract and any extensions, with all tax laws of this state or any political subdivision of this state, including but not limited to ORS 305.620 and ORS chapters 316, 317, and 318. Any violation of this section shall constitute a material breach of this Contract and shall entitle County to terminate this Contract, to pursue and recover any and all damages that arise from the breach and the termination of this Contract, and to pursue any or all of the remedies available under this Contract or applicable law.

8. Confidential Information.

Contractor acknowledges that it and its employees or agents may, in the course of performing their responsibilities under this Contract, be exposed to or acquire information that is confidential to Owner. Any and all information of any form obtained by Contractor or its employees or agents in the performance of this Contract shall be deemed confidential information of Owner ("Confidential Information"). Contractor agrees to hold Confidential Information in strict confidence, using at least the same degree of care that Contractor uses in maintaining the confidentiality of its own confidential information, and not to copy, reproduce, sell, assign, license, market, transfer or otherwise dispose of, give, or disclose Confidential Information to third parties or use Confidential Information for any purpose unless specifically authorized in writing under this Contract.

9. Counterparts.

This Contract may be executed in several counterparts, all of which when taken together shall constitute an agreement binding on all Parties, notwithstanding that all Parties are not signatories to the same counterpart. Each copy of the Contract so executed shall constitute an original.

10. Integration.

All provisions of state law required to be part of this Contract, whether listed in the General or Special Conditions or otherwise, are hereby integrated and adopted herein. Contractor acknowledges the obligations thereunder and that failure to comply with such terms is a material breach of this Contract.

The Contract Documents constitute the entire agreement between the parties. There are no other understandings, agreements or representations, oral or written, not specified herein regarding this Contract. Contractor, by the signature below of its authorized representative, hereby acknowledges that it has read this Contract, understands it, and agrees to be bound by its terms and conditions.

11. Compliance with Applicable Law. Contractor shall comply with all federal, state, county, and local laws, ordinances, and regulations applicable to the Work to be done under this Contract including, but not limited to, compliance with the prohibitions set forth in ORS 652.220, compliance of which is a material element of this Contract and failure to comply is a material breach that entitles County to exercise any rights and remedies available under this Contract including, but not limited to, termination for default.

12. Responsibility for Taxes. Contractor is solely responsible for payment of any federal, state, or local taxes required as a result of the Contract or the Work including, but not limited, to payment of the corporate activity tax imposed under enrolled HB 3427 (2019 Oregon regular legislative session). Contractor may not include its federal, state, or local tax obligations as part of the cost to perform the Work.

13. Contractor Data.

LONG Building Technologies, Inc.
800 SW 34th Street
Renton, WA 98057

Contractor CCB # 206592 Expiration Date: 5/14/2027

Oregon Business Registry # 1035141-96 Entity Type: FBC State of Formation: Colorado

Payment information will be reported to the IRS under the name and taxpayer ID# provided by the Contractor. Information must be provided prior to contract approval. Information not matching IRS records could subject Contractor to 28 percent backup withholding.

In witness whereof, Owner executes this Contract and the Contractor does execute the same as of the day and year first above written.

LONG Building Technologies, Inc.

Clackamas County

 Digitally signed by Jason Nefs
Date: 2026.08.26 09:20:46
-06'00'

Authorized Signature

Date

Chair

Date

Name / Title Printed

Approved for Legal Sufficiency


County Counsel

8/31/2026

Date



CLACKAMAS COUNTY PUBLIC IMPROVEMENT CONTRACT OPPORTUNITY

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CLACKAMAS COUNTY
NOTICE OF PUBLIC IMPROVEMENT CONTRACT OPPORTUNITY

INVITATION TO BID #2026-05
Jail Electronic System Update Remodel
May 7, 2026

Clackamas County ("County") through its Board of County Commissioners is accepting sealed bids for the **Jail Electronic System Update Remodel** Project until **June 4, 2026, 2:00 PM**, Pacific Time, ("Bid Closing") at the following location:

Bidding Documents can be downloaded from the state of Oregon procurement website ("OregonBuys") at the following address: <https://oregonbuys.gov/bsa/view/login/login.xhtml>, Document No.S-C01010-00016893.

Prospective Bidders will need to sign in to download the information and that information will be accumulated for a Plan Holder's List. Prospective Bidders are responsible for obtaining any Addenda from Website listed above.

Submitting Proposals: Bid Locker

Proposals will only be accepted electronically thru a secure online bid submission service, **Bid Locker**. *Email submissions to Clackamas County email addresses will no longer be accepted.*

- A. Completed proposal documents must arrive electronically via Bid Locker located at <https://bidlocker.us/a/clackamascountry/BidLocker>.
- B. Bid Locker will electronically document the date and time of all submissions. Completed documents must arrive by the deadline indicated in Section 1 or as modified by Addendum. **LATE PROPOSALS WILL NOT BE ACCEPTED.**
- C. Proposers must register and create a profile for their business with Bid Locker in order to submit for this project. It is free to register for Bid Locker.
- D. Proposers with further questions concerning Bid Locker may review the Vendor's Guide located at <https://www.clackamas.us/how-to-bid-on-county-projects>.

Engineers Estimate: \$3,000,000.00

Contact Information

Procurement Process and Technical Questions: Ryan Rice, rrice@clackamas.us.

A **Mandatory Pre-Bid Conference** will be conducted on **May 20, 2026 at 10:00 AM**. Bidders shall meet with County representatives at the Jail Facility located at 2206 Kaen Road, Oregon City for that purpose. Attendance will be documented through a sign-in sheet prepared by the County representative. Prime bidders who arrive more than ten (10) minutes after the start time of the meeting (as stated in the solicitation and by the County's watch) or after the discussion portion of the meeting (whichever comes first) shall not be permitted to sign in and will not be permitted to submit a bid on the project.

The Clackamas County Jail has a zero-tolerance weapons policy for all visitors within the facility. Visitors will not be allowed to enter should they have a weapon of any kind on their person, inclusive of and not limited to, knives, box knives, tools, guns, or the like.

Bids will be opened and publicly read aloud at the above Delivery address after the Bid Closing. Bid results will also be posted to the OregonBuys listing shortly after the opening.

To be eligible for award under this Invitation to Bid, bidders (prime contractors) must have prior experience with low voltage security system. The County is requesting that the LVSS Bidder must have successfully completed the provision of PLC based systems in which microprocessor based intercom and 1080P CCTV video systems were integrated with door monitoring control and microprocessor based intercom systems with control systems and controlled from touch screen graphical user interfaces preferably within a detention center.

Prevailing Wage

Prevailing Wage Rates requirements apply to this Project because the maximum compensation for all Owner-contracted Work is more than \$50,000. Contractor and all subcontractors shall comply with the provisions of ORS 279C.800 through 279C.870, relative to Prevailing Wage Rates. The Bureau of Labor and Industries (BOLI) wage rates and requirements set forth in the following BOLI booklet (and any listed amendments to that booklet), which are incorporated herein by reference, apply to the Work authorized under this Agreement:

PREVAILING WAGE RATES for Public Works Contracts in Oregon, January 5, 2026 and amended on April 5, 2026, which can be downloaded at the following web address:

http://www.oregon.gov/boli/WHDPWR/Pages/pwr_state.aspx

The Work will take place in Clackamas County, Oregon.

Clackamas County encourages bids from Minority, Women, and Emerging Small Businesses.



CLACKAMAS COUNTY PUBLIC IMPROVEMENT CONTRACT

INSTRUCTIONS TO BIDDERS

Clackamas County Local Contract Review Board Rules ("LCRB Rules") govern this procurement process. LCRB Rules may be found at: <http://www.clackamas.us/code/documents/appendixc.pdf>. The Instructions to Bidders is applicable to the procurement process for Clackamas County, or any component unit thereof identified on the Notice of Public Improvement Contract Opportunity, herein after referred to as the "Owner."

Article 1. Scope of Work

The work contemplated under this contract with the Owner, includes all labor, materials, transportation, equipment and services necessary for, and reasonably incidental to, the completion of all construction work in connection with the project described in the Project Manual which includes, but is not necessarily limited to, the Notice of Public Improvement Contract Opportunity, Instructions to Bidders, Supplemental Instructions to Bidders, Bid Form, Bid Bond, Public Improvement Contract Form, Performance Bond, Payment Bond, Clackamas County General Conditions for Public Improvement Contracts (10/13/2021), Supplemental General Conditions, and Plans, Specifications and Drawings.

Article 2. Examination of Site and Conditions

Before making a Bid, the Bidder shall examine the site of the work and ascertain all the physical conditions in relation thereto. The Bidder shall also make a careful examination of the Project Manual including the plans, specifications, and drawings and other contract documents, and shall be fully informed as to the quality and quantity of materials and the sources of supply of the materials. Failure to take these steps will not release the successful Bidder from entering into the contract nor excuse the Bidder from performing the work in strict accordance with the terms of the contract at the

price established by the Bid.

The Owner will not be responsible for any loss or for any unanticipated costs, which may be suffered by the successful Bidder, as a result of such Bidder's failure to be fully informed in advance with regard to all conditions pertaining to the work and the character of the work required, including site conditions. No statement made by an elected official, officer, agent, or employee of the Owner in relation to the physical or other conditions pertaining to the site of the work will be binding on the Owner, unless covered by the Project Manual or an Addendum.

Article 3. Interpretation of Project Manual and Approval of Materials Equal to Those Provided in the Specifications

If any Bidder contemplating submitting a Bid for the proposed contract is in doubt as to the true meaning of any part of the plans, specifications or forms of contract documents, or detects discrepancies or omissions, such Bidder may submit to the Architect (read "Engineer" throughout in lieu of Architect as appropriate) a written request for an interpretation thereof at least ten (10) calendar days prior to the date set for the Bid Closing.

When a prospective Bidder seeks approval of a particular manufacturer's material, process or item of equal value, utility or merit other than that designated by the Architect in the Project Manual, the Bidder may submit to the Architect a written request for approval of such substitute at least ten (10) calendar days prior to the date set for the Bid Closing. The prospective Bidder submitting the request will be responsible for its prompt delivery.

Requests of approval for a substitution from that specified shall be accompanied by samples, records of performance, certified copies of tests by

impartial and recognized laboratories, and such other information as the Architect may request.

To establish a basis of quality, certain processes, types of machinery and equipment or kinds of materials may be specified in the Project Manual either by description of process or by designating a manufacturer by name and referring to a brand or product designation or by specifying a kind of material. Whenever a process is designated or a manufacturer's name, brand or item designation is given, or whenever a process or material covered by patent is designated or described, it shall be understood that the words "or approved equal" follow such name, designation or description, whether in fact they do so or not.

Any interpretation of the Project Manual or approval of manufacturer's material will be made only by an Addendum duly issued. All Addenda will be posted to the OregonBuys listing and will become a part of the Project Manual. The Owner will not be responsible for any other explanation or interpretation of the Project Manual nor for any other approval of a particular manufacturer's process or item for any Bidder.

When the Architect approves a substitution by Addendum, it is with the understanding that the Contractor guarantees the substituted article or material to be equal or better than the one specified.

Article 4. Security to Be Furnished by Each Bidder

Each Bid must be accompanied by either 1) a cashier's check or a certified check drawn on a bank authorized to do business in the State of Oregon, or 2) a Bid bond described hereinafter, executed in favor of the Owner, for an amount equal to ten percent (10%) of the total amount Bid as a guarantee that, if awarded the contract, the Bidder will execute the contract and provide a performance bond and payment bond as required. The successful Bidder's check or Bid bond will be retained until the Bidder has entered into a contract satisfactory to Owner and furnished a one hundred percent (100%) performance bond and one hundred percent (100%) payment bond. The Owner

reserves the right to hold the Bid security as described in Article 10 hereof. Should the successful Bidder fail to execute and deliver the contract as provided for in Article 12 hereof, including a satisfactory performance bond and payment bond within twenty (20) calendar days after the Bid has been accepted by the Owner, then the contract award made to such Bidder may be considered canceled and the Bid security may be forfeited as liquidated damages at the option of the Owner. The date of the acceptance of the Bid and the award of the contract as contemplated by the Project Manual shall mean the date of acceptance specified in the Notice of Intent to Award.

Article 5. Execution of Bid Bond

Should the Bidder elect to utilize a Bid bond as described in Article 4 in order to satisfy the Bid security requirements, such form must be completed in the following manner:

- A. Bid bonds must be executed on the County forms, which will be provided to all prospective Bidders by the Owner.
- B. The Bid bond shall be executed on behalf of a bonding company licensed to do business in the State of Oregon.
- C. In the case of a sole individual, the bond need only be executed as principal by the sole individual. In the case of a partnership, the bond must be executed by at least one of the partners. In the case of a corporation, the bond must be executed by stating the official name of the corporation under which is placed the signature of an officer authorized to sign on behalf of the corporation followed by such person's official capacity, such as president, etc. The corporation seal should then be affixed to the bond.
- D. The name of the surety must be stated in the execution over the signature of its duly authorized attorney-in-fact and accompanied by the seal of the surety corporation.

Article 6. Execution of the Bid Form

Each Bid shall be made in accordance with: (i) the sample Bid Form accompanying these instructions; (ii) the appropriate signatures for a sole individual, partnership, corporation or limited liability corporation shall be added as noted in Article 5C above; (iii) numbers pertaining to base Bids shall be stated both in writing and in figures; and (iv) the Bidder's address shall be typed or printed.

The Bid Form relates to Bids on a specific Project Manual. Only the amounts and information asked for on the Bid Form furnished will be considered as the Bid. Each Bidder shall Bid upon the work exactly as specified and provided in the Bid Form. The Bidder shall include in the Bid a sum to cover the cost of all items contemplated by the Contract. The Bidder shall Bid upon all alternates that may be indicated on the Bid Form. When Bidding on an alternate for which there is no charge, the Bidder shall write the words "No Charge" in the space provided on the Bid Form. If one or more alternates are shown on the Bid Form, the Bidder shall indicate whether each is "add" or "deduct."

Article 7. Prohibition of Alterations to Bid

Bids that are incomplete, or contain ambiguities or have differing conditions required by the Bidder, including requested changes or exceptions to the Public Improvement Contract form or other portions of the Project Manual, may be rejected in Owner's sole and absolute discretion.

Article 8. Submission of Bid

Each Bid shall be sealed in an envelope, properly addressed to the Owner, showing on the outside of the envelope the name of the Bidder and the name of the project. Bids will be received at the time and place stated in the Notice of Public Improvement Contract Opportunity.

Article 9. Bid Closing and Opening of Bids

All Bids must be received by the Owner at the place and time set for the Bid Closing. Any Bids received after the scheduled Bid Closing time for

receipt of Bids will be rejected.

At the time of opening and reading of Bids, each Bid received will be publicly opened and read aloud, irrespective of any irregularities or informalities in such Bids.

Generally, Bid results will be posted to the OregonBuys Website within a couple hours of the opening.

Article 10. Acceptance or Rejection of Bids by Owner

Unless all Bids are rejected, the Owner will award a contract based on the lowest responsive Bid from a responsible Bidder. If that Bidder does not execute the contract, it will be awarded to the next lowest responsible Bidder or Bidders in succession.

The Owner reserves the right to reject all Bids and to waive minor informalities. The procedures for contract awards shall be in compliance with the provisions of the LCRB Rules in effect at that time.

The Owner reserves the right to hold the Bid and Bid security of the three lowest Bidders for a period of thirty (30) calendar days from and after the time of Bid opening pending award of the contract. Following award of the contract the Bid security of the three lowest Bidders may be held twenty (20) calendar days pending execution of the contract. All other Bids will be rejected and Bid security will be returned.

In determining the lowest Bidder, the Owner reserves the right to take into consideration any or all authorized base Bids as well as alternates or combinations indicated in the Bid Form.

If no Bid has been accepted within thirty (30) calendar days after the opening of the Bids, each of the three lowest Bidders may withdraw the Bid submitted and request the return of the Bid security.

Article 11. Withdrawal of Bid

At any time prior to the Bid Closing, a Bidder may withdraw its Bid. This will not preclude the

submission of another Bid by such Bidder prior to the time set for the Bid Closing.

After the time set for the Bid Closing, no Bidder will be permitted to withdraw its Bid within the time frames specified in Article 10 for award and execution, except as provided for in that Article.

Article 12. Execution of Contract, Performance Bond and Payment Bond

The Owner will provide the successful Bidder with contract forms within seven (7) calendar days after the completion of the award protest period. The Bidder is required to execute the contract forms as provided, including a performance bond and a payment bond from a surety company licensed to do surety business in the State of Oregon, within seven (7) calendar days after receipt of the contract forms. The contract forms shall be delivered to the Owner in the number called for and to the location as instructed by the Owner.

Article 13. Recyclable Products

Contractors will use recyclable products to the maximum extent economically feasible in the performance of the Contract.

Article 14. Clarification or Protest of the Solicitation Document or Specifications

Any request for clarification or protest of the solicitation document or specifications must be submitted in the manner provided for in the applicable section of the LCRB Rules to the Procurement Representative referenced in the Notice of Public Improvement Contract Opportunity.

A protest of the Solicitation Document must be received within seven (7) business days of the issuance of the Bid or within three (3) business days of issuance of an addendum.

Requests for clarification may be submitted no less than five (5) business days prior to the Bid Closing Date.

Article 15. Protest of Intent to Award

Owner will name the apparent successful Bidder in a "Notice of Intent to Award" letter. Identification of the apparent successful Bidder is procedural only and creates no right in the named Bidder to the award of the contract. Competing Bidders will be notified by publication of the Notice of Intent to Award on the OregonBuys Website of the selection of the apparent successful Bidder(s) and Bidders shall be given seven (7) calendar days from the date on the "Notice of Intent to Award" letter to review the file at the Procurement Division office and file a written protest of award, pursuant to C-049-0450. Any award protest must be in writing and must be delivered by email, hand delivery, or mail to the Procurement Division Director at: Procurement Division, 2051 Kaen Road, Oregon City, OR 97045.

Article 16. Disclosure of First-Tier Subcontractors

Within two (2) working hours after the Bid Closing, all Bidders shall submit to the County a disclosure form identifying any first-tier subcontractors (those entities that would be contracting directly with the prime contractor) that will be furnishing labor and materials on the contract, if awarded, whose subcontract value would be equal to or greater than: (a) Five percent (5%) of the total contract price, but at least \$15,000; or (b) \$350,000, regardless of the percentage of the total contract price.

Disclosures may be submitted with the Bid or may be hand delivered to the Bid Closing address or emailed to the Contract Information Analyst listed on the Notice of Contract Opportunity.



**CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT**

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

Project Name: 2026-05 Jail Electronic System Update Remodel

The following modify the Clackamas County “Instructions to Bidders” for this Project. Where a portion of the Instructions to Bidders has been modified by these Supplemental Instructions to Bidders, the unaltered portions shall remain in effect.

- 1. Mandatory Pre-Bid Conference** will be conducted on **May 20, 2026 at 10:00 AM**. Bidders shall meet with County representatives at the Jail Facility located at 2206 Kaen Road, Oregon City for that purpose. Attendance will be documented through a sign-in sheet prepared by the County representative. Prime bidders who arrive more than ten (10) minutes after the start time of the meeting (as stated in the solicitation and by the County’s watch) or after the discussion portion of the meeting (whichever comes first) shall not be permitted to sign in and will not be permitted to submit a bid on the project.

The Clackamas County Jail has a zero-tolerance weapons policy for all visitors within the facility. Visitors will not be allowed to enter should they have a weapon of any kind on their person, inclusive of and not limited to, knives, box knives, tools, guns, or the like.

- 2. Qualified Vendors:** To be eligible for award under this Invitation to Bid, bidders (prime contractors) must have prior experience with low voltage security system. The County is requesting that the LVSS Bidder must have successfully completed the provision of PLC based systems in which microprocessor based intercom and 1080P CCTV video systems were integrated with door monitoring control and microprocessor based intercom systems with control systems and controlled from touch screen graphical user interfaces preferably within a detention center.
- 3. Electronic Submissions:** The County is requiring all bids for this project be electronically submitted. Complete Bids (including all attachments) will only be accepted electronically thru a secure online bid submission service, Bid Locker. Email submissions to Clackamas County email addresses will no longer be accepted.
<https://bidlocker.us/a/clackamascountry/BidLocker>.

Bids will be publicly read aloud via the computer application, Zoom. Bidders will be allowed to video conference or listen by phone to the bid results. The projects Zoom meeting can be accessed via the information below:

Join Zoom Meeting

<https://clackamascountry.zoom.us/j/88110099749>

Meeting ID: 881 1009 9749

****The Apparent Low bid results will be posted to the projects OregonBuys listing as soon as possible following the bid opening.**

4. **Good Faith Effort:** Clackamas County encourages participation in contracts by Historically Underrepresented Businesses. “Historically Underrepresented Businesses” are State of Oregon-certified and self-identified minority, women and emerging small business as well as firms that are certified federally or by another state or entity with substantially similar requirements as the State of Oregon.

Bidders must perform Good Faith Effort (defined below) and submit **Form 1 and Form 2** for the Bidders Bid to be considered responsive. **Form 1 and Form 2** must be submitted within **two (2) hours** after the Closing Date and Time. Form 1 and Form 2 may be submitted to either the Contact Information Analyst listed on Notice of Contract Opportunity or via the <https://bidlocker.us/a/clackamascounty/BidLocker> listing.

“Good Faith Effort” is a requirement of a prime contractor to reach out to at least three Historically Underrepresented Business Subcontractors for each division of work that will be subcontracted out and to complete the required forms. If fewer than three Historically Underrepresented Business Subcontractors are reasonably available for a particular division of work, the Bidder must specifically note the reason for there being fewer than three contacts. The outreach should be performed with sufficient time to give the subcontractors at least 5 calendar days to respond to the opportunity. Form 3, which documents the actual amount of subcontractors on the project, must be submitted with the project final pay application. Compliance with the Good Faith Effort and submission of Forms 1, 2 and 3 is a contractual requirement for final payment.

The sufficiency of the documentation or the performance of Good Faith Effort shall be in the sole and absolute determination of Clackamas County. Only those Bidders that Clackamas County has determined have not sufficiently performed Good Faith Effort shall have protest rights of the determination for such Bidder. No Bidder shall have protest rights of the sufficiency of any other Bidder completing Good Faith Effort.

**CLACKAMAS COUNTY
GOOD FAITH EFFORT
SUBCONTRACTOR AND SELF-PERFORMED WORK LIST
(FORM 1)**

Prime Contractor Name: Justice Systems by LONG
Project Name: 2026-05 Jail Electronic System Update Remodel

Total Contract Amount: 2,594,560 W/O
alternates

PRIME SELF-PERFORMING: Identify below **ALL** GFE Divisions of Work (DOW) to be self-performed. Good Faith Efforts are otherwise required.

<u>DOW BIDDER WILL SELF-PERFORM (GFE not required)</u>	
Cameras, Intercom, Network, system install, programming, PLC/controls commissioning and training	

PRIME CONTRACTOR SHALL DISCLOSE AND LIST ALL SUBCONTRACTORS, including those Minority-owned, Woman-owned, and Emerging Small Businesses ("M/W/ESB") that you intend to use on the project. Delivery via bid locker <https://bidlocker.us/a/clackamascountry/BidLocker> within 2 hours of the BID/Quote Closing Date/Time.

LIST ALL SUBCONTRACTORS BELOW Use <u>correct legal name</u> of Subcontractor (No Assumed Business Names)	Division of Work (Painting, electrical, landscaping, etc.) List ALL DOW performed by Subcontractors	DOLLAR AMOUNT OF SUBCONTRACT	If Certified or self-reporting MBE/WBE/ESB Subcontractor Check box 		
			MBE	WBE	ESB
Name Valley Electrical Address 1100 Merrill Creek, City/St/Zip Everett, WA 98203 Phone# 425 327-9576 OCCB#	Division 26 & support for Prime's Division 28 Systems	\$380,000	☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐

GFE SUBCONTRACTOR AND SELF-PERFORMED WORK LIST (FORM 1) cont'd

CLACKAMAS COUNTY
GOOD FAITH EFFORT
M/W/ESB CONTACT / BIDS RECEIVED LOG
(FORM 2)

Prime Contractor:
Project: 2026-05 Jail Electronic System Update Remodel

Prime Contractor must contact or endeavor to contact at least 3 M/W/ESB Subcontractors for each Division of Work. Prime Contractor shall record its contacts with M/W/ESB Subcontractors through use of this log (or equivalent) entering all required information. All columns shall be completed where applicable. Additional forms may be copied if needed.

NAME OF M/W/ESB SUBCONTRACTOR	Divisions of Work (Painting, electrical, landscaping, etc.)	Date Solicitation Letter / Fax Sent	PHONE CONTACT		BID ACTIVITY Check Yes or No			REJECTED BIDS (if bid received & not used)		Notes
					Will Bid	Bid Received	Bid Used	Bid Amount	Reason Not Used (Price, Scope or Other. If Other, explain in Notes>>)	
			Date of Call	Person Receiving Call						
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			

**CLACKAMAS COUNTY
GOOD FAITH EFFORT
PROJECT COMPLETION REPORT
(FORM 3)**

Prime Contractor Name:

Total Contract Amount:

Project Name: 2026-05 Jail Electronic System Update Remodel

Complete this form and submit with your request for final payment upon the project completion. Please list all subcontractors used for the project. Use additional sheets as necessary.

LIST ALL SUBCONTRACTORS BELOW Use correct legal name of Subcontractor (No Assumed Business Names)	Division of Work (Painting, electrical, landscaping, etc.) List ALL DOW performed by Subcontractors	FINAL DOLLAR AMOUNT OF SUBCONTRACT	If Certified or self-reported MBE/WBE/ESB Subcontractor Check box 		
			MBE	WBE	ESB
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐

BY SIGNING BELOW, I HEREBY CERTIFY THAT THE ABOVE LISTED FIRMS HAVE BEEN UTILIZED BY OUR COMPANY IN THE AMOUNTS REPRESENTED ABOVE AND THAT THE INFORMATION CONTAINED HEREIN IS COMPLETE AND ACCURATE. .

Authorized Signature of Contractor Representative

Date

POWER OF ATTORNEY

Direct Inquiries, Bond Authenticity
and Claims to:

THE HARTFORD

BOND, T-14

One Hartford Plaza

Hartford, Connecticut 06155

Bond.Claims@thehartford.com

call: 888-266-3488 or fax: 860-757-5835

KNOW ALL PERSONS BY THESE PRESENTS THAT:

Agency Name: SURESCAPE INSURANCE SERVICES LLC

Agency Code: 34-344525

- ☒ **Hartford Fire Insurance Company**, a corporation duly organized under the laws of the State of Connecticut
- ☒ **Hartford Casualty Insurance Company**, a corporation duly organized under the laws of the State of Indiana
- ☒ **Hartford Accident and Indemnity Company**, a corporation duly organized under the laws of the State of Connecticut
- ☐ **Hartford Insurance Company of the Midwest**, a corporation duly organized under the laws of the State of Indiana

having their home office in Hartford, Connecticut, (hereinafter collectively referred to as the "Companies") do hereby make, constitute and appoint, **up to the amount of Unlimited :**

Wesley J. Butorac, Karisa Heninger, Kimberly McAlexander, Jason M. McMillan,
Douglas J. Rothery, Zachary J. Rothery of LITTLETON, Colorado

their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign its name as surety(ies) only as delineated above by ☒, and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

In Witness Whereof, and as authorized by a Resolution of the Board of Directors of the Companies on May 23, 2016 the Companies have caused these presents to be signed by its Assistant Vice President and its corporate seals to be hereto affixed, duly attested by its Assistant Secretary. Further, pursuant to Resolution of the Board of Directors of the Companies, the Companies hereby unambiguously affirm that they are and will be bound by any mechanically applied signatures applied to this Power of Attorney.



Phyllis A. Clark

Phyllis A. Clark, Assistant Secretary

Joelle L. LaPierre

Joelle L. LaPierre, Assistant Vice President

STATE OF FLORIDA

COUNTY OF SEMINOLE

ss. Lake Mary

On this 1st day of March, 2024, before me personally came Joelle L. LaPierre, to me known, who being by me duly sworn, did depose and say: that (s)he resides in Seminole County, State of Florida; that (s)he is the Assistant Vice President of the Companies, the corporations described in and which executed the above instrument; that (s)he knows the seals of the said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed by authority of the Boards of Directors of said corporations and that (s)he signed his/her name thereto by like authority.



Mariluz Arce

Mariluz Arce
My Commission HH 287363
Expires July 13, 2026

I, the undersigned, Assistant Vice President of the Companies, DO HEREBY CERTIFY that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is still in full force effective as of June 4, 2026.

Signed and sealed in Lake Mary, Florida.



Keith D. Dozois

Keith D. Dozois, Assistant Vice President



**CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT**

BID FORM

PROJECT: 2026-05 Jail Electronic System Update Remodel
BID CLOSING: June 4, 2026, 2:00 PM, Pacific Time
BID OPENING: June 4, 2026, 2:05 PM, Pacific Time

FROM: LONG Building Technologies, Inc
Bidder's Name (must be full legal name, not ABN/DBA)

TO: <https://bidlocker.us/a/clackamascountry/BidLocker>

1. Bidder is (*check one of the following and insert information requested*):

- ☐ a. An individual; or
- ☐ b. A partnership registered under the laws of the State of _____; or
- ☒ c. A corporation organized under the laws of the State of Colorado; or
- ☐ d. A limited liability corporation organized under the laws of the State of _____;

and authorized to do business in the State of Oregon hereby proposes to furnish all material and labor and perform all work hereinafter indicated for the above project in strict accordance with the Contract Documents for the Basic Bid as follows:

Two million five hundred ninety-four thousand five hundred sixty dollars Dollars (\$ 2,594,560)

and the Undersigned agrees to be bound by the following documents:

- Notice of Public Improvement Contract Opportunity
 - Instructions to Bidders
 - Bid Bond
 - Public Improvement Contract Form
 - Clackamas County General Conditions
 - Prevailing Wage Rates
 - Plans, Specifications and Drawings
 - Supplemental Instructions to Bidders
 - Bid Form
 - Performance Bond and Payment Bond
 - Supplemental General Conditions
 - Payroll and Certified Statement Form
- ADDENDA numbered 1 through 1, inclusive (*fill in blanks*)

2. The Undersigned proposes to add to or deduct from the Base Bid indicated above the items of work relating to the following Alternate(s) as designated in the Specifications:

ALTERNATE #1:	Provide full installation of twenty-four (24) Net New Exterior Cameras, as specified in Section 28 2330 – Detention Video Surveillance System.	ADD or DEDUCT: \$ <u>160,000</u>
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ALTERNATE #2:	Provide nine (9) Net New Interior Cameras, as specified in Section 28 2330 – Detention Video Surveillance System.	ADD or DEDUCT: \$ <u>45,000</u>
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3. The Undersigned proposes to add to or deduct from the Base Bid indicated above the items or work relating to the following Unit Price(s) as designated in the Specifications, for which any adjustments in the Contract amount will be made in accordance with Section D of the Clackamas County General Conditions:

4. The work shall be completed within the time stipulated and specified in the contract documents.

5. Accompanying herewith is Bid Security, which is equal to ten percent (10%) of the total amount of the Basic Bid, plus the total sum of all Alternatives (if any).

6. The Undersigned agrees, if awarded the Contract, to execute and deliver to Clackamas County, within twenty (20) calendar days after receiving the Contract forms, a Contract Form, and a satisfactory Performance Bond and Payment Bond each in an amount equal to one hundred percent (100%) of the Contract sum, using forms provided by the Owner. The surety requested to issue the Performance Bond and Payment Bond will be:

Hartford Fire Insurance Company

(name of surety company - not insurance agency)

The Undersigned hereby authorizes said surety company to disclose any information to the Owner concerning the Undersigned's ability to supply a Performance Bond and Payment Bond each in the amount of the Contract.

7. The Undersigned further agrees that the Bid Security accompanying the Bid is left in escrow with Clackamas County; that the amount thereof is the measure of liquidated damages which the Owner will sustain by the failure of the Undersigned to execute and deliver the above-named Contract Form, Performance Bond and Payment Bond, each as published, and that if the Undersigned defaults in either executing the Contract Form or providing the Performance Bond and Payment Bond within twenty (20) calendar days after receiving the Contract forms, then the Bid Security shall become the property of the Owner at the Owner's option; but if the Bid is not accepted within thirty (30) calendar days of the time set for the opening of the Bids, or if the Undersigned

executes and timely delivers said Contract Form, Performance Bond and Payment Bond, the Bid Security shall be returned.

8. The Undersigned certifies that: (i) This Bid has been arrived at independently and is being submitted without collusion with and without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment or services described in the invitation to bid designed to limit independent bidding or competition; and (ii) the contents of the Bid have not been communicated by the Undersigned or its employees or agents to any person not an employee or agent of the Undersigned or its surety on any Bond furnished with the Bid and will not be communicated to such person prior to the official opening of the Bid.

9. The undersigned ☒ **HAS**, ☐ **HAS NOT** (*check one*) paid unemployment or income taxes in Oregon within the past 12 months and ☒ **DOES**, ☐ **DOES NOT** (*check one*) a business address in Oregon. The undersigned acknowledges that, if the selected bidder, that the undersigned will have to pay all applicable taxes and register to do business in the State of Oregon before executing the Contract Form.

10. The Undersigned agrees, if awarded a contract, to comply with the provisions of ORS 279C.800 through 279C.870 pertaining to the payment of the prevailing rates of wage.

11. Contractor's CCB registration number is 206592. As a condition to submitting a bid, a Contractor must be registered with the Oregon Construction Contractors Board in accordance with ORS 701.035 to 701.055, and disclose the registration number. Failure to register and disclose the number will make the bid unresponsive and it will be rejected, unless contrary to federal law.

12. The successful Bidder hereby certifies that all subcontractors who will perform construction work as described in ORS 701.005(2) were registered with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 at the time the subcontractor(s) made a bid to work under the contract.

13. The successful Bidder hereby certifies that, in compliance with the Worker's Compensation Law of the State of Oregon, its Worker's Compensation Insurance provider is The Travelers Indemnity Company, Policy No. UB-9P669324-25-26-G and that Contractor shall submit Certificates of Insurance as required.

14. Contractor's Key Individuals for this project (supply information as applicable):
Project Executive: Mike Zamesnik, Cell Phone: 253 736-4730,
Project Manager: Narvair Parhar, Cell Phone: 206 348-4975,
Job Superintendent: Gabe Pyle, Cell Phone: 206 900-5002,
Project Engineer: Ben Grinchuk, Cell Phone: 253 455-3637.

15. The Undersigned certifies that it has not discriminated against minority, women, or emerging small businesses in obtaining any subcontracts for this project.

16. The Undersigned certifies that it has a drug testing program in accordance with ORS 279C.505.

REMINDER: Bidder must submit the below First-Tier Subcontractor Disclosure Form.

By signature below, Contractor agrees to be bound by this Bid.

NAME OF FIRM	<u>LONG Building Technologies, Inc</u>
ADDRESS	<u>800 SW 34th St, Renton WA, 98057</u>
TELEPHONE NO	<u>206 486-7346</u>
EMAIL	<u>Mzamesnik@long.com</u>
SIGNATURE 1)	<u>Sole Individual</u>
or 2)	<u>Partner</u>
or 3)	<u>Authorized Officer or Employee of Corporation</u>

*** * * * *** ***END OF BID*** *** * * * ***

FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM
PROJECT: 2026-05 Jail Electronic System Update Remodel

BID OPENING: June 4, 2026, 2:00 PM, Pacific Time

Failure to submit this Form by the disclosure deadline will result in a nonresponsive bid.

INSTRUCTIONS:

This First-Tier Subcontractor Disclosure Form ("Form") must be submitted and received at the location specified in the Notice of Public Improvement Contract Opportunity on the advertised Bid Closing, and within two working hours after the advertised Bid Closing Time.

Proposals will only be accepted electronically thru a secure online bid submission service, **Bid Locker**.

Email submissions to Clackamas County email addresses will no longer be accepted.

- A. Completed proposal documents must arrive electronically via Bid Locker located at <https://bidlocker.us/a/clackamascounty/BidLocker>.
- B. Bid Locker will electronically document the date and time of all submissions. Completed documents must arrive by the deadline indicated in Section 1 or as modified by Addendum.
LATE PROPOSALS WILL NOT BE ACCEPTED.
- C. Proposers must register and create a profile for their business with Bid Locker in order to submit for this project. It is free to register for Bid Locker.
- D. Proposers with further questions concerning Bid Locker may review the Vendor's Guide located at <https://www.clackamas.us/how-to-bid-on-county-projects>.

Subcontractor lists may be submitted with the bid in the same envelope or email at the Bid Closing date and time. Subcontractor lists **MUST** be submitted within **two (2) hours** of the Bid Closing date and time.

List below the name of each subcontractor that will be furnishing labor, or labor and materials, for which disclosure is required, the category of work that the subcontractor will be performing, and the dollar value of the subcontract. Enter **"NONE"** if the value of the project bid is less than \$100,000 or there are no subcontractors that need to be disclosed. ATTACH ADDITIONAL SHEETS IF NECESSARY.

	SUBCONTRACTOR NAME	DOLLAR VALUE	CATEGORY OF WORK
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____

The above listed first-tier subcontractor(s) are providing labor, or labor and material, with a Dollar Value equal to or greater than:

- a) 5% of the total Contract Price, but at least \$15,000. If the Dollar Value is less than \$15,000 do not list the subcontractor above; or
- b) \$350,000 regardless of the percentage of the total Contract Price.

Firm Name: _____

Bidder Signature: _____ Phone # _____



**CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT
SUPPLEMENTAL GENERAL CONDITIONS**

PROJECT: # 2026-05 Jail Electronic System Update Remodel

The following modifies the November 21, 2024 Clackamas County General Conditions for Public Improvement Contracts (“County General Conditions”) for this Contract. Except as modified below, all other terms and conditions of the County General Conditions shall remain in effect.

1. Good Faith Effort

As a condition of Contractor being awarded a Contract for this Project, Contractor must complete Good Faith Effort outreach and documentation as described in the Supplemental Instructions to Bidders of the Solicitation Document.

The Contractor may not change who is performing each Division of Work identified in Form 1 of the Good Faith Effort without the express written advance approval of Owner. This includes substituting identified subcontractors, self-performance of a Division of Work that was identified to be performed by a subcontractor, or the Contractor subcontracting a Division of Work that was identified to be self-performed by the Contractor.

Contractor shall be required to submit the completed Form 3 with its final pay application as a condition of final payment.



CLACKAMAS COUNTY GENERAL CONDITIONS FOR PUBLIC IMPROVEMENT CONTRACTS November 21, 2024

INSTRUCTIONS: The attached Clackamas County General Conditions for Public Improvement Contracts ("County General Conditions") apply to all designated Public Improvement contracts. Changes to the County General Conditions (including any additions, deletions or substitutions) should only be made by attaching Public Improvement Supplemental General Conditions. The text of these County General Conditions should not otherwise be altered.

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**CLACKAMAS COUNTY GENERAL CONDITIONS
FOR PUBLIC IMPROVEMENT CONTRACTS
("County General Conditions")**

**SECTION A
GENERAL PROVISIONS**

A.1 DEFINITION OF TERMS

In the Contract Documents the following terms shall be as defined below:

APPLICABLE LAWS, means all federal, state and local laws, codes, rules, regulations and ordinances, as amended applicable to the Work, to the Contract, or to the parties individually.

APPROVED BY CONTRACTING AGENCY, for purposes of ORS 279C.570(2), means the date a progress payment is approved by the Clackamas County Treasurer's office.

ARCHITECT/ENGINEER, means the Person appointed by the Owner to make drawings and specifications and, to provide contract administration of the Work contemplated by the Contract to the extent provided herein or by supplemental instruction of Owner (under which Owner may delegate responsibilities to the Architect/Engineer), in accordance with ORS Chapter 671 (Architects) or ORS Chapter 672 (Engineers) and administrative rules adopted thereunder.

AVOIDABLE DELAYS, mean any delays other than Unavoidable Delays, and include delays that otherwise would be considered Unavoidable Delays but that: (a) Could have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its Subcontractors; (b) Affect only a portion of the Work and do not necessarily prevent or delay the prosecution of other parts of the Work nor the completion of the whole Work within the Contract Time; (c) Do not impact activities on the accepted critical path schedule; and (d) Are associated with the reasonable interference of other contractors employed by the Owner that do not necessarily prevent the completion of the whole Work within the Contract Time.

BIDDER, means a bidder in connection with Instructions to Bidders or a proposer in connection with a Request for Proposals, or Solicitation Document. May also be referenced as "Offeror," "Quoter" or "Proposer" based on the type of Solicitation Document.

CHANGE ORDER, means a written order which, when fully executed by the Parties to the Contract, constitutes a change to the Contract Documents. Change Orders shall be issued in accordance with the changes provisions in Section D and, if applicable, establish a Contract Price or Contract Time adjustment. A Change Order shall not be effective until executed by both parties.

CLAIM, means a demand by Contractor pursuant to Section D.3 for review of the denial of Contractor's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, submitted in accordance with the requirements and within the time limits established for review of Claims in these County General Conditions.

CONTRACT, means the written agreement between the Owner and the Contractor comprised of the Contract Documents which describe the Work to be done and the obligations between the parties.

CONTRACT DOCUMENTS, means the Contract, County General Conditions, Supplemental General Conditions if any, Plans, Specifications, the accepted Offer, Solicitation Document and addenda thereto, Instructions to Offerors, and Supplemental Instructions to Offerors.

CONTRACT PERIOD, as set forth in the Contract Documents, means the total period of time beginning with the full execution of a Contract

and, if applicable, the issuance of a Notice to Proceed and concluding upon Final Completion.

CONTRACT PRICE, means the total price reflected in the Contract.

CONTRACT TIME, means any incremental period of time allowed under the Contract to complete any portion of the Work as reflected in the Project schedule.

CONTRACTOR, means the Person awarded the Contract for the Work contemplated.

DAYS, are calendar days, including weekdays, weekends and holidays, unless otherwise specified.

DEFECTIVE WORK, means Work that is not completed in accordance with the Specifications or the requirements of the Contract.

DIRECT COSTS, means, unless otherwise provided in the Contract Documents: the cost of materials, including sales tax and the cost of delivery; cost of labor which shall only include the applicable prevailing wage and fringe benefit (if applicable, and if paid to or on behalf of the employee) rate plus a maximum of a twelve percent (12%) markup on the prevailing wage (but not the fringe benefit) to cover Contractor's labor burden including but not limited to social security, Medicare, unemployment insurance, workers' compensation insurance, sick leave pay; substantiated Project cost increases for specific insurance (including, without limitation, Builder's Risk Insurance and Builder's Risk Installation Floater) or bond premiums; rental cost of equipment, and machinery required for execution of the Work; and the additional costs of field personnel directly attributable to the Work; travel expense reimbursement only if specifically authorized and only to the extent allowable under the County Contractor Travel Reimbursement Policy, hereby incorporated by reference.

FINAL COMPLETION, means the final completion of all requirements under the Contract, including Contract Closeout as described in Section K but excluding Warranty Work as described in Section I.2, and the final payment and release of all retainage, if any.

FORCE MAJEURE, means an act, event or occurrence caused by fire, riot, war, acts of God, terrorism, nature, sovereign, or public enemy, strikes, freight embargoes or any other act, event or occurrence that is beyond the control of the party to the Contract who is asserting Force Majeure.

NOTICE TO PROCEED, means the official written notice from the Owner stating that the Contractor is to proceed with the Work defined in the Contract Documents.

OFFER, means a bid in connection with Instructions to Bidders or a proposal in connection with a Request for Proposals, or Solicitation Document to do the work stated in the Solicitation Document at the price quoted. May also be referenced as "Bid," "Quote," or "Proposal" based on the type of Solicitation Document.

OVERHEAD, means those items which may be included in the Contractor's markup (general and administrative expense and profit) and that shall not be charged as Direct Cost of the Work, including without limitation such Overhead expenses as wages or salary of personnel above the level of foreman (i.e., superintendents and project managers), labor rates and fringe benefits above the applicable prevailing wage and fringe benefit (if applicable, and if paid to or on behalf of the employee), Contractor's labor burden for fringe benefit if paid to the employee, expenses of Contractor's offices and supplies at the Project Site (e.g. job trailer) and at Contractor's principal place of business and including expenses of personnel staffing the Project Site office and Contractor's principal place of business, and Commercial General Liability Insurance and Automobile Liability Insurance.

OWNER, means, Clackamas County or any component unit thereof including Clackamas County Development Agency, Clackamas County Service District No. 1, Surface Water Management Agency of Clackamas County, Tri-City Service District, Water Environment Services, North Clackamas Parks and Recreation District, Clackamas County Extension & 4-H Service District, Library Service District of Clackamas County, Enhanced Law Enforcement District, and Clackamas County Service District No. 5. Owner may elect, by written notice to Contractor, to delegate certain duties to more than one agent, including without limitation, to an Architect/Engineer. However, nothing in these County General Conditions is intended to abrogate the separate design professional responsibilities of Architects under ORS Chapter 671 or of Engineers under ORS Chapter 672.

PERSON, means a natural person or entity doing business as a sole proprietorship, a partnership, a joint venture, a corporation, a limited liability company or partnership, a nonprofit, a trust, or any other entity possessing the legal capacity to contract.

PLANS, means the drawings which show the location, type, dimensions, and details of the Work to be done under the Contract.

PRODUCT DATA, means illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

PROJECT, means the total undertaking to be accomplished for Owner by architects/engineers, contractors, and other others, including planning, study, design, construction, testing, commissioning, start-up, of which the Work to be performed under the Contract Documents is a part.

PROJECT SITE, means the specific real property on which the Work is to be performed, including designated contiguous staging areas, that is identified in the Plans, Specifications and Drawings.

PUNCH LIST, means the list of Work yet to be completed or deficiencies which need to be corrected in order to achieve Final Completion of the Contract.

RECORD DOCUMENT, means the as-built Plans, Specifications, testing and inspection records, product data, samples, manufacturer and distributor/supplier warranties evidencing transfer of ownership to Owner, operational and maintenance manuals, shop drawings, correspondence, certificate(s) of occupancy, and other documents listed in Subsection B.9.1 of these County General Conditions, recording all Services performed.

SAMPLES, means physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

SHOP DRAWINGS, means drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor (including any subsubcontractor), manufacturer, supplier, or distributor to illustrate some portion of the Work.

SOLICITATION DOCUMENT, means an Invitation to Bid, Request for Proposals, Request for Quotes, or other written document issued by Owner that outlines the required Specifications necessary to submit an Offer.

SPECIFICATION, means any description of the physical or functional characteristics of the Work, or of the nature of a supply, service or construction item included in the Solicitation Document. Specifications may include a description of any requirement for inspecting, testing or preparing a supply, service or construction item for delivery and the quantities or qualities of materials to be furnished under the Contract. Specifications generally will state the results or products to be obtained and may, on occasion, describe the method and manner of doing the

Work to be performed. Specifications may be incorporated by reference and/or may be attached to the Contract.

SUBCONTRACTOR, means a Person having a direct contract with the Contractor, or another Subcontractor of any tier, to perform one or more items of the Work.

SUBSTANTIAL COMPLETION, means the date when the Owner accepts in writing the construction, alteration or repair constituting the Work or any designated portion thereof as having reached that state of completion when it may be used or occupied for its intended purpose. Substantial Completion of facilities with operating systems occurs only after thirty (30) continuous Days of successful, trouble-free operation of the operating systems as provided in Section K.3.2.

SUBSTITUTIONS, means items that in function, performance, reliability, quality, and general configuration are the same or better than the product(s) specified. Substitutions also means the performance of the Work by a labor force other than what is submitted in the Offer.

SUPPLEMENTAL GENERAL CONDITIONS, means those conditions that remove from, add to, or modify these County General Conditions. Public Improvement Supplemental General Conditions may be included in the Solicitation Document or may be a separate attachment to the Contract.

UNAVOIDABLE DELAYS, mean delays other than Avoidable Delays that are: (a) to the extent caused by any actions of the Owner, or any other employee or agent of the Owner, or by a separate contractor employed by the Owner; (b) to the extent caused by any Project Site conditions which differ materially from the conditions that would normally be expected to exist and inherent to the construction activities defined in the Contract Documents; or (c) to the extent caused by Force Majeure acts, or events or occurrences.

WORK, means the furnishing of all materials, equipment, labor, transportation, services, incidentals, those permits and regulatory approvals not provided by the owner necessary to successfully complete any individual item or the entire Contract and the carrying out of duties and obligations imposed by the Contract Documents for the Project.

A.2 SCOPE OF WORK

The Work contemplated under the Contract includes all labor, materials, transportation, equipment and services for, and incidental to, the completion of all work in connection with the Project described in the Contract Documents. The Contractor shall perform all Work necessary so that the Project can be legally occupied and fully used for the intended use as set forth in the Contract Documents.

A.3 INTERPRETATION OF CONTRACT DOCUMENTS

A.3.1 Unless otherwise specifically defined in the Contract Documents, words which have well-known technical meanings or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Contract Documents are intended to be complementary. Whatever is called for in one, is interpreted to be called for in all. However, in the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following descending order of precedence:

- (a) The Contract and any amendments thereto, including Change Orders, with those of later date having precedence over those of an earlier date;
- (b) The Supplemental General Conditions;
- (c) County General Conditions;
- (d) Plans and Specifications;
- (e) The Solicitation Document, and any addenda thereto.

A.3.2 In the case of an inconsistency between Plans and Specifications or within either document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Owner's interpretation in writing as determined in Owners sole discretion.

A.3.3 If the Contractor finds discrepancies in, or omissions from the Contract Documents, or if the Contractor is in doubt as to their meaning, the Contractor shall at once notify the Owner. Matters concerning and interpretation of requirements of the Contract Documents will be decided by the Owner in the Owner's sole discretion, who may delegate that duty in some instances to the Architect/Engineer. Responses to Contractor's requests for interpretation of Contract Documents will be made in writing by Owner (or the Architect/Engineer) within any time limits agreed upon or otherwise with reasonable promptness. Contractor shall not proceed without direction in writing from the Owner (or Architect/Engineer).

A.3.4 References to standard specifications, manuals, codes of any technical society, organization or association, to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, laws or regulations in effect in the jurisdiction where the Project Site is located on the first published date of the Solicitation Document, except as may be otherwise specifically stated.

A.4 EXAMINATION OF PLANS, SPECIFICATIONS, AND PROJECT SITE

A.4.1 It is understood that the Contractor, before submitting an Offer, has made a careful examination of the Contract Documents; has become fully informed as to the quality and quantity of materials and the character of the Work required; and has made a careful examination of the location and conditions of the Work and the sources of supply for materials. The Owner will in no case be responsible for any loss or for any unanticipated costs that may be suffered by the Contractor as a result of the Contractor's failure to acquire full information in advance in regard to all conditions pertaining to the Work. No oral agreement or conversation with any officer, agent, or personnel of the Owner, or with the Architect/Engineer either before or after the execution of the Contract, shall affect or modify any of the terms or obligations herein contained. Contractor shall at all times be responsible for all utility locates regardless of the ownership of such utility infrastructure or service.

A.4.2 Should the Plans or Specifications fail to particularly describe the materials, kind of goods, or details of construction of any aspect of the Work, Contractor shall have the duty to make inquiry of the Owner and Architect/Engineer as to what is required prior to performance of the Work. Absent Specifications to the contrary, the materials or processes that would normally be used to produce first quality finished Work shall be considered a part of the Contract requirements.

A.4.3 Any design errors or omissions noted by the Contractor shall be reported promptly to the Owner, including without limitation, any nonconformity with Applicable Laws.

A.4.4 If the Contractor believes that adjustments to cost or Contract Time are involved because of clarifications or instructions issued by the Owner (or Architect/Engineer) in response to the Contractor's notices or requests for information, the Contractor must submit a written request to the Owner, setting forth the nature and specific extent of the request, including all time and cost impacts against the Contract as soon as possible, but no later than thirty (30) Days after receipt by Contractor of the clarifications or instructions issued. If the Owner denies Contractor's request for additional compensation, additional Contract Time, or other relief

that Contractor believes results from the clarifications or instructions, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process. If the Contractor fails to perform the obligations of Sections A.4.1 to A.4.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations.

A.4.5 If the Contractor believes that adjustments to cost or Contract Time are involved because of an Unavoidable Delay caused by differing Project Site conditions, the Contractor shall notify the Owner immediately of differing Project Site conditions before the area has been disturbed. The Owner will investigate the area and make a determination as to whether or not the conditions differ materially from either the conditions stated in the Contract Documents or those which could reasonably be expected in execution of this particular Contract. If Contractor and the Owner agrees that a differing Project Site condition exists, any adjustment to compensation or Contract Time will be determined based on the process set forth in Section D.2.2 for adjustments to or deletions from Work. If the Owner disagrees that a differing Project Site condition exists and denies Contractor's request for additional compensation or Contract Time, Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

A.5 INDEPENDENT CONTRACTOR STATUS

The service or services to be performed under the Contract are those of an independent contractor as defined in ORS 670.600. Contractor represents and warrants that it is not an officer, employee or agent of the Owner as those terms are used in ORS 30.265.

A.6 RETIREMENT SYSTEM STATUS AND TAXES

Contractor represents and warrants that it is not a contributing member of the Public Employees' Retirement System and will be responsible for any federal or state taxes applicable to payment received under the Contract. Contractor will not be eligible for any benefits from these Contract payments of federal Social Security, employment insurance, workers' compensation or the Public Employees' Retirement System, except as a self-employed individual. Unless the Contractor is subject to backup withholding, Owner will not withhold from such payments any amount(s) to cover Contractor's federal or state tax obligations.

A.7 GOVERNMENT EMPLOYMENT STATUS

A.7.1 If this payment is to be charged against federal funds, Contractor represents and warrants that it is not currently employed by the Federal Government. This does not preclude the Contractor from holding another contract with the Federal Government.

SECTION B ADMINISTRATION OF THE CONTRACT

B.1 OWNER'S ADMINISTRATION OF THE CONTRACT

B.1.1 The Owner shall administer the Contract as described in the Contract Documents throughout the term of the Contract, including the one-year period for correction of Work. The Owner will act as provided in the Contract Documents, unless modified in writing in accordance with other provisions of the Contract. In performing these tasks, the Owner may rely on the Architect/Engineer or other agents to perform some or all of these tasks.

B.1.2 The Owner may visit the Project Site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. The Owner will not

make exhaustive or continuous on-Project Site inspections to check the quality or quantity of the Work. Unless otherwise required in a Change Order, the Owner will neither have control over or charge of, nor be responsible for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work.

B.1.3 Except as otherwise provided in the Contract Documents or when direct communications have been specifically authorized, the Owner and Contractor shall communicate with each other within a reasonable time frame about matters arising out of or relating to the Contract. Communications by and with the Architect/Engineer's consultants shall be through the Architect/Engineer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

B.1.4 Based upon the Architect/Engineer's evaluations of the Contractor's Application for Payment, or unless otherwise stipulated by the Owner, the Architect/Engineer will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

B.2 CONTRACTOR'S MEANS AND METHODS; MITIGATION OF IMPACTS

B.2.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the Project Site safety thereof and, except as stated below, shall be fully and solely responsible for the Project Site safety of such means, methods, techniques, sequences or procedures.

B.2.2 The Contractor is responsible to protect and maintain the Work during the course of construction and to mitigate any adverse impacts to the Project, including those caused by authorized changes, which may affect cost, schedule, or quality.

B.2.3 The Contractor is responsible for the actions of all its personnel, laborers, suppliers, agents, and Subcontractors on the Project. The Contractor shall enforce strict discipline and good order among Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of persons who are unfit or unskilled for the tasks assigned to them.

B.3 MATERIALS AND WORKMANSHIP

B.3.1 The intent of the Contract Documents is to provide for the construction and completion of every detail of the Work described. All Work shall be performed in a professional manner and, unless the means or methods of performing a task are specified elsewhere in the Contract Documents, Contractor shall employ methods that are generally accepted and used by the industry, in accordance with industry standards.

B.3.2 The Contractor is responsible to perform the Work as required by the Contract Documents. Defective Work shall be corrected at the Contractor's sole expense and within a reasonable time frame.

B.3.3 Work done and materials furnished may be subject to inspection and/or observation and testing by the Owner to determine if they conform to the Contract Documents. Inspection of the Work by the Owner does not relieve the Contractor of responsibility for the Work in accordance with the Contract Documents.

B.3.4 Contractor shall furnish adequate facilities, as required, for the Owner to have safe access to the Work including without limitation walkways, railings, ladders, tunnels, and platforms. Producers, suppliers, and fabricators shall also provide proper facilities and access to their facilities.

B.3.5 The Contractor shall furnish Samples of materials for testing by the Owner and include the cost of the Samples in the Contract Price.

B.4 PERMITS

Contractor shall obtain and pay for all necessary permits, licenses and fees, except for those specifically excluded in the Supplemental General Conditions, as required for the project. Contractor shall be responsible for all violations of the law. Contractor shall give all requisite notices to public authorities.

B.5 COMPLIANCE WITH GOVERNMENT REGULATIONS

B.5.1 Contractor shall comply with Applicable Laws, as amended pertaining to the Work and the Contract. Failure to comply with such requirements shall constitute a breach of Contract and shall be grounds for Contract termination. Without limiting the generality of the foregoing, Contractor expressly agrees to comply with the following, as applicable and as may be amended from time to time: (i) Title VI and VII of Civil Rights Act of 1964, as amended; (ii) Section 503 and 504 of the Rehabilitation Act of 1973, as amended; (iii) the Health Insurance Portability and Accountability Act of 1996; (iv) the Americans with Disabilities Act of 1990, as amended; (v) ORS Chapter 659A; as amended; (vi) all regulations and administrative rules established pursuant to any applicable laws; and (vii) all other applicable requirements of federal, state, county or other local government entity statutes, rules and regulations.

B.5.2 Contractor shall comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations, and

(a) Contractor shall not discriminate against Disadvantaged, Minority, Women or Emerging Small Business enterprises, as those terms are defined in ORS 200.005, or a business enterprise that is owned or controlled by or that employs a disabled veteran, as that term is defined in ORS 408.225, in the awarding of subcontracts.

(b) Contractor shall maintain, in current and valid form, all licenses and certificates required by Applicable Laws or the Contract when performing the Work.

B.5.3 Contractor shall certify that it shall not accept a bid from Subcontractors to perform Work unless such Subcontractors are registered with the Construction Contractors Board in accordance with ORS 701.021 at the time they submit their bids to the Contractor.

B.5.4 Contractor shall certify that each landscape contracting business, as defined in ORS 671.520(2), performing Work under the Contract holds a valid landscape construction professional license issued pursuant to ORS 671.560.

B.5.5 The following notice is applicable to Contractors who perform excavation Work. ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of the rules by calling the center at (877) 668-4001.

B.5.6 Failure to comply with any or all of the requirements of B.5.1 through B.5.5 shall be a material breach of Contract and constitute

grounds for Contract termination. Damages or costs resulting from such noncompliance shall be the responsibility of Contractor.

B.5.7 The Contractor shall include in each subcontract those provisions required under ORS 279C.580.

B.5.8 Contractor shall comply with ORS 652.220, compliance of which is a material element of this Contract and failure to comply is a material breach that entitles County to exercise any rights and remedies available under this Contract including, but not limited to, termination for default.

B.6 SUPERINTENDENCE

Contractor shall keep on the Project Site, during the progress of the Work, a competent superintendent and any necessary assistants who shall be satisfactory to the Owner and who shall represent the Contractor on the Project Site. Directions given to the superintendent by the Owner shall be confirmed in writing to the Contractor.

B.7 INSPECTION

B.7.1 Owner shall have access to the Work at all times.

B.7.2 Inspection of the Work will be made by the Owner at its discretion. The Owner will have authority to reject Work that does not conform to the Contract Documents in the Owner's sole discretion. Any Work found to be not in conformance with the Contract Documents, in the discretion of the Owner, shall be removed and replaced at the Contractor's expense.

B.7.3 Contractor shall make or obtain at the appropriate time all tests, inspections and approvals of portions of the Work required by the Contract Documents or by Applicable Laws or orders of public authorities having jurisdiction. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work. The Contractor shall give the Owner timely notice of when and where tests and inspections are to be made so that the Owner may be present for such procedures. Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Owner.

B.7.4 As required by the Contract Documents, Work done or material used without required inspection or testing and/or without providing timely notice to the Owner may be ordered removed at the Contractor's expense.

B.7.5 If directed to do so by Owner or other permitting authority any time before the Work is accepted, the Contractor shall uncover portions of the completed Work for inspection. After inspection, the Contractor shall restore such portions of Work to the standard required by the Contract. If the Work uncovered is unacceptable or was done without required testing or inspection or sufficient notice to the Owner, the uncovering and restoration shall be done at the Contractor's expense. If the Work uncovered is acceptable and was done with sufficient notice to the Owner, the uncovering and restoration will be paid for pursuant to a Change Order.

B.7.6 If any testing or inspection reveals failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Owner's and Architect/Engineer's services and expenses, shall be at the Contractor's expense.

B.7.7 In Owner's sole discretion, it may authorize other interested parties to inspect the Work affecting their interests or property. Their right to inspect shall not make them a party to the Contract and shall not interfere with the rights of the parties of the Contract. Instructions or orders of such parties shall be transmitted to the Contractor, through the Owner.

B.8 SUBCONTRACTS AND ASSIGNMENT

B.8.1 Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound by the terms and conditions of these General Conditions and Supplemental General Conditions, and to assume toward the Contractor all of the obligations and responsibilities which the Contractor assumes toward the Owner thereunder, unless (1) the same are clearly inapplicable to the subcontract at issue because of legal requirements or industry practices, or (2) specific exceptions are requested by Contractor and approved in writing by Owner. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with sub-subcontractors at any level.

B.8.2 At Owner's request, Contractor shall submit to Owner prior to their execution either Contractor's form of subcontract, or the subcontract to be executed with any particular Subcontractor. If Owner disapproves such form, Contractor shall not execute the form until the matters disapproved are resolved to Owner's satisfaction. Owner's review, comment upon or approval of any such form shall not relieve Contractor of its obligations under this Agreement or be deemed a waiver of such obligations of Contractor.

B.8.3 Contractor shall not assign, sell, or transfer its rights, or delegate its responsibilities under the Contract, in whole or in part, without the prior written approval of the Owner. No such written approval shall relieve Contractor of any obligations of the Contract, and any transferee shall be considered the agent of the Contractor and bound to perform in accordance with the Contract Documents. Contractor shall remain liable as between the original parties to the Contract as if no assignment had occurred.

B.9 OWNER'S RIGHT TO DO WORK

Owner reserves the right to perform other or additional work at or near the Project Site with other agents than those of the Contractor. If such work takes place within or next to the Project Site, Contractor shall coordinate work with the other contractors or agents, cooperate with all other contractors or forces, carry out the Work in a way that will minimize interference and delay for all agents involved, place and dispose of materials being used so as not to interfere with the operations of another, and join the Work with the work of the others in an acceptable manner and perform it in proper sequence to that of the others. The Owner will resolve any disagreements that may arise between or among Contractor and the other contractors over the method or order of doing all work (including the Work). In case of unavoidable interference, the Owner will establish work priority (including the Work) in the Owner's sole discretion.

B.10 OTHER CONTRACTS

In all cases and at any time, the Owner has the right to execute other contracts related to or unrelated to the Work of the Contract. The Contractor of the Contract shall fully cooperate with any and all other contractors without additional cost to the Owner in the manner described in Section B.13.

B.11 ALLOWANCES

B.11.1 The Contractor shall include in the Contract Price all allowances stated in the Contract Documents. Items covered by allowances

shall be supplied for such amounts and by such persons or entities as the Owner may direct.

B.11.2 Unless otherwise provided in the Contract Documents:

- (a) when finally reconciled, allowances shall cover the cost of the Contractor's materials and equipment delivered at the Project Site and all required taxes, less applicable trade discounts;
- (b) Contractor's costs for unloading and handling at the Project Site, labor, installation costs, Overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Price but not in the allowances;
- (c) whenever costs are more than or less than allowances, the Contract Price shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (i) the difference between actual costs and the allowances under Section B.17.2(a) and (ii) changes in Contractor's costs under Section B.17.2(b);
- (d) Unless Owner requests otherwise, Contractor shall provide to Owner a proposed fixed price for any allowance work prior to its performance.

B.12 SUBMITTALS, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- B.12.1 The Contractor shall prepare and keep current, for the Architect's/Engineer's approval (or for the approval of Owner if approval authority has not been delegated to the Architect/Engineer), a schedule and list of submittals which is coordinated with the Contractor's construction schedule and allows the Architect/Engineer reasonable time to review submittals. Owner reserves the right to finally approve the schedule and list of submittals. Submittals include, without limitation, Shop Drawings, Product Data, and Samples.
- B.12.2 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review of submittals by the Architect/Engineer is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, or for approval of safety precautions or, unless otherwise specifically stated by the Architect/Engineer, of any construction means, methods, techniques, sequences or procedures, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect/Engineer's review of the Contractor's submittals shall not relieve the Contractor of its obligations under the Contract Documents. The Architect/Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component. Informational submittals upon which the Architect/Engineer is not expected to take responsive action may be so identified in the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Architect/Engineer without action.
- B.12.3 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect/Engineer Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents

and approved by the Contractor may be returned by the Architect/Engineer without action.

- B.12.4 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.
- B.12.5 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect/Engineer.
- B.12.6 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect/Engineer's review or approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect/Engineer in writing of such deviation at the time of submittal and (i) the Architect/Engineer has given written approval to the specific deviation as a minor change in the Work, or (ii) a Change Order has been executed by Owner authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect/Engineer's review or approval thereof.
- B.12.7 In the event that Owner elects not to have the obligations and duties described under this Section B.18 performed by the Architect/Engineer, or in the event no Architect/Engineer is employed by Owner on the Project, all obligations and duties assigned to the Architect/Engineer hereunder shall be performed by the Owner.

B.13 SUBSTITUTIONS

The Contractor may make Substitutions only with the written consent of the Owner, after evaluation by the Owner and only in accordance with a Change Order. Substitutions shall be subject to the requirements of the Solicitation Document. By making requests for Substitutions, the Contractor represents that the Contractor has personally investigated the proposed substitute product; represents that the Contractor will provide the same warranty for the Substitution that the Contractor would for the product originally specified unless approved otherwise; certifies that the cost data presented is complete and includes all related costs under the Contract including redesign costs, and waives all claims for additional costs related to the Substitution which subsequently become apparent; and will coordinate the installation of the accepted Substitution, making such changes as may be required for the Work to be completed in all respects.

B.14 USE OF PLANS AND SPECIFICATIONS

Plans, Specifications and related Contract Documents furnished to Contractor by Owner or Owner's Architect/Engineer shall be used solely for the performance of the Work under the Contract. Contractor and its Subcontractors and suppliers are authorized to use and reproduce applicable portions of such documents appropriate to the execution of the Work, but shall not claim any ownership or other interest in them beyond the scope of the Contract, and no such interest shall attach. Unless otherwise indicated, all common law, statutory and other reserved rights, in addition to copyrights, are retained by Owner.

SECTION C
WAGES AND LABOR

C.1 PREVAILING WAGE RATES ON PUBLIC WORKS

Contractor shall comply fully with the provisions of ORS 279C.800 through 279C.870. Pursuant to ORS 279C.830(1)(d), Contractor shall pay workers at not less than the specified minimum hourly rate of wage, and shall include that requirement in all subcontracts. If the Work is subject to both the state prevailing wage rate law and the federal Davis-Bacon Act, Contractor shall pay the higher of the applicable state or federal prevailing rate of wage. Contractor shall provide written notice to all workers of the number of hours per day and days per week such workers may be required to work.

C.2 PAYROLL CERTIFICATION AND FEE REQUIREMENTS

- C.2.1 In accordance with ORS 279C.845, the Contractor and every Subcontractor shall submit written certified statements to the Owner on the form prescribed by the Commissioner of the Bureau of Labor and Industries ("BOLI"), certifying the hourly rate of wage paid each worker which the Contractor or the Subcontractor has employed on the Project and further certifying that no worker employed on the Project has been paid less than the prevailing rate of wage or less than the minimum hourly rate of wage specified in the Contract, which certificate and statement shall be verified by the oath of the Contractor or the Subcontractor that the Contractor or Subcontractor has read the certified statement, that the Contractor or Subcontractor knows the contents of the certified statement, and, that to the Contractor's or Subcontractor's best knowledge and belief, the certified statement is true. The certified statements shall set out accurately and completely the payroll records for the prior week, including the name and address of each worker, the worker's correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid. Certified statements for each week during which the Contractor or Subcontractor has employed a worker on the Project shall be submitted once a month, by the fifth (5th) business day of the following month. The Contractor and Subcontractors shall preserve the certified statements for a period of ten (10) years from the date of completion of the Contract.
- C.2.2 Pursuant to ORS 279C.845(7), the Owner shall retain 25 percent of any amount earned by the Contractor on the Project until the Contractor has filed the certified statements required by section C.2.1. The Owner shall pay to the Contractor the amount retained under this subsection within 14 days after the Contractor files the required certified statements, regardless of whether a Subcontractor has failed to file certified statements.
- C.2.3 Pursuant to ORS 279C.845(8), the Contractor shall retain 25 percent of any amount earned by a first-tier Subcontractor on this Project until the first-tier Subcontractor has filed with the Owner the certified statements required by C.2.1. Before paying any amount retained under this subsection, the Contractor shall verify that the first-tier Subcontractor has filed the certified statement. Within 14 days after the first-tier Subcontractor files the required certified statement the Contractor shall pay the first-tier Subcontractor any amount retained under this subsection.
- C.2.4 In accordance with statutory requirements and administrative rules promulgated by the Commissioner of the Bureau of Labor and Industries, the fee required by ORS 279C.825(1) will be paid by Owner to the Commissioner.

C.3 PROMPT PAYMENT AND CONTRACT CONDITIONS

- C.3.1 As a condition to Owner's performance hereunder, the Contractor shall:
- C.3.1.1 Make payment promptly, as due, to all persons supplying to Contractor labor or materials for the prosecution of the Work provided for in the Contract.
- C.3.1.2 Pay all contributions or amounts due the State Industrial Accident Fund or successor program from such Contractor or Subcontractor incurred in the performance of the Contract.
- C.3.1.3 Not permit any lien or claim to be filed or prosecuted against the Owner on account of any labor or material furnished. Contractor will not assign any claims that Contractor has against Owner, or assign any sums due by Owner, to Subcontractors, suppliers, or manufacturers, and will not make any agreement or act in any way to give Subcontractors a claim or standing to make a claim against the Owner.
- C.3.1.4 Pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.
- C.3.2 If Contractor fails, neglects or refuses to make prompt payment of any claim for labor or services furnished to the Contractor of a Subcontractor by any person in connection with the Project as such claim becomes due, the proper officer(s) representing the Owner may pay the claim and charge the amount of the payment against funds due or to become due Contractor under the Contract. Payment of claims in this manner shall not relieve the Contractor or the Contractor's surety from obligation with respect to any unpaid claims.
- C.3.3 Contractor shall include in each subcontract for property or services entered into by the Contractor and a first-tier subcontractor, including a material supplier, for the purpose of performing a construction contract, a payment clause that obligates the Contractor to pay the first-tier Subcontractor for satisfactory performance under its subcontract within ten (10) Days out of such amounts as are paid to the Contractor by the Owner under such contract.
- C.3.4 If the Contractor or a first-tier subcontractor fails, neglects or refuses to pay a person that provides labor or materials in connection with the Contract within 30 days after receiving payment from the contracting agency or a contractor, the Contractor or first-tier subcontractor owes the person the amount due plus interest charges that begin at the end of the 10-day period within which payment is due under ORS 279C.580 (4) and that end upon final payment, unless payment is subject to a good faith dispute as defined in ORS 279C.580. The rate of interest on the amount due is nine percent per annum. The amount of interest may not be waived.
- C.3.5 If the Contractor or a subcontractor fails, neglects or refuses to make payment to a person furnishing labor or materials in connection with the Contract, the person may file a complaint with the Construction Contractors Board, unless payment is subject to a good faith dispute as defined in ORS 279C.580.
- C.3.6 All employers, including Contractor, that employ subject workers who work under the Contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. Contractor shall ensure that each of its Subcontractors complies with these requirements.
- C.3.7 In accordance with ORS 279C.570, for all subcontracts that exceed \$500,000 that the Contractor withholds retainage, the Contractor shall place amounts deducted as retainage into an interest-bearing escrow account. Interest on the retainage amount accrues from the

date the payment request is approved until the date the retainage is paid to the Subcontractor to which it is due.

C.4 PAYMENT FOR MEDICAL CARE

As a condition to Owner's performance hereunder, Contractor shall promptly, as due, make payment to any person, co-partnership, association or corporation furnishing medical, surgical, and hospital care or other needed care and attention, incident to sickness or injury, to the employees of the Contractor, of all sums of which the Contractor agrees to pay for the services and all moneys and sums that the Contractor collected or deducted from the wages of employees under any law, contract or agreement for the purpose of providing or paying for the services.

C.5 HOURS OF LABOR

As a condition to Owner's performance hereunder, no person shall be employed to perform Work under the Contract for more than ten (10) hours in any one day or forty (40) hours in any one week, except in cases of necessity, emergency or where public policy absolutely requires it. In such instances, Contractor shall pay the employee at least time and a half pay:

- (a) For all overtime in excess of eight (8) hours a day or forty (40) hours in any one week when the work week is five consecutive Days, Monday through Friday; or
- (b) For all overtime in excess of ten (10) hours a day or forty (40) hours in any one week when the work week is four consecutive Days, Monday through Friday; and
- (c) For all Work performed on Saturday and on any legal holiday specified in ORS 279C.540.

This Section C.5 will not apply to Contractor's Work under the Contract to the extent Contractor is currently a party to a collective bargaining agreement with any labor organization.

This Section C.5 shall not excuse Contractor from completion of the Work within the time required under the Contract.

SECTION D CHANGES IN THE WORK

D.1 CHANGES IN WORK

D.1.1 The terms of the Contract shall not be waived, altered, modified, supplemented or amended in any manner whatsoever, without prior written agreement and then only after any necessary approvals have been obtained. A Change Order is required to modify the Contract, which shall not be effective until its execution by the parties to the Contract and all approvals required by public contracting laws have been obtained.

D.1.2 It is mutually agreed that changes in Plans, quantities, or details of construction may be necessary or desirable during the course of construction. Within the general scope of the Contract, the Owner may at any time, without notice to the sureties and without impairing the Contract, require changes it deems necessary or desirable within the scope of this Project and consistent with this Section D.1. All changes to the Work shall be documented and Change Orders shall be executed under the conditions of the Contract Documents. Such changes may include, but are not limited to:

- (a) Modification of specifications and design.
- (b) Increases or decreases in quantities.
- (c) Increases or decreases to the amount of Work.
- (d) Addition or elimination of any Work item.
- (e) Change in the duration of the Project.

- (f) Acceleration or delay in performance of Work.
- (g) Deductive changes.

Deductive changes are those that reduce the scope of the Work, and shall be made by mutual agreement whenever feasible. In cases of suspension or partial termination under Section J, Owner reserves the right to unilaterally impose a deductive change and to self-perform such Work, for which the provisions of Section B.13 (Owner's Right to Do Work) shall then apply. Adjustments in compensation shall be made under Section D.1.3, in which costs for deductive changes shall be based upon a Direct Costs adjustment together with the related percentage markup specified for profit, Overhead and other indirect costs, unless otherwise agreed to by Owner.

D.1.3 The Owner and Contractor agree that adjustments to or deletions from the Work shall be administered and compensated according to the following:

- (a) Unit Pricing: Unit pricing may be utilized at the Owner's option when unit prices or solicitation alternates were provided that established the cost for adjustments to Work, and a binding obligation exists under the Contract on the parties covering the terms and conditions of the adjustment to Work.
- (b) Fixed Fee: If the Owner elects not to utilize unit pricing, or in the event that unit pricing is not available or appropriate, fixed pricing may be used for adjustments to or deletions from the Work. In fixed pricing, the basis of payments or total price shall be agreed upon in writing between the parties to the Contract, and shall be established before the Work is done whenever feasible. Notwithstanding the foregoing, the mark-ups set forth in Section D.1.3(c) shall be utilized in establishing fixed pricing, and such mark-ups shall not be exceeded. Cost and price data relating to adjustments to or deletions from the Work shall be supplied by Contractor to Owner upon request, but Owner shall be under no obligation to make such requests.
- (c) Time and Material: In the event that unit pricing and fixed pricing are not utilized, then adjustments to or deletions from the Work shall be performed on a cost reimbursement basis for Direct Costs. Such Work shall be compensated on the basis of the actual, reasonable and allowable cost of labor, equipment, and material furnished on the Work performed. The Contractor or Subcontractor who performs the Work shall be allowed to add up to ten percent (10%) markup to the Direct Costs as full compensation for profit, Overhead and other indirect costs for Work performed with the Contractor's or Subcontractor's own agents

Each ascending tier Subcontractor or the Contractor that did not perform the Work, will be allowed to add up to five percent (5%) supplemental markup on the Direct Costs of the Work (but not the above allowable markups) covered by a Change Order. No additional markup shall be permitted for any third tier or greater descending Subcontractor.

Example: \$20,000 of Direct Costs Work performed by a 2nd Tier Subcontractor

	Markup	Allowed Total Fee Plus Markup
General Contractor	5%	\$1,000.00
1 st Tier Sub Contractor	5%	\$1,000.00
2 nd Tier Sub Contractor	10%	\$22,000.00

- (d) Payments made to the Contractor shall be complete compensation for Overhead, profit, and all costs that were incurred by the Contractor or by other agents furnished by the Contractor, including Subcontractors, for adjustments to or deletions from the Work pursuant to a Change Order. Owner may establish a maximum cost for additional Work under this Section D.1.3, which shall not be exceeded for reimbursement without additional written

authorization from Owner in the form of a Change Order. Contractor shall not be required to complete such additional Work without additional authorization.

- D.1.4 Any necessary adjustment of Contract Time that may be required as a result of adjustments to or deletions from the Work must be agreed upon by the parties before the start of the revised Work unless Owner authorizes Contractor to start the revised Work before agreement on Contract Time adjustment.

Contractor shall submit any request for additional compensation (and additional Contract Time if Contractor was authorized to start Work before an adjustment of Contract Time was approved) as soon as possible but no later than thirty (30) Days after receipt of Owner's request for additional Work. If Contractor's request for additional compensation or adjustment of Contract Time is not made within the thirty (30) Day time limit, Contractor's requests pertaining to that additional Work shall be barred. The thirty (30) Day time limit for making requests shall not be extended for any reason, including without limitation Contractor's claimed inability to determine the amount of additional compensation or adjustment of Contract Time, unless an extension is granted in writing by Owner. If the Owner denies Contractor's request for additional compensation or adjustment of Contract Time, Contractor may proceed to file a Claim under Section D.3, Claims Review Process. No other reimbursement, compensation, or payment will be made, except as provided in Section D.1.5 for impact claims.

- D.1.5 If any adjustment to Work under Section D.1.3 causes an increase or decrease in the Contractor's cost of, or the Contract Time required for the performance of any other part of the Work under the Contract, Contractor shall submit a written request to the Owner, setting forth the nature and specific extent of the request, including all time and cost impacts against the Contract as soon as possible, but no later than thirty (30) Days after receipt of Owner's request for adjustments to or deletions from the Work by Contractor.

The thirty (30) Day time limit applies to claims of Subcontractors, suppliers, or manufacturers who may be affected by Owner's request for adjustments to or deletions from the Work and who request additional compensation or an extension of Contract Time to perform; Contractor has responsibility for contacting its Subcontractors, suppliers, or manufacturers within the thirty (30) Day time limit, and including their requests with Contractor's requests. If the request involves Work to be completed by Subcontractors, or materials to be furnished by suppliers or manufacturers, such requests shall be submitted to the Contractor in writing with full analysis and justification for the adjustments to compensation and Contract Time requested. The Contractor shall analyze and evaluate the merits of the requests submitted by Subcontractors, suppliers, and manufacturers to Contractor prior to including those requests and Contractor's analysis and evaluation of those requests with Contractor's requests for adjustments to compensation or Contract Time that Contractor submits to the Owner. Failure of Subcontractors, suppliers, manufacturers or others to submit their requests to Contractor for inclusion with Contractor's requests submitted to Owner within the time period and by the means described in this section shall constitute a waiver of these Subcontractor claims. The Owner will not consider direct requests or claims from Subcontractors, suppliers, manufacturers or others not a party to the Contract. The consideration of such requests and claims under this section does not give any Person, not a party to the Contract the right to bring a claim against Owner, whether in this claims process, in litigation, or in any dispute resolution process.

If the Owner denies the Contractor's request for adjustment to compensation or Contract Time, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

- D.1.6 No request or Claim by the Contractor for additional costs or an adjustment of Contract Time shall be allowed if made after receipt of final payment application under the Contract. Final payment application must be made by Contractor within the time required under Section E.6.4.

- D.1.7 It is understood that changes in the Work are inherent in construction of this type. The number of changes, the scope of those changes, and the effect they have on the progress of the original Work cannot be defined at this time. The Contractor agrees that it will work in good faith with Owner to undertake changes, when agreed upon by execution of a Change Order. Each change will be evaluated for extension of Contract Time and increase or decrease in compensation based on its own merit.

D.2 DELAYS

- D.2.1 Contractor shall not be entitled to additional compensation or additional Contract Time for Avoidable Delays.

- D.2.2 In the event of Unavoidable Delays, Contractor may be entitled to the following:

- (a) Contractor may be entitled to additional compensation or additional Contract Time, or both, for Unavoidable Delays described in Section D.2.1.2 (a) and (b).
- (b) Contractor may be entitled to additional Contract Time for Unavoidable Delays described in Section D.2.1.2(c) and (d).

In the event of any requests for additional compensation or additional Contract Time, or both, as applicable, arising under this Section D.2.2 for Unavoidable Delays, other than requests for additional compensation or additional Contract Time for differing Project Site conditions for which a review process is established under Section A.4.5, Contractor shall submit a written notification of the delay to the Owner within two (2) Days of the occurrence of the cause of the delay. This written notification shall state the cause of the potential delay, the Project components impacted by the delay, and the anticipated additional Contract Time extension or the additional compensation, or both, as applicable, resulting from the delay. Within seven (7) Days after the cause of the delay has been mitigated, or in no case more than thirty (30) Days after the initial written notification, the Contractor shall submit to the Owner, a complete and detailed request for additional compensation or additional Contract Time, or both, as applicable, resulting from the delay. If the Owner denies Contractor's request for additional compensation or adjustment of Contract Time, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

If Contractor does not timely submit the notices required under this Section D.2, Contractor's Claim shall be barred.

D.3 CLAIMS REVIEW PROCESS

- D.3.1 All Contractor Claims shall be referred to the Owner for review. Contractor's Claims, including Claims for adjustments to compensation or Contract Time, shall be submitted in writing by Contractor to the Owner within five (5) Days after a denial of Contractor's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, provided that such initial request has been submitted in accordance with the requirements and within the time limits established in these County General Conditions. Within thirty (30) Days after the initial Claim, Owner shall receive from Contractor a complete and detailed description of the Claim (the "Detailed Notice") that includes all information required by Section D.3.2. Unless the Claim is made in accordance with these time requirements, it shall be barred.

D.3.2 The Detailed Notice of the Claim shall be submitted in writing by Contractor and shall include all information, records and documentation necessary for the Owner to properly and completely evaluate the claim, including, but not limited to a detailed, factual statement of the basis of the Claim, pertinent dates, Contract provisions which support or allow the Claim, reference to or copies of any documents which support the Claim, the dollar value of the Claim, and the Contract Time adjustment requested for the Claim. If the Claim involves Work to be completed by Subcontractors, the Contractor will analyze and evaluate the merits of the Subcontractor claim prior to forwarding it and that analysis and evaluation to the Owner. The Owner will not consider direct claims from Subcontractors, suppliers, manufacturers, or others not a party to the Contract. Contractor agrees that it will make no agreement, covenant, or assignment, nor will it commit any other act that will permit or assist any Subcontractor, supplier, manufacturer, or other to directly or indirectly make a claim against Owner.

D.3.3 The Owner, through the Architect/Engineer (or other employee or agent assigned by the Owner) will review all Claims and take one or more of the following preliminary actions within ten (10) Days of receipt of the Detailed Notice of a Claim: (1) request additional supporting information from the Contractor; (2) inform the Contractor and Owner in writing of the time required for adequate review and response; (3) reject the Claim in whole or in part and identify the reasons for rejection; (4) recommend approval of all or part of the Claim; (5) arrange a meeting with the Contractor for formal review of the Claim; or (6) propose an alternate resolution.

D.3.4 Once the Engineer or Project Manager determines the Owner is in receipt of a properly submitted claim, the Engineer or Project Manager may arrange a meeting, as agreed by the parties, with the Contractor in order to present the claim for formal review and discussion. A person authorized by the Contractor to execute Change Orders on behalf of the Contractor must be present and attend all claim meetings.

D.3.5 The Owner's decision, through the Architect/Engineer (or other employee or agent assigned by the Owner), shall be final and binding on the Contractor unless appealed by written notice to the Owner within fifteen (15) Days of receipt of the decision. The Contractor must present written documentation supporting the Claim within fifteen (15) Days of the notice of appeal. After receiving the appeal documentation, the Owner, through the appropriate department director, shall review the materials and render a decision within thirty (30) Days after receiving the appeal documents.

D.3.6 If, at any step in the claim decision or review process, the Contractor fails to promptly submit requested information or documentation that the Owner deems necessary to analyze the claim, the Contractor is deemed to have waived its right to further review, and the Claim will not be considered properly filed and preserved.

D.3.7 Both parties agree to exercise their best efforts in good faith to resolve all disputes within sixty (60) Days of the issuance of the appeal in Section D. 3.4 above. If the parties are unable to resolve their issues through mediation or otherwise, either party may seek redress through all available remedies in equity or in law.

D.3.8 Unless otherwise directed by Owner, Contractor shall proceed with the Work while any Claim, or mediation or litigation arising from a Claim, is pending. Regardless of the review period or the final decision of the Owner, the Contractor shall continue to diligently pursue the Work as identified in the Contract Documents. In no case is the Contractor justified or allowed to cease or delay Work, in whole or in part, without a written stop work order from the Owner.

SECTION E PAYMENTS

E.1 SCHEDULE OF VALUES

The Contractor shall submit, by or before the pre-construction conference (as described in Section H.1.3), a schedule of values ("Schedule of Values") for the Contract Work. This schedule shall provide a breakdown of values for the Contract Work and will be the basis for progress payments. The breakdown shall demonstrate reasonable, identifiable, and measurable components of the Work. Unless objected to by the Owner, this schedule shall be used as the basis for reviewing Contractor's applications for payment. If objected to by Owner, Contractor shall revise the schedule of values and resubmit the same for approval of Owner.

E.2 APPLICATIONS FOR PAYMENT

E.2.1 Owner shall make progress payments on the Contract monthly as Work progresses, in accordance with the requirements of this Section E.2 and ORS 279C.570. Applications for payment shall be based upon estimates of Work completed and the Schedule of Values. As a condition precedent to Owner's obligation to pay, all applications for payment shall be approved by the Owner. A progress payment shall not be considered acceptance or approval of any Work or waiver of any defects therein. Owner shall pay to Contractor interest in accordance with ORS 279C.570 for overdue invoices, not including retainage, due the Contractor. Overdue invoices will be those that have not been paid within the earlier of:

- (a) Thirty (30) days after receipt of the invoice; or
- (b) Fifteen (15) days after the payment is approved by the County.

Notwithstanding the foregoing, in instances when an application for payment is filled out incorrectly, or when there is any defect or impropriety in any submitted application or when there is a good faith dispute, Owner shall so notify the Contractor within fifteen (15) Days stating the reason or reasons the application for payment is defective or improper or the reasons for the dispute. A defective or improper application for payment, if corrected by the Contractor within seven (7) Days of being notified by the Owner, shall not cause a payment to be made later than specified in this section unless interest is also paid. Payment of interest will be postponed when payment on the principal is delayed because of disagreement between the Owner and the Contractor.

Owner reserves the right, instead of requiring the Contractor to correct or resubmit a defective or improper application for payment, to reject the defective or improper portion of the application for payment and pay the remainder of the application for such amounts which are correct and proper.

Owner, upon written notice to the Contractor, may elect to make payments to the Contractor only by means of Electronic Funds Transfers ("EFT") through Automated Clearing House ("ACH") payments. If Owner makes this election, the Contractor shall arrange for receipt of the EFT/ACH payments.

E.2.2 Contractor shall submit to the Owner an application for each payment and, if required, receipts or other vouchers showing payments for materials and labor including payments to Subcontractors. Contractor shall include in its application for payment a schedule of the percentages of the various parts of the Work completed, based on the Schedule of Values which shall aggregate to the payment application total, and shall include, on the face of each copy thereof, a certificate in substantially the following form:

"I, the undersigned, hereby certify that the above bill is true and correct, and the payment therefore, has not been received.

Signed: _____
Dated: _____"

E.2.3 Generally, applications for payment will be accepted only for materials that have been installed. Under special conditions, applications for payment for stored materials will be accepted at Owner's sole discretion. Such a payment, if made, will be subject to the following conditions:

- (a) The request for stored material shall be submitted at least thirty (30) Days in advance of the application for payment on which it appears. Applications for payment shall be entertained for major equipment, components or expenditures only.
- (b) The Contractor shall submit applications for payment showing the quantity and cost of the material stored.
- (c) The material shall be stored in a bonded warehouse and Owner shall be granted the right to access the material for the purpose of removal or inspection at any time during the Contract Period.
- (d) The Contractor shall name the Owner as co-insured on the insurance policy covering the full value of the property while in the care and custody of the Contractor until it is installed. A certificate noting this coverage shall be issued to the Owner.
- (e) Payments shall be made for materials and equipment only. The submitted amount in the application for payment shall be reduced by the cost of transportation from the storage site to the Project Site and for the cost of an inspector to verify delivery and condition of the goods at the storage site. The cost of storage and inspection shall be borne solely by the Contractor.
- (f) Within sixty (60) Days of the application for payment, the Contractor shall submit evidence of payment covering the material and/or equipment stored and of payment for the storage site.
- (g) Payment for stored materials and/or equipment shall in no way indicate acceptance of the materials and/or equipment or waive any rights under the Contract for the rejection of the Work or materials and/or equipment not in conformance with the Contract Documents.
- (h) All required documentation shall be submitted with the respective application for payment.

E.2.4 The Owner reserves the right to withhold all or part of a payment, or may nullify in whole or part any payment previously made, to such extent as may be necessary in the Owner's opinion to protect the Owner from loss because of:

- (a) Work that is defective and not remedied, or that has been demonstrated or identified as failing to conform with Applicable Laws or the Contract Documents;
- (b) third party claims filed or evidence reasonably indicating that such claims will likely be filed unless security acceptable to the Owner is provided by the Contractor;
- (c) failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment (in which case Owner may issue checks made payable jointly to Contractor and such unpaid persons under this provision, or directly to Subcontractors and suppliers at any level under Section C.3.2);

- (d) reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;
- (e) damage to the Work, Owner or Owner's agent;
- (f) reasonable evidence that the Work will not be completed within the Contract Time required by the Contract, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- (g) failure to carry out the Work in accordance with the Contract Documents; or
- (h) assessment of liquidated damages, when withholding is made for offset purposes.

E.2.5 Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- (a) Take that portion of the Contract Price properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Price allocated to that portion of the Work in the Schedule of Values, less retainage as provided in Section E.5. Pending final determination of cost to the Owner of changes in the Work, no amounts for changes in the Work can be included in applications for payment until the Contract Price has been adjusted by a Change Order;
- (b) Add that portion of the Contract Price properly allocable to materials and equipment delivered and suitably stored at the Project Site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner pursuant to Section E.2.3, suitably stored off the Project Site at a location agreed upon in writing), less retainage as provided in Section E.5;
- (c) Subtract the aggregate of previous payments made by the Owner; and
- (d) Subtract any amounts for which the Owner has withheld or nullified payment as provided in the Contract Documents.

E.2.6 Contractor's applications for payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier.

E.2.7 The Contractor warrants to Owner that title to all Work covered by an application for payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an application for payment all Work for which payments are received from the Owner shall be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided financing, labor, materials and equipment relating to the Work.

E.2.8 If Contractor disputes any determination by Owner with regard to any application for payment, Contractor nevertheless shall continue to expeditiously perform the Work. No payment made hereunder shall be or be construed to be final acceptance or approval of that portion of the Work to which such partial payment relates or shall relieve Contractor of any of its obligations hereunder.

E.3 PAYROLL CERTIFICATION REQUIREMENT

Owner's receipt of payroll certification pursuant to Section C.2 of the Contract shall be a condition precedent to Owner's obligation to pay any progress payments or final payment otherwise due.

E.4 DUAL PAYMENT SOURCES

Contractor shall not be compensated for Work performed under the Contract from any state agency other than the agency that is a party to the Contract.

E.5 RETAINAGE

E.5.1 Retainage shall be withheld and released in accordance with the requirements set forth in Local Contract Review Board Rules or the applicable County standard.

E.5.1.1 Owner may reserve as retainage from any progress payment an amount not to exceed five percent of the payment. As Work progresses, Owner may reduce the amount of retainage on or may eliminate retainage on any remaining monthly Contract payments after fifty (50) percent of the Work under the Contract is completed if, in the Owner's discretion, such Work is progressing satisfactorily. Elimination or reduction of retainage shall be allowed only upon written application by the Contractor, which application shall include written approval of Contractor's surety; except that when the Work is ninety-seven and a half percent (97.5%) completed in Owner's estimation, the Owner may, at its discretion and without application by the Contractor, reduce the retained amount to hundred (100) percent of the value of the Work remaining to be done. Upon receipt of written application by the Contractor, Owner shall respond in writing within a reasonable time.

E.5.1.2 If retainage is withheld, unless the Contractor requests and the Owner accepts a form of retainage described in options (a) or (b) below, the Owner (except as otherwise provided below for a contract of \$500,000 or less), will deposit the retainage in an interest-bearing escrow account as required by ORS 279C.570(2). The Contractor shall execute such documentation and instructions respecting the interest-bearing escrow account as the Owner may require to protect its interests, including but not limited to a provision that no funds may be paid from the account to anyone without the Owner's advance written authorization. For a Contract over \$500,000, if the Contractor requests that the Owner deposit the retainage in an interest-bearing account under ORS 279C.560(5), the Owner will use an interest-bearing escrow account as stated above. For a Contract of \$500,000 or less, if the Contractor requests that the Owner deposit the retainage in an interest-bearing account under ORS 279C.560(5), the Owner will use an interest-bearing account (in a bank, savings bank, trust company or savings association) as provided under ORS 279C.450(5).

In accordance with the provisions of ORS 279C.560, Local Contract Review Board Rules, or the applicable County standard, unless the Owner finds in writing that accepting bonds, securities or other instruments described in option (a) below or a security bond described in option (b) below poses an extraordinary risk that is not typically associated with the bond, security or instrument, the Owner will approve the Contractor's written request:

- a. to be paid amounts which would otherwise have been retained from progress payments where Contractor has deposited acceptable bonds, securities or other instruments of equal value with Owner or in a custodial account or other mutually-agreed account satisfactory to Owner, with an approved bank or trust company to be held in lieu of the cash retainage for the benefit of Owner. Interest or earnings on the bonds, securities or other instruments shall accrue to the Contractor. The Contractor shall execute and provide such documentation and instructions respecting the bonds, securities and other instruments as the Owner may require to protect its interests. To be permissible, the bonds, securities and other instruments must be of a character approved by Owner; or

- b. that the Contractor be allowed, with the approval of the Owner, Owner allow Contractor to deposit a surety bond for the benefit of Owner, in a form acceptable to Owner, in lieu of all or a portion of funds retained, or to be retained. Such bond and any proceeds therefrom shall be made subject to all claims and liens in the manner and priority as set forth for retainage under ORS 279C.550 to ORS 279C.625.

When the Owner has accepted the Contractor's election of option (a) or (b), Owner may recover from Contractor any additional costs incurred through such election by reducing Contractor's final payment. Where the Owner has agreed to Contractor's request for option (b), Contractor shall accept like bonds from Subcontractors and suppliers on the Project from which Contractor has required retainages.

E. 5.1.3 The retainage held by Owner shall be included in and paid to the Contractor as part of the final payment of the Contract Price. The Owner shall pay to Contractor interest at the rate of two thirds of one percent per month on the final payment due Contractor, interest to commence forty-five (45) Days after the date which Owner receives Contractor's final approved application for payment and Work under the Contract has been completed and accepted and to run until the date when final payment is tendered to Contractor. The Contractor shall notify Owner in writing when the Contractor considers the Work complete and deliver to Owner its final application for payment and Owner shall, within fifteen (15) Days after receiving the written notice and the application for payment, either accept the Work or notify the Contractor of Work yet to be performed on the Contract. If Owner does not within the time allowed notify the Contractor of Work yet to be performed to fulfill contractual obligations, the interest provided by this subsection shall commence to run forty-five (45) Days after the end of the fifteen (15) Day period.

E.5.1.4 Owner will reduce the amount of the retainage if the Contractor notifies the Owner that the Contractor has deposited in an escrow account with a bank or trust company, in a manner authorized by the Owner, bonds and securities of equal value of a kind approved by the Owner and such bonds and securities have in fact been deposited.

E.5.1.5 Contractor agrees that if Contractor elects to reserve a retainage from any progress payment due to any Subcontractor or supplier, such retainage shall not exceed five percent of the payment, and such retainage withheld from Subcontractors and suppliers shall be subject to the same terms and conditions stated in Subsection E.5 as apply to Owner's retainage from any progress payment due to Contractor.

E.5.1.6 The Contractor shall comply with all applicable legal requirements for withholding and releasing retainage and for prompt payments, including but not limited to those in ORS Chapters 279C and 701, and 49 CFR 26.29.

E.6 FINAL PAYMENT

E.6.1 Upon completion of all the Work under the Contract, the Contractor shall notify the Owner, in writing, that Contractor has completed Contractor's obligations under the Contract and shall prepare its application requesting final payment. The amount of final payment will be the difference between the total amount due the Contractor pursuant to the Contract Documents and the sum of all payments previously made. Upon receipt of such notice and application for payment, the Owner will inspect the Work, and, if acceptable, submit to Contractor a recommendation as to acceptance of the completed Work and the final estimate of the amount due the Contractor. If the Work is not acceptable, Owner will notify Contractor within fifteen (15) Days of Contractor's request for final payment. Upon approval of this final application for payment by the Owner and compliance by the Contractor with

provisions in Section K, and Contractor's satisfaction of other provisions of the Contract Documents as may be applicable, the Owner shall pay to the Contractor all monies due under the provisions of these Contract Documents.

- E.6.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Owner (1) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least thirty (30) Days' prior written notice has been given to the Owner, (2) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (3) consent of surety, if any, to final payment and (4), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien.
- E.6.3 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final application for payment.
- E.6.4 Contractor agrees to submit its final payment application within ninety (90) Days after Substantial Completion, unless written extension is granted by Owner. Contractor shall not delay final payment application for any reason, including without limitation nonpayment of Subcontractors, suppliers, manufacturers or others not a party to the Contract, or lack of resolution of a dispute with Owner or any other person of matters arising out of or relating to the Contract. If Contractor fails to submit its final payment application within ninety (90) Days after Substantial Completion, and Contractor has not obtained written extension by Owner, all requests or Claims for additional costs or an extension of Contract Time shall be barred.

SECTION F

PROJECT SITE CONDITIONS

F.1 USE OF PREMISES

Contractor shall confine equipment, storage of materials and operation of Work to the limits indicated by Contract Documents, Applicable Laws, permits or directions of the Owner. Contractor shall follow the Owner's instructions regarding use of premises, if any.

F.2 PROTECTION OF WORKERS, PROPERTY AND THE PUBLIC

- F.2.1 Contractor shall maintain continuous and adequate protection of all of the Work from damage and shall protect the Owner, workers and property from injury or loss arising in connection with the Contract. Contractor shall remedy acceptably to the Owner any damage, injury, or loss, except such as may be directly due to errors in the Contract Documents or caused by authorized representatives or personnel of the Owner. Contractor shall adequately protect adjacent property as provided by law and the Contract Documents.
- F.2.2 Contractor shall take all necessary precautions for the safety of all personnel on the Project Site or otherwise engaged in the undertaking of the Work and shall comply with the Contract Documents, best practices and all applicable provisions of federal, state and municipal safety laws and building codes to prevent

accidents or injury to persons on, about or adjacent to the premises where the Work is being performed. Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for protection of workers and the public against any hazards created by construction. Contractor shall designate a responsible employee or associate on the Project Site, whose duty shall be the prevention of accidents. The name and position of the person designated shall be reported to the Owner. The Owner has no responsibility for Project Site safety. Project Site safety shall be the responsibility of the Contractor.

- F.2.3 Contractor shall not enter upon private property without first obtaining permission from the property owner or its duly authorized representative. Contractor shall be responsible for the preservation of all public and private property along and adjacent to the Work contemplated under the Contract and shall use every precaution necessary to prevent damage thereto. In the event the Contractor damages any property, the Contractor shall at once notify the property owner and make, or arrange to make, full restitution. Contractor shall, immediately and in writing, report to the Owner, all pertinent facts relating to such property damage and the ultimate disposition of the claim for damage.
- F.2.4 Contractor shall be responsible for protection of adjacent work areas including impacts brought about by activities, equipment, labor, utilities, vehicles and materials on the Project Site.
- F.2.5 Contractor shall at all times direct its activities in such a manner as to minimize adverse effects on the environment. Handling of all materials shall be conducted so no release will occur that may pollute or become hazardous.
- F.2.6 In an emergency affecting the safety of life or limb or of the Work or of adjoining property, the Contractor, without special instruction or authorization from the Owner, shall act reasonably to prevent threatened loss or injury, and shall so act, without appeal, if instructed by the Owner. Any compensation claimed by the Contractor on account of emergency work shall be determined in accordance with section D.
- F.2.7 Contractor shall comply with all Owner safety rules and regulations, if applicable. Prior to commencement of any Work, Contractor and Subcontractors shall be required to complete an Owner Contractor Safety Orientation and submit all Owner required safety plans.
- F.2.8 Contractor shall demonstrate that an employee drug testing program is in place.

F.3 CUTTING AND PATCHING

- F.3.1 If applicable, Contractor shall be responsible for coordinating all cutting, fitting, or patching of the Work to make its several parts come together properly and fit to receive or be received by work of other contractors or Subcontractors shown upon, or reasonably implied by, the Contract Documents.
- F.3.2 If applicable, Contractor shall be responsible for restoring all cut, fitted, or patched surfaces to an original condition; provided, however, that if a different condition is specified in the Contract Documents, then Contractor shall be responsible for restoring such surfaces to the condition specified in the Contract Documents.

F.4 CLEANING UP

From time to time as may be prudent or ordered by the Owner and, in any event, immediately after completion of the Work, the Contractor shall, at its own expense, clean up and remove all refuse and unused materials of any kind resulting from the Work. If Contractor fails to do so within twenty-four (24) hours after notification by the Owner the work may be

done by others and the cost charged to the Contractor and deducted from payment due the Contractor.

F.5 ENVIRONMENTAL CONTAMINATION

F.5.1. Contractor shall be held responsible for and shall indemnify, defend (with counsel of Owner's choice), and hold harmless Owner from and against any costs, expenses, damages, claims, and causes of action, or any of them, resulting from all spills, releases, discharges, leaks and disposal of environmental pollution, including storage, transportation, and handling during the performance of the Work or Contractor's obligations under the Contract which occur as a result of, or are contributed by, the negligence or actions of Contractor or its personnel, agents, or Subcontractors or any failure to perform in accordance with the Contract Documents (except to the extent otherwise void under ORS 30.140). Nothing in this section F.5.1 shall limit Contractor's responsibility for obtaining insurance coverages required under Section G.3 of the Contract, and Contractor shall take no action that would void or impair such coverages.

F.5.1.1 Contractor agrees to promptly dispose of such spills, releases, discharge or leaks to the satisfaction of Owner and regulatory agencies having jurisdiction in a manner that complies with Applicable Laws. Cleanup shall be at no cost to the Owner and shall be performed by properly qualified and, if applicable, licensed personnel.

F.5.1.2 Unless otherwise approved in the Solicitation Document, Contractor shall obtain the Owner's written consent prior to bringing onto the Project Site any (i) environmental pollutants or (ii) hazardous substances or materials, as the same or reasonably similar terms are used in any Applicable Laws. In any event, Contractor shall provide prior written notice to Owner when hazardous materials are brought on to the Project Site. The Contractor, at all times, shall:

- (a) properly handle, use and dispose of all environmental pollutants and hazardous substances or materials on the Project Site, in accordance with all Applicable Laws;
- (b) be responsible for any and all spills, releases, discharges, or leaks of (or from) environmental pollutants or hazardous substances or materials which Contractor has brought onto the Project Site; and
- (c) promptly clean up and remediate, without cost to the Owner, such spills, releases, discharges, or leaks to the Owner's satisfaction and in compliance with all Applicable Laws.

F.5.2 Contractor shall report all reportable quantity releases, as such releases are defined in Applicable Laws. Upon discovery, regardless of quantity, Contractor must verbally report all releases to the Owner in a prompt manner. A written follow-up report shall be submitted to Owner within 48 hours of the telephonic report. Such written report shall contain, as a minimum:

- (a) Description of items released (identity, quantity, manifest numbers, and any and all other documentation required by law).
- (b) Whether amount of items released is EPA/DEQ reportable, and, if so, when reported.
- (c) Exact time and location of release, including a description of the area involved.
- (d) Containment procedures initiated.

(e) Summary of communications about the release between Contractor and State, local or federal officials other than Owner. Any communication to the press will be done by Owner and Contractor will defer to Owner.

(f) Description of cleanup procedures employed or to be employed at the Project Site, including disposal location of spill residue.

(g) Personal injuries, if any, resulting from, or aggravated by, the release.

F.6 ENVIRONMENTAL CLEAN-UP

F.6.1 Unless disposition of environmental pollution is specifically a part of the Contract, or was caused by the Contractor (reference F.5 Environmental Contamination), Contractor shall immediately notify Owner of any hazardous substance(s) which Contractor discovers or encounters during performance of the Work required by the Contract. "Hazardous substance(s)" means any hazardous, toxic and radioactive materials and those substances defined as "hazardous substances," "hazardous materials," "hazardous wastes," "toxic substances," or other similar designations in any federal, state, or local law, regulation, or ordinance, including without limitation asbestos, polychlorinated biphenyl ("PCB"), or petroleum, and any substances, materials or wastes regulated by 40 CFR, Part 261 and defined as hazardous in 40 CFR S 261.3. In addition to notifying Owner of any hazardous substance(s) discovered or encountered, Contractor shall immediately cease working in any particular area of the Project where a hazardous substance(s) has been discovered or encountered if continued work in such area would present a risk or danger to the health or wellbeing of Contractor's or any Subcontractor's work force, property or the environment.

F.6.2 Upon being notified by Contractor of the presence of hazardous substance(s) on the Project Site, not brought on to the Project Site by Contractor, Owner shall arrange for the proper disposition of such hazardous substance(s).

F.7 DEMOLITION

F.7.1 For demolition tasks, if any, the Contractor shall salvage or recycle construction and demolition debris, if feasible and cost-effective.

SECTION G INDEMNITY, BONDING, AND INSURANCE

G.1 RESPONSIBILITY FOR DAMAGES / INDEMNITY

G.1.1 Contractor shall be responsible for all damage to property, injury to persons, and loss, expense, inconvenience, and delay that may be caused by, or result from, the carrying out of the Work to be done under the Contract, or from any act, omission or neglect of the Contractor, its Subcontractors, employees, guests, visitors, invitees and agents.

G.1.2 To the fullest extent permitted by law, Contractor shall indemnify, defend (with counsel approved by Owner) and hold harmless the Owner and its elected officials, officers, directors, agents, and employees (collectively "Indemnitees") from and against all liabilities, damages, losses, claims, expenses, demands and actions of any nature whatsoever which arise out of, result from or are related to: (a) any damage, injury, loss, expense, inconvenience or delay described in this Section G.1; (b) any accident or occurrence which happens or is alleged to have happened in or about the Project Site or any place where the Work is being performed, or in the vicinity of either, at any time prior to the time the Work is fully completed in all respects; (c) any failure of the Contractor to

observe or perform any duty or obligation under the Contract Documents which is to be observed or performed by the Contractor, or any breach of any agreement, representation or warranty of the Contractor contained in the Contract Documents or in any subcontract; (d) the negligent acts or omissions of the Contractor, a Subcontractor or anyone directly or indirectly employed by them or any one of them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder (except to the extent otherwise void under ORS 30.140); and (e) any lien filed upon the Project or bond claim in connection with the Work. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section G.1.2.

- G.1.3 In claims against any person or entity indemnified under Section G.1.2 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section G.1.2 shall not be limited on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

G.2 PERFORMANCE AND PAYMENT SECURITY; PUBLIC WORKS BOND

- G.2.1 When the Contract Price is \$50,000 or more, the Contractor shall furnish and maintain in effect at all times during the Contract Period a performance bond in a sum equal to the Contract Price and a separate payment bond also in a sum equal to the Contract Price. Contractor shall furnish such bonds even if the Contract Price is less than the above thresholds if otherwise required by the Contract Documents. If the Contract Price is increased, Contractor shall increase its payment and performance bonds to reflect the amended Contract Price.
- G.2.2 Bond forms furnished by the Owner and notarized by Contractor's surety company authorized to do business in Oregon are the only acceptable forms of performance and payment security, unless otherwise specified in the Contract Documents.
- G.2.3 Before execution of the Contract, the Contractor shall file with the Construction Contractors Board, and maintain in full force and effect, the separate public works bond required by Oregon Revised Statutes, Chapter 279C.830 and 279C.836, unless otherwise exempt under those provisions. The Contractor shall also include in every subcontract a provision requiring the Subcontractor to have a public works bond filed with the Construction Contractors Board before starting Work, unless otherwise exempt, and shall verify that the Subcontractor has filed a public works bond before permitting any Subcontractor to start Work.

G.3 INSURANCE

- G.3.1 Primary Coverage: Insurance carried by Contractor under the Contract shall be the primary coverage. The coverages indicated are minimums unless otherwise specified in the Contract Documents.
- G.3.2 Workers' Compensation: All employers, including Contractor, that employ subject workers who work under the Contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. This shall include Employer's Liability Insurance with coverage limits of not less than the minimum amount required by statute for each accident. Contractors who perform the Work without the assistance or labor of any employee need not obtain such coverage if the Contractor certifies so in writing. Contractor shall ensure that each of its

Subcontractors complies with these requirements. The Contractor shall require proof of such Workers' Compensation coverage by receiving and keeping on file a certificate of insurance from each Subcontractor or anyone else directly employed by either the Contractor or its Subcontractors.

G.3.3 Builder's Risk Insurance:

- G.3.3.1 Builder's Risk: During the term of the Contract, for new construction the Contractor shall obtain and keep in effect Builder's Risk insurance on an all risk forms, including earthquake and flood, for an amount equal to the full amount of the Contract, plus any changes in values due to modifications, Change Orders and loss of materials added. Such Builder's Risk shall include, in addition to earthquake and flood, theft, vandalism, mischief, collapse, transit, debris removal, and architect's fees "soft costs" associated with delay of Project due to insured peril. Any deductible shall not exceed \$50,000 for each loss, except the earthquake and flood deductible which shall not exceed 2 percent of each loss or \$50,000, whichever is greater. The deductible shall be paid by Contractor. The policy will include as loss payees Owner, the Contractor and its Subcontractors as their interests may appear.

- G.3.3.2 Builder's Risk Installation Floater: For Work other than new construction, Contractor shall obtain and keep in effect during the term of the Contract, a Builder's Risk Installation Floater for coverage of the Contractor's labor, materials and equipment to be used for completion of the Work performed under the Contract. The minimum amount of coverage to be carried shall be equal to the full amount of the Contract. The policy will include as loss payees Owner, the Contractor and its Subcontractors as their interests may appear. Owner may waive this requirement at its sole and absolute discretion.

- G.3.3.3 Such insurance shall be maintained until Owner has occupied the facility.

- G.3.3.4 A loss insured under the Builder's Risk insurance shall be adjusted by the Owner and made payable to the Owner as loss payee. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner. The Owner shall have power to adjust and settle a loss with insurers.

G.3.4 General Liability Insurance:

- G.3.4.1 Commercial General Liability: Upon execution of a Contract, Contractor shall obtain, and keep in effect at Contractor's expense for the term of the Contract, Commercial General Liability Insurance ("CGL") covering bodily injury and property damage in the amount of not less than \$1,000,000 per claim and \$2,000,000 per occurrence in a form satisfactory to Owner. This insurance shall include personal injury liability, products and completed operations, and contractual liability coverage for the indemnities provided under the Contract (to the extent contractual liability coverage for the indemnity is available in the marketplace), and shall be issued on an occurrence basis written on ISO Form GC 00 01 (12 04 or later) or an equivalent form approved in advance by Owner. The CGL shall provide separation of insured language. The policy or policies obtained by Contractor for purposes of fulfilling the requirements of this section shall be primary insurance with respect to the Owner. Any insurance or self-insurance maintained by the County shall be excess and shall not contribute to it.

- G.3.4.2 Automobile Liability: Contractor shall obtain, at Contractor's expense, and keep in effect during the term of the Contract, Automobile Liability Insurance covering owned, and/or hired

vehicles, as applicable. The coverage may be written in combination with the Commercial General Liability Insurance. Contractor shall provide proof of insurance of not less than \$1,000,000 per claim and \$2,000,000 per occurrence. Contractor and its Subcontractors shall be responsible for ensuring that all non-owned vehicles maintain adequate Automobile Liability insurance while on Project Site.

- G.3.4.3 Owner may adjust the insurance amounts required in Section G.3.4.1 and G.3.4.2 based upon institution specific risk assessments through the issuance of Supplemental General Conditions and a Contract.
- G.3.4.4 To the extent that the Contract Documents require the Contractor to provide professional design services, design-build, or certifications related to systems, materials, or equipment, the Contractor shall (1) purchase and maintain professional liability/errors-and-omissions insurance with limits of not less than \$1,000,000 for each claim and \$2,000,000 general annual aggregate and (2) cause those Subcontractors (of any tier) who are providing professional design services including any design-build services to procure and maintain professional liability/errors-and-omissions insurance with limits of not less than \$1,000,000 for each claim and \$2,000,000 general annual aggregate. This policy shall be for the protection of the Owner, its elected officials, officers, agents and employees against liability for damages because of personal injury, bodily injury, death, or damage to property, including loss of use thereof, and damages because of negligent acts, errors and omissions in any way related to the Contract. The Owner, at its option, may require a complete copy of the above policy.
- G.3.4.5 "Tail" Coverage: If any of the required liability insurance is arranged on a "claims made" basis, "tail" coverage will be required at the completion of the Contract for a duration of 36 months or the maximum time period available in the marketplace if less than 36 months. Contractor shall furnish certification of "tail" coverage as described or continuous "claims made" liability coverage for 36 months following Final Completion. Continuous "claims made" coverage will be acceptable in lieu of "tail" coverage, provided its retroactive date is on or before the effective date of the Contract. Owner's receipt of the policy endorsement evidencing such coverage shall be a condition precedent to Owner's obligation to make final payment and to Owner's final acceptance of Work or services and related warranty (if any).
- G.3.4.6 Umbrella Liability (if required by Owner through issuance of Supplemental General Conditions): Contractor shall obtain, at Contractor's expense, and keep in effect during the term of the Contract, Umbrella liability Insurance over and above the general liability, automobile liability and workers' compensation coverage if required by Owner in specified limits at time of requirement.
- G.3.4.7 Pollution Liability may be required by Owner through issuance of Supplemental General Conditions.
- G.3.5 Additional Insured: The general liability insurance coverage, automobile liability, umbrella, and pollution liability if required, shall include the Owner as additional insureds but only with respect to the Contractor's activities to be performed under the Contract. The additional-insured endorsement for CGL insurance must be written on ISO Form CG 20 10 (10 01) and CG 20 37 (10 01), or their equivalent, but shall not use either of the following forms: CG 20 10 (10 93) or CG 20 10 (03 94). Proof of insurance must include a copy of the endorsement showing "Clackamas County, its elected officials, agents, officers, and employees" as scheduled insureds.

If Contractor cannot obtain an insurer to name the Owner as additional insureds, Contractor shall obtain at Contractor's

expense, and keep in effect during the term of the Contract, Owners and Contractors Protective Liability Insurance, naming the Owner as additional insureds with not less than a \$2,000,000 limit per occurrence. This policy must be kept in effect for 36 months following Final Completion. As evidence of coverage, Contractor shall furnish the actual policy to Owner prior to execution of the Contract.

- G.3.6 Notice of Cancellation or Change: If the Contractor receives a non-renewal or cancellation notice from an insurance carrier affording coverage required herein, or receives notice that coverage no longer complies with the insurance requirements herein, Contractor agrees to notify Owner by fax within five (5) business days with a copy of the non-renewal or cancellation notice, or written specifics as to which coverage is no longer in compliance. When notified by Owner, the Contractor agrees to stop Work pursuant to the Contract at Contractor's expense, unless all required insurance remain in effect. Any failure to comply with the reporting provisions of this insurance, except for the potential exhaustion of aggregate limits, shall not affect the coverages provided to the Owner and its institutions, divisions, officers, and employees.

Owner shall have the right, but not the obligation, of prohibiting Contractor from entering the Project Site until a new certificate(s) of insurance is provided to Owner evidencing the replacement coverage. The Contractor agrees that Owner reserves the right to withhold payment to Contractor until evidence of reinstated or replacement coverage is provided to Owner.

- G.3.7 Certificate(s) of Insurance/Insurance Carrier Qualification: As evidence of the insurance coverage required by the Contract, the Contractor shall furnish certificate(s) of insurance to the Owner prior to execution of the Contract. The certificate(s) will specify all of the parties who are additional insureds or loss payees for the Contract. A renewal certificate shall be sent to Owner at least 10 days prior to coverage expiration. Insurance coverage required under the Contract shall be obtained from insurance companies or entities acceptable to the Owner and that are eligible to provide such insurance under Oregon law. Eligible insurers include admitted insurers that have been issued a certificate of authority from the Oregon Department of Consumer and Business Services authorizing them to conduct an insurance business and issue policies of insurance in the state of Oregon, and certain non-admitted surplus lines insurers that satisfy the requirements of applicable Oregon law and which are subject to approval by the Owner. The Contractor shall be financially responsible for all deductibles, self-insured retentions and/or self-insurance included hereunder. Any deductible, self-insured retention and/or self-insurance in excess of \$50,000 shall be subject to approval by the Owner in writing and shall be a condition precedent to the effectiveness of any Contract.

SECTION H

SCHEDULE OF WORK

H.1 CONTRACT PERIOD

- H.1.1 Time is of the essence. The Contractor shall at all times carry on the Work diligently, without delay and punctually fulfill all requirements herein.
- H.1.2 Notice to Proceed. Unless otherwise directed in the Contract Documents, Contractor shall commence Work on the Project Site within fifteen (15) Days of the Notice to Proceed. Notwithstanding the Notice to Proceed, Contractor shall not be authorized to proceed with the Work until all initial Contract requirements, including the Contract, performance bond and payment bond, and certificates of insurance, have been fully executed and submitted in a form acceptable to Owner.

H.1.3 Unless otherwise not required in the Construction Documents, Contractor shall participate in a pre-construction conference with the Owner's representative and designated design team. The purpose of this pre-construction conference is to review the Contractor's proposed Schedule of Values and to review any other Project logistics to be coordinated between the parties.

H.1.4 Unless specifically extended by a Change Order, all Work shall be complete by the date contained in the Contract Documents. The Owner shall have the right to accelerate the completion date of the Work, which may require the use of overtime. Such accelerated Work schedule shall be an acceleration in performance of Work under Section D.1.2(f) and shall be subject to the provisions of Section D.1.

H.1.5 The Owner shall not waive any rights under the Contract by permitting the Contractor to continue or complete in whole or in part the Work after the date described in Section H.1.2 above.

H.2 SCHEDULE

H.2.1 Contractor shall provide, by or before the pre-construction conference, the initial as-planned schedule for review and acceptance by the Owner. The submitted schedule must illustrate Work by Project components, labor trades, and long lead items broken down by building and/or floor where applicable. If Owner shall so elect, Contractor shall provide the schedule in CPM format showing the graphical network of planned activities, including i) a reasonably detailed list of all activities required to complete the Work; ii) the time and duration that each activity will take to completion; and iii) the dependencies between the activities. Schedules lacking adequate detail, or unreasonably detailed, will be rejected. The schedule shall include the following: Notice to Proceed or the date the Work commences, if no Notice to Proceed is issued by Owner, Substantial Completion, and Final Completion. Schedules shall be updated monthly, unless otherwise required by the Contract Documents, and submitted with the monthly application for payment. Acceptance of the Schedule by the Owner does not constitute agreement by the Owner as to the Contractor's sequencing, means, methods, or durations. Any positive difference between the Contractor's scheduled completion and the Contract completion date is float owned by the Owner. Owner reserves the right to negotiate the float if it is deemed to be in Owner's best interest to do so. In no case shall the Contractor make a claim for delays if the Work is completed within the Contract Time but after Contractor's scheduled completion.

H.2.2 All Work shall be completed during normal weekdays (Monday through Friday) between the hours of 7:00 a.m. and 5:00 p.m. unless otherwise specified in the Contract Documents. Unless otherwise specified in the Contract Documents, no Work shall be performed during the following holidays:

- New Year's Day
- Martin Luther King Day
- Memorial Day
- Independence Day
- Labor Day
- Veterans Day
- Thanksgiving Day
- Christmas Day
- President's Day

When a holiday falls on a Sunday, the following Monday shall be recognized as a legal holiday. When a holiday falls on Saturday, the preceding Friday shall be recognized as a legal holiday.

H.3 PARTIAL OCCUPANCY OR USE

The Owner may occupy or use any completed or partially completed portion of the Work at any stage, provided such occupancy or use is consented to by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have reasonably accepted in writing the responsibilities assigned to each of them. Approval by the Contractor to partial occupancy or use shall not be unreasonably withheld. Immediately prior to such partial occupancy or use, the Owner and Contractor shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work. Partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

SECTION I *CORRECTION OF WORK*

I.1 CORRECTION OF WORK BEFORE FINAL PAYMENT

The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects, and that the Work will conform to the requirements of the Contract Documents. Work failing to conform to these requirements shall be deemed defective. Contractor shall promptly remove from the premises and replace all defective materials and equipment as determined by the Owner, whether incorporated in the Work or not. Removal and replacement shall be without loss or expense to the Owner, and Contractor shall bear the cost of repairing all Work destroyed or damaged by such removal or replacement. Contractor shall be allowed a period of no longer than thirty (30) Days after Substantial Completion for completion of defective (Punch List) work. At the end of the thirty-day period, or earlier if requested by the Contractor, Owner shall arrange for inspection of the Work by the Architect/Engineer. Should the work not be complete, and all corrections made, the costs for all subsequent reinspections shall be borne by the Contractor. If Contractor fails to complete the Punch List work within the thirty (30) Day period, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) Days after demand without affecting Contractor's obligations.

I.2 WARRANTY WORK

I.2.1 Neither the final certificate of payment nor any provision of the Contract Documents shall relieve the Contractor from responsibility for Defective Work and, unless a longer period is specified, Contractor shall correct all defects that appear in the Work within a period of one year from the date of issuance of the written notice of Substantial Completion by the Owner except for latent defects which will be remedied by the Contractor at any time they become apparent. The Owner shall give Contractor notice of defects with reasonable promptness. Contractor shall perform such warranty work within a reasonable time after Owner's demand and at Contractor's sole expense. If Contractor fails to complete the warranty work within such period as Owner determines reasonable, or at any time in the event of warranty work consisting of emergency repairs, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) Days after demand, without affecting Contractor's obligations. The Contractor shall perform the warranty Work by correcting defects within twenty-four (24) hours of notification by Owner, unless otherwise specified in the Contract Documents. Should the Contractor fail to respond within the specified response time, the Owner may, at its option, complete the necessary repairs using another contractor or its agents. If Owner completes the repairs using Owner's agent, Contractor shall pay Owner at the rate of one and one-half (1½) times the standard hourly rate of Owner's agent, plus related overhead and any direct non-salary costs. If Owner completes the repairs using another contractor, Contractor shall pay

Owner the amount of Owner's direct costs billed by the other contractor for the work, plus the direct salary costs and related overhead and direct non-salary expenses of Owner's agents who are required to monitor that contractor's work. Work performed by Owner using Owner's own agents or those of another contractor shall not affect the Contractor's contractual duties under these provisions, including warranty provisions.

- I.2.2 Nothing in this Section I.2 provision shall negate guarantees or warranties for periods longer than one year including without limitation, such guarantees or warranties required by other sections of the Contract Documents for specific installations, materials, processes, equipment or fixtures.
- I.2.3 In addition to Contractor's warranty, manufacturer's warranties shall pass to the Owner and shall not take effect until such portion of the Work covered by the applicable warranty has been accepted in writing by the Owner.
- I.2.4 The one-year period for correction of Work shall be extended with respect to portions of Work performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work, and shall be extended by corrective Work performed by the Contractor pursuant to this Section, as to the Work corrected. The Contractor shall remove from the Project Site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.
- I.2.5 Nothing contained in this Section I.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the period for correction of Work as described in this Section I.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.
- I.2.6 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Price will be reduced as appropriate and equitable as determined by Owner. Such adjustment shall be effected whether or not final payment has been made.

SECTION J

SUSPENSION AND/OR TERMINATION OF THE WORK

J.1 OWNER'S RIGHT TO SUSPEND THE WORK

- J.1.1 The Owner has the authority to suspend portions or all of the Work due to the following causes:
 - (a) Failure of the Contractor to correct unsafe conditions;
 - (b) Failure of the Contractor to carry out any provision of the Contract;
 - (c) Failure of the Contractor to carry out orders;
 - (d) Conditions, in the opinion of the Owner, which are unsuitable for performing the Work;
 - (e) Time required to investigate differing Project Site conditions; or
 - (f) Any reason considered to be in the public interest.

- J.1.2 The Owner shall notify Contractor and the Contractor's Surety in writing of the effective date and time of the suspension, and Owner shall notify Contractor and Contractor's surety in writing to resume Work.

J.2 CONTRACTOR'S RESPONSIBILITIES

- J.2.1 During the period of the suspension, Contractor is responsible to continue maintenance at the Project just as if the Work were in progress. This includes, but is not limited to, protection of completed Work, maintenance of access, protection of stored materials, temporary facilities, and clean-up.
- J.2.2 When the Work is recommenced after the suspension, the Contractor shall replace or renew any Work damaged during the suspension, remove any materials or facilities used as part of temporary maintenance, and complete the Work in every respect as though its prosecution had been continuous and without suspension.

J.3 COMPENSATION FOR SUSPENSION

Depending on the reason for suspension of the Work, the Contractor or the Owner may be due compensation by the other party. If the suspension was required due to acts or omissions of Contractor, the Owner may assess the Contractor actual costs of the suspension in terms of administration, remedial work by the Owner's agents or another contractor to correct the problem associated with the suspension, rent of temporary facilities, and other actual costs related to the suspension, and any liquidated damages arising from the delay. If the suspension was caused by acts or omissions of the Owner, the Contractor may be due compensation which shall be defined using Section D, Changes in Work. If the suspension was required through no fault of the Contractor or the Owner, neither party shall owe the other for the impact.

J.4 OWNER'S RIGHT TO TERMINATE CONTRACT

- J.4.1 The Owner may, without prejudice to any other right or remedy, and after giving Contractor seven (7) Days' written notice and an opportunity to cure, terminate the Contract in whole or in part under the following conditions:
 - (a) If Contractor should, voluntarily or involuntarily, seek protection under the United States Bankruptcy Code and Contractor as debtor-in-possession or the Trustee for the estate fails to assume the Contract within a reasonable time;
 - (b) If Contractor should make a general assignment for the benefit of Contractor's creditors;
 - (c) If a receiver should be appointed on account of Contractor's insolvency;
 - (d) If Contractor should repeatedly refuse or fail to supply an adequate number of skilled workers or proper materials to carry on the Work as required by the Contract Documents, or otherwise fail to perform the Work in a timely manner;
 - (e) If Contractor should repeatedly fail to make prompt payment to Subcontractors or for material or labor, or should disregard laws, ordinances or the instructions of the Owner;
 - (f) If Contractor is otherwise in breach of any part of the Contract; or
 - (g) If Contractor is in violation of Applicable Laws, either in the conduct of its business or in its performance of the Work.

- J.4.2 At any time that any of the above occurs, Owner may exercise all rights and remedies available to Owner at law or in equity, and, in

addition, Owner may take possession of the premises and of all materials and appliances and finish the Work by whatever method it may deem expedient. In such case, the Contractor shall not be entitled to receive further payment until the Work is completed. If the Owner's cost of finishing the Work exceeds the unpaid balance of the Contract Price, Contractor shall pay the difference to the Owner.

J.5 TERMINATION FOR CONVENIENCE, NON-APPROPRIATION OF FUNDS, OR FORCE MAJEURE

- J.5.1 Owner may terminate the Contract in whole or in part whenever Owner determines: (a) that termination of the Contract is in the best interest of Owner or the public; (b) that the Owner failed to receive funding, appropriations, allocations or other expenditure authority as contemplated by Owner's budget and Owner determines, in its sole determination, and its assessment and ranking of the policy objectives explicit or implicit in Owner's budget, Owner may determine it is necessary to and may terminate the Contract; or (c) in the event of Force Majeure.
- J.5.2 The Owner shall provide the Contractor with seven (7) Days prior written notice of a termination for Owner's or for public convenience. After such notice, the Contractor shall provide the Owner with immediate and peaceful possession of the premises and materials located on and off the premises for which the Contractor received progress payment under Section E. Compensation for Work terminated by the Owner under this provision will be according to Section E. In no circumstance shall Contractor be entitled to lost profits for Work not performed due to termination. If the Contract is terminated for public convenience, neither the Contractor nor its Surety shall be relieved of liability for damages or losses suffered by the Owner as a result of defective, unacceptable or unauthorized Work completed or performed.

J.6 ACTION UPON TERMINATION

- J.6.1 Upon receiving a notice of termination, and except as directed otherwise by the Owner, Contractor shall immediately cease placing further subcontracts or orders for materials, services, or facilities. In addition, Contractor shall terminate all subcontracts or orders to the extent they relate to the Work terminated and, with the prior written approval of the Owner, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts and orders.
- J.6.2 As directed by the Owner, Contractor shall, upon termination, transfer title and deliver to the Owner all Record Documents, information, and other property that, if the Contract had been completed, would have been required to be furnished to the Owner.
- J.6.3 Upon Owner's notice of termination pursuant to either Section J.4 or J.5, if Owner shall so elect, Contractor shall assign to the Owner such subcontracts and orders as Owner shall specify. In the event Owner elects to take assignment of any such subcontract or order, Contractor shall take such action and shall execute such documents as Owner shall reasonably require for the effectiveness of such assignment and Contractor shall ensure that no contractual arrangement between it and its subcontractors or suppliers of any tier or sub-tier shall prevent such assignment.

SECTION K **CONTRACT CLOSE OUT**

K.1 RECORD DOCUMENTS

As a condition of final payment (refer also to section E.6), Contractor shall comply with the following: Contractor shall provide Record Documents for the entire Project to Owner. Record Documents shall depict the Project as constructed and shall reflect each and every change, modification, and deletion made during the construction. Record

Documents are part of the Work and shall be provided prior to the Owner's issuance of final payment. Record Documents include all modifications to the Contract Documents unless otherwise directed.

K.2 OPERATION AND MAINTENANCE MANUALS

As part of the Work, Contractor shall submit two completed operation and maintenance manuals ("O & M Manuals") for review by the Owner prior to submission of any pay request for more than 75% of the Work. Owner's receipt of the O & M Manuals shall be a condition precedent to any payment thereafter due. The O & M Manuals shall contain a complete set of all submittals, all product data as required by the specifications, training information, telephone list and contact information for all consultants, manufacturers, installer and suppliers, manufacturer's printed data, record and shop drawings, schematic diagrams of systems, appropriate equipment indices, warranties and bonds. The Owner shall review and return one O & M Manual for any modifications or adjustments required. Prior to submission of its final pay request, Contractor shall deliver two (2) complete and approved sets of O & M Manuals in paper form and one (1) complete and approved set in electronic form to the Owner and Owner's receipt of the O & M Manuals shall be a condition precedent to Owner's obligation to make final payment.

K.3 COMPLETION NOTICES

- K.3.1 Contractor shall provide Owner written notice of both Substantial and Final Completion. The certificate of Substantial Completion shall state the date of Substantial Completion, the responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and the time within which the Contractor shall finish all items on the Punch List accompanying the Certificate. Both completion notices must be signed and notarized by the Contractor and signed by the Architect/Engineer (if applicable) and Owner to be valid. The Owner shall provide the final signature on the notices. The notices shall take effect on the date they are signed by the Owner.
- K.3.2 Substantial Completion of a facility with operating systems (e.g., mechanical, electrical, HVAC) shall be that degree of completion that has provided a minimum of thirty (30) continuous Days of successful, trouble-free operation, which period shall begin after all performance and acceptance testing has been successfully demonstrated to the Owner. All equipment contained in the Work, plus all other components necessary to enable the Owner to operate the facility in the manner that was intended, shall be complete on the Substantial Completion date. The Contractor may request that a Punch List be prepared by the Owner with submission of the request for the Substantial Completion notice.

K.4 TRAINING

As part of the Work, and prior to submission of the final application for payment, the Contractor shall schedule with the Owner training sessions for all equipment and systems as required by the Contract Documents. Contractor shall schedule training sessions at least two weeks in advance of the date of training to allow Owner to provide its personnel with adequate notice. If assignments arise because of termination under Section J.4, then such assignments shall not relieve Contractor of liability hereunder. The O & M Manual shall be used as a basis for training. In addition to any off-Project Site training required by the Contract Documents, training shall include a formal session conducted at the Project Site after the equipment and/or system is completely installed and operational in its normal operating environment.

K.5 EXTRA MATERIALS

As part of the Work, Contractor shall provide spare parts, extra maintenance materials, and other materials or products in the quantities specified in the Contract Documents prior to final payment. Delivery point for extra materials shall be designated by the Owner.

K.6 ENVIRONMENTAL CLEAN-UP

As part of the Final Completion notice, or as a separate written notice submitted with or before the notice of Final Completion, the Contractor shall notify the Owner that all environmental and pollution clean-up, remediation and closure have been completed in accordance with all Applicable Laws and pursuant to the authority of all agencies having jurisdiction, and Contractor shall provide Owner with any and all documentation related to the same, including but not limited to directives, orders, letters, certificates and permits related to or arising from such environmental pollution. The notice shall reaffirm the indemnification given under Section F.5.1 above. Contractor's completion of its obligations under this Section K.6 and Owner's receipt of documents evidencing such completion shall be a condition precedent to Owner's obligation to make final payment.

K.7 CERTIFICATE OF OCCUPANCY

Owner's receipt of an unconditioned certificate of occupancy from the appropriate state and/or local building officials shall be a condition precedent to Owner's obligation to make final payment, except to the extent failure to obtain an unconditional certificate of occupancy is due to the fault or neglect of Owner.

K.8 OTHER CONTRACTOR RESPONSIBILITIES

The Contractor shall be responsible for returning to the Owner all property of Owner issued to Contractor during construction such as keys, security passes, Project Site admittance badges, and all other pertinent items. Upon notice from Owner, Contractor shall be responsible for notifying the appropriate utility companies to transfer utility charges from the Contractor to the Owner. The utility transfer date shall not be before Substantial Completion and may not be until Final Completion, if the Owner does not take beneficial use of the facility and the Contractor's agents continue with the Work.

The Owner's property is drug free and weapons free areas and the use of tobacco products is only allowed in designated areas. Contractor shall be required to ensure that its employees, Subcontractors and agents shall comply with these requirements.

SECTION L GENERAL PROVISIONS

L.1 NO THIRD PARTY BENEFICIARIES

Owner and Contractor are the only parties to the Contract and are the only parties entitled to enforce its terms. Nothing in the Contract gives, is intended to give, or shall be construed to give or provide any benefit or right, whether directly, indirectly, or otherwise, to third persons unless such third persons are individually identified by name herein and expressly described as intended beneficiaries of the terms of the Contract.

L.2 SEVERABILITY

If any provision of the Contract is declared by a court to be unenforceable, illegal, or in conflict with any law, the validity of the remaining terms and provisions shall not be affected and the rights and obligations of the parties shall be construed and enforced as if the Contract did not contain the particular provision held to be invalid.

L.3 ACCESS TO RECORDS

L.3.1 Contractor shall keep, at all times on the Project Site, one record copy of the complete Contract Documents, including the Plans, Specifications, addenda, and Change Orders (if any) in good order and marked currently to record field changes and selections made during construction, and one record copy of Shop Drawings, Product Data, Samples and similar submittals, and shall at all times give the Owner access thereto.

L.3.2 Contractor shall retain and the Owner and its duly authorized representatives shall have access, for a period not less than ten (10) years, to all Record Documents, financial and accounting records, and other books, documents, papers and records of Contractor which are pertinent to the Contract, including records pertaining to Overhead and indirect costs, for the purpose of making audit, examination, excerpts and transcripts. If for any reason, any part of the Work or the Contract shall be subject to litigation, Contractor shall retain all such records until all litigation is resolved and Contractor shall continue to provide Owner and/or its agents with full access to such records until such time as all litigation is complete and all periods for appeal have expired and full and final satisfaction of any judgment, order or decree is recorded and Owner receives a record copy of documentation from Contractor.

L.4 WAIVER

Failure of the Owner to enforce any provision of the Contract shall not constitute a waiver or relinquishment by the Owner of the right to such performance in the future nor of the right to enforce any other provision of the Contract.

L.5 SUCCESSORS IN INTEREST

The provisions of the Contract shall be binding upon and shall accrue to the benefit of the parties to the Contract and their respective permitted successors and assigns.

L.6 GOVERNING LAW

The Contract shall be governed by and construed in accordance with the laws of the State of Oregon without giving effect to the conflict of law provisions thereof.

L.7 APPLICABLE LAW

Contractor hereto agrees to comply in all ways with applicable local, state and federal ordinances, statutes, laws and regulations.

L.8 NON-EXCLUSIVE RIGHTS AND REMEDIES

Except as otherwise expressly provided herein, the rights and remedies expressly afforded under the provisions of the Contract shall not be deemed exclusive, and shall be in addition to and cumulative with any and all rights and remedies otherwise available at law or in equity. The exercise by either Party of any one or more of such remedies shall not preclude the exercise by it, at the same or different times, of any other remedies for the same default or breach, or for any other default or breach, by the other Party.

L.9 INTERPRETATION

The titles of the sections of the Contract are inserted for convenience of reference only and shall be disregarded in construing or interpreting any of its provisions.

L.10 DEBT LIMITATION

The Contract is expressly subject to the debt limitation of Oregon counties set forth in Article XI, Section 10, of the Oregon Constitution, and is contingent upon funds being appropriated therefore. Any provisions herein which would conflict with law are deemed inoperative to that extent.

L.11 LITIGATION

Any Claim between Owner and Contractor that arises from or relates to the Contract and that is not resolved through the Claims Review Process in Section D.3 shall be brought and conducted solely and exclusively within the Circuit Court of Clackamas County for the State of Oregon; provided, however, if a Claim must be brought in a federal forum, then it

shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon. In no event shall this section be construed as a waiver by the County of any form of defense or immunity, whether sovereign immunity, governmental immunity, immunity based on the Eleventh Amendment to the Constitution of the United States or otherwise, from any claim or from the jurisdiction of any court. CONTRACTOR, BY EXECUTION OF THE CONTRACT, HEREBY CONSENTS TO THE IN PERSONAM JURISDICTION OF THE COURTS REFERENCED IN THIS SECTION.

L. 12 SURVIVAL

All warranty, indemnification, and record retention provisions of the Contract, and all of Contractor's other obligations under the Contract that are not fully performed by the time of Final Completion or termination, and all other rights and obligations which by their context are intended to survive, shall survive Final Completion or any termination of the Contract.

L.13 ACCESS TO RECORDS

L.13.1. Contractor shall keep, at all times on the Work site, one record copy of the complete Contract Documents, including the Plans, Specifications, Construction Change Directives and addenda, in good order and marked currently to record field changes and selections made during construction, and one copy of Shop Drawings, Project Data, Samples and similar submittals, and shall at all times give the Owner access thereto.

L.13.2 Contractor shall retain and the Owner and its duly authorized representatives shall have access, for a period not less than ten (10) years, to all Record Documents, financial and accounting records, and other books, documents, papers and records of Contractor which are pertinent to the Contract, including records pertaining to Overhead and indirect costs, for the purpose of making audit, examination, excerpts and transcripts. If for any reason, any part of the Work or this Contract shall be subject to litigation, Contractor shall retain all such records until all litigation is resolved and Contractor shall continue to provide Owner and/or its agents with full access to such records until such time as all litigation is complete and all periods for appeal have expired and full and final satisfaction of any judgment, order or decree is recorded and Owner receives a record copy of documentation from Contractor.

L.14 WAIVER

Failure of the Owner to enforce any provision of this Contract shall not constitute a waiver or relinquishment by the Owner of the right to such performance in the future nor of the right to enforce any other provision of this Contract.

L. 15 NO ATTORNEY FEES.

In the event any arbitration, action or proceeding, including any bankruptcy proceeding, is instituted to enforce any term of this Contract, each party shall be responsible for its own attorneys' fees and expenses.



CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT

PERFORMANCE BOND

Bond No.: 34BCSJL3014
Solicitation: # 2026-05
Project Name: Jail Electronic System Update Remodel

Hartford Fire Insurance Company	(Surety #1)	Bond Amount No. 1:	\$ 2,799,560.00
N/A	(Surety #2)*	Bond Amount No. 2:*	\$ N/A
		Total Penal Sum of Bond:	\$ 2,799,560.00

* If using multiple sureties

We, Long Building Technologies, Inc. as Principal, and the above identified Surety(ies), authorized to transact surety business in Oregon, as Surety, hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns firmly by these presents to pay unto Clackamas County, the sum of (Total Penal Sum of Bond) Two Million Seven Hundred Ninety Nine Thousand Five Hundred Sixty and No/100 Dollars (\$2,799,560.00) (Provided, that we the Sureties bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety); and

WHEREAS, the Principal has entered into a contract with Clackamas County, along with the plans, specifications, terms and conditions of which are contained in the above-referenced Solicitation; and

WHEREAS, the terms and conditions of the contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of contract prices, are made a part of this Performance Bond by reference, whether or not attached to the contract (all hereafter called "Contract"); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and all authorized modifications of the Contract which increase the amount of the work, the amount of the Contract, or constitute an authorized extension of the time for performance, notice of any such modifications hereby being waived by the Surety:

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH that if the Principal herein shall faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, and shall well and truly and fully do and perform all matters and things undertaken by Contractor to be performed under the Contract, upon the terms set forth therein, and within the time prescribed therein, or as extended as provided in the Contract, with or without notice to the Sureties, and shall defend, indemnify, and save harmless Clackamas County and its elected officials, officers, employees and agents, against any direct or indirect damages or claim of every kind and description that shall be suffered or claimed to be suffered in connection with or

arising out of the performance of the Contract by the Principal or its subcontractors, and shall in all respects perform said contract according to law, then this obligation is to be void; otherwise, it shall remain in full force and effect for so long as any term of the Contract remains in effect.

Nonpayment of the bond premium will not invalidate this bond nor shall Clackamas County, be obligated for the payment of any premiums.

This bond is given and received under authority of Oregon Revised Statutes Chapter 279C and the Clackamas County Local Contractor Review Board Rules, the provisions of which hereby are incorporated into this bond and made a part hereof.

IN WITNESS WHEREOF, WE HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED AND SEALED BY OUR DULY AUTHORIZED LEGAL REPRESENTATIVES.

Dated this 14th day of August, 2026.

PRINCIPAL: Long Building Technologies, Inc.

By: [Signature]
Pandora Dyer Signature
V.P. of Finance Official Capacity

Attest: [Signature]
David Papp Corporation Secretary



SURETY: Hartford Fire Insurance Company
[Add signatures for each if using multiple bonds]

BY ATTORNEY-IN-FACT:
[Power-of-Attorney must accompany each bond]

Douglas J. Rothery, Attorney-in-Fact
Name
[Signature]
Signature
One Hartford Plaza
Address
Hartford, Connecticut 06155
City State Zip
860-547-5000
Phone Fax



CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT

PAYMENT BOND

Bond No.: 34BCSJL3014

Solicitation: # 2026-05

Project Name: Jail Electronic System Update Remodel

Hartford Fire Insurance

Company (Surety #1)

Bond Amount No. 1: \$ 2,799,560.00

N/A (Surety #2)*

Bond Amount No. 2:* \$ N/A

* If using multiple sureties

Total Penal Sum of Bond: \$ 2,799,560.00

We, Long Building Technologies, Inc., as Principal, and the above identified Surety(ies), authorized to transact surety business in Oregon, as Surety, hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns firmly by these presents to pay unto Clackamas County, the sum of (Total Penal Sum of Bond) Two Million Seven Hundred Ninety Nine Thousand

Five Hundred Sixty and No/100 Dollars (\$2,799,560.00) (Provided, that we the Sureties bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety); and

WHEREAS, the Principal has entered into a contract with Clackamas County, along with the plans, specifications, terms and conditions of which are contained in above-referenced Solicitation; and

WHEREAS, the terms and conditions of the contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of contract prices, are made a part of this Payment Bond by reference, whether or not attached to the contract (all hereafter called "Contract"); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and schedule of contract prices which are set forth in the Contract and any attachments, and all authorized modifications of the Contract which increase the amount of the work, or the cost of the Contract, or constitute authorized extensions of time for performance of the Contract, notice of any such modifications hereby being waived by the Surety:

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH that if the Principal shall faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, and shall well and truly and fully do and perform all matters and things by it undertaken to be performed under said Contract and any duly authorized modifications that are made, upon the terms set forth therein, and within the time prescribed therein, or as extended therein as provided in the Contract, with or without notice to the Sureties, and shall defend, indemnify, and save harmless Clackamas County and its elected officials, officers, employees and agents, against any claim for direct or indirect damages of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by the Contractor or its subcontractors, and shall promptly pay all persons supplying labor, materials or both to the Principal or its subcontractors for prosecution of the work provided in the Contract; and shall promptly pay all contributions due the State Industrial Accident Fund and the State Unemployment Compensation Fund from the Principal or its subcontractors in connection with the performance of the Contract; and shall pay over to the Oregon Department of Revenue all sums required to be deducted and retained from the wages of employees of the Principal and its subcontractors pursuant to ORS 316.167, and

shall permit no lien nor claim to be filed or prosecuted against Clackamas County on account of any labor or materials furnished; and shall do all things required of the Principal by the laws of this State, then this obligation shall be void; otherwise, it shall remain in full force and effect for so long as any term of the Contract remains in effect.

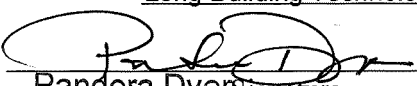
Nonpayment of the bond premium will not invalidate this bond nor shall Clackamas County be obligated for the payment of any premiums.

This bond is given and received under authority of Oregon Revised Statutes Chapter 279C and the Clackamas County Local Contractor Review Board Rules, the provisions of which hereby are incorporated into this bond and made a part hereof.

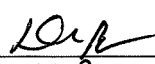
IN WITNESS WHEREOF, WE HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED AND SEALED BY OUR DULY AUTHORIZED LEGAL REPRESENTATIVES:

Dated this 14th day of August, 20 26.

PRINCIPAL: Long Building Technologies, Inc.

By: 
Pandora Dyer Signature
V.P. of Finance

Official Capacity

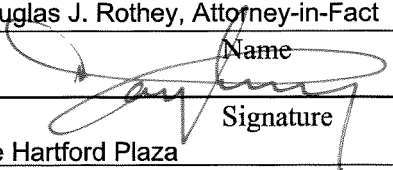
Attest: 
David Papp Signature
Corporation Secretary



SURETY: Hartford Fire Insurance Company
[Add signatures for each if using multiple bonds]

BY ATTORNEY-IN-FACT:
[Power-of-Attorney must accompany each bond]

Douglas J. Rothery, Attorney-in-Fact

Name


Signature
One Hartford Plaza

Address
Hartford, Connecticut 06155

City State Zip
860-547-5000

Phone Fax

POWER OF ATTORNEY

**Direct Inquiries, Bond Authenticity
and Claims to:**
THE HARTFORD
BOND, T-14
One Hartford Plaza
Hartford, Connecticut 06155
Bond.Claims@thehartford.com
call: 888-266-3488 or fax: 860-757-5835

KNOW ALL PERSONS BY THESE PRESENTS THAT:

Agency Name: SURESCAPE INSURANCE SERVICES LLC
Agency Code: 34-344525

- ☒ **Hartford Fire Insurance Company**, a corporation duly organized under the laws of the State of Connecticut
☒ **Hartford Casualty Insurance Company**, a corporation duly organized under the laws of the State of Indiana
☒ **Hartford Accident and Indemnity Company**, a corporation duly organized under the laws of the State of Connecticut
☐ **Hartford Insurance Company of the Midwest**, a corporation duly organized under the laws of the State of Indiana

having their home office in Hartford, Connecticut, (hereinafter collectively referred to as the "Companies") do hereby make, constitute and appoint,
up to the amount of Unlimited :

Wesley J. Butorac, Kimberly McAlexander, Jason M. McMillan, Douglas J. Rothey,
Zachary J. Rothey of LITTLETON, Colorado

their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign its name as surety(ies) only as delineated above by ☒, and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

In Witness Whereof, and as authorized by a Resolution of the Board of Directors of the Companies on May 23, 2016 the Companies have caused these presents to be signed by its Assistant Vice President and its corporate seals to be hereto affixed, duly attested by its Assistant Secretary. Further, pursuant to Resolution of the Board of Directors of the Companies, the Companies hereby unambiguously affirm that they are and will be bound by any mechanically applied signatures applied to this Power of Attorney.



Phyllis A. Clark

Phyllis A. Clark, Assistant Secretary

Joelle L. LaPierre

Joelle L. LaPierre, Assistant Vice President

STATE OF FLORIDA

COUNTY OF SEMINOLE

ss. Lake Mary

On this 1st day of March, 2024, before me personally came Joelle L. LaPierre, to me known, who being by me duly sworn, did depose and say: that (s)he resides in Seminole County, State of Florida; that (s)he is the Assistant Vice President of the Companies, the corporations described in and which executed the above instrument; that (s)he knows the seals of the said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed by authority of the Boards of Directors of said corporations and that (s)he signed his/her name thereto by like authority.



Mariluz Arce

Mariluz Arce
My Commission HH 287363
Expires July 13, 2026

I, the undersigned, Assistant Vice President of the Companies, DO HEREBY CERTIFY that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is still in full force effective as of **August 14**, 2026.

Signed and sealed in Lake Mary, Florida.



Keith D. Dozois

Keith D. Dozois, Assistant Vice President



CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT
PROJECT INFORMATION, PLANS, SPECIFICATIONS AND DRAWINGS

PROJECT: #2026-05 Jail Electronic System Update Remodel

Background

The Clackamas County Jail, located at 2206 Kaen Rd, Oregon City, OR 97045, has occupied this site since 1959. The jail underwent a significant upgrade in 1982 bringing its bed count from 86 beds to 164 beds. In 1990, another addition was constructed to accommodate the Oregon Corrections Intake Center ("OCIC") - adding 300 beds, administrative space, and new medical and booking facilities. In 2002 the OCIC moved to a new location, and the Clackamas County Jail absorbed the vacated space. Thirty beds were converted to an in-house laundry service - increasing the total number of jail beds to 434.

Clackamas County Jail is regularly assessed through annual Grand Jury inspection and reviews by the National Institute of Corrections and the Oregon State Sheriffs' Association. The Oregon Jail Standards Board awarded the facility a 97.4% compliance rating, one of the highest in the state. The Jail employs 127 full and part-time staff and processes approximately 16,000 offenders annually. The Clackamas County Jail offers several programs not offered in other counties; these include the GED program, Medical Assisted Treatment program ("MAT"), National Alliance on Mental Illness program ("NAMI"), Alcoholics Anonymous ("AA"), Narcotics Anonymous ("NA"), Church Services, and the Jail Substance Abuse Program ("JSAP").

The proposed Jail System's Upgrade will include;

- 1) New video management system. New video recording system with multiple workstations. The demolition and replacement of existing outdated cameras and wiring in and around the jail, adding new cameras in locations as needed.
- 2) New touch screen computer hardware. Including a new Citect platform with updated programming and transfer of the existing Citect projects.
- 3) Replace the existing Harding Instruments DXI intercom system with new Harding DXL intercom platform. Re-termination of existing intercom field devices and new programming compatible with new Citect program

Engineers Estimate: \$3,000,000.00

Key Dates:

All Basic Bid Work may begin as soon as the Notice to Proceed ("NTP") is issued

Substantial Completion: December 1, 2027

Final Completion: December 31, 2027

Time is of the essence for this Project. Note the Liquidated Damages requirements as described in the Supplemental General Conditions.

Note: There are two (2) Alternates for this Project.

- Alternate No. 1: Provide full installation of twenty-four (24) Net New Exterior Cameras, as specified in Section 28 2330 – Detention Video Surveillance System.
- Alternate No. 2: Provide nine (9) Net New Interior Cameras, as specified in Section 28 2330 – Detention Video Surveillance System.

The Scope further includes the following Plans, Specifications and Drawings:

- Clackamas County Jail Security Electronic Upgrades.
Project Manual dated March 20, 2026
- Clackamas County Jail Electronics Update Drawing Package. 19 pages.

CLACKAMAS COUNTY JAIL – SECURITY ELECTRONICS UPGRADES

2206 S Kaen Road
Oregon City, Oregon 97045

PROJECT MANUAL

Bid Set

Project Number: 225102

March 20, 2026



Clackamas County Jail
2206 S Kaen Road
Oregon City, Oregon 97045



720 NW Davis Suite 300 Portland, Oregon 97209

☎ 503.221.1121 📠 503.221.2077

DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS

INTRODUCTORY INFORMATION

00 0110 Table of Contents

DIVISION 01 GENERAL REQUIREMENTS

01 1100 Summary of Work
01 2300 Alternates
01 2500 Substitution Procedures
01 2600 Contract Modification Procedures
01 2900 Payment Procedures
01 3100 Project Management and Coordination
01 3300 Submittal Procedures
01 4200 Definitions and Reference Standards
01 4500 Quality Control
01 5000 Temporary Facilities and Controls
01 6000 Product Requirements
01 7329 Cutting and Patching
01 7400 Cleaning
01 7410 Construction Waste Management
01 7700 Closeout Procedures

DIVISION 02 EXISTING CONDITIONS

02 4100 Demolition

DIVISION 07 THERMAL AND MOISTURE PROTECTION

07 8400 Firestopping

DIVISION 09 FINISHES

09 9600 High Performance Coatings (Epoxy)

DIVISION 26 ELECTRICAL

26 0533 Raceways and Boxes for Electrical Systems
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DIVISION 28 ELECTRONIC SAFETY AND SECURITY

28 0500 Common Work Results for Electronic Security
28 0527 Racks and Cabinets for Electronic Security
28 0553 Identification for Electronic Security
28 2330 Detention Video Surveillance System
28 4613 Touch Screen System

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PART 1 GENERAL

1.1. SUMMARY

A. Section Includes:

1. Project Information.
2. Contract Description.
3. Work Covered by Contract Documents.
4. Work of Other Contracts.
5. Use of premises.
6. Work Restrictions
7. Specification formats and conventions.
8. Supplemental Requirements for Work in Detention Areas.

1.2. PROJECT INFORMATION

A. Project Identification: Clackamas County Jail -Security Electronics Upgrade.

1. Project Location: 2206 S Kaen Road, Oregon City, Oregon 97045.

B. Owner: Clackamas County Jail, 2206 S Kaen Road, Oregon City Oregon 97045.

C. Architect: LRS Architects, Inc., 720 NW Davis, Suite 300, Portland, Oregon 97209.

D. Construction Management Software Program: Construction Management Software Program administered by the Contractor may be used for purposes of managing communication and documents during the construction stage.

1. See Section 01 3300 - Project Management and Coordination for requirements establishing, administering, and using the Construction Management Software Program.

1.3. CONTRACT DESCRIPTION

A. Contract Type: A single prime contract as described in the Owner-Contractor Agreement.

1.4. WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of the Contract includes Renovations as indicated in the Drawings and as specified in this Project Manual, including Modifications incorporated into the Contract Documents.

1. Project consists of upgrades to existing security electronics system in a two story, Type I-B construction, concrete and concrete unit masonry jail, I-3 (Condition 5) Occupancy, with fire sprinklers.

1.5. WORK UNDER OTHER CONTRACTS

A. Concurrent Work:

1. Owner has or will award separate contract(s) for the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract:
 - a. Equipment identified as OFOI.
 - b. Archival Storage System.
2. Products and systems furnished by Owner and installed by Owner are identified as OFOI (Owner Furnished, Owner Installed).
3. Cooperate fully with separate contractors so that work under other contracts may be conducted smoothly, without interfering with or delaying work of this Contract.
4. Contractor to coordinate with the County for the hand-off of data.
5. Provide access to site and coordinate work according to the General Conditions of the Contract.

B. If Work of other contractors in any way interferes with the Contractor's Work, notify party sufficiently in advance to give reasonable time to make necessary adjustments.

C. If the Contractor's Work in any way interferes with the work of other contractors, notify other party and Owner as soon as possible and modify schedule to accommodate the other party's work, or make other arrangements to accommodate other contractors work as agreed to by Owner.

D. Contractor recognizes that Owner is entitled, under the Contract Documents, to perform Work on site during the course of Contractor's performance, whether by Owner's forces, consultants, or separate contractors.

1.6. USE OF PREMISES

A. General: Contractor shall confine construction operations, including temporary storage of materials and equipment, to within the staging areas noted on staging plan and approved by Owner.

1. Contractor's use of area established for construction operations is limited only by Owner's right to perform work or to retain other Contractors for portions of Project.
2. Use of Owner's property outside staging area will not be permitted except under unusual circumstances for limited periods of time as approved by Owner.
3. Short term lay down space for materials will be provided inside the facilities in locations designated by Owner.
 - a. Additional storage areas will be provided outside in the adjacent building.

4. Limited parking spaces, near established staging areas, shall be designated by Owner for Contractor use. Public parking will be used for the remaining balance of parking as required for Contractor employees, subcontractors, and vendors.
- B. Maintain clear access to project at all times for emergency vehicles, delivery of materials, and Owner and Owner's employees' access.
- C. Use of Existing Building: Maintain existing building in a secure condition throughout construction period.
 1. Allow for Owner occupancy and use by the public.
 - a. Cooperate and schedule work with Owner to minimize conflict, and to facilitate Owner's operations.
 2. Protect building and its occupants during construction period.
 3. Repair damage caused by construction operations.

1.7 WORK RESTRICTIONS

- A. Contractor is responsible for all personnel under their span of control and are responsible to make sure their personnel maintain appropriate conduct. Contractor, subcontractors, employees, and any associated personnel are required to abide and adhere to the following policies. The Clackamas County Jail administration reserves the right to modify these policies as future real-life situations or otherwise unforeseen contingencies may dictate. Refer to Clackamas County Sheriff's Office, "**Specification Supplement for Work Inside Detention Facilities Work Rules,**" at the end of this Section.
 1. All construction personnel must submit to a background check and PREA check prior to being allowed onto the premises. The background check will be completed by jail personnel and temporary access badges will be issued to those approved for entry. These badges must be always worn conspicuously while on the jobsite; anyone not wearing their badge will not be allowed entry or will not be allowed to work until the badge is displayed.
 2. No person having a felony conviction in his or her history will be allowed into any secure portion of the jail, nor will anyone currently on probation or parole be allowed into any secure portion of the jail.
 3. Construction hours shall be from 0600 hours until 1800 hours [6:00 AM until 6:00 PM] unless otherwise approved in writing by the Jail Commander.
 4. No contractor, subcontractor, employee, or anyone under his or her span of control will be allowed to wear orange or blue coveralls, or any color-matched set of clothing in blue or orange.
 6. At the end of the construction day, the supervisor or his approved designee must provide a complete hand tool inventory to the booking sergeant and accompany the sergeant on a walk-through of the construction area to make sure there are no security concerns, prior to the supervisor leaving the site.
 7. The construction supervisor or his approved designee shall be the last one to leave the construction area and will ensure all security gates are locked or secured.

8. All hand tools must be accounted for in a daily supervisor's log that contains tool descriptions and check boxes for tools being brought into and out of the construction site. A copy of this list must be provided to the booking sergeant at the end of each workday. The contractor shall keep the master list until the end of construction and final departure of all construction personnel.
 9. All small tools (large drills, concrete saws, and other things not readily carried in a tool belt) shall be secured in a lockable storage container while on the site. All larger tools, tools that are not readily carried around by one person, shall be stored in a safe manner while on the construction site.
 10. All construction areas must be kept clean, and all debris must be picked up before the crew leaves the area. All debris must be placed in a secure receptacle away from the security areas. The regularity schedule for clean-up efforts is negotiable; however, it must be completed on a weekly basis at the minimum.
 11. Penetrations of any existing wall of the jail shall be limited to 6 inches in diameter. Larger openings such as new doorways must be secured with a minimum of 3/4 inch plywood or its equivalent and must be lockable.
 12. Staff toilets throughout the facilities shall be available to construction personnel.
- B. Security: Adhere to posted building notices and do not interfere with existing building security systems, protocols and exits except as required to complete the Work and as approved by Owner.
1. Personal Identification: Uniform and security identification badge or card will always be worn in a clearly visible manner, from the collar or lanyard, while in the correctional facilities premises.
 2. Security Escorts: Construction crews shall be escorted at all times, including at entry and exiting from the premises.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify Owner not less than 2 working days in advance of proposed disruptive operations.
 2. Do not proceed with utility interruptions without Owner's written permission.
- D. Noise, vibration, and odors: Coordinate operations with Owner that may result in high levels of noise and vibration, odors, or other disruptions to Owner occupancy and work environment.
1. Notify Owner not less than 2 working days in advance of proposed disruptive operations.
 2. Do not proceed with disruptive operations without Owner's written permission.

1.8 SPECIFICATION FORMAT AND CONVENTIONS

- A. Specification Format: Specifications are organized into Divisions and Sections using the 50 Division format and The Construction Specifications Institute's (CSI) "MasterFormat" 2018 Edition, or later, numbering system.
 - 1. Division 01 - General Requirements: Sections in this Division govern the execution of Work of all Specifications Sections.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in situations, as follows:
 - 1. Abbreviated Language:
 - a. Language used in the Specifications and other Contract Documents is abbreviated.
 - b. Words and meanings shall be interpreted as appropriate.
 - c. Words implied, but not stated, shall be inferred as the sense requires.
 - d. Singular words shall be interpreted as plural, and plural words as singular, where applicable as the context of the Contract Documents indicates.
 - 2. Imperative mood and streamlined language are generally used in the Specifications.
 - a. Requirements expressed in the imperative mood are to be performed by Contractor.
 - b. Subjective or indicative language may be used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.
 - c. 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.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

CLACKAMAS COUNTY SHERIFF'S OFFICE-

"SPECIFICATION SUPPLMENT FOR WORK INSIDE DETENTION FACILITIES"

FOLLOWS THIS PAGE

END OF SECTION



Clackamas County Sheriff's Office

Specification Supplement for Work Inside Detention Facilities

CONTRACTOR WORKING IN DETENTION FACILITIES WORK RULES

The following rules and information were created to instruct contractors and their employees on the proper procedures for working in County Correction Facilities. These rules **shall be adhered to at all times. Any documented violation of these rules may result in immediate work stoppage and termination of contract. Contractors are responsible for their employee's actions while inside and on the grounds of County Detention Facilities. Contractors and their employees shall also agree to and sign this document before working inside these facilities.**

What follows is a list of Do's and Don'ts that you are **required** to follow **at all times** while working in a detention facility. Failure to do so may result in immediate termination.

I. Behavior Expected of Contractor and Contractors Employees

1. Do not talk to any inmates. It is considered polite to respond to a cordial greeting like "Good Morning", but do not stop to make conversation.
2. When being approached by any escorted inmate(s); always stop what you are doing, take your equipment and move against the opposite side of the hall or room and place your equipment in front of you.
3. Never touch an inmate.
4. Never give anything to, or take anything from an inmate.
5. Never walk up behind or suddenly approach an inmate or Corrections Deputy.
6. Never use any nicknames with inmates or Corrections Deputies. Treat everyone with respect.
7. Contractors shall bring into the facility **ONLY** the tools, supplies and equipment required to do the work assigned. Lunch boxes, drink containers, etc shall be left outside the detention areas.
8. If you witness a disturbance, **never interfere**. Always do your job and allow the Deputies to do theirs. **Under no circumstances** are you permitted to be involved in any interaction with inmates. The Deputies are there to protect you, if you get involved in an altercation, the Deputies must then protect both you and themselves. Do not put the Deputy in this position.
9. You are required to wear your uniform and security identification displayed visibly from the collar or a lanyard at all times while you are in the correctional facility.
10. All personal I.D. and jewelry is to be left in your vehicle prior to entering the facility or checked in at the reception area. Do not take items such as jewelry, lighter or other personal effects into the facility. Cell phones or other electronic communication devices, pocket knives and or weapons of any kind are **strictly prohibited**.
11. Never leave your tools and equipment unattended. Keep your work area clean and clear of obstructions. Remember that anything you leave behind could be made into a weapon, if you drop an item pick it up and secure it prior to doing anything else.
12. Use only the products approved for your duties and wear approved safety equipment when required.
13. Prior to your shift, conduct an inventory of all your equipment. Conduct an inventory of all your equipment each time you complete work in a different area in the facility. If anything is missing, **find it! If you do not find the item notify a corrections deputy.**
14. Follow any and all instructions given to you by a Corrections Deputy.
15. At times you will be asked to leave an area before you are finished. Do so immediately and do not ask any questions. This is for your own safety.
16. Before exiting a room, look both ways to ensure that the halls are secured and safe.

"Working Together to Make a Difference"

2223 Kaen Road, Oregon City, OR 97045 • Tel 503-655-8218 • Fax 503-655-8549 • www.clackamas.us/sheriff

Specification Supplement for Work Inside Detention Facilities

CONTRACTOR WORKING IN DETENTION FACILITIES WORK RULES

17. At times you may be locked in an area for your own protection. Do not resist or argue with the Deputy.
18. Follow all Correctional Facilities procedures for emergency evacuations and medical emergencies.
19. Under no circumstances are you to engage in a threat of violence with an inmate, Corrections Deputy or other staff member.
20. Do not report for work under the influence of drugs or alcohol.

II. Prison Rape Elimination Act 2003 (PREA)

PREA is a federal law enacted and signed into law in 2003, for the purpose of establishing a zero-tolerance standard for the incidents of rapes and sexual misconduct in prisons and local jails/detention facilities. The PREA requires that prevention of prison rape and sexual misconduct will be a top priority in prisons, police lock ups, local jails and juvenile detention facilities. It further requires the development and implementation of national standards for the detection, prevention, reduction and punishment of prison rape and sexual misconduct. You are required to report **any** witnessed violations of PREA.

Prohibited Conduct

Conduct specifically prohibited that will cause a violation of Sheriff's Office policy, termination as a volunteer, and possible prosecution on criminal charges, includes but is not limited to:

1. Any sexual advance by a staff member or visitor;
2. requests for sexual favors by a staff member or visitor;
3. invasion of an inmate's privacy beyond that reasonably necessary for safety and security;
4. inappropriate touching, fondling, hugging, or kissing;
5. any sexual act or contact between a staff member or visitor and an inmate, or an inmate with another inmate;
6. indecent exposure by the staff member or visitor in front of an inmate;
7. other verbal, physical or graphic conduct of a sexual or gender-based nature;
8. sexual comments, gestures, drawings, picture, writings, or any physical conduct that is of a sexual nature or is sexually suggestive, derogatory, or offensive;
9. influencing, promising or threatening an inmate's safety, custody or security level (including recommendations for court actions), privacy, housing, privileges, work detail or program status in exchange for sexual favors;
10. failing to report any suspicious activity of a sexual nature either observed or suspected based on possible items or evidence found in an area;
11. permitting sexually offensive behavior, sexual harassment, or sexual misconduct to continue after its occurrence is known; and/or,
12. interference with the official process of reporting or investigating an sexual misconduct incident or allegation.

Consent

A sexual act or sexual contact between any volunteer and an inmate, even if the inmate consents, initiates or pursues, is prohibited and is illegal. Inmates shall be considered incapable of giving

Specification Supplement for Work Inside Detention Facilities

CONTRACTOR WORKING IN DETENTION FACILITIES WORK RULES

consent to engage in sexual misconduct with volunteers.

An inmate's consent to and/or initiation or pursuit of sexual misconduct with a volunteer shall not excuse, negate or mitigate a volunteer's duties, responsibilities and/or penalties under Sheriff's Office policy.

III. General Behavior

Generally, a correctional facility can be safer than walking alone on the street at night. However, at times a correctional facility can be a dangerous place. These instructions are for your protection and are to be followed to the letter. Always remember that this is a correctional facility and you can never 100% anticipate the actions of the inmates.

In the event that you identify an inmate that you have known prior to this assignment; do not make any attempt to acknowledge this individual. If they say "Hello" to you first, acknowledge them, and move on. Do not attempt to make any conversation. This policy does not require contractors to be rude. A simple acknowledgement in response to a greeting from an inmate shall not be a violation of this policy; however, no further conversation or contact is permitted.

Proceed to the administration/lieutenant's office and file a report about your relationship with the inmate. This is to preclude any special treatment or relationship from arising out of the incident. This is for the protection of the inmate and YOU!

Clothing and or safety attire that has wording/graphics that is sexually suggestive, drug or alcohol related, insulting, vulgar, which depicts violence, gang membership related, or ridicules a particular person or group is prohibited.

In addition, you are required to not become an active member of conversations between inmates and/or between inmates and deputies/staff. Nor are you to discuss safety and security issues you see while in a correctional facility. This would include your current and future work schedule inside the facility. **Confidentiality** of safety and security issues is paramount in maintaining the working relationship we have established within the facility.

No garbage or construction debris is to be left inside the secure facility or deposited into a detention trash receptacle, **remove it from the facility**.

Do not touch anything that is not yours. **Under NO circumstances are you permitted to leave the facility with property not owned/belonging to you or your company. This includes anything found in the garbage (i.e. soda cans, paper rolls, food, and literature) or anywhere in the facility.**

IF YOU DID NOT COME TO WORK WITH IT, YOU DON'T GO HOME WITH IT!

In the event of a violation of these policies, the County and/or the City shall have the right to require the Contractor to immediately and permanently remove the individual or individuals violating the policy from the job site.

Specification Supplement for Work Inside Detention Facilities

CONTRACTOR WORKING IN DETENTION FACILITIES WORK RULES

Acknowledgement:

I have read these rules and procedures and understand that failure on my part to follow all rules regarding working inside a correction facility will result in the immediate termination of my contract.

Contractor Name (Printed)

Employee Name (Printed)

Employee's Signature

Date

OFFICIAL ADMINSTRATIVE USE ONLY (PLEASE DO NOT USE)

☐ Access Approved ☐ Access Disapproved

Approved By: _____
Signature Title DPSST# Date

Date of Request: _____ Organization: _____

Full Name: _____

Date of Birth: _____

Contact Number: _____

Prior Criminal History: Yes ☐ No ☐ Date: _____

Currently on formal or bench supervision (probation): Yes ☐ No ☐

Last Arrest: _____

Been in Clackamas County Jail: Yes ☐ No ☐ Last Incarceration Date: _____

Drug History: Yes ☐ No ☐ _____

Last date of use: _____

Violent History: Yes ☐ No ☐ _____

PREA Violations: Yes ☐ No ☐ _____

PART 1 GENERAL

1.1. SUMMARY

- A. This Section includes administrative and procedural requirements for Alternates.

1.2. DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on Bid Form for certain work defined in Bidding Requirements that may be added to or deducted from Base Bid amount if 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 alternate into the Work. No other adjustments are made to the Contract Sum.

1.3. PROCEDURES

- A. Owner reserves right to select any or all of alternates up to thirty calendar days after award of Contract, unless otherwise stated in Bidding Requirements.
- B. Coordination: Modify or adjust of 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 described as part of alternate.
- C. Notification: Immediately following award of the Contract, notify in writing each party involved of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- D. Execute accepted alternates under same conditions as other Work of the Contract.
- E. Schedule: A Schedule of Alternates is included at the end of this Section. Drawings, and Specification Sections referenced in the schedule, contain requirements and materials necessary to achieve the work described under each alternate.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 SCHEDULE OF ALTERNATES

1. Alternate No. 1: Provide full installation of twenty-four (24) Net New Exterior Cameras, as specified in Section 28 2330 – Detention Video Surveillance System.
2. Alternate No. 2: Provide nine (9) Net New Interior Cameras, as specified in Section 28 2330 – Detention Video Surveillance System.
3. Locations of cameras as indicated in the Drawings.

END OF SECTION

PART 1 GENERAL

1.1. SUMMARY

- A. This Section includes procedures for the following:
 - 1. Contractor's responsibilities concerning substitutions.
 - 2. Substitution requirements during the bidding/negotiating period.
 - 3. Substitutions requested after award of Contract.
 - 4. Substitutions not permitted.
- B. Related Sections:
 - 1. Section 01 4200: Definitions and Reference Standards, for applicability of industry standards to products specified.
 - 2. Section 01 6000: Product Requirements, for requirements governing Contractor's selection of products and product options.

1.2. DEFINITIONS

- A. Substitutions: Contractor proposals for changes in products, materials, equipment, and methods of construction required by the Contract Documents made during bidding/negotiating and after award of Contract are considered to be requests for substitution.
 - 1. The following are not considered to be requests for substitution:
 - a. Revisions to the Contract Documents requested by Owner or Architect.
 - b. Specified options of products and construction methods included in the Contract Documents.
 - c. Contractor's determination of and compliance with regulations and orders issued by governing authorities.
- B. Substitutions accepted during the bidding/negotiating period are accepted by Addendum prior to award of Contract, and thereafter are included in the Contract Documents.
- C. Substitution requests that affect cost and/or time accepted after award of contract are accepted only by Change Order, and thereafter are included in the Contract Documents.

1.3. CONTRACTOR'S RESPONSIBILITIES

- A. Contractor's responsibilities for substitution requests made during the bidding/negotiation period after award of Contract are as follows:
 - 1. Fully investigate proposed substitution and determine to be equal or superior in all respects to specified product.

2. Verify substitutions don't affect dimensions and functional clearances.
3. If applicable, confirm maintenance service and source of replacement parts is available locally or readily obtainable for proposed substitution.
4. Make changes in, and coordinate, the Work as may be required to incorporate and install accepted substitutions.
5. Any changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution to be paid by Contractor.
6. Confirm substitution will have no adverse effect on other trades, construction schedule, or specified warranty.
7. Waive all claims for additional costs that subsequently become apparent which are related to substitutions.

1.4. SUBSTITUTION SUBMITTAL PROCEDURES

- A. Acceptability of different materials or products shall be determined by methods set forth in this Section.
- B. Architect will be sole judge of acceptability of any proposed substitution, and the Owner's acceptance or denial of any substitution will be final.

PART 2 PRODUCTS

2.1. SUBSTITUTION REQUIREMENTS DURING THE BIDDING/NEGOTIATING PERIOD

- A. Submit request for approval of a substitution on LRS Architect, Inc. Substitution Request Form; Copy included at the end of this Section.
- B. All substitution requests must be received in the Architect's office no less than 10 calendar days prior to Bid Date, unless otherwise stipulated in the bidding/negotiating instructions.

2.2. SUBSTITUTIONS REQUESTED AFTER AWARD OF CONTRACT

- A. Substitutions will normally not be considered after award of Contract, except due to unforeseen circumstances.
- B. Architect will receive and consider Contractor's request for substitution after award of Contract when one or more of the following conditions are satisfied, as determined by the Architect. If the following conditions are not met, Architect will return the requests without action except to record noncompliance with these requirements.
 1. The specified product cannot be provided within the Contract time.
 - a. Architect will not consider the request if the product cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
 2. The specified product cannot receive necessary approval by a governing authority, and the requested substitution can be approved.

3. The specified product cannot be coordinated with other materials and the Contractor certifies that the proposed substitution can be coordinated.
 4. The specified product cannot provide the required warranty and the Contractor certifies that the proposed substitution provides the warranty.
 5. The requested substitution offers the Owner a substantial advantage in cost, time, or other considerations after deducting additional Owner's cost of compensation to the Architect for redesign and evaluation services, increased cost of other construction, and similar considerations.
- C. Submit request for approval of a substitution on LRS Architects, Inc. Substitution Request Form; Copy included at the end of this Section.
- D. Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

2.3. SUBSTITUTIONS NOT PERMITTED

- A. Substitutions indicated or implied on submitted Shop Drawings or Product Data without first requesting approval in accordance with requirements of this Section.
- B. Where manufacturers, products, or systems listed in the Specifications are not followed with "or approved" or "Substitutions: Provide in accordance with requirements of Section 01 2500," it is intended that substitutions are not permitted.

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

PART 1 GENERAL

1.1. SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing the following Contract modifications:
 - 1. Requests for Interpretation.
 - 2. Architect's Supplemental Instructions.
 - 3. Proposal Requests.
 - 4. Construction Change Directives.
 - 5. Change Orders.
- B. Related Documents and Sections:
 - 1. General and Supplementary Conditions provided under separate cover by Clackamas County.
 - 2. Section 01 2500: Substitution Procedures, for administrative procedures for handling request for substitutions made after Contract award.
 - 3. Section 01 7700: Closeout Procedures, for requirements for inclusion of contract modifications in record documents.

1.2. RESPONSIBLE PARTIES

- A. Immediately following Contract execution, Owner and Contractor to identify each person who is responsible for executing Change Orders and other modifications to the Contract.

1.3. DEFINITIONS

- A. Request for Interpretation (RFI):
 - 1. Written request submitted by Contractor or Owner to Architect on standard form requesting interpretation of Contract documents.
 - 2. An RFI shall only be used as a vehicle for confirming or verifying an issue through an interpretation of the Contract Documents; responses that result in change to Contract Documents and adjustment to Contract Sum and/or Contract Time must be documented in a Change Order.
- B. Architect's Supplemental Instructions (ASI):
 - 1. Architect's written order of instruction to Contractor, signed by Architect, that authorizes minor changes in Work that do not change Contract Sum or Contract Time.
- C. Proposal Request (PR) / Change Order Request (COR):

1. Proposal Request (Initiated by Architect): Written request by Architect to Contractor, as directed by Owner, to quote change to Contract Sum and/or Contract Time for proposed change to Contract Documents.
2. Change Order Request (initiated by Contractor): Written request by Contractor to Architect and Owner proposing change to Contract Documents accompanied with quotation for change to Contract Sum and/or Contract Time.

D. Construction Change Directive (CCD):

1. Written order prepared by Architect, signed by Owner and Architect, directing Contractor to proceed with change to Contract Documents which affect Contract Sum and/or Contract Time, for subsequent inclusion in a Change Order after change to Contract Sum and/or Contract Time has been determined.

E. Change Order (CO):

1. Prepared by Contractor and signed by Owner, Contractor, and Architect stating their agreement to a change to Contract Documents and adjustment to Contract Sum and/or Contract Time.

1.4. REQUEST FOR INTERPRETATION (RFI):

- A. Submit RFIs numbered in sequential order, reviewed by Contractor with respect to Construction Documents, with the following information:
 1. Project name and address.
 2. Architects name.
 3. Contractors name.
 4. Date of RFI.
 5. Drawing and/or Specification reference.
 6. Signature of Contractor's reviewer.
 7. Indicate "URGENT" on RFIs that may cause impact to the project schedule.
- B. Architect will receive RFIs only from the Contractor or Owner; Architect will not accept RFIs directly from subcontractors, suppliers, or other entities.
- C. Architect will receive only legible, properly prepared RFIs.
 1. Illegibly written RFIs, or RFIs with incomplete information, will be returned promptly without action.
 2. Architect will review RFIs with respect to Contract Documents and return response within 10 calendar days.

- a. RFIs marked "URGENT" will take precedence, in order received, over outstanding RFIs and be answered by Architect as soon as possible.
- D. Contractor, in being fully familiar with Construction Documents, shall not be relieved of responsibility to coordinate the Work to prevent adverse impact to Project schedule when submitting RFIs to Architect for interpretation of Contract Documents.

1.5. ARCHITECT'S SUPPLEMENTAL INSTRUCTIONS (ASI)

- A. Architect's Supplemental Instructions may include supplementary or revised Drawings and/or Specifications to describe minor changes to Contract Documents.
 - 1. Proceeding with the Work as indicated in the ASI, indicates acknowledgment that there will be no adjustment in the Contract Sum or Contract Time.
 - 2. If the Contractor believes a change in Contract Sum or Contract Time is required, the Contractor shall notify the Architect and Owner, prior to proceeding with the stated Work.
 - 3. If there is an adjustment in Contract Sum or Contract Time, then a Change Order Request and approval shall be completed in order to proceed with the change.
- B. Architect's Supplemental Instructions will be executed on AIA Form G710, or other similar form designated by Architect.

1.6. PROPOSAL REQUEST (PR)

- A. Proposal Request Initiated by Architect:
 - 1. Proposal Request is a request for information only, and is not an instruction or authorization to execute the change, or an order to stop Work in progress.
 - 2. Proposal Request may include supplementary or revised Drawings and/or Specifications to describe a proposed change to Contract Documents.
 - 3. Contractor shall submit cost and/or time quotations to Architect within 10 working days following receipt of Proposal Request.
- B. Change Order Request Initiated by Contractor:
 - 1. Change Order Request is for a change in the Work accompanied by a detailed quotation of impact on Contract Sum and/or Contract Time.
 - 2. Change Order Request is a request for information and review only, and does not authorize the Contractor to execute the change or stop Work in progress without the Architect's and Owner's authorization.

3. Contractor initiated Change Order Requests may take the form of a "Claim", where Contractor finds it necessary for proper execution of the Work, to propose a change in the Work that is not shown or indicated in Contract Documents, and may affect Contract Sum and/or Contract Time, which for which no Proposal Request or Construction Change Authorization has been issued by the Architect.
 - a. Contractor's determination that Architect's response to an RFI that affects Contract Sum and/or Contract Time may be addressed in a Proposal Request.
4. Architect and Owner shall respond to Contractor initiated proposals within 10 calendar days following receipt of Change Order Request.

1.7. CONSTRUCTION CHANGE DIRECTIVE (CCD)

- A. A Construction Change Directive is issued in lieu of a Proposal Request when time is of the essence and change to Contract Sum and/or Contract Time cannot be determined prior to start of the work.
- B. A Construction Change Directive is executed on AIA Form G714 or other similar form designated by Architect, and may include supplementary or revised Drawings and/or Specifications to describe change to the Contract Documents.
- C. Both Owner and Architect will sign and date a Construction Change Directive that directs the Contractor to proceed with change to the Contract Documents prior to determination of cost and/or time.
- D. Contractor shall submit to Architect itemized change to Contract Sum and/or Contract Time within 10 working days when possible, and no more than 30 calendar days, except for the following conditions:
 1. Unit prices have been agreed upon and quantities cannot be determined until work described in the CCD has been completed.
 2. Owner has agreed that Contract Sum and/or Contract Time of can be determined at completion of work described in the CCD.
 3. When Owner, Architect, and Contractor concur on change to Contract Sum and/or Contract Time, as described in the General Conditions for "Construction Change Directives," the change to Contract Sum and/or Contract Time will be included in a Change Order.

1.8. CHANGE ORDERS

- A. Contractor will prepare each Change Order utilizing AIA Document G701, or other similar form acceptable to Owner.
- B. Changes to Project Contract Sum and/or Contract Time listed or indicated in Change Orders shall include or be determined by methods described in the General Conditions, and as follows:

1. Proposal Request/Change Order Request approved for change to Contract Documents by Owner and Architect that have not been converted to a Construction Change Directive.
2. Construction Change Directives where Owner, Architect, and Contractor have agreed to change in Project Contract Sum and/or Contract Time.
3. Changes to Project Contract Sum and/or Contract Time that have not been documented by Proposal Request, Change Order Request or Construction Change Directive, but have been agreed upon by Owner, Architect, and Contractor.

1.9. DOCUMENTATION FOR CONTRACT MODIFICATIONS

- A. Cost and Time Quotations: Support quotation for changes in the Work with sufficient substantiating data to allow Architect to evaluate quotation, to include the following:
 1. Labor expended in hours and unit cost.
 2. Equipment cost.
 3. Products, with quantities used and unit cost, including purchase source.
 4. Taxes, Insurance, and Bonds.
 5. Credit for deleted work where applicable with same documentation as required for cost increases for additional work.
 6. Overhead and profit, determined after credits have been deducted from additions.
 7. Justification for change in Contract Time.
- B. Document requests for Product substitutions according to requirements of Section 01 2500.

1.10. CORRELATING CHANGE ORDERS WITH OTHER REQUIREMENTS

- A. Revise Schedule of Values and Applications for Payment to record each Change Order as separate item of work with adjustment to Contract Sum and Contract Time as described in Section 01 2900, "Payment Procedures."
- B. Revise Construction Schedule to reflect each change in Contract Time.
- C. Revise Sub schedules to show changes for other items of work affected by modifications to Contract Documents.
- D. Record modifications in Record Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

PART 1 GENERAL

1.1. SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections:
 - 1. Section 01 2300- Alternates, for administrative procedures for alternates.
 - 2. Section 01 2600: Contract Modification Procedures, for administrative procedures for handling changes to the Contract.

1.2. SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.
 - 1. Coordinate line items in the Schedule of Values with other required administrative schedules and forms, including:
 - a. Application for Payment forms with Continuation Sheets.
 - b. List of Subcontractors, principal suppliers, and fabricators.
 - c. Submittals Schedule.
 - d. Items required to be indicated as separate activities in Contractor's Construction Schedule.
 - 2. Submit the Schedule of Values to Architect at earliest possible date but no later than Pre-Construction Conference.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one-line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of the Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange Schedule of Values consistent with format of AIA Document G703.
 - a. Electronic media printout including equivalent information will be considered in lieu of standard form specified.

- b. Forms filled out by hand will not be accepted.
- 3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value.
 - 1) Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
- 4. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
- 5. Round amounts to nearest whole dollar; the total to equal the Contract Sum.
- 6. Provide a separate line item for each part of the Work where Applications for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing for items stored off-site.
- 7. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items or distributed as general overhead expense, at Contractor's option.
- 8. Update and resubmit the Schedule of Values before the next Application for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3. APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

1. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.
 2. Include updated Construction Schedule with each Application for Payment.
 3. Prior to pay requests for more than 75% of the Work, provide operation and maintenance manuals for Owner's review as indicated in Section 01 7700.
- B. Payment Application Times: The date for each progress payment date is as agreed to by the Owner and the Contractor. The period of construction Work covered by each Application for Payment is the period indicated in that Agreement.
- C. Payment Application Forms: Use AIA Document G702 and Continuation Sheets G703.
1. Electronic media printout including equivalent information will be considered in lieu of standard form specified; Submit form to Owner and Architect for approval.
 2. Forms filled out by hand will not be accepted.
 3. On the face of each payment application form, provide a certification as indicated in the General Conditions.
- D. Application Preparation: Complete every item of form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
1. Match entries with data on the Schedules of Values.
 2. Include amounts for Work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for Work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount required with amounts indicated on documentation do not include overhead and profit on stored materials.
- F. Transmittal: Submit one electronic and 3 signed and notarized original copies, if required by Owner, of each application for payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

- G. Waivers of Mechanic Lien: With each Application for Payment, submit waivers of mechanic's lien from subcontractors, sub-subcontractor, and suppliers for construction period covered by the previous application.
 - 1. Submit partial waivers on each item for the amount requested in previous applications, after deduction for retainage, on each item.
 - 2. When an application shows completion of an item, submit final or full waivers.
 - 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 - 4. Submit final Application for payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 - 5. Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - 1. Schedule of Values.
 - 2. Contractor's Construction Schedule.
 - 3. Submittals Schedule.
 - 4. Initial progress report.
 - 5. Report of preconstruction conference.
 - 6. Certificates of insurance and insurance policies.
 - 7. Performance and payment bonds.
 - 8. Data needed to acquire the Owner's insurance.
- I. Application for Payment at Substantial Completion: After issuance of the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
 - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 - 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
 - 3. Administrative actions and submittals that must precede or coincide with this application include the following:
 - a. Occupancy permits and similar approvals.

- b. Warranties (guarantees) and maintenance agreements.
 - c. Test/adjust/balance records.
 - d. Maintenance instructions.
 - e. Final cleaning.
 - f. Application for reduction of retainage and consent of surety.
 - g. Advice on shifting insurance coverages, and additional requirements of General Conditions.
 - h. List of incomplete Work recognized as exceptions to Architect's Certificate of Substantial Completion.
4. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
- a. Evidence of completion of Project closeout requirements.
 - b. Completion of items specified for completion after Substantial Completion.
 - c. Updated final statement, accounting for final changes to the Contract Sum.
 - d. Evidence that claims have been settled.
 - e. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
 - f. Assurance that incomplete Work not accepted, if applicable, will be completed without undue delay.
 - g. Evidence that taxes, fees, and similar obligations were paid.
 - h. Removal of temporary facilities and services.
 - i. Removal of surplus materials, rubbish, and similar elements.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

PART 1 GENERAL

1.1. SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General Project coordination procedures.
 - 2. Construction Management Software Program.
 - 3. Project meetings.
 - 4. Construction schedule.
 - 5. Submittal schedule.
- B. Related Sections:
 - 1. Section 01 1100 – Summary of Work: Work restrictions specific to detention areas.
 - 2. Section 01 3300: Submittal Procedures.
 - 3. Section 01 6000: Product Requirements, for coordinating selection of products.
 - 4. Section 01 7400: Cleaning, for coordinating progress and final cleaning.
 - 5. Section 01 7700: Closeout Procedures, for coordinating Contract closeout requirements, procedures and documentation.

1.2. GENERAL PROJECT COORDINATION PROCEDURES

- A. Coordinate construction operations included in various Specification Sections to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, which depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Coordinate storage or staging areas for all trades.
- B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

- C. Prepare similar memoranda for Owner and separate Contractors if coordination of their Work is required.
- D. Administrative Procedures:
 - 1. Coordinate scheduling and timing of required administrative procedures with other construction activities, activities of the Owner, and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - a. Preparation of Contractor's construction Schedule.
 - b. Preparation of the Schedule of Values.
 - c. Installation and removal of temporary facilities and controls.
 - d. Delivery and processing of submittals.
 - e. Progress meetings.
 - f. Preinstallation conferences.
 - g. Startup and adjustment of systems.
 - h. Project closeout activities.
- E. Conservation: Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.
- F. Coordination of Key Personnel: Within 15 days of commencement of construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site.
 - 1. Identify individuals, their duties and responsibilities.
 - 2. List addresses and telephone numbers, including office and cellular telephone numbers, and e-mail addresses.
 - 3. Post copies of list in Project meeting room, and temporary field office and on Construction Management Software Program if applicable. Keep list current at all times.

1.3. PROJECT MEETINGS

- A. Use Construction Management Software Program may be used for purposes of hosting and managing project communication and documentation until Final Completion. Construction Management Software Program shall include the following functions:
 - 1. Project directory.
 - 2. Project correspondence.
 - 3. Meeting minutes.
 - 4. Contract modification forms and logs.
 - 5. RFI forms and logs.
 - 6. Task and issue management.
 - 7. Photo documentation.
 - 8. Schedule and calendar management.
 - 9. Submittals forms and logs.
 - 10. Reminder and tracking functions.
 - 11. Archiving functions.
- B. Preconstruction Conference:
 - 1. Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but not later than 15 days after execution of Agreement.
 - a. Hold conference at Project site or other location agreeable to Owner and Architect.
 - b. Conduct meeting to review responsibilities and personnel assignments.
 - 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties deemed necessary.
 - 3. All participants shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 4. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - 1) Format.
 - 2) Phasing.

- 3) Critical work sequencing and long-lead items.
 - b. Designation of key personnel and their duties.
 - c. Routing of correspondence.
 - d. Distribution of Contract Documents, including addenda, valued engineering (VE) items and substitutions included in Construction Contract.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for requests for interpretations (RFIs).
- C. General: Schedule and conduct meetings and conferences at Project site, unless otherwise instructed or directed.
- 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 - 2. Agenda: Prepare the meeting agenda. Distribute agenda to all invited attendees.
 - 3. Minutes: Record significant discussions, and agreements achieved. Distribute meeting minutes to everyone concerned, including Owner and Architect, within 72 hours after each meeting.
- D. Preconstruction Conference:
- 1. Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but not later than 15 days after execution of Agreement.
 - a. Hold conference at Project site or other location agreeable to Owner and Architect.
 - b. Conduct meeting to review responsibilities and personnel assignments.
 - 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties deemed necessary.
 - 3. All participants shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 4. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - 1) Format.
 - 2) Phasing.
 - 3) Critical work sequencing and long-lead items.

- b. Designation of key personnel and their duties.
 - c. Routing of correspondence.
 - d. Distribution of Contract Documents, including addenda, valued engineering (VE) items and substitutions included in Construction Contract.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for requests for interpretations (RFIs).
 - g. Submittal procedures and mock ups, if required by Owner.
 - h. Procedures for testing and inspection.
 - i. Procedures for processing Applications for Payment.
 - j. Procedures for delegated design work.
 - k. Procedures for substitutions.
 - l. Responsibility for temporary facilities and controls.
 - m. Use of premises and Owner's Utilities.
 - n. Site access, traffic, and parking availability and rules.
 - o. Office, work, and storage areas.
 - p. Security.
 - q. Progress cleaning.
 - r. Construction waste management and recycling.
 - s. Closeout Procedures.
5. Minutes: Contractor will record and distribute meeting minutes.
- E. Preinstallation Conferences:
- 1. Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
 - 2. Attendees: Contractor and its superintendent, installer and representatives of manufacturer's and fabricator's involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow. Include code enforcement personnel if required by local codes.
 - 3. Advise Architect of scheduled meeting dates.

4. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. The Contract Documents.
 - b. Related Change Orders.
 - c. Related Requests for Interpretation (RFI's).
 - d. Submittals.
 - e. Review of mockups.
 - f. Possible conflicts or compatibility problems.
 - g. Time schedules.
 - h. Weather limitations.
 - i. Manufacturer's written recommendations.
 - j. Warranty requirements.
 - k. Acceptability of substrates.
 - l. Temporary Facilities and Controls.
 - m. Regulations of authorities having jurisdiction.
 - n. Testing and inspecting requirements.
 - o. Installation procedures.
 - p. Coordination with other work.
 - q. Required performance results.
 - r. Protection of adjacent work.
5. Record significant conference discussions, agreements, disagreements, and required corrective measures and actions.
6. Do not proceed with installation if conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene conference at earliest feasible date.
7. Minutes: Contractor will record and distribute meeting minutes to each party present and to parties who should have been present.

F. Progress Meetings:

1. Conduct progress meetings at Project site at regular scheduled intervals.
 - a. Coordinate meeting dates with preparation of payment request.
2. Attendees: Authorized representatives of Owner, Architect, Contractor, and each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of immediate future activities.
 - a. Participants shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that affect progress, including topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Review schedule for next period.
 - c. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Progress cleaning.
 - 5) Quality and Work standards.
 - 6) Status of correction of deficient items.
 - 7) Field observations.
 - 8) Requests for interpretation (RFIs) status.
 - 9) Status of Proposal Requests.
 - 10) Status of Change Orders.
 - 11) Project administration issues.

4. Minutes: Contractor will record and distribute meeting minutes to Owner and Architect. Contractor shall be responsible for distribution to subcontractors, suppliers, or other entities concerned with current progress.
5. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.4. CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit a comprehensive, fully developed, horizontal bar-chart type Contractor's Construction Schedule by or before the pre-construction conference.
- B. Indicate each significant construction activity separately. Identify first working day of each week with a continuous vertical line.
 1. Include start-up, finish, duration, approval dates, material ordering, delivery dates, anticipated shutdowns, partial occupancy and Owner use, Completion Date and other such information required by the General Conditions to allow Owner's monitoring of progress of project and identifying critical path of events required to meet Completion Date.
 2. Use same breakdown of units of Work as indicated in Schedule of Values.
- C. Distribution: Following response to initial submittal, print and distribute copies to Architect, Owner, subcontractors, and other parties required to comply with scheduled dates.
- D. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized.
 1. Bring significant deviations from Schedule immediately to Owner's and Architect's attention.
 2. Include updated Construction Schedule with each Application for Payment.

1.5. SUBMITTALS SCHEDULE

- A. Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
 1. Coordinate Submittals Schedule with list of subcontract, the Schedule of Values, and Contractor's Construction Schedule.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

PART 1 GENERAL

1.1. SUMMARY

- A. This Section includes administrative and procedural requirements for submittals required for performance of Work, including Shop Drawings, Product Data, and Samples.
- B. Related Sections:
 - 1. Section 01 2500: Substitution Procedures, for substitutions submittal requirements.
 - 2. Section 01 2900: Payment Procedures, for Applications for Payment and Schedule of Values submittal requirements.
 - 3. Section 01 3100: Project Management and Coordination, for Coordination Drawings, Contractor's Construction Schedule, Submittals Schedule, and distribution of meeting and conference minutes submittal requirements.
 - 4. Section 01 3573: Delegated Design Procedures, for administrative and procedural requirements for Delegated Design submittals.
 - 5. Section 01 4500: Quality Control, for test and inspection reports submittal requirements.
 - 6. Section 01 7700: Closeout Procedures, for Record Drawings, Record Specifications, Operation and Maintenance Manuals, and warranties submittal requirements.
 - 7. Sections with specific requirements for submittals indicated in those Sections.

1.2. DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.
- C. Construction Management Software Program: Communication and management cloud-based platform that enables transfer of files, including submittals.
- D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.3. SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Submit all items required for each specification section concurrently unless partial submittals for portions of the Work are indicated on approved submittals schedule.

3. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed by need to review submittals concurrently for coordination.
 - a. Architect reserves right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - b. Partial submittals may be rejected as not complying with these provisions.
- B. Submittals Schedule: Comply with requirements of Section 01 3100, Project Management and Coordination, for list of submittals and time requirements for scheduled performance of related construction activities.
- C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows.
 1. Time for review shall commence on Architect's receipt of submittal.
 2. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 3. Initial Review: Allow minimum 10 working days for initial review of each submittal.
 - a. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 4. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 5. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 15 working days for initial review of each submittal.
 6. Resubmittal Review: Allow minimum 10 working days for review of each resubmittal.
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
 1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number. Resubmittals shall include a revision identifier after the Specification Section number.
 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.

4. Transmittal Form for Electronic Submittals: Use electronic form containing the following information:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name of Contractor.
 - e. Name of firm or entity that prepared submittal.
 - f. Name of manufacturer.
 - g. Specification Section number and title.
 - h. Drawing number and detail reference, as appropriate.
 - i. Location(s) where product is to be installed, as appropriate.
 - j. Transmittal number, numbered consecutively.
 - k. Submittal and transmittal distribution record.
 - l. Other necessary identification.
- E. Submit items pertaining to only one Specification Section in each submittal.
- F. Deviations: On an attached separate sheet, prepared on Contractor's letter head, record relevant information, revisions other than those required by Architect, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. Transmittal: Package each submittal individually and appropriately for transmittal and handling.
 1. Transmit each submittal from Contractor to Architect, using a transmittal form.
 2. Architect will return submittals, without review, received from sources other than Contractor or forwarded to Architect without transmittal.
- H. Resubmittals:
 1. Make resubmittals in same form and number of copies as initial submittal.
 2. Note date, revision number and content of revision in label or title block of resubmittal. Clearly indicate extent of revision.
- I. Distribution:
 1. Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others necessary as necessary for performance of construction activities.

2. Indicate submittal distribution on transmittal.
- J. Use for Construction: Use only submittals with mark indicating Architect's final release.
- K. Submittal Log: Maintain an accurate submittal log for duration of Work, showing current status of submittals at all times. Make log available to Owner and Architect for review upon request.

PART 2 PRODUCTS

2.1. ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
 1. Post submittals as PDF electronic files directly to Construction Management Software Program specifically established for Project, or submit electronically via email as PDF electronic files.

2.2. PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction and type of product or equipment.
 1. If information must be specifically prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not Product Data.
- B. Mark each copy of each submittal to show which products and options are applicable.
 1. Product Data, such as general product brochures containing information on other products that are not required or proposed for Work, which are not clearly marked to indicate which products and options are applicable to Project will be returned by Architect without review or action.
- C. Include following information, as specified in specific sections.
 1. Manufacturer's written recommendations.
 2. Manufacturer's product specifications.
 3. Manufacturer's installation instructions.
 4. Standard color charts.
 5. Manufacturer's catalog cuts.
 6. Compliance with specified referenced standards.
 7. Testing by recognized testing agency.
 8. Performance characteristics and capacities.
 9. Notation of dimensions verified by field measurement.
 10. Wiring diagrams showing factory installed wiring.

11. Printed performance curves.
 12. Operational range diagrams.
 13. Notation of coordination requirements.
- D. Submit one of the following for each required submittal:
1. Post electronic Product Data as PDF electronic files directly to Construction Management Software Program specifically established for Project.
 2. Submit electronic submittals via email as PDF electronic files.
 - a. Architect will return annotated file.
- E. Architect will return annotated file to Contractor, marked with action taken and, where applicable, corrections or modifications required.
1. Distribute Product Data necessary for performance of construction activities.
 2. Retain number of copies required for maintenance manuals.

2.3. SHOP DRAWINGS

- A. Shop Drawings: Prepare Project specific information, drawn accurately to a scale sufficiently large to show pertinent aspects of item and its method of connection to Work. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.
- B. Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
1. Dimensions; Identify dimensions established by field measurement.
 2. Identification of products.
 3. Fabrication and installation drawings.
 4. Roughing-in and setting diagrams.
 5. Wiring Diagrams: Differentiate between manufacturer installed and field installed wiring.
 6. Templates and patterns.
 7. Schedules.
 8. Design calculations.
 9. Compliance with specified standards.
 10. Notation of coordination requirements.
 11. Relationship to adjoining construction clearly indicated.

- C. Sheet Size: Except for templates, patterns and similar full-size drawings, at least 8-1/2 by 11 inches but no larger than 30 by 42 inches
- D. Submit one of the following for each required submittal:
 - 1. Post electronic Shop Drawings submittals as PDF electronic files directly to Construction Management Software Program specifically established for the Project.
 - 2. PDF electronic file.
- E. Architect will return annotated file to Contractor, marked with action taken and, where applicable, corrections or modifications required.
 - 1. Contractor is responsible for reproduction and distribution of final Shop Drawings as reviewed and necessary for performance of construction activities.

2.4. SAMPLES - NA

2.5. INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by Specification Sections.
- B. Submit one of the following for each required submittal:
 - 1. Post electronic Informational Submittals as PDF electronic files directly to Construction Management Software Program specifically established for Project.
 - 2. Submit electronic submittals via email as PDF electronic files.
- C. Certificates and Certifications.
 - 1. Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an office or other individual authorized to sign documents on behalf of that entity.
- D. Test and Inspection Reports: Comply with requirements specified in Section 01 4500, Quality Control.
- E. Welding, Installer, Manufacturer, Product and Material Certificates: Prepare written statements on manufacturer's letterhead certifying compliance with requirements in the Contract Documents.
- F. The following are Informational Submittals:
 - 1. Test and Inspection Reports.
 - 2. Coordination Drawings.
 - 3. Contractor's Construction Schedule.
 - 4. Qualification Data.

5. Welding Certificates.
6. Installer Certificates.
7. Manufacturer Certificates.
8. Product Certificates.
9. Material Certificates.
10. Material Test Reports.
11. Research/Evaluation Reports.
12. Compatibility Test Reports.
13. Field Test Reports.
14. Maintenance Data.
15. Design Data.
16. Manufacturer's Instructions.
17. Manufacturer's Field Reports
18. Safety Data Sheets.
 - a. Submit information directly to Owner; do not submit to Architect.
 - b. Architect will not review Safety Data Sheets (SDS).

2.6. DELEGATED DESIGN

- A. Coordinate delegated design components with Contract Documents prior to submitting for review.
- B. Delegated Design submittals are required to show complete design criteria, details, calculations, submittals, instructions for fabrication, assembly, installation and interface with other trades, unless noted otherwise in the specific Specification Section.
- C. Complete submittals shall be submitted with the Delegated Design Engineer's seal and signature and calculations for the specified portion of the Work. Submittals without required calculations, without the Delegated Design Engineer's seal and signature, and which have not been reviewed by the Contractor will not be reviewed by the Architect or Engineer of Record.
 1. The Architect shall review and take appropriate action on Shop Drawings and other submittals related to the Work designed or certified by the Contractor's design professional, provided the submittals bear such professional's seal and signature when submitted to the Architect.

2. The Architect's review shall be for the limited purpose of checking for conformance with information given and the design concept and criteria expressed in the Contract Documents.
- D. Delegated Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed by a design professional.
 1. Provide certificate in format required by Authority Having Jurisdiction.
 2. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 EXECUTION

3.1. CONTRACTOR'S REVIEW

- A. Review each submittal for completeness and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions.
 1. Incomplete submittals are unacceptable and will be considered nonresponsive.
 - a. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
 2. Mark with approval stamp before submitting to Architect.
- B. Approval Stamp: Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2. ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, mark with an action stamp, and return to Contractor.
- C. Action Stamp: Architect will stamp each submittal with an action stamp, and mark stamp appropriately to indicate action taken, as follows:
 1. Final Unrestricted Release: When a submittal is marked "NO EXCEPTION TAKEN," Work covered by submittal may proceed provided it complies with requirements of Contract Documents. Final payment depends on that compliance.

2. Final-But-Restricted Release: When a submittal is marked "MAKE CORRECTIONS NOTED," Work covered by submittal may proceed provided it complies with notations or corrections on submittal and requirements of Contract Documents. Final payment depends on that compliance.
3. Returned for Resubmittal: When a submittal is marked "REVISE AND RESUBMIT," do not proceed with Work covered by submittal, including purchasing, fabrication, delivery, or other activity.
 - a. Revise or prepare a new submittal according to notations and resubmit. Repeat as necessary to obtain an action releasing submittal.
 - b. Do not use, or allow others to use, submittals marked "REVISE AND RESUBMIT," at Project site or elsewhere where Work is in progress.
4. Submittals for Record:
 - a. Where a submittal is for record purposes, Architect will return submittal marked "RECORD ONLY."
- D. Informational Submittals: Architect will review each submittal and will not return it, return it marked "RECORD ONLY," or will reject and return it if it does not appear to comply with requirements.
- E. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
 1. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- F. Unsolicited Submittals: Architect may not review submittals not required by the Contract Documents. Such submittals may be returned to sender without action, or discarded.

END OF SECTION

PART 1 GENERAL

1.1. SUMMARY

- A. Certain components of the Work under this project are Delegated Design. It is the Contractor's responsibility to coordinate and assume or assign to subcontractors the complete responsibility for the design, calculations, submittals, fabrication, transportation, and installation of the Delegated Design portions or components as required in this Section. The Applicant is responsible for submitting to Oregon City, all Delegated Design documents required for the separate approval for each Delegated Design item. There are no exceptions. Delegated Design components of this Work are defined as complete, operational systems, provided for their intended use.
- B. The Architect's or Engineer of Record's review of Delegated Design submittals shall be for design intent and shall not lessen nor shift the responsibility from the Applicant or the assigned subcontractor to the Owner nor to the design professional. The Owner shall not be responsible for paying for any delays, additional products, additional hours of work or overtime, restocking or rework required due to failure by the Applicant or the subcontractor to coordinate their Work with the Work of other trades on the project or to provide the Delegated Design portion or component in a timely manner to meet the schedule of the project.
- C. Oregon City Requirements: Follow Oregon City's requirements current at the time of submission. The Applicant is responsible for coordinating and submitting all material required by the City so that the City's review will not adversely affect the construction schedule. At or near the time of application, the Applicant shall meet with the City to identify Delegated Design components and how they are to be submitted and processed.
- D. Delegated Design components known at this time:
 - 1. Firestopping.
- E. Refer to systems descriptions in technical Sections of these Specifications for additional information on Delegated Design work.

1.2. DEFINITIONS

- A. Applicant: Person applying for building permit for Delegated Design systems and person coordinating Delegated Design systems with basic building. Includes coordination of required submittals.
- B. Architect or Engineer of Record: Architect or Engineer registered in state that Project is located, engaged by the Owner to provide plans and computations, and establish design criteria for Delegated Design components and specifications required by the Building Official for principle Project systems.
- C. Contractor: Entity engaged by the Owner to construct the Project. Includes employees, subcontractors, suppliers, and their employees.

- D. Deferred Submittal: Those portions of the design of the building/structure that are not submitted at the time of permit application that are to be submitted to the building official within a specified period.
- E. Delegated Design Engineer: Professional Engineer registered in state that Project is located, engaged by the Contractor to provide plans, computations, and specifications required by the Building Official for a designated delegated design specialty system, in accordance with criteria set forth in Contract Drawings and Specifications.
- F. Seal: Certification that plans, computations, and specifications were designed and prepared under the direct supervision of the Engineer whose name appears thereon.
- G. Review Stamp: Certification, by means of a stamp or other similar notation, that the Architect or Engineer has reviewed plans, computations, and specifications bearing the seal of the Delegated Design Engineer, verifying conformance with information given and design concept set forth in Contract Drawings and Specifications.
- H. Approval Stamp: Certification that the Building Official has reviewed a submittal and finds it acceptable with respect to applicable code compliance.

1.3. SUBMITTALS

- A. Comply with pertinent provisions of Section 01 3300, Submittal Procedures.

1.4. SPECIFIC REQUIREMENTS

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Some Delegated Design components are shown in the Contract Documents for design intent. The purpose is to have the Contractor responsible for providing, coordinating, and installing the Delegated Design component.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

PART 1 GENERAL

1.1. DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on the Contractor's applications and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Reviewed": When used in lieu of "Approved" to convey Architect's action on the Contractor's submittals, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.
- D. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted," have the same meaning as "directed."
- E. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in the Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- F. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- G. "Furnish": Supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- H. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- I. "Provide": Furnish and install, complete and ready for the intended use.
- J. "Installer": Contractor or another entity engaged by the Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
- K. "Experienced": When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with the special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- L. "Project Site": Space available for performing construction activities. The extent of Project site is shown in Drawings and may or may not be identical with the description of the land on which Project is to be built.
- M. "Testing Agencies": Independent entities engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.2. INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of the date of the Contract Documents, unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on the Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.
- D. Conflicting Requirements: Comply with the most stringent requirement when compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels.
 - 1. Refer uncertainties and requirements that are different, but apparently equal, to the Architect for decision before proceeding.
- E. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed.

1.3. ABBREVIATIONS AND ACRONYMS

- A. Standards and Regulations: Where abbreviations and acronyms are used in Specification or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. Names are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.
 - 1. ADAAG:
 - a. Americans with Disabilities Act (ADA)
 - b. Architectural Barriers Act (ABA)
 - c. Accessibility Guidelines for Buildings and Facilities; available from Access Board; www.access-board.gov
 - 2. CFR: Code of Federal Regulations
 - a. Available from Government Printing Office; www.gpo.gov/fdsys
 - 3. UFAS: Uniform Federal Accessibility Standards
 - a. Available from Access Board; www.access-board.gov

B. Industry Organizations: Where abbreviations and acronyms are used in Specification or other Contract Documents, they shall mean the recognized name of entities in the following list. Names are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

1. AA: Aluminum Association, Inc. (The)
 - a. www.aluminum.org
2. AABC: Associated Air Balance Council
 - a. www.aabc.com
3. AAMA: American Architectural Manufacturers Association
 - a. www.aamanet.org
4. AASHTO: American Association of State Highway and
Transportation Officials; www.transportation.org
 - a. www.transportation.org
5. AATCC: American Association of Textile Chemists and Colorists
 - a. www.aatcc.org
6. ACI: American Concrete Institute
 - a. www.concrete.org
7. AF&PA: American Forest & Paper Association
 - a. www.afandpa.org
8. AGA: American Gas Association
 - a. www.aga.org
9. AGC: Associated General Contractors of America (The)
 - a. www.agc.org
10. AHAM: Association of Home Appliance Manufacturers
 - a. www.aham.org
11. AHRI: Air-Conditioning, Heating, and Refrigeration Institute (The)
 - a. www.ahrinet.org
12. AI: Asphalt Institute
 - a. www.ashpaltinstitute.org

13. AIA: American Institute of Architects (The)
 - a. www.aia.org
14. AISC: American Institute of Steel Construction
 - a. www.aisc.org
15. AISI: American Iron and Steel Institute
 - a. www.steel.org
16. ALSC: American Lumber Standards Committee, Incorporated
 - a. www.alsc.org
17. AMCA: Air Movement and Control Association International, Inc.
 - a. www.amca.org
18. ANSI: American National Standards Institute
 - a. www.ansi.org
19. APA - The Engineered Wood Association
 - a. www.apawood.org
20. ASCE: American Society of Civil Engineers
 - a. www.asce.org
21. ASHRAE: American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
 - a. www.ashrae.org
22. ASME International: (American Society of Mechanical Engineers)
 - a. www.asme.org
23. ASSE: American Society of Sanitary Engineering
 - a. www.asse-plumbing.org
24. ASTM International: (American Society for Testing and Materials International)
 - a. www.astm.org
25. AWCI: Association of the Wall and Ceiling Industry
 - a. www.awci.org

26. AWI: Architectural Woodwork Institute
 - a. www.awinet.org
27. AWPA: American Wood Protection Association
 - a. www.awpa.com
28. AWS: American Welding Society
 - a. www.aws.org
29. AWWA: American Water Works Association
 - a. www.awwa.org
30. BHMA: Builders Hardware Manufacturers Association
 - a. www.buildershardware.com
31. Cisca: Ceiling and Interior Systems Construction Association
 - a. www.cisca.org
32. CISPI: Cast Iron Soil Pipe Institute
 - a. www.cispi.org
33. CPPA: Plastics Pipe Institute
 - a. www.plasticpipe.org
34. CRI: Carpet and Rug Institute (The)
 - a. www.carpet-rug.org
35. CRSI: Concrete Reinforcing Steel Institute
 - a. www.crsi.org
36. CSA International
 - a. (Formally: IAS - International Approval Services)
 - b. www.csa-international.org
37. CSI: Construction Specifications Institute (The)
 - a. www.csinet.org
38. DHI: Door and Hardware Institute
 - a. www.dhi.org

- 39. ECA: Electrical Components Association
 - a. www.ec-central.org
- 40. GA: Gypsum Association
 - a. www.gypsum.org
- 41. GANA: Glass Association of North America
 - a. www.glasswebsite.com
- 42. GS: Green Seal
 - a. www.greenseal.org
- 43. GSI: Geosynthetic Institute
 - a. www.geosynthetic-institute.org
- 44. HMMA: Hollow Metal Manufacturers Association
 - a. (Part of NAAMM)
- 45. HPVA: Hardwood Plywood and Veneer Association
 - a. www.hpva.org
- 46. IEEE: Institute of Electrical and Electronics Engineers, Inc. (The)
 - a. www.ieee.org
- 47. IES: Illuminating Engineering Society
 - a. www.ies.org
- 48. IGCC: Insulating Glass Certification Council
 - a. www.igcc.org
- 49. IGMA: Insulating Glass Manufacturers Alliance
 - a. www.igmaonline.org
- 50. Intertek Intertek Group
 - a. www.intertek.com
- 51. ISFA: International Surface Fabricators Association
 - a. www.isfanow.org
- 52. ISO: International Organization for Standardization

- a. www.iso.org
- 53. MFMA: Metal Framing Manufacturers Association
 - a. www.metalframingmfg.org
- 54. MIA: Masonry Institute of America
 - a. www.masonryinstitute.org
- 55. MPI: Master Painters Institute
 - a. www.paintinfo.com
- 56. NAAMM: National Association of Architectural Metal Manufacturers
 - a. www.naamm.org
- 57. NAIMA: The North American Insulation Manufacturers Association
 - a. www.naima.org
- 58. NCMA: National Concrete Masonry Association
 - a. www.ncma.org
- 59. NCTA: National Cable & Telecommunications Association
 - a. www.ncta.com
- 60. NECA: National Electrical Contractors Association
 - a. www.necanet.org
- 61. NEMA: National Electrical Manufacturers Association
 - a. www.nema.org
- 62. NFPA (National Fire Protection Association)
 - a. www.nfpa.org
- 63. NFRC: National Fenestration Rating Council
 - a. www.nfrc.org
- 64. NGA: National Glass Association
 - a. www.glass.org
- 65. NHLA: National Hardwood Lumber Association
 - a. www.nhla.com

66. NLGA: National Lumber Grades Authority
 - a. www.nlga.org
67. NRCA: National Roofing Contractors Association
 - a. www.nrca.net
68. NRMCA: National Ready Mixed Concrete Association
 - a. www.nrmca.org
69. NSSGA: National Stone, Sand & Gravel Association
 - a. www.nssga.org
70. NWCB: Northwest Wall and Ceiling Bureau
 - a. www.nwcb.org
71. PCA: Portland Cement Association
 - a. www.cement.org
72. RCSC: Research Council on Structural Connections
 - a. www.boltcouncil.org
73. RCFI: Resilient Floor Covering Institute
 - a. www.rfci.com
74. SCAQMD: South Coast Air Quality Management District
 - a. www.aqmd.com
75. SDI: Steel Deck Institute
 - a. www.sdi.org
76. SDI: Steel Door Institute
 - a. www.steeldoor.org
77. SGCC: Safety Glazing Certification Council
 - a. www.sgcc.org
78. SMACNA: Sheet Metal and Air Conditioning Contractors' National Association
 - a. www.smacna.org
79. SPFA: Spray Polyurethane Foam Alliance

- a. www.sprayfoam.org
- 80. SPRI: Single Ply Roofing Industry
 - a. www.spri.org
- 81. SPRI: Solar Rating and Certification Corporation
 - a. www.solar-rating.org
- 82. SSMA: Steel Stud Manufacturers Association
 - a. www.ssma.com
- 83. SSPC: The Society for Protective Coatings
 - a. www.sspc.org
- 84. SWRI: Sealant, Waterproofing, and Restoration Institute
 - a. www.swrionline.org
- 85. TCNA: Tile Council of North America, Inc.
 - a. www.tileusa.com
- 86. UL: Underwriters Laboratories Inc.
 - a. www.ul.com
- 87. WCLIB: West Coast Lumber Inspection Bureau
 - a. www.wclib.org
- 88. WCMA: Window Covering Manufacturers Association
 - a. www.wcmanet.org
- 89. WI: Woodwork Institute
 - a. www.wicnet.org
- 90. Western States Roofing Contractors Association
 - a. www.wsrca.com
- 91. Western Wood Products Association
 - a. www.wwpa.org

- C. Code Agencies: Where abbreviations and acronyms are used in Specification or other Contract Documents, they shall mean the recognized name of entities in the following list. Names are

subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

1. IBC: International Building Code
 2. ICC: International Code Council
 - a. www.iccsafe.org
 3. ICC-ES: ICC Evaluation Service, LLC
 - a. www.ice-es.org
 4. OSSC: State of Oregon Structural Specialty Code
- D. Federal Government Agencies: Where abbreviations and acronyms are used in Specification or other Contract Documents, they shall mean the recognized name of entities in the following list. Names are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.
1. CPSC: Consumer Product Safety Commission
 - a. www.cpsc.gov
 2. EPA: Environmental Protection Agency
 - a. www.epa.gov
 3. HUD: Department of Housing and Urban Development
 - a. www.hud.gov
 4. OSHA: Occupational Safety & Health Administration
 - a. www.osha.gov

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

PART 1 GENERAL

1.1. SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control services.
 - 1. Quality assurance and control services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, manufacturers, and by governing authorities. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - a. Requirements do not include Contract enforcement activities performed by Architect.
 - 2. Inspection and testing services are required to verify compliance with requirements specified or indicated.
- B. Related Sections:
 - 1. Section 01 7329: Cutting and Patching, for requirements for repair and restoration of construction disturbed by inspection and testing activities.
 - 2. Section 07 8400: Firestopping, for independent inspection requirements for firestopping assemblies.
 - 3. Section 28 0500- Common Work Results for Electronic Security, for testing and inspection requirements of security systems.

1.2. RESPONSIBILITIES

- A. Owner will contract separately for services of independent testing laboratory to perform specified inspection and testing.
 - 1. Unanticipated inspections and testing required by authorities having jurisdiction will be paid for by the Owner, unless inspection or testing is required due to failure of the Contractor to perform work of the Contract Documents.
- B. Inspections and testing costs required by defective Work or improperly-timed notices shall be paid by Contractor.

1.3. RETESTING

- A. Regardless of whether original tests were Contractor's responsibility, provide quality-control services, including retesting, for construction that replaced Work that failed to comply with the Contract Documents.

1.4. ASSOCIATED SERVICES

- A. Cooperate with agencies performing inspections and tests.
- B. Provide auxiliary services as requested.

- C. Notify agency in advance of operations to permit assignment of personnel.
- D. Auxiliary services include, but are not limited to, following:
 - 1. Providing access to Work.
 - 2. Furnishing incidental labor and facilities necessary to facilitate inspections and tests.
- E. Coordinate activities to accommodate services with a minimum of delay.
- F. Contractor is responsible for scheduling inspections and tests.
 - 1. Except where indicated as responsibility of testing agency, Contractor is responsible for taking samples.

1.5. QUALITY ASSURANCE

- A. Qualifications for Inspection and Testing Agencies:
 - 1. Engage inspection and testing service agencies that are prequalified as complying with American Council of Independent Laboratories' "Recommended Requirements for Independent Laboratory Qualification" and that specialize in types of inspections and tests to be performed.
 - 2. Each independent inspection and testing agency engaged on Project shall be authorized by authorities having jurisdiction to operate in State where Project is located.
- B. Duties of Testing Agency:
 - 1. Testing agency shall cooperate with Architect and Contractor in performing its duties.
 - 2. Agency shall provide qualified personnel to perform inspections and tests.
 - 3. Agency shall notify Architect and Contractor of irregularities or deficiencies observed in Work during performance of its services.
 - 4. Except as otherwise specified, testing laboratory shall secure, handle, and store samples and specimens for testing.
- C. Submittals: Testing agency shall submit a certified written report of each inspection and test to:
 - 1. Architect.
 - 2. Contractor.
 - 3. Governmental agencies requiring submission of reports.
 - 4. Other persons as directed by Architect.

PART 2 PRODUCTS – (NOT APPLICABLE)

PART 3 EXECUTION

3.1. SPECIAL INSPECTIONS

- A. Comply with requirements of Section 1701 of Oregon Structural Specialty Code, latest edition, based on International Building Code.

3.2. MANUFACTURER'S FIELD SERVICES AND REPORTS.

- A. Submit qualifications of observer to Architect/Engineer 30 days in advance of required observations.
 - 1. Observer subject to approval of Architect/Engineer and Owner.
- B. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe:
 - 1. Site conditions
 - 2. Conditions of surfaces and installation
 - 3. Quality of workmanship
 - 4. Start-up of equipment
 - 5. Test, adjust, and balance of equipment applicable, and to initiate instructions when necessary.
- C. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.
- D. Submit report in duplicate within 30 days of observation to Architect/Engineer for review.

3.3. REPAIR AND PROTECTION

- A. Upon completion of inspection, testing, and sample taking, repair damaged construction.
 - 1. Restore substrates and finishes.
 - 2. Comply with Section 01 7329, "Cutting and Patching."
- B. Protect construction exposed by or for quality control service activities, and protect repaired construction.
- C. Repair and protection are Contractor's responsibility, regardless of assignment of responsibility for inspection and testing.

3.4. EVALUATION OF TESTS AND INSPECTIONS

- A. Satisfactory completion of Work will be judged on results of laboratory and site tests and inspections.
- B. Results of tests and inspections that indicate Work does not comply with requirements of Contract Documents will be considered deficient Work.
- C. Contractor has responsibility to remove and replace deficient Work at Contractor's expense.

END OF SECTION

PART I GENERAL

1.1. SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, security and protection facilities.

1.2. USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, testing agencies, and authorities having jurisdiction.
- B. Existing Utility Services: Water and electric power from Owner's existing systems is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3. QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to:
 - 1. Building code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police and fire department rules.
 - 5. Environmental protection regulations.
- B. Standards: Comply with the following:
 - 1. NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
 - 2. ANSI A10 Series standards for "Safety Requirements for Construction and Demolition."
 - 3. NECA Electrical Design Library "Temporary Electrical Facilities."
- C. Electric Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70 "National Electric Code."
- D. Tests and Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.4. PROJECT CONDITIONS

- A. Keep temporary services and facilities clean and neat in appearance.

- B. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.
- C. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 PRODUCTS

2.1. MATERIALS

- A. Provide new materials, or use undamaged, used materials in serviceable conditions, suitable for use intended.

2.2. TEMPORARY FACILITIES

- A. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows, and serviceable finishes, of sufficient size and furnished to accommodate needs of construction personnel.
 - 1. Use of Owner's existing building will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
 - 1. Use of Owner's existing building will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

2.3. EQUIPMENT

- A. Fire Extinguishers: Portable, UL-rated, with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid propane gas or fuel oil heaters with individual space thermostatic control.
 - 1. Use of gasoline burning space heaters, open flame heaters, or salamander heating units is prohibited.
 - 2. Heating Units: Listed and labeled for type of fuel being consumed, by UL, FM, or another testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 3 EXECUTION

3.1. TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company and Owner for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel.
 - 1. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of the fixtures and facilities.
 - 2. Toilets: Use of Owner's existing toilet facilities may be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- D. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.
- E. **Heating: Provide temporary heat required by construction activities for curing or drying of completed installations or for protection of installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.**
- F. Telecommunication Service: Provide, maintain, and pay for telecommunication services for field office at time of project mobilization.
 - 1. Telecommunication services shall include the following:
 - a. Wi-Fi cell phone access equipment or land-based telephone line for use by construction personnel.
 - b. Personal computer with window-based operating system dedicated to project telecommunications, with necessary software and laser printer.
 - 2. In the field Office, post a list of important telephone numbers, including the following:
 - a. Police and fire departments.
 - b. Ambulance service.
 - c. Contractor's home office.
 - d. Contractor's emergency after-hours telephone number.

- e. Architect's office.
 - f. Engineer's office.
 - g. Owner's office.
 - h. Principal subcontractor's field offices.
3. Provide superintendent with cellular telephone or two-way radio for use when away from field office.
- G. Electronic Communication Service: Provide temporary electronic communication service including electronic mail, in primary field
- H. office.
- I. Isolation of Work Areas in Occupied Areas: Prevent dust, fumes, and odors from entering occupied areas.
- 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed.
 - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
 - b. Maintain negative air pressure within work area using HEPA-equipped air filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
 - 2. Maintain dust partitions or protective barriers during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust containment devices.

3.2. SUPPORT FACILITIES

- A. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- B. Project Identification Signs: Provide Project identification and other signs.
 - 1. Provide temporary, directional signs for construction personnel and visitors.
 - 2. Do not permit installation of unauthorized signs.
- C. Waste Disposal Facilities: Comply with requirements specified in Section 01 7419, Construction Waste Management.
- D. Lifts and Hoists: Provide facilities for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.3. SECURITY AND PROTECTION FACILITIES

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection:
 - 1. Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or that other undesirable effects.
 - 2. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.
 - a. Comply with work restrictions specified in Section 01 1100, "Summary of Work".
- C. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, or similar violations of security.
 - 1. Lock entrances at end of each work day.
- D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structural adequate barricades, including warning signs and lighting.
 - 1. Provide appropriate warning signs to inform personnel and the public of hazards being protected against.
- E. Temporary Fire Protection: Install and maintain temporary fire protection facilities of types needed to protect against reasonably predictable and controllable fire losses until permanent fire protection facilities are operable.
 - 1. Comply with NFPA 241.
 - 2. Store combustible materials in containers in fire safe locations.
 - 3. Maintain unobstructed access to fire protection equipment.
 - 4. Supervise welding operations, combustion type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 5. Develop and post information for overall fire prevention and protection program for personnel at Project site.
- F. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

3.4. TERMINATION AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities to minimize waste and abuse.

- B. Maintenance: Maintain facilities in good operating condition until removal.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Termination and Removal: Remove each temporary facility when the need for its service has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion.
 - 1. Materials and facilities that constitute temporary facilities are property of the Contractor.
 - 2. The Owner reserves the right to take possession of Project identification signs.
 - 3. Complete, or if necessary, restore permanent construction that may have been delayed because of interference with temporary facility.
- D. At Substantial Completion, clean and renovate permanent facilities used during the construction period.

END OF SECTION

PART 1 GENERAL

1.1. SUMMARY

- A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in Project; product delivery, storage, and handling; and manufacturer's standard warranties on products; special warranties; and comparable products.
- B. Related Sections:
 - 1. Section 01 2500: Substitution Procedures, for product substitutions procedures.
 - 2. Section 01 3300: Submittal Procedures, for product submittal procedures.
 - 3. Section 01 4200: Definitions and Reference Standards
 - 4. Section 01 7700: Closeout Procedures, for submittal of warranties.
 - 5. Section 28 0500- Common Work Results for Electronic Security, for specific submittal and substitution requirements for electronic system products and materials.

1.2. DEFINITIONS

- A. Products: Items obtained for incorporating into the Work. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by the manufacturer's product name, including make or model number or other designation shown or listed in the manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed. Products salvaged or recycled from other products are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through substitution submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Refer to Section 01 2500 for product substitution procedures.
- C. Basis of Design, or Standard of Design, Product Specification: Where the manufacturer's product is named and accompanied by the words "basis of design" or "standard of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.3. SUBMITTALS

- A. Refer to Section 01 3300 for product submittal procedures.
- B. Product List: Before Contractor's first request for payment, submit a complete list of major products proposed for use in the Project.
 - 1. Include proprietary product names, manufacturer's name and installing Subcontractor's name.

1.4. QUALITY ASSURANCE

- A. Source Limitations: Provide products of the same kind from a single source to the fullest extent possible.
- B. Compatibility of Products: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.5. PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, or other losses.
 - 3. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
 - 1. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Comply with manufacturer's written instructions for temperature, humidity, ventilation, and weather protection requirements for storage.

1.6. PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitation on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 - 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document specifically endorsed by manufacturer to Owner that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
 - 1. Manufacturer's Standard Form: Modified to include Project specific information and properly executed.
 - 2. Specified Form: When specified forms are included in the Specifications, prepare a written document using appropriate form properly executed.
 - 3. Refer to Section 28 0500 for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 01 7700, "Closeout Procedures."

PART 2 PRODUCTS

2.1. PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 - 1. Provide products complete with accessories, trim, finish fasteners, and other items needed for a complete installation and indicated use and effect.
 - 2. Where products are accompanied by the term "as selected," Architect will make selection.
 - 3. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
 - 4. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," submit product for Architect approval according to requirements of Section 01 2500, "Substitution Procedures" to obtain approval of an unnamed product.

- B. Proprietary Specification Requirements: Where a single product or manufacturer is named, provide the product that complies with requirements. No substitutions are permitted.
- C. Manufacturer/Source: Where a single manufacturer or source is named, provide a product by the named manufacturer or source that complies with requirements.
- D. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
- E. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements. Comply with provisions of Section 01 2500 for consideration of an unnamed product.
- F. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed that complies with requirements. Comply with provisions of Section 01 2500 for consideration of an unnamed product.
- G. Descriptive Specification Requirements: Where a product or assembly listing exact characteristics required, provide a product or assembly that provides those characteristics and otherwise complies with requirements.
- H. Performance Specification Requirements: Where compliance with performance requirements are specified, provide products that comply with those requirements and are recommended by the manufacturer for the application indicated.
- I. Specified Standards, Codes, and Regulations: Where compliance with an imposed code, standard, or regulation is specified, provide a product that complies with that code, standard, or regulation.
- J. Basis of Design, or Standard of Design, Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions of Section 01 2500 for consideration of an unnamed product by the other named manufacturers.
- K. Inappropriate Product Selections: If Contractor believes specified product, method, or system is inappropriate for use, Contractor shall notify the Architect before performing Work in question.
 - 1. If notice of objection is not received prior to delivery to site, it will be assumed by Owner that Contractor agrees specified products, methods, and systems are appropriate for use in the Project.

PART 3 EXECUTION

3.1. INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated.
 - 1. Anchor each product securely in place, accurately located and aligned with other Work.

2. Clean exposed surfaces and protect as necessary from damage and deterioration.
- B. Should job conditions or specified requirements conflict with Manufacturers' instructions, consult Architect for further instructions.

END OF SECTION

PART 1 GENERAL

1.1. SUMMARY

- A. This Section includes requirements for cutting, fitting, and patching of Work required to:
 - 1. Make several parts fit properly.
 - 2. Uncover work to provide for installing, inspecting, or both, of ill-timed work.
 - 3. Remove and replace work not conforming to requirements of Contract Documents.
 - 4. Remove and replace defective work.
 - 5. Products and installation for patching and extending Work.
 - 6. Repair of damaged surfaces, finishes, and cleaning.
- B. Related Sections:
 - 1. Section 01 3100: Project Management and Coordination, for coordinating cutting and patching with other construction activities.
 - 2. Section 02 4100 – Demolition.
 - 3. Section 07 8400- Firestopping, for firestopping requirements for cutting fire rated wall and floor/ceiling assemblies.
 - 4. Section 09 9600 – High Performance Coatings: Epoxy paint.
 - 5. Divisions 26 and 28, for electronic security requirements and limitations applicable to cutting and patching electrical security installations.

1.2. QUALITY ASSURANCE

- A. Structural Work: Do not cut and patch structural elements in a manner that would change their load carrying capacity of load deflection ratio.
 - 1. Obtain approval before cutting and patching structural elements.
- B. Do not cut and patch operating elements in a manner that would reduce their capacity to perform as intended, cause increased maintenance, or decreased operational life or safety.
- C. Do not cut and patch exposed elements of construction that in the Architect's opinion would reduce the visual aesthetic qualities, or result in visual evidence of cutting and patching.
 - 1. Remove and replace construction cut and patched in a visually unacceptable manner.

1.3. WARRANTY

- A. Cut and patch construction using methods and with materials in such a manner as to not void any warranties required or existing.

PART 2 PRODUCTS

2.1. MATERIALS

- A. General: Comply with requirements specified in other sections.
- B. Use new materials identical to existing materials.
- C. For exposed surfaces, where identical materials are not available, use materials that visually match existing adjacent surfaces as nearly as possible.

PART 3 EXECUTION

3.1. INSPECTION

- A. Inspect existing conditions, including elements subject to movement or damage during cutting, excavating, patching, and backfilling.
- B. After uncovering Work, inspect conditions affecting installation of new Work.
- C. Discrepancies: If uncovered conditions are not as anticipated, immediately notify Architect and secure direction before proceeding further.
 - 1. Do not proceed until unsatisfactory conditions are corrected.

3.2. PREPARATION

- A. Protect existing construction during cutting and patching to prevent damage.
- B. Cut, move, or remove items as necessary for access to alteration Work. Replace and restore at completion.
- C. Remove debris and abandoned items from area and from concealed spaces.
- D. Prepare surface and remove surface finishes to provide for proper installation of new work and finishes.

3.3. GENERAL PERFORMANCE

- A. Use skilled workers trained and experienced in necessary crafts and familiar with requirements and methods required to restore surfaces to their original condition.
- B. Provide dust proof barriers where necessary to protect existing surfaces.

3.4. CUTTING

- A. Perform cutting and demolition by methods that will provide the least damage to other portions of Work.
- B. Prior to cutting existing work, locate concealed utilities to eliminate possibility of service interruption or damage.

- C. Cut through concrete or masonry with a carborundum masonry saw or diamond-core drill.
- D. When masonry construction must be pierced, furnish and install a steel pipe sleeve in opening and grout in place neatly.
 - 1. Leave grout surface to match existing finish.
 - 2. Fabricate sleeve one inch in diameter larger than pipe or insulation.
 - 3. Pack between sleeve and pipe with waterproof sealant.
 - 4. At penetrations of fire-resistant rated walls, partitions, ceiling, or floor construction, completely seal voids with fire-resistant rated materials as required to maintain assembly of fire-resistant rating of penetrated element, or as required by Building Code.
 - a. Refer to Section 07 8400- Firestopping for firestopping requirements.

3.5. PATCHING

- A. Perform fitting and adjusting of products to provide a finished installation complying with tolerances and finishes specified for type of construction involved.
- B. Where replacement of equipment and fixtures is required, restore electrical, and similar systems to full operational condition.
- C. Refinish surfaces to match existing adjacent finish, patching with seams that are durable and as invisible as possible.
 - 1. Patch or replace portions of existing surfaces that are damaged, discolored, or showing other imperfections.
 - 2. Repair substrate prior to patching finish.
 - 3. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining work in manner that will eliminate evidence of patching and refinishing.
 - 4. Where new Work abuts or aligns with existing, perform a smooth and even transition. Patched Work to match existing adjacent Work in texture and appearance.
- D. When finished surfaces are cut so that smooth transition with existing or new work is not possible, submit to Architect, for approval, recommendation for terminating surface along straight line at natural line of division.
 - 1. Where change of plane of 1/4 inch or more occurs, submit to Architect, for approval, recommendation for providing smooth transition

3.6. INSTALLATION

- A. Coordinate work of alterations to expedite completion sequentially and to accommodate Owner occupancy.

- B. Project Finishes: Complete in all respects including operational electrical work.
- C. Remove, cut, and patch Work in a manner to minimize damage and to provide a means of restoring Products and finishes to specified condition. Repair substrate prior to patching finish.
- D. Refinish visible existing surfaces to remain in renovated rooms and spaces, to match existing conditions for each material, with a neat transition to adjacent finishes.
- E. Repaint existing interior surfaces marked or scuffed due to demolition and installation of new security systems and cameras.
- F. Repaint newly installed surface materials with epoxy paint as specified in Section 09 9600. Color to match existing, unless otherwise directed by Owner.
- G. Install Security System Products as specified in individual Sections.

3.7. REPAIR OF DAMAGED SURFACES

- A. Remove gypsum wall panels damaged in demolition and alteration work and replace gypsum material in kind.
- B. Repaint damaged, scuffed, dented or stained wall surfaces with epoxy paint material in kind. Match existing paint color and sheen.

3.8. CLEANING

- A. Clean areas and spaces where cutting and patching work is performed.

END OF SECTION

PART 1 GENERAL

1.1. WASTE MANAGEMENT GOALS

- A. Waste materials produced as a result of this project shall be reused or recycled to minimize impact of construction waste on landfills and to minimize expenditure of energy and cost in fabricating new materials.

1.2. WASTE MANAGEMENT PLAN

- A. Reuse or recycle debris generated as a result of work performed on project when practicable and cost effective.
- B. Report following information on a monthly basis to Owner:
 - 1. Types of waste materials produced as a result of work performed on site.
 - 2. Quantities of waste and recyclables taken from site.
 - 3. Destination of materials.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1. ON-SITE MATERIALS SORTING AND STORAGE DURING CONSTRUCTION

- A. Verify recycling facilities or waste processor requirements for preparation of materials to be accepted and to what degree materials can be contaminated.
- B. Recycle the following waste materials:
 - 1. Wood
 - 2. Metals (ferrous and non-ferrous)
 - 3. Cardboard
 - 4. Drywall
 - 5. Masonry and Concrete
 - 6. Office paper
- C. Coordinate with local hauler to provide separate containers for recycled materials listed above.
 - 1. Subcontractors shall follow source separation requirements for each waste, and use appropriate on-site container for each type of waste material.
 - 2. Provide separate containers for non-recyclable materials.
- D. Rebates: Paid or credited by hauler/recycler to Contractor.

- E. Inform field personnel and subcontractors about recycling program, and continuously monitor program to verify proper source separation and to avoid contamination of recyclable materials.
- F. Recycling Processors and Facilities:
 - 1. Comprehensive list of recycling facilities in Portland Metro are available from local building permit office or by contacting Metro at 503-234-3000.

END OF SECTION

PART 1 GENERAL

1.1. SUMMARY

- A. This Section includes administrative and procedural requirements for Contract closeout including, but not limited to, the following:
 - 1. Substantial completion procedures.
 - 2. Final completion procedures.
 - 3. Project record documents.
 - 4. Operation and maintenance manuals.
 - 5. Warranties.
 - 6. Starting and Adjusting.
 - 7. Instruction of Owner's personnel.
- B. Closeout requirements for specific construction activities are included in the appropriate Sections.
- C. Related Sections:
 - 1. Section 01 2900: Payment Procedures, for requirements for Applications for Payment for Substantial and Final Completion.
 - 2. Section 01 4500: Quality Control, additional requirements for Record Documents and Operation and maintenance manuals.
 - 3. Section 01 5000: Temporary Facilities and Control, for removal of temporary facilities.
 - 4. Section 01 7400: Cleaning, for final cleaning requirements.
 - 5. Section 28 0500 – Common Work Results for Electronic Security, specific closeout requirements, including operational and maintenance training.

1.2. SUBSTANTIAL COMPLETION

- A. Prior to requesting construction observation for determining date of Substantial Completion, complete the following.
 - 1. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Prepare a list of items to be completed and corrected (Contractor's punch list), the value of items on the list, and reasons why the Work is not complete.
 - 3. Advise the Owner of pending insurance changeover requirements.

4. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 5. Submit specific warranties.
 6. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 7. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment as required by Owner.
 8. Initiate touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
 9. Initiate cleanup requirements required in Section 01 7400, including touchup painting.
- B. Construction Observation: Submit a written request, with attached Contractor's punch list, for Architect's observation of the Work for completion of Construction Contract requirements to establish date of Substantial Completion.
1. On receipt of request and Contractor's punch list, the Architect will either proceed with observation of the Work, or without completing process of observation, advise Contractor that based on limited observation, the Work is not sufficiently complete for Substantial Completion.
 2. Architect will prepare the Certificate of Substantial Completion after completion of observation of the Work, or will notify Contractor of items, either on Contractor's punch list or additional items identified by Architect, that must be completed or corrected before certificate can be issued.
 - a. Architect will perform a final observation of the Work when assured by Contractor that deficiencies identified in previous observation have been completed or corrected.
 - b. If additional observation(s) of the Work is required to establish Substantial Completion, the Owner will charge the Contractor to reimburse Architect for time and expenses.
 - c. Results of the completed construction observation will form the basis of requirements for final acceptance.
 3. Owner will allow Contractor no longer than 30 calendar days from Date of Substantial Completion to remedy deficiencies.

1.3. FINAL COMPLETION

- A. Prior to requesting construction observation for determining date of Final Completion, complete the following.
1. Submit a final Application for Payment, according to requirements of Section 01 2900.

2. Submit certified copy of Substantial Completion punch list of deficient items to be completed or corrected, endorsed and dated by Architect that states that each item has been completed, corrected, or otherwise resolved for acceptance.
 3. Submit Project Record Documents, operation and maintenance manuals, construction photographs, damage or settlement surveys, property surveys, and similar final record information.
 4. Submit specific workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 5. Submit test/adjust/balance records if required for adjustment of existing and new equipment.
 6. Terminate and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
 7. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
 8. Complete final cleanup requirements required in Section 01 7400, including touchup painting.
- B. Construction Observation: Submit a written request, and copy of Substantial Completion punch list noting when the listed items were completed, for Architect's observation of the Work for completion of Construction Contract requirements for final acceptance.
1. On receipt of request, the Architect will either proceed with observation of the Work and specifically the Substantial Completion punch list of deficient items to be completed or corrected, or advise the Contractor of unfulfilled requirements.
 2. Architect will prepare the final Certificate for Payment after completion of observation of the Work, or will notify Contractor of Contract requirements that must be completed or corrected before certificate can be issued.
 - a. Architect will perform a final observation of the Work when assured by Contractor that deficiencies identified in previous observation(s) have been completed or corrected.
 - b. If additional observation(s) of the Work is required to establish Final Completion, the Owner will charge the Contractor to reimburse Architect for time and expenses.

1.4. LIST OF DEFICIENT ITEMS (PUNCH LIST)

- A. Submit list of deficient items (Contractor's punch list). Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if applicable, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.

2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.

1.5. PROJECT RECORD DOCUMENTS

- A. General: Do not use Project Record Documents for construction purposes; protect from deterioration and loss.
- B. Electronic Record Drawings: Prepare a full set of corrected digital data files of the Contract Drawings, as follows:
 1. File Format: Annotated PDF electronic file.
 2. When authorized by Owner, provide same digital data software program, version, and operating system as the original Contract Drawings.
 3. Incorporate changes and additional information previously marked on record prints.
 - a. Delete, redraw, and add details and notations where applicable.
 4. Refer instances of uncertainty to Architect for resolution.
 5. Architect will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.
 - a. Architect will provide data file layer information. Record markups in separate layers.
- C. Record Specifications: Submit one complete annotated PDF electronic file of Project Specifications, including addenda and contract modifications.
 1. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 3. Mark copy with proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 4. Note related Change Orders and other modifications, where applicable.

- D. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind miscellaneous records and identify each in same format as specified for Operation and Maintenance Manuals, ready for continued use and reference.
1. One set of evidence of compliance with requirements of governmental agencies having jurisdiction including, but not necessarily limited to:
 - a. Certificates of Inspection.
 2. One set of certificates of insurance for products and completed operations.
 3. One set of evidence of payment and release of liens.
 4. One copy of list of Subcontractors, service organizations, and principal vendors, including names, addresses, and telephone numbers where they can be reached for emergency service at all times including nights, weekends, and holidays.
 5. Format: Submit miscellaneous record submittals as PDF electronic file.

1.6. OPERATION AND MAINTENANCE MANUALS

- A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:
1. Submit two complete and approved sets of maintenance manuals prior to system start-ups and instruction of operation and maintenance personnel.
 2. Submit on complete and approved PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect and Owner.
 3. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - a. Cover labeled as "Operating and Maintenance Instructions" with name and address of Project, and names of Contractor and Subcontractors.
 - b. Typewritten index near front of manual, providing immediate information as to location within manual of emergency information regarding installation.
 - c. Complete instructions regarding operation and maintenance of all equipment, including lubrication, disassembly, and reassembly.
 - d. Complete nomenclature of all parts of all equipment.
 - e. Complete nomenclature and part number of all replacement parts, name and address of nearest vendor, and all other data pertinent to procurement procedures.
 - f. Copy of guarantees and warranties issued.

- g. Manufacturers' bulletins, cuts, and descriptive data, where applicable, clearly indicating precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturers' data with which this installation is not concerned.

1.7. WARRANTIES

- A. Submit one set of warranties, organized into an orderly sequence based on the table of contents of the Project Manual, in same format as specified for Operation and Maintenance Manuals.
 - 1. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- B. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1. STARTING AND ADJUSTING

- A. Prior to request for certification of Substantial Completion, start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment and operating components for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.2. DEMONSTRATION AND TRAINING

- A. Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. Provide instructors experienced in operation and maintenance procedures.
 - 2. Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.
 - 3. Schedule training with Owner with at least 2 weeks advance notice.
 - 4. Coordinate instructors, including providing notification dates, times, length of instruction, and course content.
- B. Include instruction for system design and operational philosophy, review of documentation, operations, adjustments, troubleshooting, maintenance, and repair.

END OF SECTION

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Selective demolition of building elements; including casework, for alteration purposes.

1.2. RELATED SECTIONS

- A. Section 01 1100 - Summary of Work: Limitations on Contractor's use of site and premises.
- B. Section 01 7329 – Cutting and Patching: Requirements for patching and replacement of materials and products due to demolition.
- C. Section 01 7410 - Construction Waste Management: Requirements for recycling.
- D. Division 26 - Electrical: Demolishing or relocating site and security electrical items.

1.3. QUALITY ASSURANCE

- A. Standards: Comply with the following:
 - 1. ASSE A10.6: "Safety Requirements for Construction and Demolition."
 - 2. NFPA 241: "Safeguarding Construction, Alteration, and Demolition Operations."
 - 3. Applicable local codes for demolition work, safety of structure, and dust control.
- B. Comply with governing EPA notification regulations before beginning of demolition operations.
- C. Comply with hauling and disposal regulations of authorities having jurisdiction.

PART 2 PRODUCTS –(NOT APPLICABLE)

PART 3 EXECUTION

3.1. GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Do not begin removal until receipt of notification to proceed from Owner.
- B. Do not begin removal until elements to be salvaged or relocated have been removed.
- C. Minimize production of dust due to demolition operations.
- D. Hazardous Materials:
 - 1. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.
 - a. It is not expected that hazardous materials will be encountered in the Work.

2. If hazardous materials are discovered during demolition work, removal and abatement of hazardous materials will be by Owner under separate contract.
- E. Perform demolition in a manner that maximizes salvage and recycling of materials.
 1. Comply with requirements of Section 01 7410 - Construction Waste Management.
 2. Dismantle existing construction and separate materials.
 3. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection

3.2. EXISTING UTILITIES AND SECURITY SYSTEMS

- A. Protect existing utilities and security systems from damage.
- B. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- C. Do not close, shut off, or disrupt existing utility branches, including security systems, or take-offs that are in use without at least 3 days prior written notification to Owner.

3.3. SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Existing construction and utilities and security systems indicated on drawings are based on casual field observation and existing record documents only.
 1. Verify construction and utility arrangements are as indicated.
 2. Report discrepancies to Architect before disturbing existing installation.
 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from areas that remain occupied.
 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 5000 in locations indicated on drawings.
- C. Remove existing work as indicated and required to accomplish new work.
 1. Remove items indicated on drawings.
- D. Protect existing work to remain.
 1. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
 2. Repair adjacent construction and finishes damaged during removal work.
 3. Patch to match new work.
 4. Refer to Section 01 3516 – Alteration Project Procedures for repair and replacement of existing materials due to demolition and remodel work.

3.4. DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Remove materials not to be reused on site; do not burn or bury.
- C. Leave site in clean condition, ready for subsequent work.
- D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. Firestopping systems.
- B. Firestopping of joints and penetrations in fire-resistance-rated and smoke-resistant assemblies, whether indicated on drawings or not, and other openings indicated.

1.2. RELATED REQUIREMENTS

- A. Section 01 3573 - Delegated Design Procedures.
- B. Section 26 2712 – Sleeves and Sleeve Seals for Communications Pathways and Cabling, for penetration sleeves and accessory materials for non-rated penetrations.

1.3. SUBMITTALS

- A. See Section 01 3300 - Submittal Procedures for submittal procedures.
- B. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.
- C. Product Data: Provide data on product characteristics, performance ratings, and limitations.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Installer's qualification statement.

1.4. QUALITY ASSURANCE

- A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
 - 1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.
 - 2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.
 - 3. Submission of actual test reports is required for assemblies for which none of the above substantiation exists.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section and:
 - 1. Trained by manufacturer.

2. Approved by Factory Mutual Research Corporation under FM 4991, or meeting any two of the following requirements:
 - a. Verification of minimum three years documented experience installing work of this type.
 - b. Verification of at least five satisfactorily completed projects of comparable size and type.
 - c. Licensed by local authorities having jurisdiction (AHJ).

1.5. REGULATORY REQUIREMENTS

A. Comply with the following:

1. Oregon Structural Specialty Code based on International Building Code; Section 714, Penetrations, and Section 715, Fire-Resistant Joint Systems.
2. Penetrations: ASTM E 814.
3. Fire-Resistant Joint Systems: ASTM E 1966.

PART 2 PRODUCTS

2.1. MANUFACTURERS

A. Firestopping Manufacturers:

1. 3M Fire Protection Products: www.3m.com/firestop/#sle.
2. A/D Fire Protection Systems Inc: www.adfire.com/#sle.
3. Hilti, Inc: www.us.hilti.com/#sle.
4. RectorSeal Corporation: www.rectorseal.com/#sle.
5. Specified Technologies Inc: www.stifirestop.com/#sle.
6. Substitutions: See Section 01 2500 - Substitution Procedures.

2.2. MATERIALS

- A. Firestopping Materials: Any materials meeting requirements.
- B. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.
- C. Fire Ratings: Refer to drawings for required systems and ratings.

2.3. FIRESTOPPING ASSEMBLY REQUIREMENTS

- A. Perimeter Fire Containment Firestopping: Use system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of floor assembly.
 - 1. Movement: Provide systems that have been tested to show movement capability as indicated.
 - 2. Temperature Rise: Provide systems that have been tested to show T Rating as indicated.
 - 3. Air Leakage: Provide systems that have been tested to show L Rating as indicated.
 - 4. Where floor assembly is not required to have a fire rating, provide systems that have been tested to show L Rating as indicated.
- B. Head-of-Wall (HW) Joint System Firestopping at Joints Between Fire-Rated Wall Assemblies and Non-Rated Horizontal Assemblies: Use system that has been tested according to ASTM E2837 to have fire resistance F Rating equal to required fire rating of wall assembly.
 - 1. Movement: Provide systems that have been tested to show movement capability as indicated.
- C. Floor-to-Floor (FF), Floor-to-Wall (FW), Head-of-Wall (HW), and Wall-to-Wall (WW) Joints, Except Perimeter, Where Both Are Fire-Rated: Use system that has been tested according to ASTM E1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs.
 - 1. Movement: Provide systems that have been tested to show movement capability as indicated.
 - 2. Air Leakage: Provide systems that have been tested to show L Rating as indicated.
 - 3. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.
- D. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
 - 1. Temperature Rise: Provide systems that have been tested to show T Rating as indicated.
 - 2. Air Leakage: Provide systems that have been tested to show L Rating as indicated.
 - 3. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

2.4. FIRESTOPPING SYSTEMS

- A. Firestopping: Any material meeting requirements.

1. Fire Ratings: Use system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements.

PART 3 EXECUTION

3.1. EXAMINATION

- A. Verify openings are ready to receive the work of this section.

3.2. PREPARATION

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.
- B. Remove incompatible materials that could adversely affect bond.

3.3. INSTALLATION

- A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.
- B. Do not cover installed firestopping until inspected by Owner's Independent Testing Agency.
- C. Do not cover installed firestopping until inspected by authorities having jurisdiction.

3.4. FIELD QUALITY CONTROL

- A. Independent Testing Agency: Inspection agency employed and paid by Owner, will examine penetration firestopping in accordance with ASTM E2174 and ASTM E2393.
- B. Repair or replace penetration firestopping and joints at locations where inspection results indicate firestopping or joints do not meet specified requirements.

3.5. CLEANING

- A. Clean adjacent surfaces of firestopping materials.

3.6. PROTECTION

- A. Protect adjacent surfaces from damage by material installation.

END OF SECTION

PART 1 GENERAL

1.1. SECTION INCLUDES

- A. High performance epoxy coatings.

1.2. RELATED REQUIREMENTS

- A. Section 01 7329 – Cutting and Patching: Products and finishing materials for cutting and patching.

1.3. SUBMITTALS

- A. See Section 01 3300 - Submittal Procedures for submittal procedures.
- B. Product Data: Provide complete list of all products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel") and MPI product number.
 - 2. Substitutions - Submit according to Section 01 3300.
- C. Maintenance Data: Include cleaning procedures and repair and patching techniques to be included in operation and maintenance manuals.

1.4. QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the work of this section with minimum five years of documented experience.

1.5. DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of coating, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Coating Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.
 - 1. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and applying the coatings.

1.6. FIELD CONDITIONS

- A. Do not install materials when temperature is below 55 degrees F or above 90 degrees F.

- B. Maintain this temperature range, 24 hours before, during, and 72 hours after installation of coating.
- C. Restrict traffic from area where coating is being applied or is curing.

PART 2 PRODUCTS

2.1. HIGH-PERFORMANCE COATINGS – WATER BASED EXPOXY COATING

- A. Coatings - General: Provide complete multi-coat systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated; number of coats specified does not include primer or filler coat.
 - 1. Colors: As indicated in the Drawings.
 - 2. Top Coat(s): High Performance Institutional, Two-Component, Water Based Epoxy Coating; MPI #252, #254, #255, #256.
 - a. Sheen: Satin.
 - b. Products:
 - 1) Miller Paint Co: Waterborne Epoxy Semi-gloss 183510.
 - 2) Pittsburgh Paints; Aquapon WB EP Two-Component Waterborne Epoxy, 98E-1/98E-100 Series, Semi-Gloss: www.ppgpaints.com/sle.
 - 3) Rodda Paint Co: Cloverdale EcoLogic WB Epoxy Semi-Gloss 70504.
 - 4) Sherwin-Williams; Pro Industrial Water Based Catalyzed Epoxy: www.protective.sherwin-williams.com/sle. (MPI #254)
 - 5) Tnemec: Epoxoline WB. Series 1224; Hybrid Water-Based Epoxy.
 - 6) Substitutions: Section 01 2500 - Substitution Procedures.
 - 3. Primer: As recommended by coating manufacturer for specific substrate.

2.2. ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of coated surfaces.

PART 3 EXECUTION

3.1. EXAMINATION

- A. Verify existing conditions, including patched surfaces, before starting work.
- B. Do not begin application of coatings until substrates have been properly prepared.

- C. Verify that substrate surfaces are ready to receive work as instructed by the coating manufacturer. Obtain and follow manufacturer's instructions for examination and testing of substrates.
- D. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

3.2. PREPARATION

- A. Clean surfaces of loose foreign matter.
- B. Remove substances that would bleed through finished coatings. If unremovable, seal surface with shellac.
- C. Remove finish hardware, fixture covers, and accessories and store.

3.3. PRIMING

- A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

3.4. COATING APPLICATION

- A. Apply coatings in accordance with manufacturer's written instructions, to thicknesses specified.
- B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

3.5. CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. Clean surfaces immediately of overspray, splatter, and excess material.
- C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

3.6. PROTECTION

- A. Protect finished work from damage.

END OF SECTION

PART 1 GENERAL

1.1 DESCRIPTION

- A. The requirements of SECTION 28 05 00 - Common Work Results for Electronic Security are required by this Section as if written herein.
- B. Listing and Labeling: Provide raceways and boxes specified in this Section that are UL listed and labeled.
- C. Comply with NECA's "Standard of Installation."
- D. Comply with NFPA 70.

1.2 RELATED SECTIONS

- A. All Division 26 and 28 Sections.

PART 2 EQUIPMENT

2.1 PRODUCTS

- A. RSC: Rigid Steel Conduit: ANSI C80.1.
- B. EMT and Fittings: ANSI C80.3, with set-screw or compression type fittings.
- C. LTFMC: Liquid-Tight Flexible Metal Conduit. PVC coated Zinc-coated steel.
- D. Fittings: NEMA FB 1; compatible with conduit/tubing materials.
- E. Sheet Metal Boxes: NEMA OS 1.
- F. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

PART 3 INSTALLATION

3.1 EXECUTION

- A. Use the following wiring methods:
 - 1. Exposed Wet Locations: RSC.
 - 2. Concealed Dry Locations: EMT.
 - 3. Connections to RAC Units: LTFMC.
- B. Minimum Raceway Size: 1/2-inch trade size.

- C. Complete raceway installation before starting conductor installation.
- D. Support raceways as specified in Division 26.
- E. Use temporary closures to prevent foreign matter from entering raceways.
- F. Use raceway fittings compatible with raceways and suitable for use and location.
- G. Run concealed raceways, with a minimum of bends, in the shortest practical distance considering the type of building construction and obstructions, unless otherwise indicated.
- H. Install exposed raceways parallel to or at right angles to nearby surfaces or structural members, and follow the surface contours as much as practical.
 - 1. Run parallel or banked raceways together, on common supports where practical.
 - 2. Make bends in parallel or banked runs from same centerline to make bends parallel. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for parallel raceways.
- I. Join raceways with fittings designed and approved for the purpose and make joints tight.
 - 1. Make raceway terminations tight. Use bonding bushings or wedges at connections subject to vibration. Use bonding jumpers where joints cannot be made tight.
 - 2. Use insulating bushings to protect conductors.
- J. Tighten set screws of threadless fittings with suitable tools.
- K. Terminations: Where raceways are terminated with locknuts and bushings, align raceways to enter squarely and install locknuts with dished part against the box. Where terminations are not secure with 1 locknut, use 2 locknuts: 1 inside and 1 outside the box.
- L. Where raceways are terminated with threaded hubs, screw raceways or fittings tightly into the hub so the end bears against the wire protection shoulder. Where chase nipples are used, align raceways so the coupling is square to the box and tighten the chase nipple so no threads are exposed.
- M. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer that ensure coatings, finishes, and cabinets are without damage or deterioration at the time of Substantial Completion.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by Manufacturer.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Grounding conductors.
2. Grounding labeling.

B. Related Sections:

1. 26 05 33 - Raceways and Boxes for Electrical Systems
2. 26 77 12 - Sleeves and Sleeve Seals for Communications Pathways And Cabling
3. 28 05 00 - Common Work Results for Electronic Security
4. 28 05 53 – Identification For Electronic Security
5. 28 18 20 – Detention Intercom And Paging System
6. 28 23 30 - Detention Video Surveillance System

1.2 DEFINITIONS

- A. BCT: Bonding conductor for telecommunications.
- B. EMT: Electrical metallic tubing.
- C. TGB: Telecommunications grounding busbar.
- D. TMGB: Telecommunications main grounding busbar.

1.3 SUBMITTALS

- A. Product Data: For each type of product.
- B. Field quality-control reports. Include resistance measurements between racks and building ground with As-Builts.
- C. Operation and maintenance data.
- D. Include exact locations and impedance readings in As-Built drawings.

1.4 SITE INVESTIGATION

A. As-Built Data:

1. Existing As-Built plans may not adequately show the existing conditions of the locations or gauge sizes of the existing ground system. Contractor shall confirm prior to responding to this RFP the adequacy and locations of existing grounds including:
 - a. Ground rods.
 - b. BCT, TMGB, TGBs, and routing of their bonding conductors.

PART 2 PRODUCTS

2.1 SYSTEM COMPONENTS

- A. Comply with J-STD-607-A.
- B. Comply with UL 486A-486B.

2.2 CONDUCTORS

- A. Insulated Conductors: Stranded copper wire, green or green with yellow stripe insulation, insulated for 600 V, and complying with UL 83.
 1. Ground wire for custom-length equipment ground jumpers shall be No. 6 AWG, 19-strand, UL-listed, Type THHN wire.
- B. Bare Copper Conductors:
 1. Solid Conductors: ASTM B 3.
 2. Stranded Conductors: ASTM B 8.
 3. Tinned Conductors: ASTM B 33.
 4. Bonding Cable: 28 kcmils, 14 strands of No. 17 AWG conductor, and 1/4 inch in diameter.
 5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
 6. Bonding Jumper: Tinned-copper tape, braided conductors terminated with two hole copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

2.3 CONNECTORS

- A. Irreversible connectors listed for the purpose. Listed by an NRTL as complying with NFPA 70 for specific types, sizes, and combinations of conductors and other items connected. Comply with UL 486A-486B.

- B. Compression Wire Connectors: Crimp-and-compress connectors that bond to the conductor when the connector is compressed around the conductor. Comply with UL 467.

- 1. Electroplated tinned copper, C and H shaped.

- C. Busbar Connectors: Cast silicon bronze, solderless compression or exothermic type, mechanical connector; with a long barrel and two holes spaced on 5/8- or 1-inch centers for a two-bolt connection to the busbar.

- D. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.4 GROUNDING BUSBARS

- A. Use existing. Bring to the Owners attention any inadequacies of the existing including resistance to ground and inadequate mounting capacities.

2.5 LABELING

- A. Comply with TIA/EIA-606-A and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.
- B. Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine the ac grounding electrode system and equipment grounding for compliance with requirements for maximum ground-resistance level and other conditions affecting performance of grounding and bonding of the electrical system.
- B. Inspect the test results of the ac grounding system measured at the point of BCT connection.
- C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with connection of the BCT only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Bonding shall include the ac utility power grounding electrode system at the main electrical room. The bonding of these elements shall form a loop so that each element is connected to at least two others.
- B. Comply with NECA 1.
- C. Comply with J-STD-607-A.

- D. Installation Supervision: Installation shall be under the direct supervision of the Contractors Filed Inspector who shall be present at all times when Work of this Section is performed at Project site.

3.3 APPLICATION

- A. Conductors: Install solid conductor for No. 8 AWG and smaller and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

- 1. The bonding conductors between the TGB and structural steel of steel-frame buildings shall be sized based on the installed length of run of the conductor per 5.4.4.1 of ANSI J-STD-607-A.
- 2. The bonding conductors between the TMGB and structural steel of steel-frame buildings shall be sized based on the installed length of run of the conductor per 5.4.4.1 of ANSI J-STD-607-A.

- B. Conductor Terminations and Connections:

- 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
- 2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
- 3. Connections to Ground Rods at Test Wells: Bolted connectors.
- 4. Connections to Structural Steel: Welded connectors.

- C. Conductor Support:

- 1. Secure grounding and bonding conductors at intervals of not less than 36 inches.

- D. Grounding and Bonding Conductors:

- 1. Install in the straightest and shortest route between the origination and termination point, and no longer than required. The bend radius shall not be smaller than eight times the diameter of the conductor. No one bend may exceed 90 degrees.
- 2. Install without splices.
- 3. Support at not more than 36-inch intervals.

3.4 GROUNDING ELECTRODE SYSTEM

- A. Refer to the drawings for grounding bus gauge size. Submit calculations to confirm adequacy.

3.5 CONNECTIONS

- A. Bond metallic equipment in a telecommunications equipment room to the grounding busbar in that room, using equipment grounding conductors. Size to meet 5.4.4.1 of ANSI J-STD-607-A.
- B. Stacking of conductors under a single bolt is not permitted when connecting to busbars.
- C. Assemble the wire connector to the conductor, complying with manufacturer's written instructions and as follows:
 - 1. Use crimping tool and the die specific to the connector.
 - 2. Pretwist the conductor.
 - 3. Apply an antioxidant compound to all bolted and compression connections.
- D. Primary Protector: Bond to the TMGB with insulated bonding conductor.
- E. Interconnections: Interconnect all TGBs with the TMGB with the telecommunications backbone conductor. If more than one TMGB is installed, interconnect TMGBs using the grounding equalizer conductor. The telecommunications backbone conductor and grounding equalizer conductor size shall not be less than 2 kcmils/linear foot of conductor length, up to a maximum size of No. 3/0 AWG unless otherwise indicated.
- F. Telecommunications Enclosures and Equipment Racks: Bond metallic components of enclosures to the telecommunications bonding and grounding system. Install vertically mounted rack grounding busbar unless the enclosure and rack are manufactured with the busbar. Bond the equipment grounding busbar to the TGB No. 2 AWG bonding conductors.
- G. Structural Steel: Where the structural steel of a steel frame building is readily accessible within the room or space, bond each TGB and TMGB to the vertical steel of the building frame.
- H. Shielded Cable: Bond the shield of shielded cable to the TGB in communications rooms and spaces. Comply with TIA/EIA-568-B.1 and TIA/EIA-568-B.2 when grounding screened, balanced, twisted-pair cables.
- I. Rack- and Cabinet-Mounted Equipment: Bond powered equipment chassis to the cabinet or rack grounding bar. Power connection shall comply with NFPA 70; the equipment grounding conductor in the power cord of cord- and plug-connected equipment shall be considered as a supplement to bonding requirements in this Section.

3.6 IDENTIFICATION

- A. Labels shall be preprinted or computer-printed type.
 - 1. Label TMGB(s) with "fs-TMGB," where "fs" is the telecommunications space identifier for the space containing the TMGB.
 - 2. Label TGB(s) with "fs-TGB," where "fs" is the telecommunications space identifier for the space containing the TGB.

3. Label the BCT and each telecommunications backbone conductor at its attachment point: "WARNING! TELECOMMUNICATIONS BONDING CONDUCTOR. DO NOT REMOVE OR DISCONNECT!"

3.7 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
 1. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
 2. Test the bonding connections of the system using an ac earth ground resistance tester, taking two-point bonding measurements in each telecommunications equipment room containing a TMGB and a TGB and using the process recommended by BICSI TDMM. Conduct tests with the facility in operation.
 - a. Measure the resistance between the busbar and the nearest available grounding electrode. The maximum acceptable value of this bonding resistance is 100 milliohms.
 3. Test for ground loop currents using a digital clamp-on ammeter, with a full-scale of not more than 10 A, displaying current in increments of 0.01 A at an accuracy of plus/minus 2.0 percent.
 - a. With the grounding infrastructure completed and the communications system electronics operating, measure the current in every conductor connected to the TMGB. Maximum acceptable ac current level is 1 A.
- C. Excessive Ground Resistance: If resistance to ground at the BCT exceeds 5 ohms, notify Contracting Officer promptly and include recommendations to reduce ground resistance.
- D. Grounding system will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Sleeves for pathway and cable penetration of non-fire-rated construction walls and floors.
2. Sleeve-seal systems.
3. Sleeve-seal fittings.
4. Grout.
5. Silicone sealants.

B. Related Sections:

1. 26 05 33 - Raceways and Boxes for Electrical Systems
2. 26 77 04 - Grounding and Bonding for Communications Systems
3. 28 05 00 - Common Work Results for Electronic Security
4. 28 18 20 – Detention Intercom And Paging System
5. 28 23 30 - Detention Video Surveillance System

1.2 SUBMITTALS

A. Submit in accordance with SECTION 28 05 00 - Common Work Results for Electronic Security and Division 1

B. Product Data: For each type of product.

PART 2 PRODUCTS

2.1 SLEEVES

A. Wall Sleeves:

1. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, zinc coated, plain ends.
2. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile iron pressure pipe, with plain ends and integral water-stop unless otherwise indicated.

- B. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies: Galvanized-steel sheet; 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.

2.2 SLEEVE-SEAL SYSTEMS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and pathway or cable.
 - 1. Sealing Elements: EPDM or Nitrile (Buna N)] rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
 - 2. Pressure Plates: Plastic or Stainless steel.
 - 3. Connecting Bolts and Nuts: Carbon steel, with corrosion-resistant coating or Stainless steel of length required to secure pressure plates to sealing elements.

2.3 SLEEVE-SEAL FITTINGS

- A. For conduit penetrations in slabs-on-grade: Manufactured plastic, sleeve-type, water stop assembly made for embedding in concrete slab or wall. Unit shall have plastic or rubber water-stop collar with center opening to match piping OD. Size to match conduit stub-ups.

2.4 GROUT

- A. Description: Non shrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.
- B. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- C. Design Mix: 5000-psi, 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

2.5 SILICONE SEALANTS

- A. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below.
 - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.
 - 2. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- B. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, non-shrinking foam.

PART 3 EXECUTION

3.1 SLEEVE INSTALLATION FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS

- A. Comply with NECA 1.
- B. Sleeves for Conduits Penetrating Above-Grade Non-Fire-Rated Concrete and Masonry-Unit Floors and Walls:
 - 1. Interior Penetrations of Non-Fire-Rated Walls and Floors:
 - a. Seal annular space between sleeve and pathway or cable, using joint sealant appropriate for size, depth, and location of joint.
 - b. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect material while curing.
 - 2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
 - 3. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and pathway or cable unless sleeve seal is to be installed or unless seismic criteria require different clearance.
 - 4. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.
- C. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies:
 - 1. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.
 - 2. Seal space outside of sleeves with approved joint compound for gypsum board assemblies.
- D. Roof-Penetration Sleeves: Seal penetration of individual pathways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- E. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.

3.2 SLEEVE-SEAL-FITTING INSTALLATION

- A. Using grout, seal the space around outside of sleeve-seal fittings.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section includes:

- 1) Governing requirements for all Division 28 Security Sections.
- 2) System separation.
- 3) Coordination requirements.
- 4) Systems throughput.
- 5) Submittals
- 6) Acceptable components.
- 7) Substitutions.
- 8) Source quality control.
- 9) Installation.
- 10) System startup.
- 11) Site quality control.
- 12) Closeout activities.

B. Have a single security systems subcontractor perform the Work of this section and the following Integrated Sections:

1. 26 05 33 - Raceways and Boxes for Electrical Systems
2. 26 77 04 – Grounding and Bonding For Electronic Security Systems.
3. 26 77 12 - Sleeves and Sleeve Seals for Communications Pathways And Cabling.
4. 28 05 27 – Racks and Cabinets for Electronic Security
5. 28 05 53 – Identification For Electronic Security
6. 28 23 30 - Detention Video Surveillance System.
7. 28 46 13 - Touch Screen System.

1.2 REFERENCES

A. Definitions:

- 1) All definitions listed in the National Electrical Code are recognized in this Section unless other specific definitions are given in this Section.
- 2) "ANSI" means American National Standards Institute. Copies of ANSI standards are available from the National Conference of States on Building Codes and Standards, Inc.
- 3) "Appliance" means an electrical component which utilizes electricity to accomplish an end affect.
- 4) "ASTM" means the American Society for Testing and Materials. Copies of ASTM documents are available from ASTM International.
- 5) "AWG" means American Wire Gauge.
- 6) "Baffle" means speaker grille.
- 7) "CCR" means Central Control Room.
- 8) "Certified" means that the equipment has been documented that it has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards and to be safe for use for its intended purpose; if production is periodically inspected by a nationally recognized testing laboratory; and if it bears a label, tag, listing, or other record of certification.
- 9) "Concealed" means embedded in masonry or other construction installed behind wall furring with double partitions or hung ceilings, in crawl spaces, in shafts. Not visible from occupied locations including storage spaces, water closets, stair wells, and outdoor locations.
- 10) "Control Room" means an enclosed officer's station.
- 11) "Conveniently Accessible" means to be capable of being reached without climbing or crawling under or over obstacles, and with adequate working clearance both front and back.
- 12) "Coordinate" means to meet with, discuss with, and share with other parties as necessary to communicate all necessary information as required to fully relate all information, performance criteria, operational and functional requirements, installation details, potential conflicts such that the final product meets all specified requirements.
- 13) "Custom" means to be tailored for a unique application.

- 14) "Damage" means any visible or invisible alterations in the products or materials, whether new or existing, whether provided by Contract or by others, which negatively affects performance or appearance and creates defective materials or workmanship.
- 15) "Electrically Controlled Locking Mechanism" means an electrical solenoid, motor, motor controller, or pneumatic actuator used to lock or unlock a door or gate.
- 16) "Defective Materials or Workmanship" means that the performance is below required minimums, or evidence that the system will not be reasonably maintainable, or errors in documentation, or anything which results in the system not meeting the specified requirements.
- 17) "Event Monitor" means a CCTV monitor used for monitoring cameras selected from a HMI (e.g. touch screen computer).
- 18) "Exposed" means not concealed.
- 19) "Failure" means any deviation from intended system operation and performance, as determined by the Contract Documents.
- 20) "Furnish" means to purchase and deliver to the Project site and unload, complete with every necessary appurtenance, support and accessory required for operation. This shall include all housings and enclosures which may be necessary for the installation including as required for outdoor applications. This shall include all necessary coordination with the parties responsible for installing the Work as well as coordinating with other trades as required for establishing the mounting requirements of the equipment.
- 21) "GUI" means Graphical User Interface and consists of all of the electronics components at the operator's station including the computer, the computer monitor, keyboard and mouse and all software.
- 22) "Grille" means speaker baffle.
- 23) "HMI" means the Human Machine Interface and consists of all of the electronics components at the operator's station including the computer, the computer monitor, keyboard and mouse and all software. Where the context of an HMI includes special features such as a touch screen monitor the touch screen feature is included. The HMI may also include connections and integration to other systems such as a master intercom station(s), and a Surveillance Television computer with monitor.
- 24) "Install" means to perform every operation necessary to establish secure mounting and correct operation at the proper location in the Project. This shall include all terminations, wiring, labeling, programming, testing, and all documentation. This shall include all necessary coordination with parties responsible for furnishing the materials and equipment as well as coordinating with other trades as required for the mounting requirements of the equipment.
- 25) "Installer" means the party installing and testing equipment.

- 26) "Labeled" means that where equipment is "labeled" it embodies a valid label, symbol, or other identifying marker of a nationally recognized testing laboratory such as Underwriters' Laboratories, Inc.; the laboratory makes periodic inspections of the production of such equipment; and the labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner.
- 27) "Listed" means that where a product is mentioned in a list which is published by a nationally recognized laboratory which makes periodic inspection of the production of such equipment or states that such equipment meets nationally recognized standards or has been tested and found safe for its intended use.
- 28) "Low voltage" means class 2 circuits as defined by the NEC:
- 29) "Low Voltage Room" means the Security Electronics Room.
- 30) "LVSS" means Low Voltage Security System Sub-contractor.
- 31) "Master Control" means a specific control room in the hierarchy of the facilities control rooms.
- 32) "Nationally Recognized Testing Laboratory" means a testing laboratory which is approved, in accordance with OSHA regulations, by the Secretary of Labor.
- 33) "NEC" means National Electrical Code. Copies of the NEC are available from the National Fire Protection Association.
- 34) "NEMA" means National Electrical Manufacturer's Association. Copies of NEMA standards are available from the National Electrical Manufacturer's Association.
- 35) "NESC" means National Electrical Safety Code. Copies of the NESC are available from the Institute of Electrical and Electronics Engineers, Inc.
- 36) "NETA" means International Electrical Testing Association, Inc. Copies of the NETA standards and information are available from the International Electrical Testing Association, Inc.
- 37) "NFPA" means the National Fire Protection Association. Copies of NFPA documents are available from the National Fire Protection Association.
- 38) "NRTL" means Nationally Recognized Testing Laboratory accredited by the federal Occupational Safety and Health Administration (OSHA) after meeting the requirements of 29 CFR 1910.7.
- 39) "NVMS" means Network Video Management System and is identical to VMS except that memory and communication is spread over multiple computers and a LAN or WAN and may extend to multiple sites.
- 40) "Provide" means to furnish and install, completely ready for use, including all accessories required for operation.

- 41) "Sealed" when used in the context of:
- 42) A "sealed room" electronics room means that the walls and floors have been painted or coated with a sealant to resist dust generation caused by traffic and normal use.
- 43) A "sealed device" when used in the context of an intercom station or other wall mounted device means that a security sealant, or grout is used to seal the device tight to the wall.
- 44) "TIA/EIA" means the Telecommunications Industries Association/Electronic Industries Association which publishes the TIA/EIA Telecommunications Building Wiring Standards. Standards and publications are adopted by TIA/EIA in accordance with the American National Standards Institute (ANSI) patent policy.
- 45) "VMS" means Video Management System and is the software used to manage camera selection to a monitor or quadrant of a monitor and done specifically through the CCTV system computer keyboard and/or as directed from a connection to an external system such as a PLC (resulting from a alarm being generated through a sub-system such as a motion detector) or GUI (resulting from an input from a touch screen computer system or similar being generated through manual or automatic camera selection to a monitor from that external GUI). The term VMS generally also includes the computer on which the software resides.
- 46) "VRS" means Video Review Station and is the CCTV System computer inclusive of the VMS and/or NVMS. The VRS is typically limited through software to only view specific cameras and/or be allowed to view and/or record pre-recorded media onto external drives for use in prosecution.
- 47) "Work" means the act of managing, procuring, and all construction activities and includes all labor and materials required to provide the intent of the Contract Documents.

B. Referenced Standards:

- 1) All Trades:
 - a. IBC: International Building Code
 - b. UFAS: Uniform Federal Accessibility Standard
 - c. ADAAG: American Disabilities Act Accessibility Guidelines
- 2) Electrical:
 - a. NFPA 70 (NEC): National Electrical Code (NEC) NFPA 70
 - b. NEC-110.26: Working Spaces and Clearances
 - c. NEC-314.16: Electrical Box Sizing

- d. NEC-725: Limited Energy Electrical Systems
 - e. NEC-800: Communications Systems
 - f. NEC-Chapter9 : Tables 1 and 4, Conduit Fill Requirements
 - g. NFPA 101: Life Safety Code, NFPA 101-2012
- 3) Communication:
- a. ANSI/TIA/EIA: Telecommunications Industry Association / Electronic Industries Alliance.
 - b. ANSI/TIA/EIA-RS-232-F: Interface Between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange Standard Recommendations
 - c. ANSI/TIA/EIA-RS-310: Telecommunications Rack Assembly Recommended Standards
 - d. ANSI/TIA-RS-485: LAN Network Intercommunication Data Transmission Standard Recommendations
 - e. ANSI/TIA/EIA-568-C: Generic Building Telecommunications Cabling Standard
 - f. ANSI/TIA/EIA 568-C-3: Optical Fiber Cabling Components
 - g. ANSI/TIA/EIA 606: Administration Standard for Commercial Telecom
 - h. ANSI/TIA/EIA-606-B: Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
 - i. ANSI/TIA/EIA-607-B: Generic Telecommunication Bonding and Grounding (Earthing) for Customer Premises
 - j. NFPA 70 (NEC): National Electrical Code (NEC) NFPA 70, National Electric Code
 - k. U.L. 486A: DC Conductor Requirements
 - l. U.L. 1283: Electromagnetic Interference Filtering Requirements
 - m. U.L. 1363: Cord Connected Power Distribution Requirements
 - n. VESA: Video Electronics Standards Association, Video Monitor Mounting Guidelines

1.3 RELATED SECTIONS

- A. 26 05 33 - Raceways and Boxes for Electrical Systems
- B. 26 77 04 - Grounding and Bonding for Electronic Systems Security.
- C. 26 77 12 – Sleeves and Sleeve Seals for Communication Pathways and Cabling.
- D. 28 05 27 - Racks and Cabinets for Electronic Security.
- E. 28 05 53 - Identification for Electronic Security.
- F. 28 18 20 – Detention Intercom And Paging System
- G. 28 23 30 - Detention Video Surveillance System.
- H. 28 46 13 - Touch Screen HMI System.

1.4 SYSTEM DESCRIPTION

- A. Design Requirements:
 - 1) The systems shall not be a VLAN. System shall be a “flat network”. Connectivity to be through Ethernet switches as specified in Section 28 23 30 - Detention Video Surveillance System and shown on the drawings.
 - 2) A new Star type LAN shall be established utilizing existing fiber optic cables that have been run in parallel to the existing LAN. The existing LAN shall continue to be used for specific systems while the new LAN shall be used for other systems.
 - a. The “Security LAN” shall be used for all PLC, HMI/GUI, and Intercom system data networking communications unless noted otherwise. No additional Ethernet switches are required.
 - b. The “County LAN” shall be used for all CCTV, JMS, and other systems currently connected to the existing LAN. Provide additional Ethernet Switches as required. Refer to Section 28 23 30 Detention Video Surveillance System for additional requirements. The existing “County LAN” only connects to other LAN’s, such as the JMS LAN in the Main Security Electronics Room.
 - c. All new Ethernet switches shall be provided in new cabinets located at or near the officer’s stations to support the two networks and the Officer’s Station computers. Ethernet switches shall be equipped with dual power supplies and shall reside on one of 2 existing fiber optic networks, each arranged in a star configuration
 - d. Provide optical fiber patch cables as necessary to span the distance between existing terminals and new equipment.

- 3) General: Work shall modernize and expand the Detention Surveillance Television and Touch Screen Systems and connecting these systems to the existing sub-systems (PLC and Intercom system) to maintain operation of those existing subsystems consistent with existing operation.
 - a. Detention Video Surveillance System updating and expansion to include the requirements of Section 28 23 30 - Detention Video Surveillance System and the following:
 - i. Replacing all existing computers and their Windows 10 software. Existing Genetec software. Monitors are to remain.
 - ii. Replacing all existing analog Cameras with new IP Cameras. This shall include the provision of new cabling for all analog cameras. The majority of the new camera cabling shall be routed in new conduits to new Ethernet switches to be located at or near the existing Officer's Station computers.
 - iii. Replacing existing IP cameras with new IP Cameras. Reuse of existing camera cable, conduit, and Ethernet switches is acceptable.
 - b. Detention Intercom Systems consists of existing Harding, DXI system. Work on this system is limited to:
 - 1) Replacement of all existing Harding DXI headend equipment with new Harding, DXL headend equipment. Maintaining existing operation. Provide new interfacing software and hardware to existing PLC as required. Replace all existing master intercom stations with new IP stations.
 - 2) Testing the system after the integration of other systems have been completed to confirm that no operational or throughput time changes to the intercom system have been made.
 - 3) Replacement of specific existing remote intercom stations as shown on the drawings.
 - 4) Additionally the intercom system shall be contained within the "Security LAN" and separated from the "County LAN".:
 - c. HMI/GUI Security Systems shall be modernized by updating the existing computers and their Windows 10 software with new as well as updating existing GUI software with the newest version available. The system shall be contained within the "Security LAN" and separated from the "County LAN" and as required by Section 28 46 13 - Touch Screen HMI System.
 - 1) Existing Touch Screen Computers used at the Master Control Room Officer's Stations are located in the Main Security Electronics Room and use KVM extenders. Existing KVM extenders are to be demolished and new touch screen computers are to be located within the Master Control

Room. Work includes the replacement of existing touch screen monitors with new touch screen monitors using new mounting hardware.

- 2) Existing Touch Screen Computers used at the Remote Officer's Stations are located in the Main Security Electronics Room and use KVM extenders. Existing KVM extenders are to be demolished and new non-touch screen enabled computers are to be located at or near the Remote Officer's Station. Work includes the replacement of existing touch screen monitors with new non-touch screen monitors using new mounting hardware. Provide new wireless mouse at all locations.
- d. PLC System shall be modernized through the updating of existing software and firmware to the latest version available. Additionally the PLC system shall be contained within the "Security LAN" and separated from the "County LAN".
- e. Equipment Racks: Existing racks in the Main Security Electronics Room are to be reused. New equipment cabinets are required as shown on the drawings and described in Section 28 05 27 - Racks and Cabinets for Electronic Security. These cabinets shall house:
 - 1) Security LAN Ethernet switches and HMI/GUI Computers
 - 2) County LAN Surveillance Television system Ethernet switches and CCTV computers.
- f. Conduit: New conduit is to be provided from the new wall cabinets to the existing cabinet locations and as necessary for the replacement of existing analog cameras with new IP cameras.
- 5) Wire and cable:
 - a. All 120VAC and higher power cabling shall be provided by the electrical Sub-contractor.
 - b. Provide wire and cable meeting manufacturer's recommendations.
 - c. All cables specifically rated for their use (i.e., class 1, class 2, riser, plenum rated, tray rated, underground, etc.).
 - d. Provide all class 1 and class 2 cabling and all signaling cabling shall be provided by the LVSS Sub-contractor.
 - e. Provide all cable in conduit unless otherwise noted.
 - f. All wires over 24 gauge shall be stranded.
- 6) Conduit and Raceway Systems:

- a. All conduit and raceway systems and boxes shall be as required under Division 26.
- b. Conduit, metal wire ways, 4-inch square boxes, 4-11/16" boxes, single gang boxes, double gang boxes, 3-gang boxes, pull boxes, and all supporting equipment required, whether shown on the ES drawings or not, shall be provided by the Electrical Sub-contractor.
 - 1) Be responsible to size boxes as per code requirements and to coordinate as necessary.
 - 2) Specialty back boxes (i.e. camera back boxes, and wall mounted equipment cabinets) shall be furnished by the LVSS and installed by the Division 26 Electrical Contractor.
- c. Be responsibility to coordinate the device locations with the rough-in Work to ensure that all boxes provided and installed are located oriented and sized as necessary to facilitate the installation of the equipment. This includes but is not limited to roughing in of cameras inclusive of all pull boxes, j-boxes, back boxes, and all system head-end equipment. Provide cover-plates to fully cover backboxes.
- d. Confirm that all conduit shown on the Contract Drawings used to support the systems are sized as necessary to meet the code mandated conduit fill limitations utilizing the specific cables and installation techniques to be used prior to Shop Drawing submission.
- e. Cover plates: Security screws throughout the detainee accessible areas. In detainee accessible areas, all cover plates shall be 11-gauge steel. Provide security screws (protected Torx) for all fasteners in detainee accessible locations.
- f. All raceways shall be provided with pull strings/rope by the Electrical Sub-contractor.
- g. Maintain working space requirements as required by NEC, 110.26.
- h. Combinations of wires in conduit shall be as required in this and Related Sections and shall under no conditions violate NEC, Chapter 9, Table 1.
- i. Box sizing shall be as required in this and Related Sections and shall under no conditions violate NEC, 3.14.16.
- j. Conduit fill shall not exceed the limitations as defined by NEC, Chapter 9, and Table 4.
- k. All room penetrations into the Security Electronics Rooms and Closets shall be sleeved and sealed.

B. Systems Throughput:

- 1) The Work includes the integration of PLC, CCTV, and touch screen systems. The amount of time it takes from initiation to indication or annunciation and from touch screen icon selection to PLC output toggle shall not exceed 200ms under any scenario. This shall include the entire processing time of the touch screen computer, PLC processing and scan times, network communication delays, and all subsystem processing times. For example:
 - a. From the time an operator touches an intercom selection icon (or door control with intercom icon) on the touch screen for selection to the operator's speaker adjacent to the touch screen.
 - b. From the time an operator touches a door control icon on the touch screen to the time the PLC door control output point toggles.
 - c. From the time a user presses a call request switch or duress switch or a DPS changes state until an event is displayed on the touch screen.
 - d. Exclusions:
 - 1) Screen changes and transfer of control from one touch screen to another shall not exceed 300ms under any scenario.
 - 2) From the time an operator touches a camera icon (or door control with camera icon) on the touch screen for camera selection to the operator's CCTV monitor adjacent to the touch screen; this includes all video system switching delays; shall not exceed 750ms. This excludes any pan/tilt/zoom run times.

C. Demolition:

- 1) No unterminated cable is to remain unless noted otherwise. Demolish all unused cable as required by code.
 - a. Once the new systems are tested and accepted, tag all empty conduit "For Future" with a unique number and provide a database with the conduit number, it's point of origin and point of termination and submit to the Owner with the as-built drawings. .

D. Testing:

- 1) Use qualified testing technicians to perform testing services. Only a certified Engineering Technician shall make performance measurements with a minimum of five (5) years' experience in calibrating and testing electronic security and communication systems.
- 2) Pre-test equipment and systems in advance of witnessed tests and assure readiness for testing. The Owner may fail a test with an excessive failure rate due to lack of readiness. In that event, the test will not be considered to have occurred, and an inspection will occur prior to re-scheduling of testing to ensure readiness.

- 3) Coordinate all testing with related trades and have related trades present, so that testing is integrated and systemic. Pre-test with related trades to ensure readiness.
- 4) Provide all test equipment, instruments, materials, and personnel required for testing.
- 5) Provide all AC/DC power requirements, specialized cables, connectors, firmware, software, and associated equipment and accessories to perform tests.
- 6) Provide all equipment including man lifts, ladders, and vehicles required to perform testing.
- 7) Conduct all testing in the presence of the Owner. Make any test instruments available to the Owner during testing as well.
- 8) Perform testing according to the approved test procedures. Any test procedure resulting in failures shall require re-testing after the Contractor has made corrections.
- 9) Record test results on the approved test forms.
- 10) If test results are not in compliance with requirements, make necessary changes or adjustments at no additional cost, and arrange for re-testing. This process shall continue until the systems are acceptable to the Owner.

E. Functional Testing:

- 1) Test all features and functions required by this Section and Related Sections.
- 2) Minimum testing is listed herein. Demonstrate acceptable system performance for all installed equipment and devices with all required sequences of operation under all operating modes. The Owner reserves the right to expand on this list during the preparation of test procedures.

1.5 SUBMITTALS

A. Refer to the following schedules of this Section:

- 1) 28 05 00-1 Submittals Part 1 (Submittal A) for approval to order equipment.
- 2) 28 05 00-2 Submittals Part 2 (Submittal B and C) for approval to rough-in and fabricate.
- 3) 28 05 00-3 Submittals (Submittal D) for Theory Of Operation (ToO) requirements.

B. Product Data: Submit product data under provisions of Division 1. Submit product data indicating product standards, physical characteristics, technical specifications, limitations, and general recommendations regarding each manufactured product submitted for approval. In addition to providing finalized submittals as described below, provide submittals of all of the following as PDF's throughout the submittal approval process. Upon final approval, provide hard copies as described below.

- 1) Assemble equipment submittal data in hard cover loose-leaf ring binder. Provide cover with permanently attached typewritten label with name of Project, job number and heading name. Include the General and Sub-contractor's name, address, and telephone number and the date of submittal completion, including any revision numbers and their dates.
- 2) Group information in sets subdivided by specification section, each section containing one copy of data for each item. Provide a table of contents and labeled divider tabs for each section. Partial submittals for individual sections will be returned without review. Equipment submittals shall be in the same order as listed in the specifications. Each item submitted shall be cross-referenced to the specification Section, Article, Paragraph, and Subparagraph number.
- 3) Submit data on 8-1/2" x 11" size paper. Accordion fanfold all 11" x 17" Drawings to 8-1/2" x 11" size and include in submittal binder.
- 4) Provide a complete Bill of Material denoting manufacturers item name, part number, and quantity used for this project. Each item submitted shall be cross-referenced to the specification Section, Article, Paragraph, and Subparagraph number. Include descriptive literature, catalog cuts, illustrations, schematics, technical data sheets, and test data necessary to allow the reader to ascertain that the proposed equipment and materials comply with specification requirements.
- 5) Include quantities of each device to be installed including any that had been substituted after award and before equipment submission.
- 6) Include quantities of each device to be furnished as part of the spares inventory. Re-submit with the closeout submittals noting any products that had been substituted after the equipment submission along with the spares inventories noting all items that may be on back-order. Include quantities of all spares items and provide assistance to the Owner in showing them the spares inventories.
- 7) Catalog Cut Sheets:
 - a. Catalog cuts shall be legible and shall clearly identify equipment being submitted.
 - b. Include only information on exact equipment installed, not complete "line" of manufacturer.
 - c. Identify proposed equipment with rubber stamp arrow or similar method.
 - d. Each item submitted shall be cross-referenced to the specification Section, Article, Paragraph, and Subparagraph number.
 - e. Identify any equipment and/or accessories that are not listed by the manufacturer being submitted. Identify any custom components.
 - f. Provide a complete list of Extra Materials including quantities to be provided.
- 8) Calculations:

- a. Include required calculations, I/O points lists, system zone schedules, and other tabular data as necessary to clarify system sizing and configuration. Do not, however, consider such submittals as a substitute for complete Shop Drawings.
 - b. Submit with Equipment Submittal: Submit calculations of throughput times for each of the major systems including in each the touch screen processing, PLC input scan, PLC output scan, PLC processing time. The major systems shall include the CCTV system and the Intercom System. All times shall reflect worse case scenarios of when the system and all of its sub-systems are most heavily loaded with active inputs and outputs and when the processing tasks and speeds are at their worst.
- C. Shop Drawings: In addition to providing finalized submittals as described below, provide submittals of all of the following as PDF's throughout the submittal approval process. Upon final approval, provide hard copies as described below.
 - 1) Shop Drawings are required for all systems, sub-systems, and component assemblies. Provide drawing cover sheet including:
 - a. The LVSS Sub-contractors name, address, and phone number.
 - b. Directory giving sheet number, title, project address, revision status, approval status, and other relevant information.
 - c. Revisions on subsequent submissions shall be clouded and noted as to revision number and their respective dates.
 - d. Symbols list describing each component shown on the floor plans. Symbols shall be consistent between floor plans and all other drawings and details. Symbols may be duplicated on floor plans and other drawings as applicable.
 - 2) Diagrams for systems to be complete drawings for specific system installed. Include:
 - a. Equipment locations relative to other components. Rack and cabinet elevations, mounting details, floor plan drawings, and enlarged Electronics Room plans.
 - b. One-line block diagrams showing each major system element and its electronic relationship with other components. Standard manufacturer's system diagrams and wiring diagrams shall not be utilized unless modified for use on this project. Use these drawings as a reference for the:
 - 1) Interconnection wiring diagrams by cross-referencing the Shop Drawing number of those diagrams on these drawings.
 - 2) Mechanical drawings.
 - 3) Riser diagrams.

- c. Interconnection wiring diagrams with respect to inputs, outputs, power connections, terminal numbers, type of conductors and wiring techniques. Include:
 - 1) Wire numberings with each termination point.
 - 2) Systems requiring input and output points shall have wire numbers identified with address numbers and connector pin-outs.
 - 3) Include wire type, gauge, insulation type, shielding, etc.
 - 4) Identify the purpose of each conductor of each cable.
 - 5) Include point-to-point system schematic diagrams showing the detailed wiring, grounding, shielding, shield grounding, surge protection, fusing, connector pin-outs, terminal assignments, and similar wiring and connection details on the schematics.
 - 6) Use the same equipment designations as the floor plans and rack elevations.
 - 7) Refer to the Identification For Electronics Safety and Security Section for additional requirements.
 - 8) Show IP addresses on both the floor plans and system diagrams and within the cable labeling for all TCPIP connections.
- 3) Mechanical Drawings: To scale mechanical drawings showing physical layouts and mounting details of each cabinet and rack mounted component and custom panel(s). Include front and back views. Include wire numberings with each termination point. This information shall be on the drawing at the terminal point, not in a schedule format. Include connector and terminal block locations and labeling, and all necessary fabrication details.
 - a. Provide mounting details including supporting structure, fasteners, mounting brackets, mounting accessories, backboxes, faceplates, enclosures, housings, etc.
 - b. Show details of cable entry, weather sealing, and auxiliary equipment mounting (surge protectors, power supplies, etc.). Use the same component and device designations as the floor plans and other Shop Drawings.
- 4) Riser Diagrams: Provide system riser diagrams for each of the systems including: Network Risers, CCTV risers, and Touch Screen system riser diagrams. Also include major system elements with limited scope. Provide manufacturers wire types.
- 5) Floor Plans: Floor plans to be modified contract drawings:
 - a. Do not alter grid lines, scales, or building plan orientation.

- b. Dimensionally accurate drawing(s) at 1/8"=1'-0" or other approved scale, showing interior device and equipment placement and mounting in relation to walls, doors, windows, and other interior features.
 - c. Include wire and cable types and quantities, outlet boxes, and raceway sizing and routings.
 - d. Clearly delineate floor-mounting, ceiling-mounting, and wall-mounting of all field devices. Where devices are wall mounted indicate wall mounting heights. Reference mounting details for each unique, non-standard device mounting method. Fully coordinate mounting locations, raceway routing, and other Shop Drawing elements with other trades prior to submittal.
 - e. Equipment room and control station plans and elevations: Provide enlarged plan views and elevations of all equipment rooms and control stations:
 - 1) Dimensionally accurate drawings at 1/4"=1'-0" or larger scale.
 - 2) Equipment rooms: Show and fully dimension equipment, cabinet, enclosure, and rack placement in relation to walls, doors, and other features.
 - 3) Control stations: Show and fully dimensioned cabinets, consoles, and work surface mounted equipment in relation to walls, doors, and other features.
- 6) Electrical Rough-in Drawings: The Electrical Sub-contractor shall provide an electrical rough-in submittal for all rough-in Work necessary for the Low Voltage Systems Work. This submittal shall only show rough-in Work and other Work as necessary to support and coordinate with the rough-in Work. This submittal shall be in addition to, not in lieu of, electrical submittal requirements described under Division 26.
- 7) Coordination Drawings:
- a. Submit detailed coordination drawings showing the coordination between the electrical rough-in Work and the Work described in this Section. Particular attention shall be made relative to the coordination of the rough-in and:
 - 1) CCTV camera installation. Show all back box locations and confirm that the back box location is adequate to support the camera and its' field-of-view. Where cameras are shown in the corners of rooms, the rough-in shall be in the corner of the room and provided as necessary to support the specific camera housing to be used.
 - 2) Electrical rough-in changes: All changes made in the electrical rough-in Work shall be submitted coordinated and submitted for approval prior to implementation of the change.
 - 3) Bring any discrepancies to the attention of the Owner. Any conduit size changes necessary shall be clearly identified in the Shop Drawings. Include with the Shop Drawings a memo identifying the

changes and shall bring the changes to the attention of the Owner's representatives.

- 8) As-Built Drawings: Upon completion, submit with all changes made denoted by delta number, revision name, and date of Owner acceptance of the change. Include all contract addenda, responses to RFI's, change orders, and field revisions. Include empty conduit database with as-built drawings.
 - a. Upon approval of the as-built drawings, scale down the full size equipment cabinet elevation sheets to the maximum size that fits within the associated cabinet door, laminate the sheets, and mount them on the inside of the cabinet door on hooks to allow ease of reference and temporary removal by the maintenance staff during trouble-shooting operations.
- D. Operator and Maintenance Manuals: In addition to providing finalized submittals as described below, provide submittals of all of the following as PDF's throughout the submittal approval process. Upon final approval, provide hard copies as described below.
 - 1) Each manual shall contain but not be limited to: A statement of warranty including date of warranty termination and name, address, and telephone number (technical support-normal, technical support-emergency and sales) for each responsible party and contact person.
 - 2) Group information contained in manuals into sets, subdivided by system, containing one copy of data for each item.
 - 3) Incorporate in manuals data copies, 8-1/2" x 11" size paper. Accordion fold 11" x 17" detail to 8-1/2" x 11" size and include in binder.
 - 4) Information included shall be of the exact equipment installed, not complete "line" of manufacturer. Where sheets show equipment installed as well as other equipment, identify installed equipment with rubber stamp arrow or similar method.
 - 5) Assemble complete manuals in hard cover loose-leaf ring binders. Provide front covers with permanently attached typewritten label indicating name of job, Owner, General Contractor, and year of completion. Label binding edge with job name, Owner and date of completion.
 - 6) Provide individual factory issued manuals containing all technical information on each device installed. Advertising brochures, catalog cut sheets, or operational instructions provided in lieu of the required technical manuals is not acceptable. Include in titles:
 - a. Building name and address.
 - b. The name, address and phone number of the General Contractor, system manufacturer and Sub-contractor.
 - c. Project name and number.

- E. Maintenance Manuals: In addition to providing finalized submittals as described below, provide submittals of all of the following as PDF's throughout the submittal approval process. Upon final approval, provide hard copies as described below.
- 1) Theory of operation including block diagrams and text discussing circuit components, function, interrelation, and electrical and sensitivity parameters. Include references to sheets of the as-installed Drawings where applicable.
 - 2) Parts list and parts layout diagrams.
 - 3) Preventative maintenance shall include a requirement that for each system equipped with a computer (Note that the implementation of the preventative maintenance of the computers, and the maintenance of the computers will be provided by the Owner):
 - a. Weekly, the computer shall be rebooted.
 - b. Yearly, each software manufacturer shall be contacted for uploading software updates.
 - c. Yearly, each backup software disk is to be checked to confirm that the data has not been corrupted.
 - d. Monthly scan disk and de-fragmentation programs shall be run.
 - e. Test and equipment requirements.
 - f. Test and troubleshooting requirements and procedures.
 - g. Provide all system test documentation as required by each Related Section.
 - 1) Software and programming manuals shall include detailed descriptions of how to make programming changes and compilation.
 - 2) Include preventative maintenance routines, procedures, and schedules for all equipment. Coordinate with the preventative maintenance software provided by the Mechanical Sub-contractor for implementation into the mechanical systems preventative maintenance software package.
 - h. Provide a list of current telephone numbers and addresses of all material vendors and equipment manufacturers who have supplied components in this Project. Include separate service telephone list and purchasing telephone list cross-referencing with each component.
- F. Operators Manuals: In addition to providing finalized submittals as described below, provide submittals of all of the following as PDF's throughout the submittal approval process. Upon final approval, provide hard copies as described below.
- 1) Theory of operation, functional descriptions, block diagrams, and step-by-step operational procedures.

- 2) A "software binder" shall be provided to the Owner upon final system turnover. This software binder shall consist of a three ring, hard cover binder that shall include at a minimum, the following items; all computer manufacturer's backup/recovery discs, touch screen overlay software driver disc, software drivers for peripheral equipment (i.e. printers), HMI/GUI configuration software licenses. The software binder shall also include a licensed copy of a PC hard drive cloning software equal to Norton Ghost™. Provide one electronic copy of each touch screen control station computer hard drive in the system. Original passwords (provided at time of final completion) provided to access devices such as CCTV keyboards, Security Management Server, touch screen system elements, digital video recording client software elements, etc., shall be provided in document format.

G. Test Procedures:

- 1) Develop and submit test procedures which establish the means to test all system / subsystems functions, features, and performance. Include all testing necessary to complete the approved test forms and performance measurements.
- 2) In general, organize test procedures by location, integrated function, and system. Include proposed test sequences, test methods, test equipment, and other required resources.
- 3) Utilize the test procedures in performing shop testing. It is acknowledged that not all of the testing procedures can be implemented at that time; however implement all that can be implemented.
- 4) Utilize the test procedures in pre-testing to confirm that the systems as installed meet the requirements of the Contract Documents.
- 5) Utilize the test procedures in functional testing and performance testing, and any subsequent re-testing. All testing procedures shall be implemented.
- 6) Submit test procedures and test forms for each of the following:
 - a. Shop Testing: Point-by-point testing in accordance with the Source Quality Control requirements.
 - b. Performance Testing and Performance Re-Testing: Performance measurements in accordance with the Field Quality Control requirements.
 - c. Functional Testing and Functional Re-Testing: Functional tests in accordance with the Field Quality Control requirements.

H. Test Forms:

- 1) Develop and submit test forms which to document the pass/fail testing results of each function and feature of the system, and to record performance measurements.
- 2) Pre-Installation Fiber Tests: Summarize test results into a schedule listing performance results by fiber by cable and submit along with hardcopy traces and printouts of raw test data for Owner records. Provide trace printouts to the Owner in

hardcopy form, providing the names and signatures of the technicians performing the tests.

3) Functional Testing (Shop & Field):

a. The primary test form shall be a relational database consisting of rows and columns. It shall be possible to:

- 1) Reorganize each column (left to right).
- 2) Reorganize each row in either ascending or descending order independently by column.
- 3) Establish ascending and descending orders of columns by cascading up to at least 4 columns.

b. Column headers shall include all functions and features required by these specifications and shown on the drawings. Refer to the Touch Screen System Section for additional details.

4) Performance Testing (Shop & Field): Submit forms for recording of test methods and test equipment for each measurement to be taken and forms for the recording of test data, including measurement traces, charts, graphs, etc.

I. Test Results:

- 1) Record test results on completed test procedure checklists and test forms complete with a list of all personnel witnessing the tests.
- 2) Prepare and submit completed test results for approval a maximum of 15 days after the completion of each test.
- 3) Upon approval, include completed test results in the Operation and Maintenance manuals.

1.6 SEQUENCING AND SCHEDULING

A. General:

- 1) Submit test procedures and forms for approval a minimum of 30 calendar days in advance of each applicable test for each phase of the Work as described below.
 - a. Request Owner inspections from the Owner a minimum of 15 calendar days prior to each applicable inspection.
 - b. Request Owner attendance at tests from the Owner a minimum of 30 calendar days prior to each applicable test date. Request each test only after all prerequisites have been accomplished, all pre-testing has been satisfactorily completed, and all necessary corrections forthcoming from pre-testing have been made.

- c. Submit with the Equipment Submittal and Catalog Cut Sheets:
 - 1) Blank System Startup Test Forms.
 - 2) System Startup Test Procedures.
- d. Submit the following at least 30-days prior to the beginning of final testing:
 - 1) Final Acceptance Test Forms and Procedures.
 - 2) User Training syllabus.
 - 3) User Training schedule.
 - 4) Notification of readiness for final testing.
- e. Prior to submitting closeout submittals and prior to requesting the Owner's presence at the final system test submit:
 - 1) Manufacturing certificate of satisfactory completion.
 - 2) Completed System Startup Test Forms and Punch lists. The Owner will not go to the site until these test forms have been filled out and punch lists developed.

B. Office and Shop Milestones:

- 1) Pre-Testing Shop Inspection (Approval to Shop Test & Demonstrate): Prerequisites include approval of Submittals A through D, as well as completion of all shop assembly, system integration, and software development (excluding final configuration and incorporation of user comments). Prerequisites also include UL inspection and labeling of shop assemblies, system mock-up for shop testing, and completion of pre-shop testing by the Contractor. Notify Owner of readiness for Pre-Testing Shop Inspection upon completion of these prerequisites. Submit the following at least 30-days prior to the Shop Test (pre-test).
 - a. Notification that the system is ready for the Shop Test.
 - b. Filled Out System Startup Test Forms. These forms need only be filled out to the level of testing possible at the Contractor shop.
- 2) Shop Testing and Demonstrations Approval (Approval to Ship): Prerequisites include passing Pre-Testing Shop Inspection. To allow for a 30-day burn-in period in the shop after testing, schedule Shop Testing at least 4 weeks prior to equipment shipment to the site. Owner's approval of Shop Testing shall be obtained before the shipment of any system components to the site for installation (excluding rough-in, wiring, and field devices).
- 3) Burn-in systems in the shop for 30 days between Shop Testing and shipment to the site.

C. Field Milestones (per phase):

- 1) Pre-Installation Inspections (Approval to Install): Perform prior to the installation of assemblies from Shop Testing (e.g., during the burn-in period) obtain inspection of the system rough-in and on-site preparation. Prerequisites include approved Shop Testing and approved Submittal B.
- 2) Pre-Startup Inspection: Perform and pass prior to initial systems power-up.

D. Hot Cutover (per phase): No system level downtime shall be allowed except as specifically listed below. All new systems shall be installed and shall be fully operational at the various operators' stations in parallel with the existing systems unless specifically noted otherwise.

- 1) Touch Screen System: The new Touch Screen computers shall be installed in parallel with the existing and tested prior to cutover. Once the new touch screen computers have been tested and confirmed to be functional, the existing HMI's shall be demolished.
- 2) Downtime: No equipment or functionality shall be lost except:
 - a. PLC System: Downtime shall not exceed 2 hours for any single PLC.
 - b. Intercom and Paging System shall not exceed 2 hours.
 - c. Touch Screen System shall not exceed 4 hours for any single computer.
 - d. CCTV System shall not exceed 4 hours for any single computer.
 - 1) It is anticipated that the replacement of field cameras will necessitate a period wherein loss of camera coverage is inevitable. This loss of video coverage shall not exceed 4 hours for any interior camera located within the I-3.2 occupancy areas of the facility and not greater than 2 hours within any housing unit.
 - e. Contractor shall notify the Owner 14-days in advance of any interruptions in operation.

1.7 SPECIFICATION AND DRAWING INTERPRETATION

- A. The designs within these specifications and drawings are performance based. These are not prescriptive specifications. Contractor is responsible for significant design details as necessary to meet the performance and functional requirements of these specifications.
- B. Work includes significant custom integration between subsystems and the design and fabrication of many custom assemblies. Take full responsibility for the performance of the total integrated security electronics system, including integration between subsystems and components as necessary. This includes all hardware, software, firmware necessary, as well as any software patches and other programming elements necessary to meet the performance requirements of these Contract Documents.

- C. The Work shall be provided in accordance with the intent expressed on the drawings and Specifications, and in conformance with the actual building architectural, structural, and system conditions. When in conflict, field conditions take precedence over the drawings. Extensive field investigation and coordination is required for the Work.
- D. Quantities to be provided are as shown on the drawings and indicated by the Specifications. When not specifically indicated or implied, a minimum of one is required.
- E. Drawings do not show every component that is required for a complete installation. Provide all materials and labor required for a complete and operational system.
- F. Drawings are diagrammatic and device placements shown are approximate unless specifically noted.
 - 1) Details that appear on the drawings which are specific with regard to the dimensioning and positioning of the work, are intended only for the purpose of establishing general feasibility.
 - 2) Exact finish locations cannot be indicated. Therefore, locations of all work and equipment shall be verified to avoid interferences, preserve headroom and keep openings and passageways clear.
 - 3) Device placement shall provide proper operation meeting the operational and functional requirements of the Specifications and avoid interference with other trades and building systems. Where dimensional discrepancies exist, the architectural drawings take precedence over the security electronics drawings.
 - 4) Review the plans for the Work of the other trades and coordinate and adjust the Work of the other trades to achieve the best installation for the Owner without additional claims or charges.
- G. Be responsible to design, develop, and submit additional details as necessary to fully describe the Work and obtain necessary approvals.

1.8 WARRANTY

- A. For each system described in this Section and all Related Sections, provide documentation affirming the following:
 - 1) System shall be warranted to be free from all defects of material and workmanship for a period of one (1) year effective upon date of Owner's Accepted Substantial Completion Date of the project. Equipment or components shown with inherent defects of a mechanical or electrical nature shall be replaced at no expense to Owner. All factory recommended maintenance outlines and adjustments shall be done during the warranty period at no cost to the Owner.
- B. Receive and respond onsite within 4 hours with a factory trained and factory authorized technician, 24 hours a day, seven days per week to all service calls. Responding technician shall arrive with all necessary tools, metering equipment and replacement parts.

- C. Have adequate stock on hand to repair systems and replace faulty component within the time constraints specified in the "Maintenance" article of this Section.
- D. Ability to enter into a five-year extended warranty contract upon expiration of the one-year warranty period.

PART 2 PRODUCTS

2.1 ACCEPTABLE COMPONENTS

- A. Materials and equipment used on this Project unless specifically noted otherwise shall be delivered to the Site new, in their original unbroken packages and shall be of the best quality of their respective kinds. All materials and equipment shall conform to the latest Standard Specifications of the American Society for Testing Materials, National Electrical Manufacturer's Association or NEMA, National Board of Fire Underwriters, Institute of Electronic and Electrical Engineers, Electronic Industry Association, Federal Communications Commission or other appropriate and recognized agency. Where available, materials and equipment shall bear the stamp indicating listing by Underwriter's Laboratories, Inc.
- B. Provide equipment and materials that are:
 - 1) Selected for accessibility for maintenance, part replacement and alignment.
 - 2) Materials and equipment furnished shall be of current production by manufacturers regularly engaged in the manufacturing of such items, for which replacement parts are available, of the manufacturer's latest model or type offered.
 - 3) When more than one unit of the same class of equipment or material is required, such units shall be the products of a single manufacturer. Constituent parts that are similar shall be the products of a single manufacturer. All components of an assembled unit need not be products of the same manufacturer, however, all components must be acceptable to the Owner. Components shall be compatible with each other and with the total assembly for the intended service.
 - 4) Rated for continuous duty.
 - 5) Rated for 115 to 120 VAC, 60 Hz input power. Exception: As described elsewhere in these Specifications.
 - 6) UL listed for their application and use. Where available, materials and equipment shall bear the stamp indicating listing by Underwriter's Laboratories, Inc.
 - 7) Catalog and model numbers where used, are intended to indicate type and quality of design and material as well as exact operating features required.
- C. Equipment modifications: When standard manufactured equipment components are modified from their original condition or factory options have been exercised, identify the changes by clearly identifying the modification:
 - 1) On the Shop Drawings.

2) With a label which states "This unit has been modified ..." and identify the modification or reference. Locate the label so that a service technician or factory service personnel will be able to determine the equipment in use is non-standard and that the modifications are required for service, testing and replacement.

3) Equipment modification labels are not required for jumper or switch settings.

D. Software:

1) Include any and all software used for maintenance and for programming.

2) All software shall be licensed to the Owner except: Genetec used for VMS.

3) All programming is by the Contractor except:

a. Staff authorizations shall be inputted into the system and segregated into groups which will define who is allowed to do what, during what criteria.

b. Genetec system programming.

E. Cable Reels: Ship and deliver all cable on reels constructed to prevent cable damage during shipment and handling with the outer end of the cable securely to the reel, so as to prevent loosening of the cable during transit. Use end seals on both the inner and outer ends of the cable.

1) Provide a drum diameter at least 13 times the cable diameter. The cable shall be wound on the reel so that unwinding can be done without kinking the cable. Make two meters of cable accessible at both ends for testing.

2) Marking: Each reel shall have a permanent label attached showing length, cable identification number, cable size, cable type, and date of manufacture. For fiber optic cable also marks attenuation and bandwidth.

2.2 PRODUCTS

A. Optical Fiber Cable: Existing to be reused. Provide patch cables as necessary to match.

1) Confirm colors with Owner prior to purchase.

B. Two-Output Satellite GPS Data Time Clock: Time Machines Inc., TM1000A; or equal.

1) Provide equipment, connections, and programming to facilitate synced and accurate time stamps on all systems, computers, and recording media.

2.3 SUBSTITUTIONS

A. Some products specified include multiple manufacturers and model numbers as well as descriptions of the product which document some of the critical features or performance criteria of the product. The products specified establish:

- 1) Minimum qualities that alternate and substitute equipment must meet to be considered acceptable.
 - 2) The basis for equipment sizing, wire and cable design, power consumption, room cooling criteria, and other design parameters
- B. All requests for alternate and substitution equipment shall be confirmed to meet the specified requirements of the project. Be responsible to ensure that:
- 1) The equipment meets the minimum performance, reliability, functionality, flexibility, expandability requirements of the Contract Documents.
 - 2) No conflicts will be created with other trades including additional power or different voltage requirements, the addition of heat loading on the HVAC system, and that all components fit within the space constraints of the project.
 - 3) No conflicts in signal levels, types, protocols or other electronic characteristics of the proposed equipment exist.
- C. Equipment and materials installed on the project other than those specified or as an approved substitute item shall be subject to rejection by the Owner and if rejected shall be promptly removed and replaced with the proper item at no cost to the Owner.
- D. Be responsible for all design, coordination, and cost associated with equipment including, but not limited to:
- 1) Its integration into the total system including physical mounting space, electrical interconnection, signal wiring, power, quality, electromagnetic interference, communication protocols, functional and performance characteristics, operational and maintenance characteristics, and similar design considerations is met.
 - 2) All additional materials, equipment, components, accessories, and other items required for equivalent system operation and performance is included.
 - 3) All necessary changes to branch power circuits, circuit protective devices, and the Work of other trades are included.
 - 4) All modifications to wire, cable, and raceway design are included.
- E. To request substitution of a product after award, submit a request which will be approved only if:
- 1) The Contractor is responsible for all design, coordination, associated with the substitution including, but not limited to:
 - a. Its integration into the total system including physical mounting space, electrical interconnection, signal wiring, power, quality, electromagnetic interference, communication protocols, functional and performance characteristics, operational and maintenance characteristics, and similar design considerations is met.

- b. All additional materials, equipment, components, accessories, and other items required for equivalent system operation and performance is included.
- c. All necessary changes to branch power circuits, circuit protective devices, and the Work of other trades are included.
- d. All modifications to wire, cable, and raceway design are included.
- e. Provide the rationale for the request including:
 - 1) Product unavailability due to the manufacturer replacing the device with a subsequent replacement model, or obsolescence of the product specified.
 - 2) Extended lead time which would cause scheduling conflicts.
 - 3) Increased performance, reliability, functionality, flexibility, expandability, etc.
 - 4) There is a decreased cost to the Owner.
 - 5) Other rationale describing why it is to the Owners benefit to approve the request.

2.4 SOURCE QUALITY CONTROL

- A. Pre-Test Shop Inspection: Schedule and facilitate inspection by the Owner and/or his representative for completion level, contract compliance, codes and standards compliance, and workmanship. Demonstrate:
 - 1) Assembly to approved shop drawings, and the proper posting and incorporation of all addenda, RFIs, and change orders in the as-built drawings.
 - 2) Use of approved equipment and materials. Have the approved product data submittals present. Show each rack and cabinet component by make and model and allow the Owner to check against approved submittals.
 - 3) Assemble and fabricate to UL508A standards. Provide UL508 certification of the panel shop.
 - 4) NEC power distribution and safety grounding. NEC separation from low-voltage wire and cable.
 - 5) Specified separation of high- and low-level audio cabling. NEC separation of Class 1 wire and cable from Class 2 and communication cables.
 - 6) Proper shielding practices. Isolation of signal grounds and shields. Single-point bonding to signal ground.

- 7) Internal working and thermal clearances and thermal ventilation and/or forced cooling.
 - 8) Specified wire, terminal, and connector labeling. Specified nameplates on internal components. Demonstrate that labels and nameplates match the shop drawings.
 - 9) Other compliance with contract documents and approved submittals, workmanship, neatness, and equipment and wiring identification.
 - 10) Software completion by providing a preview of the tests and Shop Testing and Demonstration tests and demonstrations.
 - 11) That the Contractor's own pre-testing in advance of Shop Testing has begun by spot-testing various functional and performance tests.
- B. The Owner shall have the right at all times to inspect or otherwise evaluate the Work performed or being performed and shall have access to the premises in which the Work is being performed.
- C. Shop Testing Configuration:
- 1) Mock-up all major system components in the shop for demonstration to the Owner and point-by-point testing. Obtain approval through the test procedures submittal for all components not present or simulated. System head-end components to be mocked-up shall include:
 - a. The entire Touch Screen system including all networking elements.
 - b. The entire Detention CCTV system, except field devices. Provide at least 5 of each type of camera and have the ability to interconnect and quickly move them between camera inputs.
 - c. At least 5 or all, whichever is lesser, field devices of each type by system and all power supplies, data gathering panels, transmitting and receiving equipment as necessary; except as specifically noted above.
 - 2) Document the test configuration by including in the test procedures:
 - a. Revised versions of the AutoCAD one-line system shop drawing diagrams showing the system as mocked up in the shop, in particular all network diagrams and the extent of those networks.
 - b. Sketch in plan view of the shop and the relationship of components for testing.
 - c. Computer system specifications: Print directly from the operating system and submit by computer name its processor type, installed RAM, operating system version, installed hard drive and peripherals, and other specifications.

- d. Network parameters: Print directly from network management software and supplement as necessary, each network, the IP address of each Ethernet network node, and other network parameters. Include the IP address as part of the cable identification. Refer to SECTION 28 05 53 - Identification for Electronic Security for additional requirements.
- e. Submit digital jpeg photographs of overall shop views and each workstation mockup in elevation.
- f. Submit by rack/ cabinet name, digital jpeg photographs in elevation of each workstation, each cabinet interior, and each rack front and rear.

D. Shop Testing Tests:

- 1) Test the above assemblies and equipment functioning in the shop as a single, fully-integrated system. Accomplish the goal of pre-testing and confirming the correct functionality and performance of every system function, duplicating site configuration and conditions to the greatest degree practical, so that the only element untested in the shop is the field wiring.
- 2) Conduct tests in strict accordance with the approved test procedures.
- 3) Demonstrate full compliance with the required operating modes and sequences of operation.
- 4) Functional Testing:
 - a. Test system operations and performance in accordance with Owner requirements and all previous Owner review comments.
 - b. Perform thorough, device-by-device, point-by-point testing for all monitored and all controlled devices and discrete I/O.
 - c. 100% functional test of all touch screen system functionally:
 - 1) Call functions and call handling.
 - 2) Local call functions.
 - 3) Alarm functions and alarm handling.
 - 4) Horizontal door controls.
 - 5) Video camera selection from the HMI/GUI systems through both discrete camera selection and through multiple camera selection through door control selection.
 - 6) Other as required.
- 5) Performance Testing: Perform the following:

- a. Integrated touch screen / control electronics throughput and response time measurements.
- b. Rack and cabinet temperature measurements.
- c. Computer system case and CPU temperature measurements.
- d. Video quality measurements (initial).

2.5 SPARES

A. At a minimum, spares parts are to include:

- a. 2 spares inventories shall be provided of all active electronics except: Provide 8 spare fixed cameras and 2 of every other camera by type (180-degree and 360-degree panoramic cameras, etc.). Active electronics are defined as any and all equipment that utilizes electricity. This includes but is not limited to communications modules, processors, computer workstations, servers, I/O modules, extenders, monitors, etc. of each type, size, and style provided under the specifications.
- b. 10% spares inventories shall be provided of all:
 - 1) Fuses of all sizes and types.
 - 2) Terminal blocks of all sizes and types.
 - 3) Patch cables of all sizes and types.

2.6 TEST EQUIPMENT

A. The following products establish the minimum acceptable performance for test equipment to be utilized for performance measurements. Propose products to be used with the product data submittals.

- 1) Audio analyzer.
- 2) Audio spectrum analyzer.
- 3) Copper Cable Analyzer: Fluke DSP-4000 with latest software and hardware releases for CAT-6 horizontal distribution cables, or approved equal.
- 4) Copper Cable Tester: Fluke Microscanner Pro with coaxial cable module.
- 5) Digital Multi-Meter (DMM) with the ability to measure and display from 0-1000 DC/AC volts, 0 to 500 mega-ohms, and 0 to 10 amp DC. DMM shall be factory calibrated bearing the seal of the calibration date: Fluke 180 or equal.
- 6) Digital Multi-Meter with integrated Temperature (DMMT) measurement capability from 32 degrees to 200 degrees Fahrenheit. DMMT with integrated probe shall be

factory calibrated bearing the seal of the calibration date: Fluke 16 with 80BK temperature probe or equal.

- 7) Fiber OTDR Tester: Fluke OptiFiber with latest software and applicable option modules.
- 8) Impedance Bridge.
- 9) Oscilloscope.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Systems: All equipment provided in each of the Division 28 Sections shall be installed as recommended and programmed as recommended by the equipment vendor unless specifically noted otherwise in these specifications.
- B. All systems shall be synced to a GPS NTP server. One for HMI/GUI, PLC, Intercom, and CCTV system networks.
- C. Signal Separation within Racks and Cabinets:
 - 1) Maintain signal separation in all racks: Do not allow Class 2 cable to be housed or come into contact with Class 1, power or lighting cable. Observe all requirements of NEC, including Article 725.
 - 2) 2" separation between: Video, microphone level, line level audio, 25V audio, and all control cable.
 - 3) 6" separation between: 120VAC cable and all Class 2 cable.
 - 4) 12" separation between 120VAC power cable and all microphone level or audio line level cable.
 - 5) Where cables enter a common device such as an amplifier, the cables may be closer for the purpose of terminating on the equipment.
 - 6) All CCTV and data cabling shall be run continuously without splices except as required in the Drawings.
 - 7) Where cables are routed in cable trays, bundle together and tie-wrap to separate by signal type.
- D. Protection:
 - 1) Do not install active electronics within the electronics rooms until they are cleaned, sealed, and climate controlled.

- 2) Flexible metal conduits permitted only where flexibility is required in length not over 18 inches or as specifically shown on the drawings.
- 3) Do not allow cable harness support to break or deform.
- 4) Do not allow cable insulation to break. Install UL approved plastic insulated bushing on all holes, lips or other locations where cable can be damaged due to sharp edges. Apply shrinkable tubing where necessary to secure the insulation against traveling or fraying.
- 5) Wiring within equipment racks and cabinets shall be neatly grouped.
- 6) All cable provided in underground raceways shall be rated for the application.

E. Splices and Terminations:

- 1) All splices shall be in boxes utilizing wire nuts or crimp style compression fittings. Butt splices are not acceptable.
- 2) No splices shall be allowed between the electronics rooms and the field devices.
- 3) All terminations in wall cabinets and wall and floor mounted racks shall be on screw down terminal strips unless noted otherwise.
- 4) All 24-volt connectors shall be screw-down or shall employ compression attached full 360-degree ring type or spade type terminators securely fastened to the device terminals. A 3" termination loop shall be formed immediately adjacent to each terminal. Push-on connectors are prohibited.
- 5) Do not use compression connectors on solid wires.
- 6) Use compression connectors on wire of the correct gauge only.
- 7) Termination of multiple wires on a common compression connector is allowed only where the size of the connector is appropriate for the combined sizes of the wires, and all wire sizes are the same, and the number of wires does not exceed three.
- 8) Terminal strips shall be fully insulated but allow insertion of test equipment probes. Each terminal segment shall be numbered to correspond with the Drawings and conductor identification numbers.
- 9) Where field devices are provided with terminated plug/jacks at a pigtail: Utilize the plug jack and shall terminate the home-run cabling directly to the plug/jack. Use scotch locks or other intermediate splicing device to connect the homerun wires to the pigtail. There shall be no splices within 4' of a plug/jack other than that provided by the field device manufacturer.

F. Wire and Cable:

- 1) All power and Class 1 cabling shall be provided by the electrical Sub-contractor.

- 2) Meeting manufacturer's recommendations for the system to be used.
- 3) Specifically rated for their use (i.e. class 1, class 2, riser, plenum rated, tray rated, underground, etc.).
- 4) To be in conduit unless noted otherwise.

G. Locations:

- 1) Verify all locations with actual field conditions, architectural, structural, plumbing, heating and ventilating plans to avert possible installation conflicts. Coordinate Work with that of other trades to assure symmetrical placing of fixtures in respect to ceiling tile, grilles, etc. Any Work which is incorrectly installed will be ordered removed and relocated. In general, locate equipment as indicated below unless otherwise noted. See symbol schedule on Drawings.
- 2) Mounting Heights:
 - a. Mounting heights at non-typical locations shown with (+) sign and height required above finished floor or above grade as is applicable.
 - b. Outlets and boxes located in acceptable spaces and mounted in concrete block, brick or tile walls are to be adjusted in height to coordinate with modular joints of the materials.
 - c. All devices and signage shall meet all ADA requirements.
- 3) Mount all power supplies on metal plates in racks and cabinets.

3.2 SYSTEM TESTING

A. Refer to Related Sections for Testing Procedures, Testing Forms, Performance Testing, and Functional Testing requirements.

- 1) Correct any and all problems from functional and performance testing and arrange to re-test to demonstrate the correction of those specific problems.
- 2) Should the Owner ascertain that the correction of punch list items, warranty items, or other corrective work has caused tests that previously passed to now fail, the Owner reserves the right to order a full re-test – or any level of spot re-testing of previous tests in order to determine the extent that integrity of prior acceptance was compromised by these problems.

B. Pre-Installation Testing:

- 1) Copper: Test each copper circuit, device, and all equipment for shorts, continuity, and ground faults.
- 2) Fiber: Test all existing unused fiber optic cables prior to equipment installation.

- a. Testing shall consist of a bi-directional end to end OTDR trace performed per TIA/EIA 455-61 at both 850 and 1300 nanometers for multimode fibers. Bring any discrepancies to the Owner's attention.

3.3 SITE QUALITY CONTROL

A. Initial Performance Testing for Electronic Security.

1) Control, Communication and Cable Inspection:

- a. Test all new CCTV cable and conductors. Test completed end-to-end spans.
- b. Measure length on all cables and test for opens, shorts, reversed pairs, swapped pairs, and split pairs.

2) Copper Ethernet (Category 6) Cables:

- a. Certify all pairs of each copper station cable, for conformance to TIA/EIA-568B.2-1 (Addendum #1 to TIA/EIA-568B.2), as well as IEEE 802.3, 10BASE-T, 100BASE-TX, and 1000BASE-T.
- b. Test each end-to-end link (the entire channel from the connector at the station to the connector or termination in the rack) utilizing sweep tests, for continuity, shorts, polarity, near-end cross talk (NEXT), far-end cross talk (FEXT), attenuation, installed length, transposition (wire map), mutual capacitance, characteristic impedance, resistance, ACR, and presence of AC voltage. Use the Power Sum method to test NEXT and FEXT. Test each cable in both directions.
- c. Use a TIA/EIA Level III testing instrument, re-calibrated within the manufacturer's recommended calibration period, with the most current software revision based upon the most current ANSI/TIA/EIA testing guidelines, capable of storing and printing test records for each cable within the system and equipped with the current Category 6 test adapters.
- d. Tests shall confirm/guarantee compliance to Ethernet Category 6 1000B-T (1000 Mb/s IEEE 802.3ab) and 1000B-TX (1000 Mb/s ANSI/TIA/EIA-854) applications based on the data contained in the manufacturer's performance specifications.
- e. If network problems are suspected, repeat tests during performance testing with building electrical systems fully powered on (i.e. lights, HVAC, etc.).

3) Fiber Ethernet Cables:

- a. Certify all strands in both directions using a bi-directional end-to-end OTDR optical transmission loss test instrument performed per TIA TSB-140, Tier. Test at both 850 and 1300nm.
- b. Results shall conform to TIA TSB-140, Tier 2 and the criteria specified in ANSI/TIA/EIA-568B and IEEE 802.3z (1000Base-X Gigabit Ethernet) for a

maximum end-to-end dB loss of 2.5 dB and no more than 0.5 dB loss per connector.

4) Networks:

- a. Perform ping tests on all network segments.
- b. Individually disconnect individual nodes from the network, including PLCs, HMI/GUI computers, intercom & paging exchanges, video review stations, etc. and verify that no missing node affects the ability of other nodes on the network to function – except for the loss of functions associated with the missing node.

5) Network Security:

- a. This is a functioning and operational Correctional Institution. Security is of primary concern:
 - 1) Maintain tool inventory control in accordance with Divisions 0 and 1.
 - 2) Off-site access to the existing or new networks is prohibited except as may be allowed by the Owner. Contractor may submit for Owner acceptance security procedures, protocols and encryption equipment and methods, but the Owner maintains the right to not allow any off-site access to the door control systems, video surveillance systems, and any other networkable systems that it deems may constitute a risk to its security. It is anticipated that the Contractor will have access to the networks from off-site through the construction and testing periods.
 - 3) County LAN and Security LAN separation: The only connection between the two LANs are the communications between the Touch Screen System computer and the Surveillance Television system Computer (located in the Master Control Room) which shall be through RS232C, RS422, or RS485 interface as necessary for touch screen camera control.

B. Pre-Installation Inspection: Schedule and facilitate inspection by the Owner and/or its representative for completion level, contract compliance, codes and standards compliance, and workmanship. Demonstrate:

- 1) Installation to approved shop drawings, and the proper posting and incorporation of all addenda, RFIs, and change orders. Show as-building procedures.
- 2) Use of approved equipment and materials. Have the approved product data submittals present. Show each wire type, device type, etc. by make and model and allow the Owner to check against approved submittals.
- 3) Use of approved raceway practices. Show each raceway type (e.g., below slab, above ceiling, corridor racks and trapezes, etc.). Demonstrate compliant labeling of conduits, pathways, wires and cables.

- 4) Typical device termination and labeling for each device type, including devices furnished by other trades (e.g., detention hardware, overhead coiling doors, lighting control panels, valve controls). Have the wiring schematic present for each device. Test each typical circuit for proper wiring per approved schematic diagrams.
 - 5) Adequate clearance for mounting of cabinets.
 - 6) Adequate cleanliness suitable for the installation of electronic equipment.
 - 7) Other items of compliance to the Contract Documents as requested and inspected by the Owner.
- C. Pre-Startup Inspection: Schedule and facilitate inspection by the Owner and/or its representative for completion level, contract compliance, codes and standards compliance, and workmanship. Deferral and re-inspection will be granted for incomplete device wiring and termination at time of startup, as long as practices to be used are demonstrated. Demonstrate:
- 1) Installation of head-end and operator interface components to approved shop drawings and manufacturer's installation instructions.
 - 2) Seismic mounting and bracing installation of workstations, racks and cabinets. Code working clearances or approvals for variations from those clearances. Compliance with ergonomic standards.
 - 3) Completion of all NEC safety grounding.
 - 4) Proper shielding practices. Isolation of signal grounds and shields. Single-point bonding to signal ground.
 - 5) Completion of all signal grounding.
 - 6) Inspection and tagging by the electrical inspector.
 - 7) Specified wire, terminal, and connector labeling. Specified nameplates on racks, cabinets, monitors, computers, and other components. Demonstrate that labels and nameplates match the shop drawings.
- D. Other compliance with contract documents and approved submittals, workmanship, neatness, and equipment and wiring identification.
- E. Final Acceptance Tests: After installation and System Startup Testing is completed, and contractor's punch lists have been developed and all items corrected, conduct a Final Acceptance Test in the presence of the Owner. Use the approved Final Acceptance Testing procedures to conduct test.
- F. Provide all instruments, ladders, tools, and personnel to demonstrate full functionality of all equipment and system features, performance, operations, and functionality.
- G. Cleaning:

- 1) Clean all foreign matter from the interior and exterior of all equipment and touch-up scratched or marred surfaces to match original finish.
- 2) Control all dust, dirt, and foreign material caused by the performance of the Work. Clean work areas daily.

H. Cutting:

- 1) Do or arrange and pay for required cutting of concrete, masonry, wood, structural framing, etc. Limitations: No cutting or channeling of underpinning or structural members is permitted without prior permission of the General Contractor.
- 2) Grind all sharp edges of metal faceplates so that all metal corners and edges have a 1/16" or greater radii.

I. Raceway Installation: As required by Division 26 unless specifically noted otherwise.

- 1) Minimum conduit size is 3/4" unless specifically noted otherwise.
- 2) Install a nylon pull-line in each unused conduit at the time of installation. The pull-line shall have a tensile strength of 200 pounds for conduit sizes up to 1 inch, 400 pounds for conduit sizes up to 2 inches and 600 pounds for larger sizes.
- 3) All conduits shall be clearly identified at both ends as to their destination. Where more than one conduit serves the same location, each conduit should be identified with a unique number.
- 4) Open ends of conduit shall be plugged during construction to prevent the entrance of moisture or foreign material. If moisture or foreign material is found at the time the cables are being installed, promptly and thoroughly clean the conduit before installation of cables.
- 5) All conduits shall be securely fastened in place free from burrs, defects or obstructions that could interfere with installation of cables.
- 6) All conduits shall be reamed and when entering pull boxes, cabinets, wire ways or outlets shall be secured by locknut(s) and an insulated bushing on the conduit end.
- 7) All unused conduits shall be marked as noted above and shall be provided with metal blank end discs and a bushing.
- 8) All communication outlets shall be installed at the same height above the finish floor as the electrical outlets, unless otherwise specified on the Drawings.

J. Boxes, Sleeve, Inserts, Openings, Hangers and Locations: As required by Division 26 unless specifically noted otherwise.

- 1) Furnish and install boxes required for openings in the structure for installation of the Work. Be responsible for proper placement of all sleeves and boxes.

- 2) Coordinate location of inserts and hangers required to support conduit, cables, boxes, fixtures, etc.
 - 3) Locations of devices, outlets, etc., as shown on the Drawings are approximate unless dimensioned. Exact locations of such items shall be determined by the consultant or secured from special details and Drawings.
 - 4) Coordinate rough-in and connection dimensions as required for power and control connections to all equipment items.
 - 5) Verify the physical dimensions of each item of equipment to fit the available space and promptly notify the consultant prior to rough-in, if conflicts appear. Be responsible for coordination of equipment to the available space and to the access routes through the construction.
 - 6) Specific attention must be given in installation back boxes for devices in concrete and block walls. Personnel shall be specifically assigned to assure proper alignment of back boxes in concrete and block walls. This includes the proper depth relationship between the lip of the back box and the finished surface of the wall. Also included is the verification that the plane of the front of the back box is parallel with the plane of the finished wall and confirmation that the sides of the back box are vertical.
- K. No unterminated cable is to remain unless noted otherwise. Demolish all unused cable as required by code.

3.4 CLOSEOUT ACTIVITIES

A. Demonstration:

- 1) Demonstrate the performance and operation of the system.
- 2) On completion of the testing, instruct the operations staff and the Owner in the operation and testing of the systems and obtain signed receipt showing that instructions were given, time and date of instructions, names of people receiving instructions and a statement that the instructions were understood. Provide the Owner with copy of receipt with the Operator and Training manuals. Training to be held in 4-hour seminars during regular business hours at a time and location convenient to the Owner. Refer to Related Sections for the number of hours required

B. Training:

- 1) Refer to 28 05 00-3 Submittals for Owner Coordination Meetings, Demonstrations, and Training and Project Closeout requirements.
- 2) Training to be held in 4-hour seminars during regular business hours at a time and location convenient to the Owner. Refer to Related Sections for the number of hours required.

- 3) Training syllabus to include a detailed outline of all specified functions and features of each major system component. Submit one for use in operator training seminars and one for use in maintenance training seminars.
 - 4) Each training seminar is to be tailored to the interests and technical capacities of the seminar attendees. The use of Shop Drawing block diagrams and other submittal components as visual aids in the seminars is acceptable, but shall not be used in lieu of hands-on training.
 - 5) All training seminars shall be recorded onto DVD disks and submitted for approval. The video recording of the seminars are to be done in such a way as to ensure that the instructor and the entire presentation is clearly visible and all audio including all questions and answers are understandable upon playback. Recordings that do not have sufficient video or audio quality for use by the Owner in training future personnel will be rejected. If rejected, re-record seminars.
- C. Alternately, the use of detailed power point presentation utilizing screen shots of the touch screen, access control, and video review stations annotated and with audio wav files describing in detail the operation of each is acceptable.
- 1) 10% to 25% of each seminar shall be devoted to user questions and answers. Care shall be taken that all questions are recorded along with their respective answers.
 - 2) At the end of each seminar obtain signed receipts showing that instructions were given, time and date of instructions, names of people receiving instructions and a statement that the instructions were understood.
- D. Operational Training:
- 1) Instruct the operations staff and the Owner in the operation of the systems. Provide the Owner with copy of receipt with the Operator and Training manuals.
 - 2) Refer to Related Sections for the number of Operational Training Hours to be provided.
- E. Maintenance Training:
- 1) Instruct the maintenance staff and the Owner in the functions, testing, trouble-shooting, repair, and preventative maintenance routines of the systems. Provide the Owner with copy of receipt with the Maintenance manuals.
 - 2) Audio/Video record the installation, maintenance procedures used, and adjustments made for each device type provided.
 - 3) Refer to Related Sections for the number of Maintenance Training Hours to be provided.

3.5 SCHEDULES

A. 28 80 00-1 Submittals – Part 1 (Submittal A):

		Submittal A - Order Approval							
Number:	Section Name:	Product Data Submittals:	Bills of Materials:	I/O Points Lists – Initial:	Zone /Station Schedules – Initial:	Camera Schedules – Initial:	One-line block diagrams – initial:	Workstation / Monitor / Console Elevation Drawings – Initial:	Calculations:
28 05 00	Conductors and Cables for Electronic Security	X	X	X	X	X			X
28 05 27	Racks and Cabinets for Electronic Security	X	X			X	X	X	X
28 18 20	Detention Intercom And Paging System	X	X	X	X				Loads & Throughput
28 23 30	Detention Video Surveillance System	X	X	X	X	X	X	X	Loads & Throughput
28 46 13	Touch Screen HMI System	X	X		X	X	X	X	X

B. 28 80 00-2 Submittals – Part 2 (Submittal B):

		Submittal B - Rough-in Approval					Submittal C - Fabricate			
Number	Section Name	Floor Plan Shop Drawings & Electrical Rough-in Submittals	Floor plan coordination drawings	Enlarged comm & control room plans	Riser diagrams	Mounting detail drawings	One-line block diagrams - final	Interconnection wiring diagrams	Interconnection coord drawings	Rack & cabinet elevation drawings
28 05 00	Conductors and Cables	X	X	X	X		X	X	X	X
28 05 27	Racks and Cabinets	X	X	X	X	X	X		X	X
28 18 20	Detention Intercom and Paging			X	X	X	X	X	X	X
28 23 30	Detention Video Surveillance	X		X	X	X	X	X		X
28 46 13	Touch Screen HMI System	X		X	X		X	X		X

B. 28 80 00-3 Meetings and Closeout Schedule:

Number	Section Name	Submittal D		Pre-ToO Workshop & Demo	ToO Review Meeting & Demo	Draft Operator Manuals	Pre-Functional Testing Demos & Mtgs	Functional Testing Demos & Mtgs	Training Syllabuses	Training & Transition
		ToO Initial w/ Initial Screens	ToO Final w/ Full Screens							
28 05 00	Conductors and Cables for Electronic Security		X							
28 05 27	Racks and Cabinets for Electronic Security	X	X	X		X	Demo	Re-Demo	X	X
28 18 20	Detention Intercom and Paging									
28 23 30	Detention Video Surveillance System	X	X	Demo	Meet	X	Demo	Re-Demo	X	X
28 46 13	Touch Screen HMI System	X	X	Demo	Demo	X	Demo	Re-Demo	X	X

C. 28 80 00-4 Inspections and Tests:

			Field Construction				Field Acceptance			
Number	Section Name	Test Procedures (Each Test)	Pre-Test Shop Inspection	Pre-Installation Inspection	Pre-Installation Testing	Pre-Start-up Inspection	System Start-up	Performance Testing	Functional Testing	Pref. & Functional Testing
28 05 00	Conductors and Cables for Electronic Security	x		x	x	x				
28 05 27	Racks and Cabinets for Electronic Security	x	x		x	x	x		x	x
28 18 20	Detention Intercom and Paging System	x	x	x	Cable	x	x	x	x	x
28 23 30	Detention Video Surveillance System	x	x	x	Cable	x	x	x	x	x
28 46 13	Touch Screen HMI System	x	x	x	Cable	x	x	x	x	x

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. The requirements of SECTION 28 05 00 – Common Work Results for Electronic Security is required by this Section as if written herein.
2. Wall cabinets.
3. Plastic wireway.
4. Surge-protected outlet strips.
5. Accessories.

B. Related Sections:

1. 28 05 00 - Common Work Results for Electronic Security
2. 28 05 53 – Identification For Electronic Security
3. 28 23 30 – Detention Video Surveillance System
4. 28 46 13 – Touch Screen System.

1.2 REFERENCES

- A. ANSI/EIA RS-310-C, Rack mounting standards.
- B. NEMA 250, Enclosures for Electrical Equip 1000 V Max.
- C. U.L. 50, Cabinets and Boxes.

1.3 EXISTING SYSTEMS

- A. The existing racks are shown in pictures included within the drawings. The existing racks shall be renovated with cable management systems and cleaned to make the final installation a logically laid out and easily maintainable system. Cables are to be redressed and new cable management shall be added to result in an orderly and logically laid out system.
 1. The requirements of Part 3 of this Section are included in the renovation of the existing racks.

1.4 SYSTEM DESCRIPTION

- A. Design Requirement:

1. All cabinets and enclosures shall be rated for the environment in which they are installed.
 - a. Type 12: For indoor use: Primarily purpose is to provide protection against accidental contact of equipment mounted within the enclosure. Secondary purpose is to protect the equipment in the enclosure from falling dirt and debris, dripping water, and condensation of non-corrosive liquids.
2. Wall Cabinets:
 - a. Provide NEMA 1 rated cabinets in conformance with U.L. 50 "Cabinets and Boxes" requirements as required to support systems listed in the Related Sections.
 - b. All vertical power runs and power strips shall be at the back of the rack opposite the signal cable runs.
 - c. Provide seismic restraints to structure in accordance with the applicable building code for the seismic zone of the site.
 - d. Each cabinet shall be laid out to allow for 10% expansion capacity of the equipment and systems housed by the rack or cabinet.
 - e. All locks to be keyed alike.
 - f. Louvers to be equipped with air filters and facilitate the future addition of whisper fans.
 - g. Doors to be gasketed.
3. Surge Protection:
 - a. Provide power surge protection for all electronic components connected to line voltage.
 - b. Protection shall be considered established with the use of equipment conforming to the requirements of UL 1363, 1283 and 1449 with TVSS rating for all conditions of 330 volts (minimum). Such equipment shall be labeled in accordance with UL standards.
 - c. All surge protection devices shall have the lowest surge voltage rating per U.L. 1449 that is consistent with the line levels.
 - d. All data, power and video signal cables entering the facility from a point exterior to the building shall be equipped with a silicon avalanche diode type of lightning protection.
 - e. Protector shall be located at the first cabinet through which the cable or conductor passes upon entering the building.

- f. 120VAC surge protection shall be installed on each non-UPS or emergency circuit feeding security devices. Provide DIN-rail mountable surge protectors equal to Transected cat. No. DR-120.
- g. Approved surge protection manufacturers; Northern Technologies, Transected and Diet.

B. Performance Requirements:

- 1. Provide fans and filters as necessary.
- 2. Provide sequential power strips and rack mount on-off switch for each rack.
- 3. Provide cable management for all cabling.
- 4. Internal temperature inside all racks and cabinets with active electronics maintained at below 100 degrees Fahrenheit under worst-case ambient outside temperatures.
- 5. Assemble and fabricate to UL508A standards. Provide UL508 certification of the panel shop.

PART 2 PRODUCTS

2.1 EQUIPMENT

A. Wall Cabinets, Indoor: SCE; Hoffman; Emcor; Stantron; or equal.

- 1. 16-guage steel throughout, with lockable, key alike, hinged, louvered, and door(s).
- 2. Equip cabinets with plastic wireways. Plastic wireways to be sized for 10 percent fill. Plastic wireways to have breakout fingers and cover. Panduit or approved.
- 3. Where 3'(W) X 3'(H) X 12"(D) wall cabinets are required, SCE, 48EL3612LP; or equal. Refer to the drawings for cabinet depth requirements.
- 4. Equip with double duplex receptacle.

B. Pole Mounted Cabinets, Outdoor: SCE; Hoffman; Emcor: Stranton; or equal.

- 1. NEMA 4X.
- 2. 16-guage steel throughout, with lockable, key alike, hinged door(s).
- 3. Equip cabinets with plastic wireways. Plastic wireways to be sized for 10 percent fill. Plastic wireways to have breakout fingers and cover. Panduit or approved.
- 4. Refer to the drawings for cabinet dimension requirements.
- 5. Equip with double duplex receptacle.
- 6. Equip with pole mounting hardware.

- C. Plastic Wireway: Panduit; or approved equal.
- D. Surge-Protected Outlet Strips:
 - 1. Surge life of at least 200 operations for 3,000 amps surge and maximum surge capacity of 13,000 amps.
 - 2. Initial clamping voltage at no greater than 250 Volts and peak clamping voltage of no greater than 500 Volts for 120 VAC, single-phase operation.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
 - 1. Verify that surfaces are ready to receive work.
- B. Evaluation and Assessment:
 - 1. For seismic restraints.

3.2 PREPARATION

- A. Painting: All inside and outside surfaces of trim and doors shall be given a factory finish coat of paint.
- B. Touch up all welds, scrapes and other mars in the enclosure finish with a rust inhibiting paint.

3.3 ERECTION / INSTALLATION / APPLICATION

- A. Special Conditions:
 - 1. Provide DIN rails for all terminal strips, fuses, circuit breakers, test points, and other blocks.
 - 2. Neatly bundle cables in plastic wireways. Provide tie wraps every 6" on center. Segregate by system type and by signal type.
 - 3. Where class 2 cables are routed adjacent to class 1 or power conductors, maintain separation as per NEC and cross at 90 degree angle.
 - 4. Do not mount terminal strips, boards, or any active or passive electronics to rack sides, doors, or top.
- B. Interface with Other Work:
 - 1. Maintain signal separation within the racks and cabinets as required by code and separate each of the following from each of the following (exception: where differing

signal types terminate at a common component, cables may be in closer proximity as necessary for termination).

C. Tolerances:

1. Front Access: Locate with minimum of 36 inches clear space in front of each cabinet and rack.

D. Fabrication:

1. Fabricate enclosures to easily accommodate interconnecting cables entering from above through the use of cable trays, and conduits. Protect all metal cabinet edges where conductors cross and conduit ends with protective covering or bushing.
2. Uniformly organize equipment and cable routing throughout all enclosures, racks, and cabinets. Provide wiring ducts, wire ways, wire posts, D rings, and wire saddles to secure factory and field wiring. Provide routing for all wiring from point of entry to point of termination to maintain required separation, access to all components, and general organization to the wiring. Neatly dress, route and secure wiring. Provide plastic wire ways for all Class 2 cable in all cabinets and racks.
3. Mechanically fasten cabinet raceways and cable clamps to enclosure rear panels, rack members, console members, or to other system components. The use of adhesive fasteners (without mechanical fastener) is not permitted. Furnish and install cable support posts where necessary to properly support cables.
4. No splices are permitted in cabinet raceways. Exception: Splice to cable shield when within two inches of cable termination is permitted.
5. Provide metal grounding type outlet strips in each equipment cabinet, enclosure, and rack. Leave a minimum of two unused receptacles at each location for future expansion. Neatly shorten and dress power cords from individual equipment to the outlet strips. Vertically orient outlet strips on opposite side of racks and cabinets from Class 2 cable wire ways.
6. Provide protection from accidental contact of all terminals or exposed conductors. Use non-conductive barriers, heat shrink or other acceptable methods. Tape of any kind is not permitted.
7. Provide an isolated ground bus within each equipment cabinet, enclosure, and rack for single point termination of audio and data shields and grounds.

3.4 ERECTION / INSTALLATION / APPLICATION

A. Systems Integration:

1. Maintain cable color code distinctions between different systems.
2. Maintain conductor color code distinctions within each cable.

3.5 FIELD QUALITY CONTROL

A. Field Tests and Inspections:

1. Inspect all conduit penetrations into enclosures to equipment racks and wall cabinets to confirm that the cables enter the cabinets to minimize internal cable runs within the racks and cabinets.
2. Using an infrared temperature sensor thoroughly inspect all racks and wall cabinets for hot spots. Bring any hot spot exceeding 90-degrees Fahrenheit to the Owners attention.

3.6 PROTECTION

- A. Provide plastic grommets on all conduit ends to protect cables from damage.
- B. Coordinate pull box locations and conduit sizes with Division 26 to ensure that cable pull stresses do not exceed cable tensile strength limitations defined by the cable manufacturer.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. This Section includes Identification for Electronic Safety and Security that shall be applicable to all Work described under this and other Sections.
2. Provide all equipment, materials, and labor necessary to provide the systems shown in the drawings and described in this Section and other Sections.
3. All Work described in SECTION 28 05 00 – COMMON WORK RESULTS FOR ELECTRONIC SECURITY shall be required by this Section as if written herein.

B. Related Sections:

1. 26 05 33 - Raceways And Boxes For Electrical Systems.
2. 26 77 04 - Grounding and Bonding For Electronic Security Systems.
3. 28 05 00 - Common Work Results for Electronic Security
4. 28 05 53 – Identification For Electronic Security
5. 28 18 20 – Detention Intercom And Paging System
6. 28 23 30 – Detention Video Surveillance System
7. 28 46 13 – Touch Screen System.

1.2 SYSTEM DESCRIPTION

A. Design Requirements:

1. Cable Identification:
 - a. Identify all cables with an identification number.
 - b. Identification numbers shall be logically sequenced and reflect both the device being controlled or monitored and the location of the device (door number, room number, etc.).
 - c. Wire labeling shall be through the use of a machine generated labeling system.
 - 1) The use of Dymo labels and hand-written labeling is prohibited.

- 2) The use of masking tape, Gaffer tape for labeling is prohibited.

2. Wire Color Coding:

- a. Each wire in each cable shall be color coded for each function shall be uniquely color-coded and grouped together for that function and housed in an overall sheath. Each functional grouping shall be encased in an overall sheath and color coded.
- b. Confirm access control cable colors with Owner prior to equipment submittal preparation.
- c. Red shields shall only be used for fire alarm.
- d. Green wire insulation shall only be used for ground circuits.
- e. Color coding of cables shall be consistent for the entire run including the cable patch cords and plugs as applicable.

3. Cross-reference the interconnection diagrams of the "as-installed" shop Drawings with the cable identification numbers on the cables. Wire numbers and terminal numbers shall be codified alike and shown on the shop drawing wiring diagrams.

4. All components in the ceilings shall be tagged on the t-bar.

1.3 SUBMITTALS

- A. General: Submit in accordance with SECTION 28 50 00 COMMON WORK RESULTS FOR ELECTRONIC SECURITY.
- B. Shop Drawings: All wiring drawings shall include wire numbers cross-referenced with field device numbers. Field device numbers shall utilize the associated door or room numbers within the numbering scheme.
- C. As-Built Drawings: The As-Installed Drawings shall be modified shop drawings and shall be up-dated to include all changes.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. As described elsewhere in this Section:
 1. The use of Dymo labels and hand-written labeling is prohibited.

PART 3 – EXECUTION

3.1 ERECTION, INSTALLATION, APPLICATION, CONSTRUCTION

- A. Special Techniques:

1. Wire labeling shall be through the use of a machine generated labeling system that permanently prints the black cable identification number onto a white, 1-inch to 1-1/5-inch long piece of heat shrinkable material sized as is appropriate for the cable.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section includes:

1. The requirements of SECTION 28 05 00 - Common Work Results for Electronic Security are required by this Section as if written herein.
2. Replacement of existing Harding Instruments DXI with new Harding Instruments DXL System.
3. Replacement and upgrading of existing software as required to maintain existing functionality.
4. Replacement of existing master intercom stations with new IP master intercom stations. Connect to Security LAN in the Main Security Electronics Room.
5. Provision of replacement remote intercom stations where shown on the drawings.

B. Related Sections:

1. 26 05 33 - Raceways and Boxes for Electrical Systems
2. 26 77 04 – Grounding and Bonding For Electronic Security Systems.
3. 26 77 12 - Sleeves and Sleeve Seals for Communications Pathways And Cabling.
4. 28 05 00 - Common Work Results for Electronic Security.
5. 28 05 53 – Identification For Electronic Security.
6. 28 46 13 - Touch Screen System.

1.2 SYSTEM DESCRIPTION

A. Design Requirements: The Work described in this Section is limited to:

1. Configure and provide new Harding DXL system to meet the current field devices including all intercom stations, paging speakers, and master stations functionality. Provide new DXL programming to duplicate existing functionality for the DXL system and Touch Screen interface operations.
2. Provision of new software as necessary to replace the existing hardware and interface the new system with the existing PLC and new Touch Screen systems.
3. Provide new Remote Intercom Stations to replace existing damaged units as shown on the drawings. New stations to replace existing shall be selected to reuse existing

cabling and existing backboxes. In no remote intercom door stations are shown on the drawings, assume 4 existing to be replaced. Owner to confirm specific locations.

4. Provide new Master Intercom stations at all existing Officer's Stations. Non-gooseneck units at remote Officer's Stations and gooseneck units at Master Control Room Officer's Stations.
 5. Contractor shall not use interface adaptors to existing DXI field cabling. Provide new DXL interface cable and blocks to existing field device terminations.
- B. Existing Conditions:
1. The existing Harding Instruments, DXI intercom system has experienced a number of failures due to improper connections and cables between the system headend components and terminal strips.

PART 2 PRODUCTS

2.1 EXISTING EQUIPMENT

- A. The existing system is manufactured by Harding Instruments and is a Harding Instruments, MicroComm, DXI System. Other existing equipment includes:
1. Harding Instruments SAC computer
 2. Harding Instruments DXI Exchange with ACB-101, AIB-X00, AIO-X01, and misc IO Boards
 3. Harding Instruments Power Supply PSU-310

2.2 EQUIPMENT

- A. Harding Instruments DXL, DCC, Harding Instruments DCC-S1S4-3030-S100-MDIP
- B. Harding Instruments DXL, DCE, Harding Instruments DCC-S100-3030-S1
- C. Master Station, Harding Instruments TMM-641-111-1
- D. Public Address Talkback amplifier, Harding Instruments, TBE-310-1
- E. Page Zone Expander, Harding Instruments PZE-110-0
- F. Harding Instruments SCC Termination Board, QCB-120-1
- G. Harding Instruments SCC Termination Board
- H. Harding Instruments Station to Intercom SCC Cable CBL-STN-XX-RR. XX indicates cable length. Contractor to determine cable length needed as required

- I. Harding Instruments Talkback Amplifier Cable CBL-150-XX. Where XX indicates cable length. Contractor to determine cable length needed as required.
- J. Intercom Station, 2 Gang, Harding Instruments MN-DXL-IMS-640/641-1.0
- K. Cable, Master Intercom Stations: CAT 6

PART 3 EXECUTION

3.1 ERECTION / INSTALLATION / APPLICATION

- A. Interface with Other Work: The existing system is fully integrated with the existing PLC, surveillance television, and Touch Screen Systems. All existing functionality shall remain and all existing operational elements and sequences shall remain.

3.2 TESTING

- A. Test for clarity of audio in both directions and overall through-put. Refer to the Testing Requirements of Section 28 05 00 – Common Work Results of Electronic Systems.

3.3 CLOSEOUT ACTIVITIES

- A. Demonstration: Maintenance Instruction: Provide 2 hours of maintenance instruction.
- B. Refer to the Testing Requirements of Section 28 05 00 – Common Work Results of Electronic Systems.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section includes:

1. The requirements of SECTION 28 05 00 - Common Work Results for Electronic Security are required by this Section as if written herein.
2. Base cameras (with approximately 85-degrees of horizontal coverage (field of view).
3. 180-degree panoramic cameras.
4. 360-degreepanoramic camera plus downward imaging.
5. Computers and servers.
6. Ethernet Switches.
7. UPS's.

B. Related Sections:

1. 01 2300 – Alternates.
2. 26 05 33 - Raceways and Boxes for Electrical Systems
3. 26 77 04 – Grounding and Bonding For Electronic Security Systems.
4. 26 77 12 - Sleeves and Sleeve Seals for Communications Pathways And Cabling.
5. 28 05 00 - Common Work Results for Electronic Security.
6. 28 05 27 – Racks and Cabinets for Electronic Security
7. 28 05 53 – Identification For Electronic Security
8. 28 46 13 - Touch Screen System.

1.2 REFERENCES

- A. ANSI/EIA/TIA 568 – Commercial Building Telecommunications Wiring Standard.
- B. ASTM F1465 – American Society for Testing and Materials, Guide Standard for Security Control System.

- C. BICSI, Building Industry Consulting Service International.
- D. FCC, Part 15 – Federal communications Commission, RF Isolation and Interference.
- E. Institute of Electronic and Electrical Engineers (IEEE) 802.3 standards
- F. International Telecommunication Union (ITU) - H.263 Video coding for low bit rate communication.
- G. ITU - H.264 Advanced video coding for generic audiovisual services.
- H. ONVIF, Version 1, c.

1.3 SYSTEM DESCRIPTIONUP

A. Design Requirements:

1. The system is divided into multiple system elements as follows. All Work is by Contractor unless specifically noted otherwise:
 - a. Include licenses for all hardware, software, and firmware for all **computers**, servers, cameras, and equipment.
 - b. Cameras: Include the replacement of all existing analog cameras with new IP cameras. Include the replacement of all existing IP cameras with new IP cameras. Include the additional of all Net New IP cameras. Refer to the drawings of quantities, mounting type, and locations.
 - 1) Existing Analog cameras are to be replaced with new IP cameras.
 - a) All existing coaxial cable is routed from the cameras to the Main Security Electronics Room and all coaxial cable is to be demolished.
 - i. Where the total cable run from the camera to Main Security Electronics Room is 100M or less, provide new CAT6 cable in existing pathways and terminate on existing Ethernet switches in Main Security Electronics Room. Refer to the drawings for Ethernet switch locations.
 - ii. Where the total cable run from the camera to Main Security Electronics Room is greater than 100M, provide new CAT6 cable in new pathways and terminate on new Ethernet switches at Remote Officer's Station locations. Refer to the drawings for Ethernet switch locations.

- 2) Existing IP cameras are to be replaced with new IP cameras. Refer to the drawings for quantities, mounting type, and locations.
 - a) Reuse of existing CAT6 cables is acceptable, except as specifically noted as requiring replacement.
 - 3) Net New IP cameras are to be provided. Refer to the drawings for quantities and locations.
 - a) Where the total cable run from the camera to Main Security Electronics Room is 100M or less, provide new CAT6 cable in new pathways and terminate on new Ethernet switches in Main Security Electronics Room. Refer to the drawings for Ethernet switch locations.
 - b) Where the total cable run from the camera to Main Security Electronics Room is greater than 100M, provide new CAT6 cable in new pathways and terminate on new Ethernet switches at Remote Officer's Station locations. Refer to the drawings for Ethernet switch locations.
 - 4) Camera numbering to remain as is. When a new camera is used to replace an existing camera, the new camera shall take on the name of the camera that it is replacing. Refer to the camera schedules in the drawings for additional information.
 - 5) County to define camera TCP/IP addressing scheme. Coordinate as required.
 - 6) Include new camera mounting hardware as necessary.
2. CCTV Computer Monitors: Replacement of existing CCTV monitors in not in Contract. Connect existing monitors to new computers as required.
 3. CCTV Computers: Replacement of existing computers is required.
 - a. Demolish all existing CCTV system computers. Provide new computers at each officer's station CCTV computer monitor. Mount to back of monitor. Provide in quantities to facilitate a 1 to 1 ratio of computers to officer's station monitors. Servers required other than those to be provided at the Officer's stations shall be rack mounted in the existing racks in the Main Security Electronics Room.
 - b. Where a CCTV Computer is used for displaying live images resulting from a Main Control Room Touch Screen Computer, provide an RS232C, RS485, or similar communication scheme for direct communications between the Touch Screen Computer and the CCTV System Computer.

c. Software:

- 1) Include Windows 11 software in all computers and servers.
- 2) Contractor shall provide all Genetec NVMS software and Genetec programming in all computers.
- 3) Master Control Room: Where CCTV System computers are to be directly connected to the Touch Screen System computers for camera call up from the Touch Screen, contractor shall provide the additional software and interfaces as necessary.

4. Network Topology: Provide a new CCTV LAN, separate from the existing Security LAN using existing unused optical fiber cables.

a. Four fiber optic cable pairs have been pulled and configured into a star arrangement. The hub of the star is at the Main Security Electronics Room and spokes extend to each of the remote officer's stations and the Master Control Room.

- 1) At each Remote Officer's Station and at the Master Control Room:
 - a) Security LAN: Two pair fiber optics are connected to existing Ethernet switches at these location and provide switching for the local PLC, Touch Screen Computer, CCTV Computer, and other devices local to the switch. Contractor shall remove the CCTV Computers from this LAN.
 - b) CCTV LAN: Two pair fiber optic are terminated near the Security LAN switch location but not connected. Contractor shall provide new Ethernet switches establishing the CCTV LAN and connect the CCTV Computers, and CAT6 IP camera cabling to this LAN. Provide Ethernet switches in quantities as necessary for termination of new IP cameras (replacing existing analog cameras), and net new IP cameras.
- 2) Main Security Room CCTV LAN:
 - a) Migrate all existing and new video equipment from the Security LAN to the new CCTV LAN. Leave existing PLC and Intercom connections on the Security LAN.
 - 2) Existing Ethernet switches that accept encoded video from T-Tapped Analog cameras shall be separated from the Security LAN by moving them from the Security LAN to the CCTV LAN. Repurpose existing empty Security LAN switches for use in the CCTV LAN is acceptable, but no connections between the Security LAN and the CCTV LAN shall be allowed.

5. Ethernet Switches:
 - a. New: Provide new Ethernet switches where shown on the drawings. Include all software as required.
 - 1) Each new Ethernet switch shall have 10% or one whichever is greater, spare unused port reserved for future use.
 - b. Existing: Provide latest versions of firmware/software for all existing switches to be retained.
6. Streaming:
 - a. Live streaming to Master Control Room Officer's Stations interfaced to Touch Screen Computer system: 15f/s @ 1080P or better.
 - b. Recorded streaming to Remote Officer's Stations utilizing Genetec: 15f/s @ 720P or 1080P as defined on the camera schedule in the drawings.
7. UPS's: Provide 2200VA managed switch at all new wall cabinet locations.
8. Power Supplies: Provide 24VDC, 10A, class 1, power supplies for each wall cabinet.
 - a. Provide one for each pair of Ethernet switches and one to facilitate redundant backup.
 - b. Provide monitoring of power and automatic switchover from failed power supply to back-up power supply. Equip with relay and remote audible/visual annunciator and signage on front of wall cabinet.
 - 1) Audible Annunciator: Sonalert.
 - 2) Momentary Switch Mounted Visual Annunciator: Telemecanique, XB series.
 - 3) Signage: Provide phenolic label to read "POWER FAILURE ALARM". Refer to Section 28 05 53 – Identification For Electronic Security for additional requirements.
 - c. Provide DIN rail mounted time delay relay and connect to front panel mounted switch.
 - 1) Operationally, when the alarm is generated by a power supply failure and the power is switched to the redundant power supply and the sounder and LED turn on, the operator can press a momentary switch to silence the alarm. The LED shall continue to be illuminated until the power supply has been replaced. Silencing the alarm shall begin a 15 minute delay upon which the tone shall start again unit the power supply has been replaced.

- d. Cables:
 - a. Fiber Optic: Existing. Provide patch cables to extend existing to new Ethernet switch locations.
 - b. Cables, Copper: Include the replacement of all existing coaxial cable with new CAT6 cable throughout the site unless specifically noted otherwise.
 - 1) Prior to shop drawing submission, review all existing outdoor IP camera cables for cable type and include the replacement of all existing outdoor cable not rated for outdoor use.
 - c. All wiring and cabling work shall comply with the ANSI/EIA/TIA 568 Commercial Building Telecommunications Wiring Standard, all relevant EIA/TIA Technical Systems Bulletins, and the recommended installation procedures in the BICSI TDM Manual.
- B. Touch Screen System Interface: New CCTV computers shall be interfaced to the existing HMI/GUI computers (both touch screen and non-touch screen computers) used for door and intercom monitoring and control, such that CCTV camera selection to monitors and quadrants of monitors are identical to the existing operation and have identical operation utilizing the new virtual matrix switching system.
 - 1. Exceptions: Net new cameras shall also be selectable on the HMI/GUI computer monitors for display on the CCTV monitors.
 - 2. Reverse engineering of the existing software is required to replicate existing functionality to new cameras.
- C. Locations:
 - 1. Rack mounted servers and Ethernet Switches: Where existing rack space allows, provide at the same locations as the existing. Otherwise, provide in the available rack space as shown on the drawings as being available for the use. Confirm approximate locations with Owner prior to shop drawing preparation. Include elevations of each rack or enclosure, defining the location and size of the equipment and what specific existing equipment is located above and below the equipment the equipment to be provided. Coordinate with existing equipment to be demolished.
 - 2. Cameras:
 - a. Where the existing cameras are shown to be moved, Contractor shall provide a new camera at the new location and turn the existing camera over to the Owner.
 - b. Where the existing cameras are shown to be replaced, Contractor shall provide a new camera at the existing location and turn the existing camera over to the Owner.

1.4 EXISTING CONDITIONS

- A. The existing system consists of primarily of analog cameras with coaxial home runs T-Tapped and equipped with encoders for distribution to off-site recording media and on-site matrix switchers.
 - 1. All are to be demolished and replaced with new IP cameras routed using CAT6 cable to new Ethernet switches as shown on the drawings. Exception: Existing Ethernet switches located in the Main Security Electronics Room may be reused within the Main Security Electronics Room.
- B. All existing IP cameras are also to be demolished and replaced with new.
- C. Existing CCTV Computers and recording system utilize Genetec. All are to be demolished and replaced with new.

PART 2 PRODUCTS

2.1 EXISTING EQUIPMENT

- A. VMS software is: Genetec and to be installed on Contractor provided CCTV Computers.
 - 1. Existing computers use Windows 10.

2.2 EQUIPMENT

- A. Cameras, IP: Vicon or approved equal.
 - 1. All cameras to be:
 - a. Varifocal lens.
 - b. Fixed 1080p or greater as indicated on the drawings.
 - c. Color.
 - d. Vandal resistant (IK-10 or better),.
 - 2. Camera, fixed, Dome, Vicon "NEXT", VNX-SN-VRS1-0.
 - a. Provide all camera mounting accessories including Vicon "Fixture kit"
 - b. Provide required camera mounting hardware
 - 3. Cell Camera, fixed, Vicon Roughneck, VCELL-HD-C
 - 4. Dayroom Camera, multi-sensor, Vicon V2020-WLK-360

5. Camera, Fixed, With Fish-eye Optics: Not allowed.
- B. Computer: HP EliteDesk 800 6G Desktop Mini PC:
 1. VESA Mounting Capable.
 2. Intel Gen 8, I7, Pentium
 3. BDR4 Ram; 64GB.
- C. Network Video Management System Software: Genetec.
- D. Optical Fibers: Provide patch cables only.
- E. Cable, Copper, CAT6: Commscope; or approved equal.
 1. Camera and Computer Cable: Blue.
 2. Patch cable: Green.
 3. Plenum rated (except where underground, wet location cable is required)
- F. Patch Panel:
 1. 24 port (Main Security Electronics Room locations only). Rack mountable.
 2. PoE++.
 3. UTP.
 4. 1RU.
 5. CAT6.
 6. 10G.
 7. 110 type punch.
 8. Color coded jacks (coordinate with Owner).
 9. Equip with port labeling system.
- G. Ethernet Switches at Remote Officer's stations and MCR: 8-port with fiber optic in/output ports: WAGO, 852-1813/000-001; or approved equal.
 1. DIN rail mountable
 2. 10/100MBPS.

3. RJ-45 for copper.
 4. 4 SFP combo giga for optical fiber ports.
 5. 8 port (All Remote Ethernet locations). Rack or DIN rail mountable as detailed on the drawings.
- H. Ethernet Switch at Outdoor Camera Pole: Identical to Ethernet Switches at Remote Officer's stations, except: 4-port copper and fiber SFP ports.
- I. Power Supply: Meanwell, NDR0240-24; or equal.
1. Input Voltage: 120VAC
 2. Output Voltage: 24VDC.
 3. Output Amperage: 10A.
 4. DIN rail mountable.
 5. Dimensions: As shown on the drawings.
- I. Ethernet Switches within Main Security Electronics Room (48-port with fiber optic in/output ports): Owner Furnished, Contractor to Install (OFCl)
1. Rack mountable.
 2. 48 port.
 3. RJ-45 for copper.
 4. Contractor to provide and install new patch panels patch cords, and cable management to support the Owner provided switches.
- J. CCTV Storage Server: As described below; No substitutes.
1. Quantum VS-HCI Series VS2016D-HCIn (D4) Normal HCI Node, 192TB (16x 12TB); HDD, Dual Intel Xeon Silver 4514Y (32 cores), 128GB (8x 16GB) RAM, two 480GB, M.2 SSD, 2 x 960GB SSD, six 10G Base-T Ports, 5Yr 5x9xNBD standard warranty with NRD: Quantum - Part#: HVSHD-2CLE-PFNDx QTY: 4 SHI 800-527-6389
 2. Quantum VS-HCI Series Unified Surveillance Platform (USP) Software; Five Year Subscription, includes Gold (7x24TS) Software Support; per Node. Quantum - Part#: W VHAA-SMUH-HG5A QTY: 4 SHI 800-527-6389
 3. Install and configure up to 10 Pivot3 appliances as a fixed-fee service and pre-defined SOW. QTY 1 Quantum - Part#: 17-0125-01, SHI 800-527-6389.
- K. Application Server for CCTV system. Dell Poweredge R640 or approved equal

1. Windows Server 2025
 2. Configured for two CPU's. Xeon Platinum 8280
 3. 256 GB RAM
 4. 4 TB Hard drive
 5. 19" Rack Mount
- L. Network Equipment (Passive):
1. Station Cabling: CAT6.
 2. Station Connectors: RJ-45.
 3. Copper patch panels:
 - a. For all 24 port switches used for video, land from right to left.
 - b. Only use flat patch panels for video systems.
- M. UPS: APC-Smart UPS, Line Interactive: SMT-2200C; or approved equal.
1. Input Voltage: 120VAC
 2. Output Voltage: 120VAC
 3. Output Power: 2.2KVA.
 4. SmartConnect plus Port+SmartSlot, AVR, LCD.
 5. Dimensions: As shown on the drawings.
- N. UPS in pole mounted box: Refer to the drawings for requirements.
- O. Time Delay Relay (DIN Rail Mountable): Schneider, RE22R1MKMR; or equal.
- P. Control Relay (DPDT, DIN Rail Mountable): Idec; Schneider; or equal.
1. Contact Rating: 24VAC, 3A
- Q. Reset Switch with On-board LED: Telemecanique, XB series:
- a. 1.2" Round.
 - b. Removable only from the back.

PART 3 EXECUTION

3.1 ERECTION / INSTALLATION / APPLICATION

- A. Interface with Other Work: The existing system is fully integrated with the existing PLC, intercom, and Touch Screen Systems. All existing functionality shall remain and all existing operational elements and sequences shall remain except as specifically described in these specifications.
- B. Collaborate with Clackamas County IT for application and storage server configuration and programming
- C. Special Techniques:
 - 1. Coordinate the exact locations of the following:
 - a. Outdoor corner mounted cameras shall be coordinated with existing conditions such that the exact placement of the mounting hardware and the electrical box are as follows:
 - 1) Boxes: Mounting hardware and electrical box within 8" of each other; or the box is part of the mounting hardware. Where the box is not part of the mounting hardware it shall be positioned such that the box coverplate of the box is obscured from the view of persons on the ground by the camera housing and mounting bracket as much as possible without compromising accessibility.
 - 2) Interior Corners: Corner mounted cameras are to be mounted tight in the corner.
 - 3) Owner: Prior to final rough-in of all net new and all relocated cameras and changes in existing camera fields of view, confirm location of rough-in by taking a picture from the proposed new camera location and submit for Owner acceptance.
 - a) Use a lens and chip that are the same as the camera to be provided at the proposed location. Prior to installation, submit the resulting pictures to the Owner for confirmation that the camera will be in the correct location. The pictures from all proposed locations shall be captured and saved to a disk and turned over to the Owner for comparison to the imagery of the camera after camera installation.
 - b) Contractor shall adjust the exact location to accommodate any changes in location requested by the Owner. Upon final completion, Contractor shall take screen shots of all new and replaced cameras and include them in the O&M manuals to establish a base line for future use.

2. CCTV head-end equipment in racks:
 - a. Maintain signal separation in all racks.
 - b. Rack mounted equipment shall be arranged and mounted to facilitate front and back access to all rack mount equipment without the need for removal of any other equipment.
 - c. Where cameras are equipped with IR cut filters, remove from all indoor cameras except where perimeter windows can be expected to allow direct sunlight into the space during any time of the year. Refer to Performance Testing in this Section for additional information.
 - d. All labeling to include IP address. Include labeling of monitors and all cabling. Refer to 28 05 53 - Identification for Electronic Security.
3. Systems Integration: The system is to be fully integrated with the Work of SECTION 28 46 13 - Touch Screen System.
4. Provide and utilize API software for intra-system communication.
5. Utilize Vicon "PRONTO" camera configuration tool.
6. Paint and Patch: Provide at locations wherein an existing:
 - a. Fixed wedge type housing is used, replace with the new dome camera. Patch and paint as necessary. See Division 1.
 - b. Adjustable wedge type housing is used, replace with the new dome camera. Provide new ceiling tile as required. See Division 1.
 - c. Box type camera is used on the end of a mounting bracket, reuse the existing mounting bracket. Provide backplate as may be necessary for interfacing to the existing bracket or demolish existing bracket and wall/ceiling mount. Confirm with Owner. See Division 1.
 - d. Camera (dome or otherwise) is larger than the new and would leave an unfinished surface, paint, patch, and refinish the surface as required. See Division 1.
 - e. All locations where demolition of the existing camera, housing and/or box leaves an unfinished or unsightly appearance not completely covered by the new camera housing.
7. Lenses: All cameras shown as replacing existing cameras are to be equipped with lenses with the exact same optics and provide the exact same field of view as the existing, exceptions:

- a) The existing analog cameras have a 4:3 aspect ratio while the new cameras have 16:9 aspect ratios. The vertical field of view of the new camera shall provide the exact same field of view as the existing while the horizontal shall be wider as allowed by the wider aspect ratio.
 - b) Where an existing camera is to be replaced with a multi-head, 180-degree, or 360-degree camera, provide multiple views. Coordinate specific views with Owner prior to installation.
8. Camera Mounting Coordination: Mounted cameras shall be coordinated with the existing conditions such that surface mounted lighting fixtures, exit lights, signage, conduit and piping, down spouts, columns, eaves, HVAC ductwork, etc., do not interfere with the target area (field of view) of the camera.
- a) Target area of new cameras replacing existing camera to be identical to existing.
 - b) Target area of net new cameras to be as shown on the drawings.
 - c) Target area of new cameras to be replace existing but located in different positions to be as shown on the drawings.
9. Where a box is required and is separate from mounting hardware liquid tight flex of not more than 18" is used for cabling between the box and the mounting/camera configuration. This liquid tight flex shall elbow down and have sufficient length and be arched to allow water to drip from the flex away from the electrical box and camera.

3.2 OWNER MEETINGS

A. Owner Coordination:

- 1. Rough-In:
 - a. Allow at least 24 hours of meeting time in multiple 2-hour segments to establish confirmation of camera rough-in for field of view confirmation described above and as required for cable color coordination as described in Section 28 05 53 – Identification For Electronic Security.
- 2. Programming: New programming is limited to:
 - a. Camera network assignments and as necessary for software/firmware updates.
 - b. Camera field of view assignments as a function of multi-head camera image definitions.
 - c. After installation but before connection to the system, confirm with Owner that the following programming currently in use is correct and that no additional programming is necessary:

- 1) Camera presets for all pan/tilt/zoom and panoramic cameras are defined and programmed.
- 2) Which staff members are to be in which of the various groups that define authorization levels within the software authorization levels for the new and existing cameras.
- 3) Which cameras are to be defined and programmed into salvos, what order, and which monitors that the salvos are to be assigned to.
- 4) Which cameras are to be defined and programmed into tours, what order, and which monitors that the tours are to be assigned.
- 5) What the programmed fields per second requirements are to be for each individual camera for live viewing and for each officer's station.
- 6) What the programmed resolution each individual camera is to be set at for live viewing.
- 7) What the specific camera number is to be for each camera.
- 8) What the specific camera name is to be for each camera.
- 11) What titling should be displayed on the monitor for each camera and where on the image the title is to be displayed.
- 12) Whether the time and date is to be displayed on each image, or in one location on each monitor, or no time and date is to be displayed.
- 13) All system addressing requirements.
- 14) All camera event monitor associations inclusive of monitor quadrant associations.

3. Programming Meetings: Allow at least 4 hours of meeting time in 2-hour sessions.

3.3 PROGRAMMING

- A. Programming: Provide enough programming time to implement all of the requirements including the results of the meetings described under Owner Meetings. Include an additional 4 hours of programming time to implement additional programming items and changes requested by the Owner during final testing and cutover.

3.4 TESTING

- A. Performance Testing:

1. Visually confirm that each camera on each monitor:

- a. Is free of dust and dirt on the lens and housing window. Is in focus.
- b. Has the correct field of view as coordinated with the Owner.
- c. Is free of skip.
- d. Does not exceed the amount of latency allowed by these specifications.
- e. Does not freeze frame.
- f. Does not display image noise.
- g. Does not shake and maintains stable imagery.
- h. Where cameras have perimeter windows within their field of view, bring to the attention of the Owner. Owner reserves the right to require the contractor to remove IR cut filters as the Owner feels appropriate.

B. Functional Testing:

- 1. Utilizing the touch screen computer, manually select each fixed camera individually to the call-up monitor. Test that each camera:
 - a. Is properly selected and titled.
 - b. Is adjusted for color balance, contrast, brightness.
 - c. Is physically adjusted for proper field-of-view including the vari-focal lens.
 - d. That neither the housing window nor light fixtures or other objects obstruct the field-of-view.
 - e. Is properly selected and titled.
 - f. The camera automatically homes to each of its pre-set points.
 - g. Camera Control Associations: Test each association between cameras and touch screen icons and/or control events, as required by the Owner.
 - h. Utilizing the touch screen computer, manually select each PTZ camera individually to the call-up monitor.
 - i. Has pan, tilt, zoom, and digital zoom functions properly controlled from the various keyboard and review station controls.
 - j. The pan/tilt/zoom follows each of its memorized tours.

2. Salvos and Dwell Times: Test each salvo shot and the dwell time between each, as well as any salvo mode changes by time-of-day or operator selection.
3. Video Review Station System Configuration: Test the video review station default live viewing monitor displays. Test motion detection settings and alarm configurations as required by the Owner.
4. Camera Control Associations: Test each association between cameras and touch screen icons and/or control events, as required by the Owner.
5. Salvos and Dwell Times: Test each salvo shot and the dwell time between each, as well as any salvo mode changes by time-of-day or operator selection.
6. Video Review Station System Configuration: Test the video review station default live viewing monitor displays. T

3.5 CLOSEOUT ACTIVITIES

- A. Demonstration: Maintenance Instruction:
 1. Provide 2 hours of maintenance instruction.
 2. Provide 1 hours of operational instruction usage instruction
- B. Refer to the Testing Requirements of Section 28 05 00 – Common Work Results of Electronic Systems.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. The requirements of SECTION 28 05 00 - Common Work Results for Electronic Security are required by this Section as if written herein.
2. HMI GUI Software.
3. Computers.
4. Touch Screen and Non-Touch Screen Computer monitors and mounting hardware

B. Related Sections:

1. 26 05 33 - Raceways And Boxes For Electrical Systems.
2. 26 77 04 - Grounding and Bonding For Electronic Security Systems.
3. 28 05 00 - Common Work Results for Electronic Security
4. 28 05 53 – Identification For Electronic Security
5. 28 18 20 – Detention Intercom And Paging System
6. 28 23 30 – Detention Video Surveillance System

1.2 SYSTEM DESCRIPTION

A. Design Requirements: The Work described in this Section includes to the up-dating of all software and firmware and the replacement of all existing HMI/GUI computers and both touch screen and non-touch screen monitors.

1. All existing GUI's (computer workstations with monitors) are to be demolished and replaced with new peer-to-peer computers located within 10' of the existing touch screen monitor locations unless noted otherwise.
 - a. Replace all existing GUI computers with new. All shall be equipped with Windows 11 or newer, new GUI software (upgraded from existing Citect) with all necessary licensing and software keys to facilitate Owner programming.
 - b. Provide all computers in wall cabinets as shown on the drawings: Exception: As shown in the Main Security Electronics Room details in the drawings.
 - 1) Provide new wall mount Non-Touch Screen monitors at all Remote Officer's Station locations.

- 2) Provide new desk mount Touch Screen monitors at the Master Control Room at the same location as the existing monitors.
2. Video Camera Selection Graphics: Include graphic screen modifications on all Touch Screen GUI's located in the Master Control Room.
 - a. Each shall depict all cameras on the project located within the graphic as displayed on the monitor, unless specifically noted otherwise.
 - b. Revise existing graphics as necessary to capture graphically capture the physical changes associated with the camera relative to its revised location, and field of view.
 - c. All existing cameras that are to be moved more than 3-feet or replaced with new cameras that are more than a 3-feet from the existing locations, or are to have their field of view changed by greater than 15-degrees shall be represented on the touch screen graphics in the new location. Revise touch screen graphics as required. The revised locations of these active icons shall support Owner selection of cameras for display on Owner selected quadrants of monitors for display. Colors and icon shapes to be identical to other existing camera icons.
 - b. All net-new cameras shall be added to the Surveillance Television System under Section 28 23 30 – Detention Video Surveillance System. Include active icons within the existing graphic screens to support Owner selection of cameras for display on Owner selected quadrants of monitors for display. Colors and icon shapes to be identical to other existing camera icons.
 - c. All net-new multi-view and panoramic view cameras and all existing cameras which are to be replaced with new multi-head and panoramic view cameras shall be depicted on the GUI with multiple camera icons.
 - d. Multi-head and panoramic cameras are to be shown with multiple fields of view to allow user selection of the specific field of view that the system is to use as its camera image for that specific camera. This can be done either by displaying multiple camera icons, each with a specific camera view, or through a single camera icon for camera selection and multiple view icons associated with the various fields of views. Coordinate specific camera field of view icons with Owner prior to programming.
3. Touch Screen programming changes – Program existing HMI program for camera call up of new digital cameras. Camera call up shall be through ethernet communications to CCTV application servers. PLC System Interface to be replaced with new Touch Screen – CCTV System Interface: Provide a new ethernet I interface between each of the new touch screen computers in the Master Control Room to each of the new Surveillance Television System computers in the Master Control Room for one-way communications for camera selection from the touch screen system. For each Master Control Room Touch Screen HMI/GUI, the interface shall:
 - a. Allow the Touch Screen operator to select cameras from the HMI/GUI to the CCTV System through the selection of camera icons on the graphics screens for individual selection of cameras to specified quadrants of specific monitors.

- 1) Existing associations of camera icons on the Touch Screen HMI/GUI's shall be retained to maintain existing facility operations to continue unaltered. County will provide schedules of existing Touch Screen camera icons with physical cameras with monitor quadrants display associations for Contractor programming. Refer to the drawings for camera schedules.
- 2) New programming is required for associations of new camera icons on the Touch Screen HMI/GUI's shall be programmed to operationally extend the existing system to include the new cameras to operationally replicate the existing system. County will provide schedules of existing Touch Screen camera icons with physical cameras with monitor quadrants display associations for Contractor programming. Coordinate as required. Refer to the drawings for camera schedules.

PART 2 PRODUCTS

2.1 EXISTING EQUIPMENT

- A. The existing software and firmware is SCADA Expert, Vijeo Citect V7.40. Replace with Citect 2018, r4 or latest version.
- B. The existing workstation HMI/GUI computers that support the Remote Officer's stations are located in the Main Security Electronics Room and are to be replaced with new and located in wall cabinets located near the Remote Officer's stations.
 1. The existing workstation GUI computer monitors that support the Remote Officer's stations are located in the Remote Officer's station and are to be replaced with new Non-Touch Screen monitors, equipped with new mounting hardware and mounted directly above the existing CCTV monitor at the Remote Officer's stations.
 - a. The existing extenders that facilitate Main Electronics Room Computers feeding Remote Officer's Station Computer monitors shall be demolished.
- C. The existing workstation HMI/GUI computers that support the Master Security Control Room Officer's stations are located in the Master Security Control Room and are to be replaced with new located in the Master Security Control Room.
 1. The existing workstation HMI/GUI computer monitors that support the Master Control Room Officer's stations are located in the Master Control Room Officer's station and are to be replaced with new Touch Screen monitors and equipped with new mounting hardware and mounted in the same location as the existing units.

2.2 PRODUCTS

- A. Computer Workstation: Identical to CCTV System Workstation Computer. Refer to Section 28 23 30 – Detention Video Surveillance System.
 1. Master Control: Mount to back of monitor.

2. Remote Officer's station: Mount to back of monitor.
3. Equip with wireless mouse. Color of mouse to be white.
- B. Computer Workstation Touch Screen Monitor with full bezel: Elo; or approved equal.
 1. Size: 25" diagonal
 2. Aspect ratio: 16:9.
 3. Equip with new desktop mounting hardware:, Ergotron, LX; or approved equal.
 - a. Select such that when extended to its final position, touching a 10 pound monitor with a force of 4 ounces on any axis does not cause the monitor to deflect greater than 2mm.
- C. Computer Workstation Non-Touch Screen Monitor with full bezel: NEC; or approved equal.
 1. Size: 25" diagonal
 2. Aspect ratio: 16:9.
 3. Equip with new wall mounting hardware: Ergotron, Interactive LD; or approved equal.
 - a. Mount above existing surveillance television monitor. Coordinate exact location and orientation with Owner and existing conditions.
- D. Ethernet Switches: Identical to CCTV System Ethernet Switches. Refer to Section 28 23 30 – Detention Video Surveillance System.
- E. Network Equipment (Passive): Identical to CCTV System Network Equipment (Passive). Refer to Section 28 23 30 – Detention Video Surveillance System.
- F. Power Supply (For Ethernet Switch): Identical to CCTV System Power Supply. Refer to Section 28 23 30 – Detention Video Surveillance System.
- G. Copper Patch Panels: Identical to CCTV System Copper Patch Panels. Refer to Section 28 23 30 – Detention Video Surveillance System.
- H. Cable, Copper, CAT6, Plenum only: Commscope; or approved equal.
 1. Computer Cable: Blue.
 2. Patch cable: Green.

PART 3 EXECUTION

3.1 SPECIAL TECHNIQUES

- A. Programming: Provide programming as required to achieve system operation described in Part 1 of this Section and Sections:

1. 28 05 00 - Common Work Results for Electronic Security
2. 28 18 20 – Detention Intercom And Paging System
3. 28 23 30 – Detention Video Surveillance System

- B. Upon completion of all new programming and system cutover, but prior to demolition of existing matrix switch, Contractor shall disconnect the existing RS-232C interface between the matrix switch and the existing PLC system.

3.2 TESTING

- A. Video Control: Functionally test each new Camera Icon on each graphic for each computer for each possible field of view for correct camera selection and correct monitor quadrant association.
- B. Test each touch screen for monitoring and control of all new field devices as required by this Section and Section 28 05 00 - Common Work Results for Electronic Security.
- C. Test one of the Master Control Officer's Station Touch Screen Computers and one of the Remote Officer's Station Computers for full monitoring and control of each field device in the facility. This includes all remote intercom stations, door position switches, and door locking mechanisms.
- D. Randomly test 5% of all existing field devices associated with each touch screen station to confirm proper operation.
- E. Use the Windows performance monitor on the touch screen computers to record:
1. Steady-state CPU utilization (average and peak).
 2. Memory / Pages/Sec Counter value stays at zero.

3.2 ERECTION / INSTALLATION / APPLICATION

- A. Interface with Other Work: The existing system is fully integrated with the existing PLC, and video surveillance television systems. All existing functionality shall remain except as specifically described otherwise and all existing operational elements and sequences shall remain. Refer to the testing requirements of Sections 28 05 00 Common Work Results for Electronic Security.
1. Other existing systems integrated into the existing system including the intercom system shall not be changed in any way that alters existing system operation.

END OF SECTION

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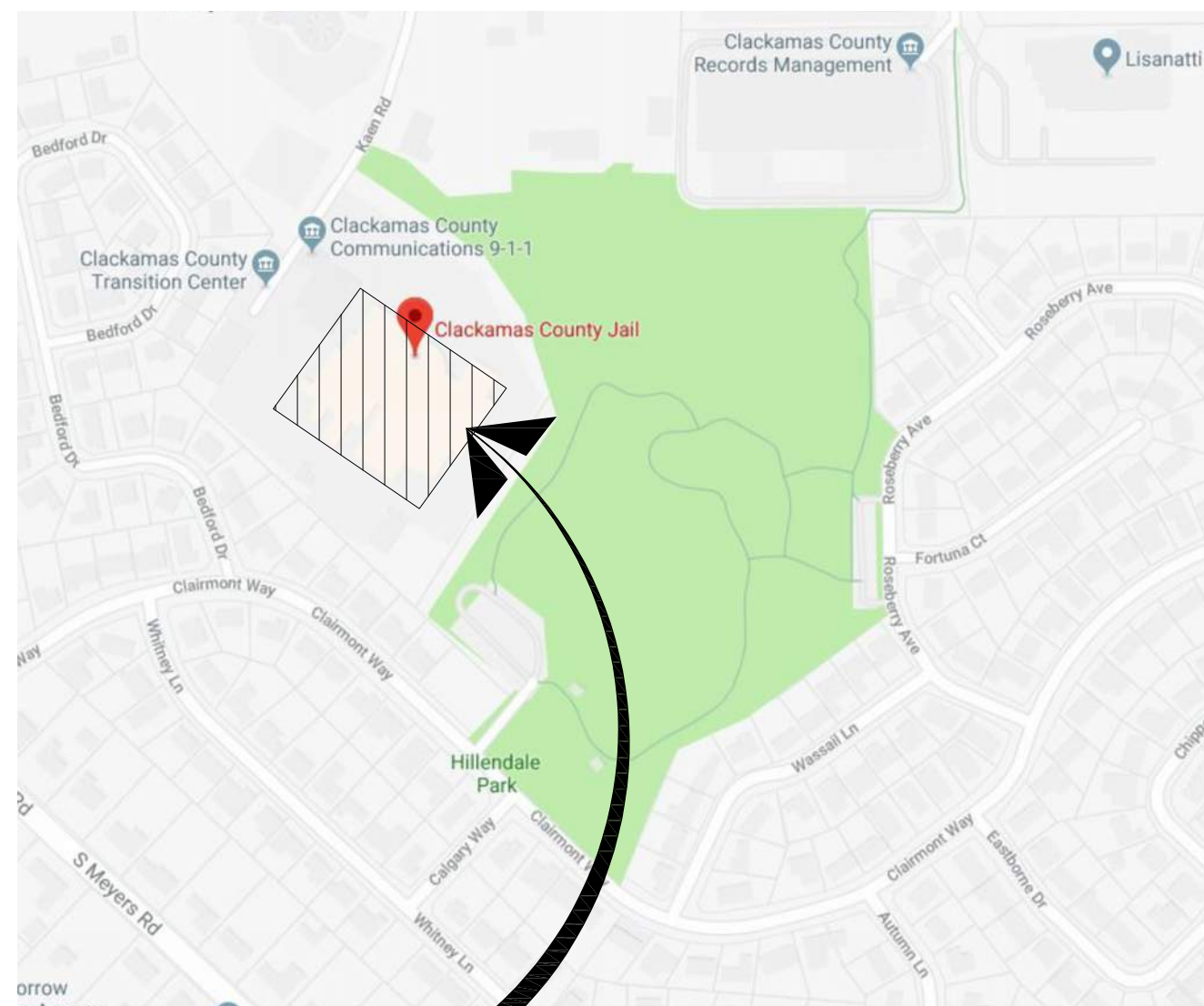
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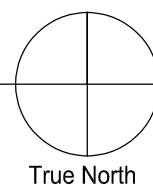
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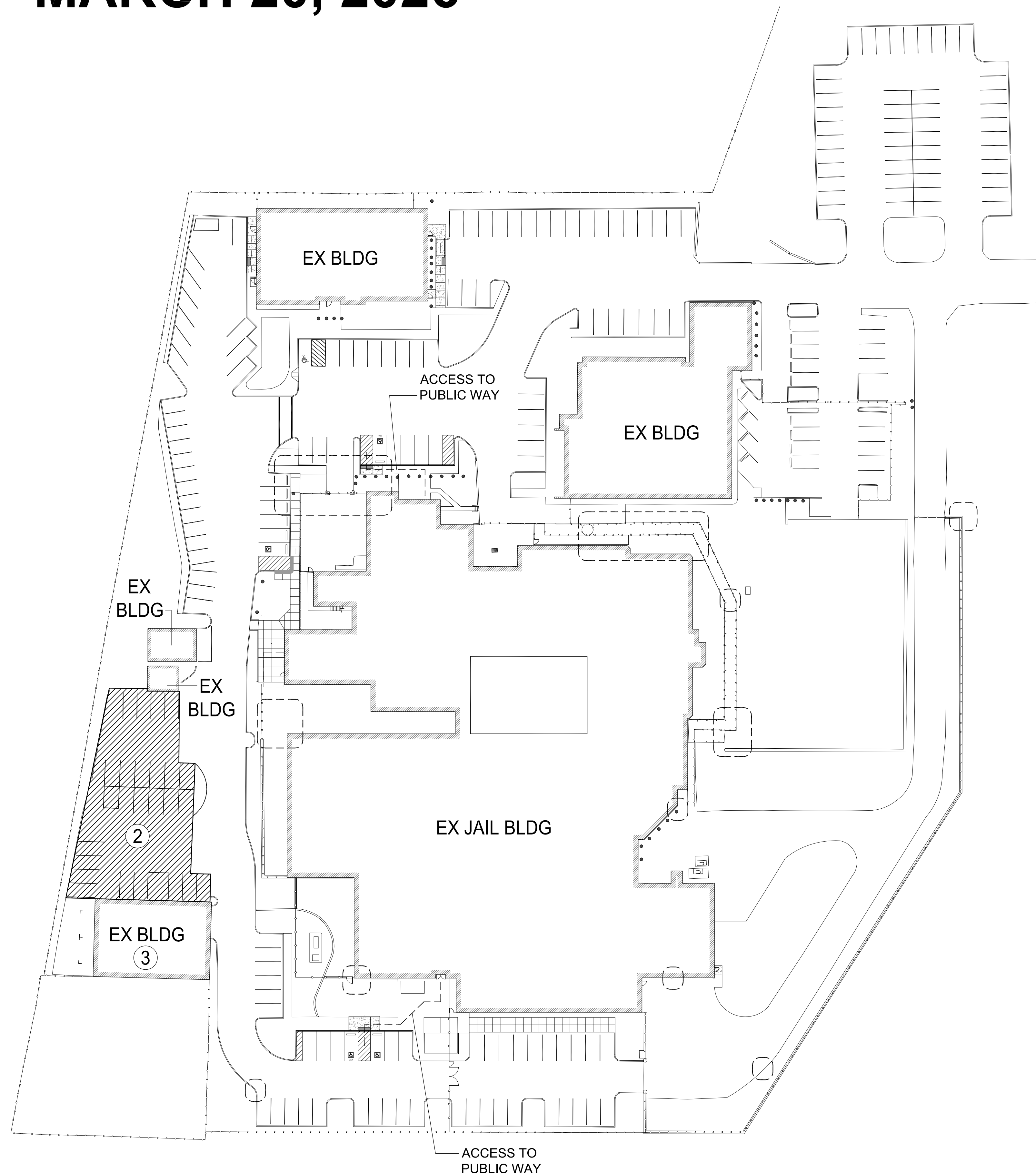
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STREET ADDRESS: 2206 S. KAEN RD., OREGON CITY, OR 97045

PROJECT DESCRIPTION:

SHEET NAME	
CS COVER SHEET / SITE PLAN	
<u>ARCHITECTURAL</u>	
A201 DEMOLITION / KEY PLAN	
<u>ELECTRICAL</u>	
E001 ELECTRICAL LEGEND SHEET	
E211 ENLARGED PLANS AND ELEVATIONS	
<u>SECURITY</u>	
E5001 SECURITY LEGEND SHEET	
E50101 SITE PLAN - SECURITY	
E50201 PARTIAL FIRST FLOOR PLAN - SECURITY	
E50202 PARTIAL FIRST FLOOR PLAN - SECURITY	
E50203 PARTIAL FIRST FLOOR PLAN - SECURITY	
E50304 SECOND FLOOR PLAN - SECURITY	
E5211 EXISTING ENLARGED PLANS & ELEVATIONS	
E5212 EXISTING ENLARGED PLANS & ELEVATIONS	
E5213 EXISTING CONDITIONS	
E5214 EXISTING ENLARGED PLANS & ELEVATIONS	
E5215 EXISTING ENLARGED PLANS & ELEVATIONS	
E5216 ENLARGED PLANS & ELEVATIONS	
E5217 WALL BOX ELEVATIONS	
E5301 CCTV DETAILS AND SCHEDULES	
E5302 DIAGRAMS	



1. DRAWINGS BASED ON OWNER PROVIDED DOCUMENTS AND PARTIAL FIELD VERIFICATION.

2. ALL ITEMS SHOWN ARE EXISTING U.N.O.

AREA OF EXTERIOR WORK - SEE SECURITY DRAWINGS

CONTRACTOR LAY DOWN / STAGING / STORAGE AREA. TO BE CONFIRMED AND SHARED WITH CCSO

LIMITED SECURE STORAGE AREA AVAILABLE WITHIN THE MAINTENANCE BUILDING

PROJECT NUMBER: 225102

**CLACKAMAS
COUNTY JAIL
ELECTRONICS
UPDATE
BID SET**

2206 S. Kaen Road
Oregon City, OR 97045

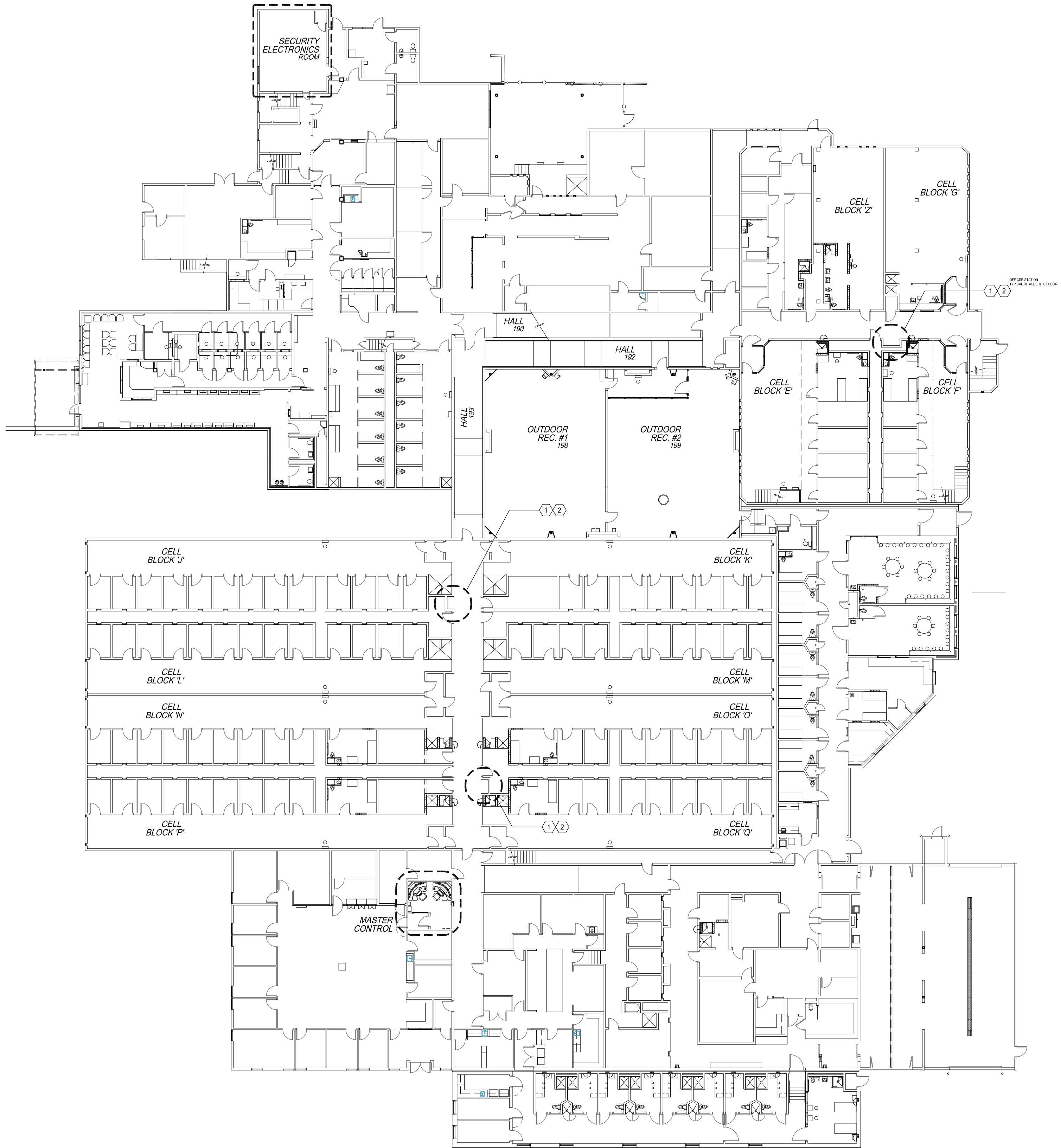
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**COVER SHEET &
SITE PLAN**

DRAWN BY: PJF
DATE ISSUED: 03.20.26

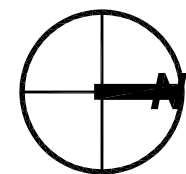
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CS
Architects, Inc. © 2026



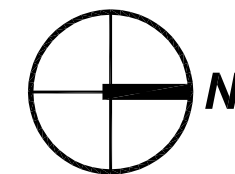
1 GROUND FLOOR DEMOLITION PLAN

SCALE: 1" = 20'-0"



2 SECOND FLOOR DEMOLITION PLAN

SCALE: 1" = 20'-0"



FLOOR PLAN KEYNOTES

- 1 REMOVE EXISTING UPPER CABINET
- 2 PATCH AND PAINT OFFICER STATION FROM TOP OF EXISTING COUNTERTOP TO TOP OF NEW ELECTRONICS CABINET



CONSULTANT:

PROJECT NUMBER: 225102

**CLACKAMAS
COUNTY JAIL
ELECTRONICS
UPDATE
BID SET**

2206 S. Kaen Road
Oregon City, OR 97045

SHEET TITLE:

**DEMOLITION /
KEY PLAN**

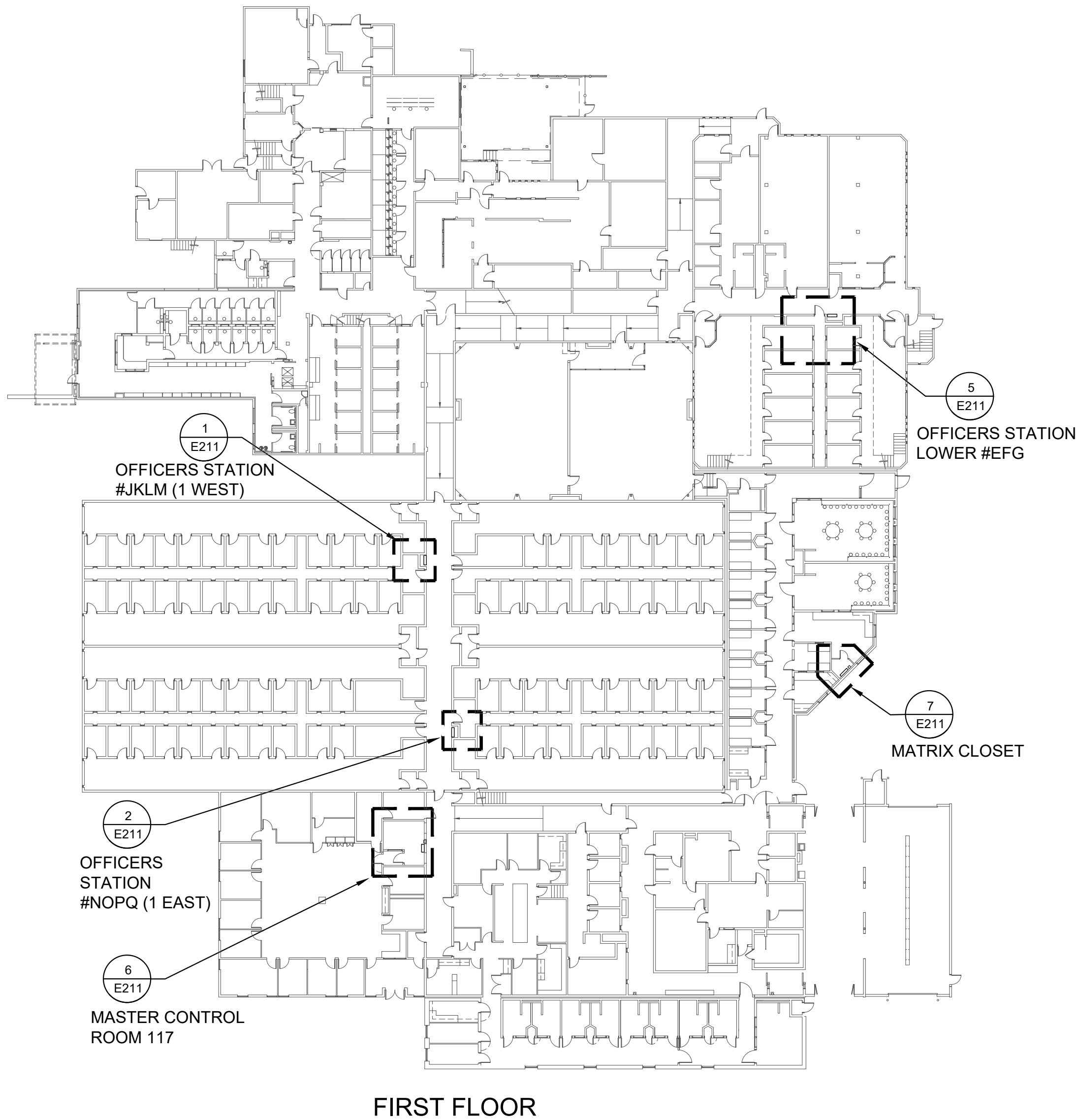
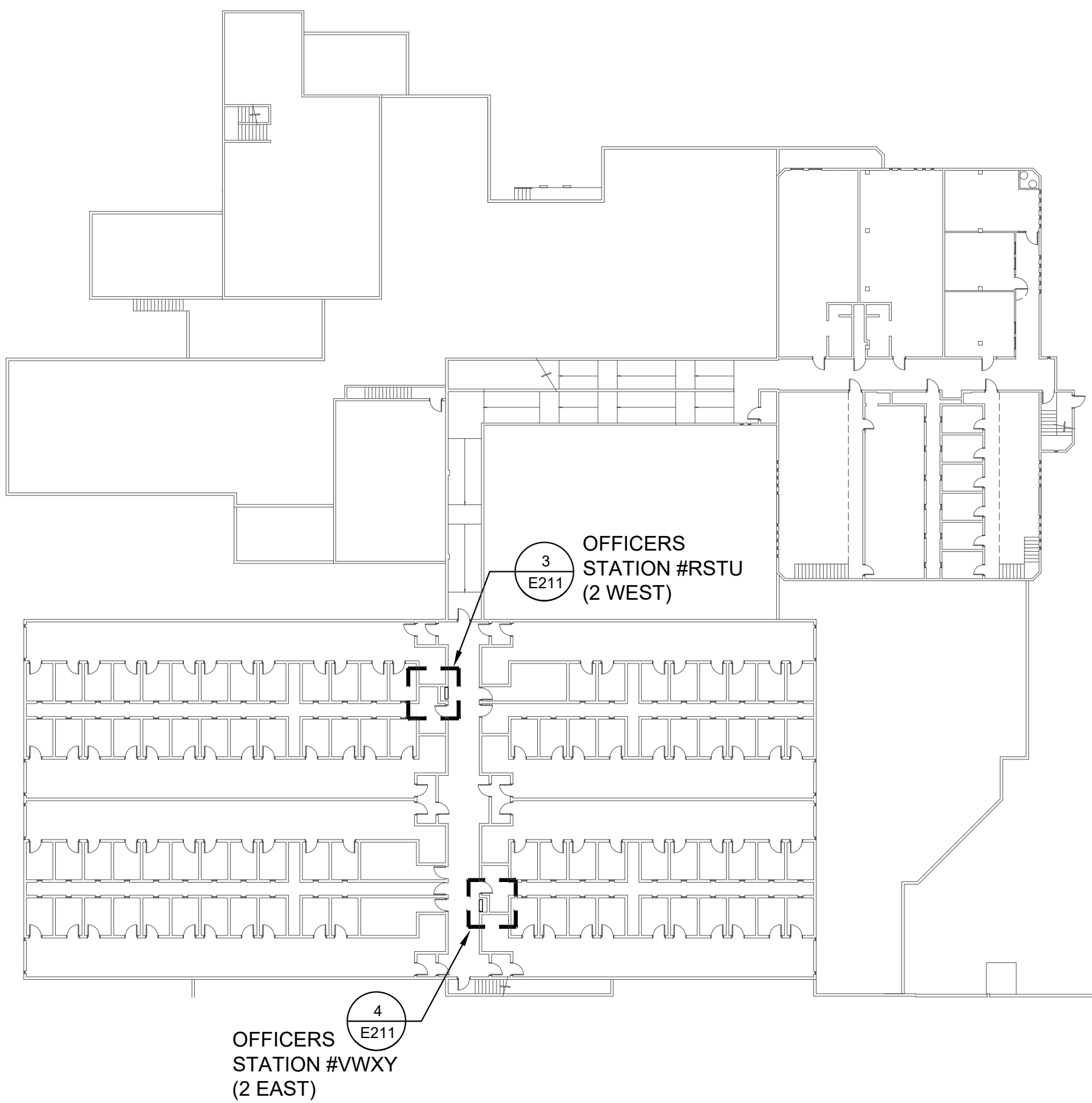
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DATE ISSUED: 03/20/26

SHEET:



KEYED NOTES

◊ MOUNTING HEIGHTS TO CENTER OF BACK BOX UNLESS INDICATED OTHERWISE.

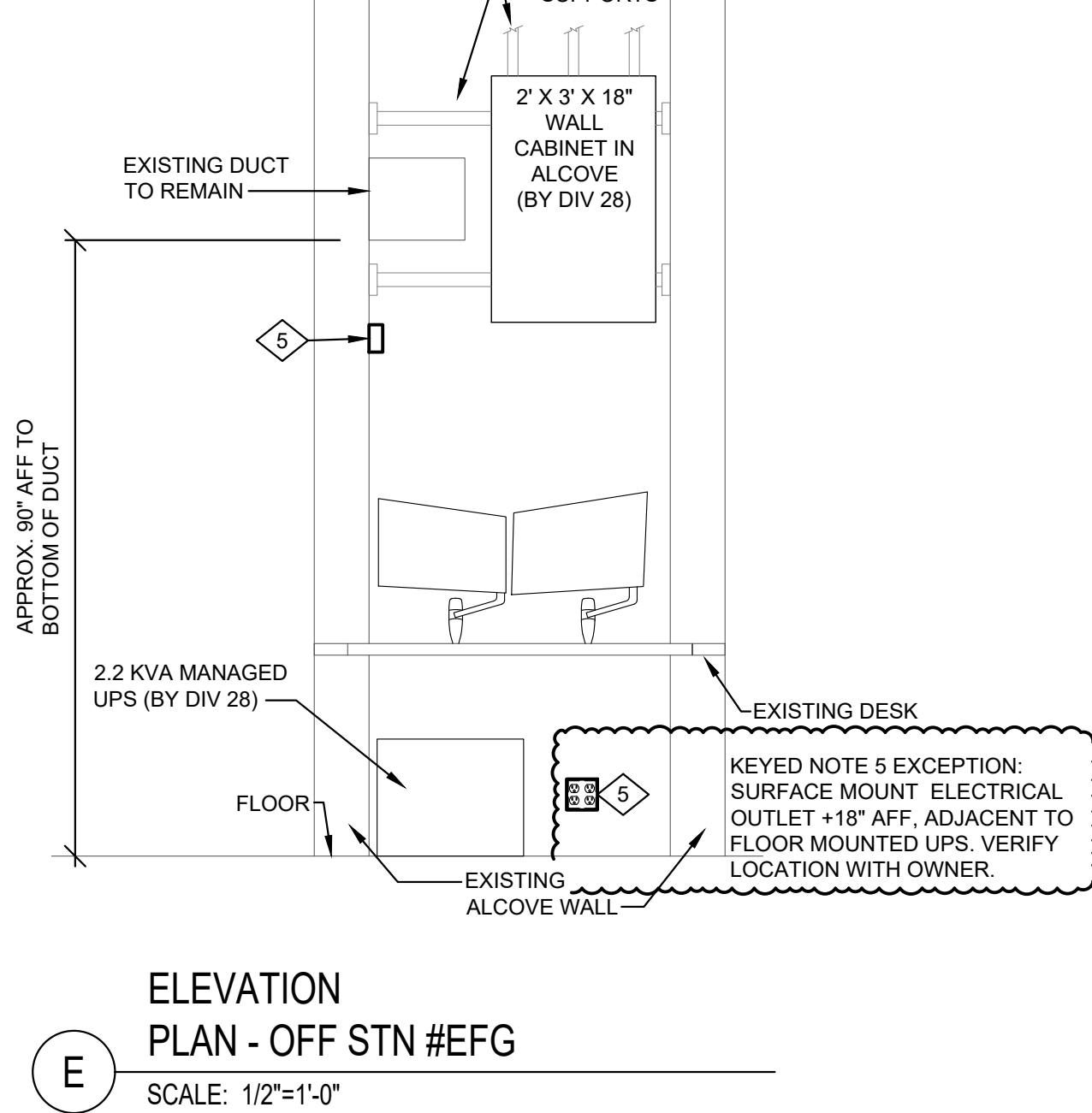
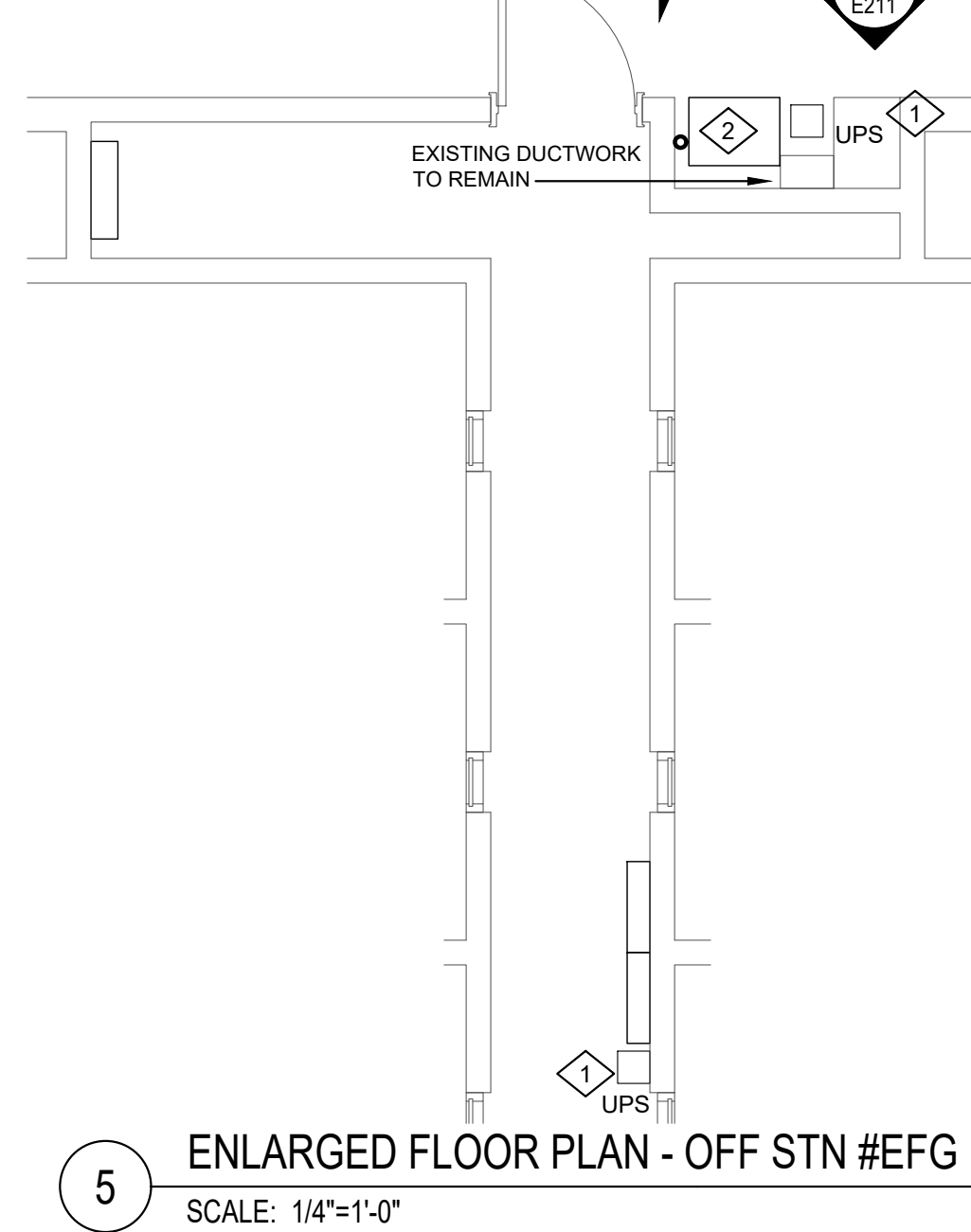
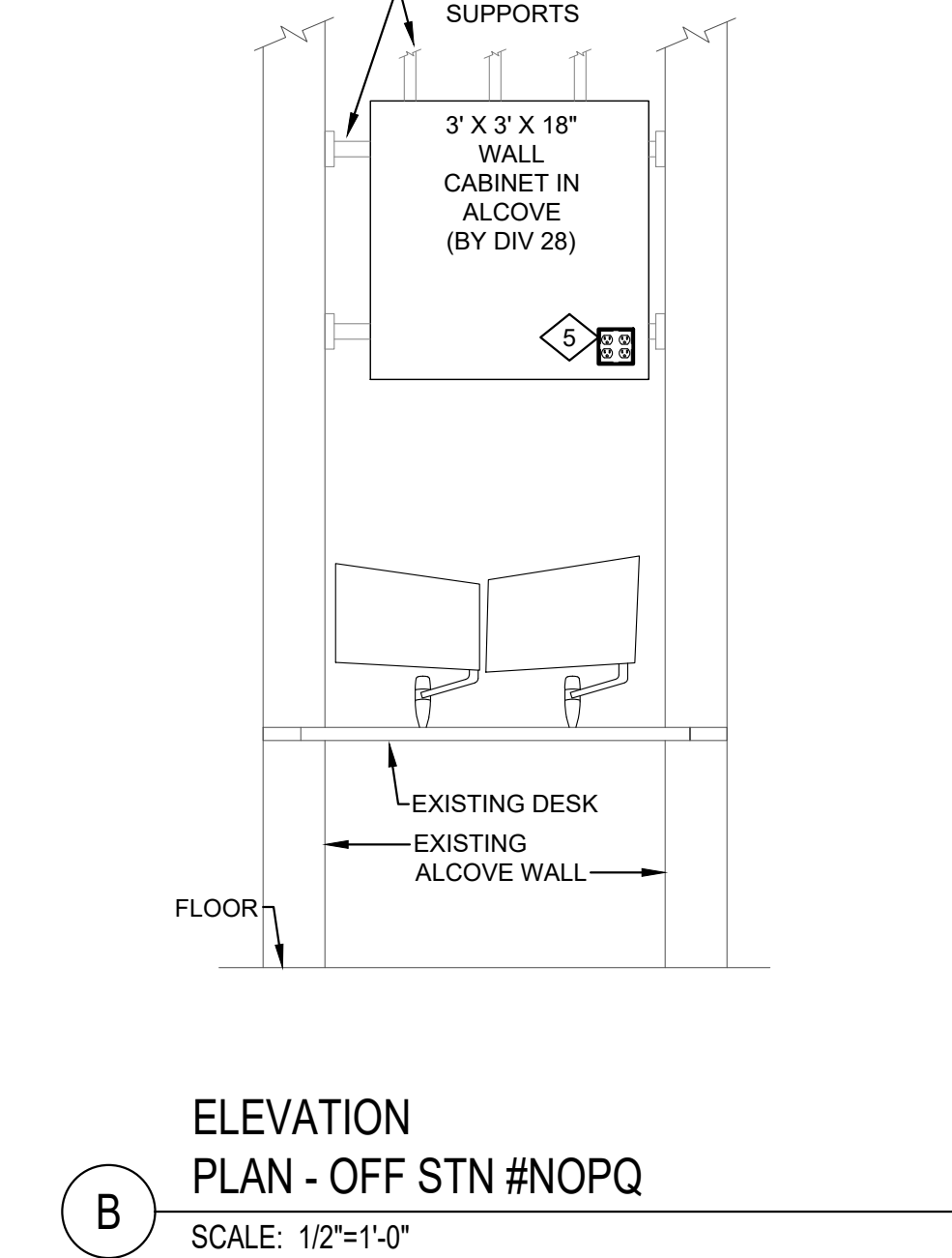
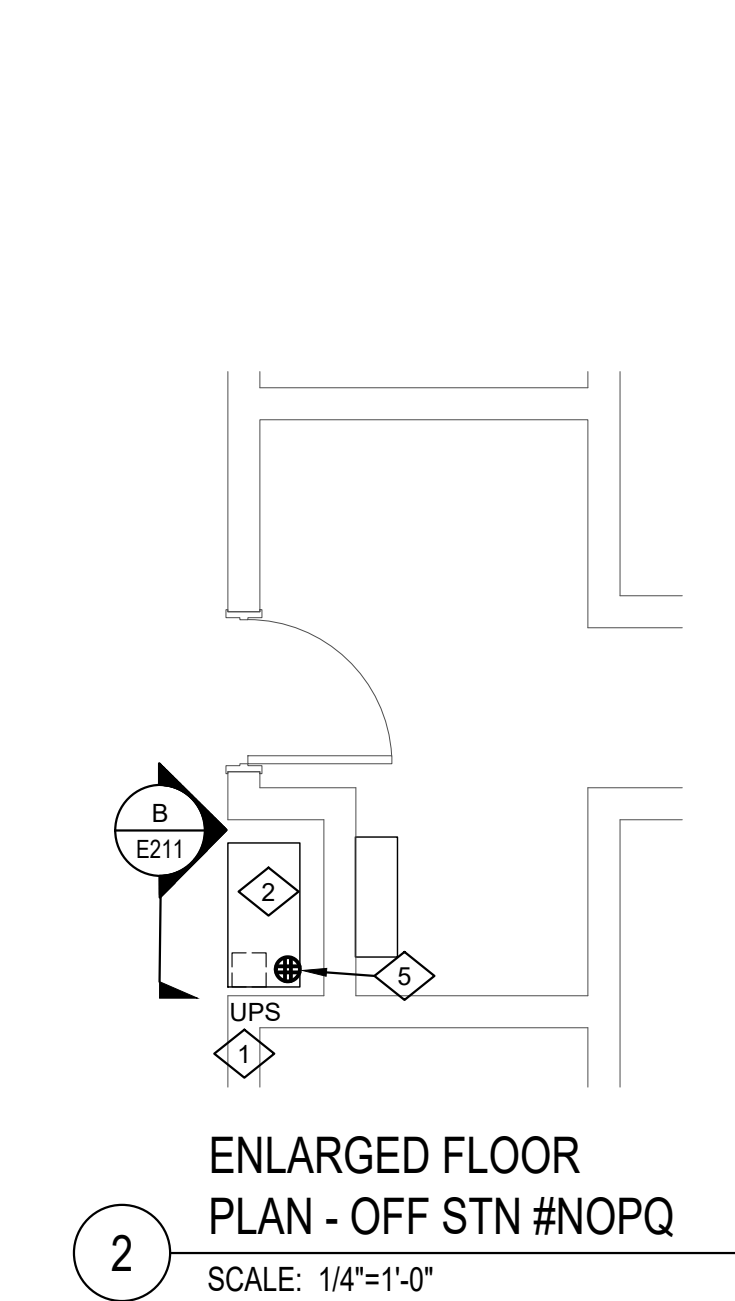
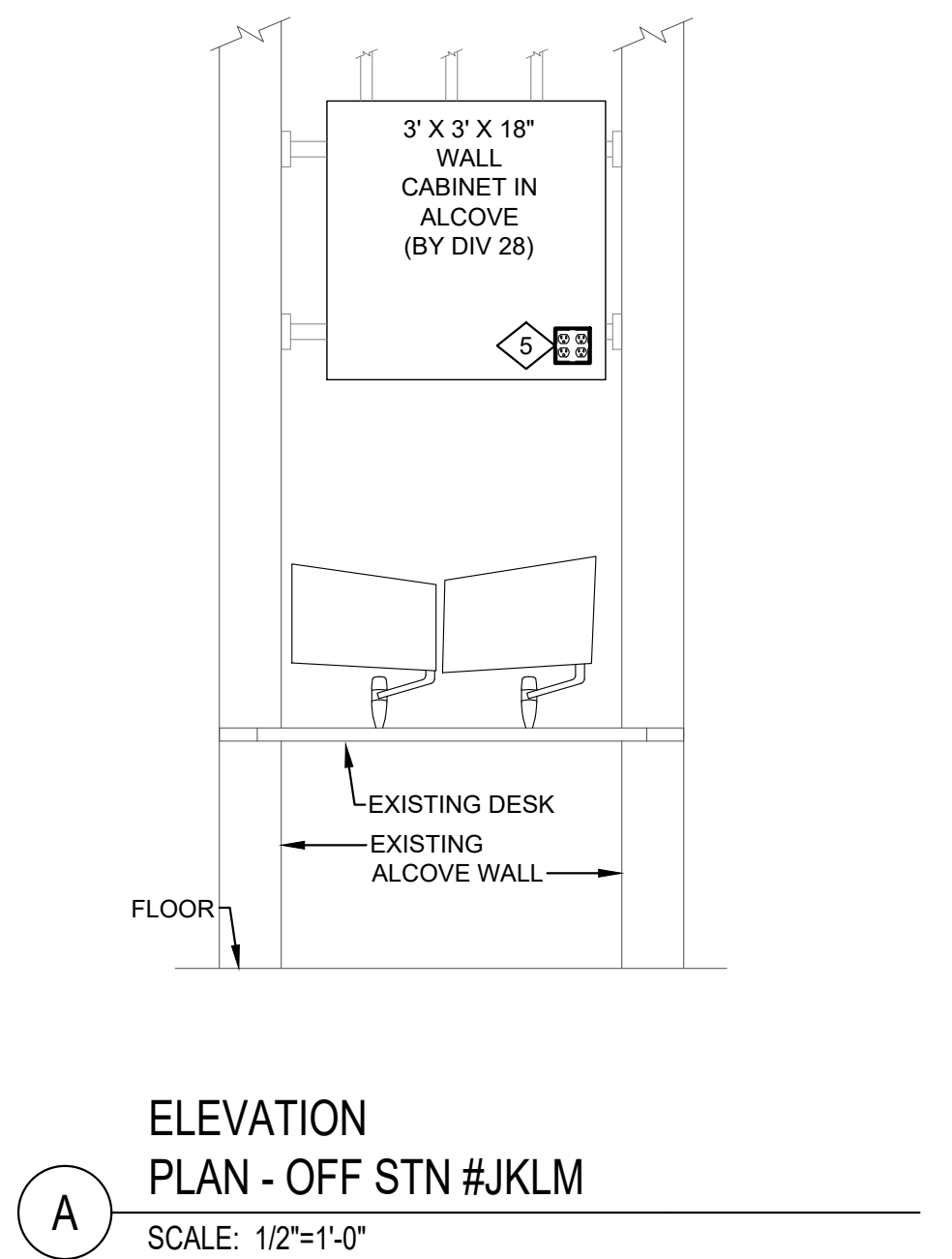
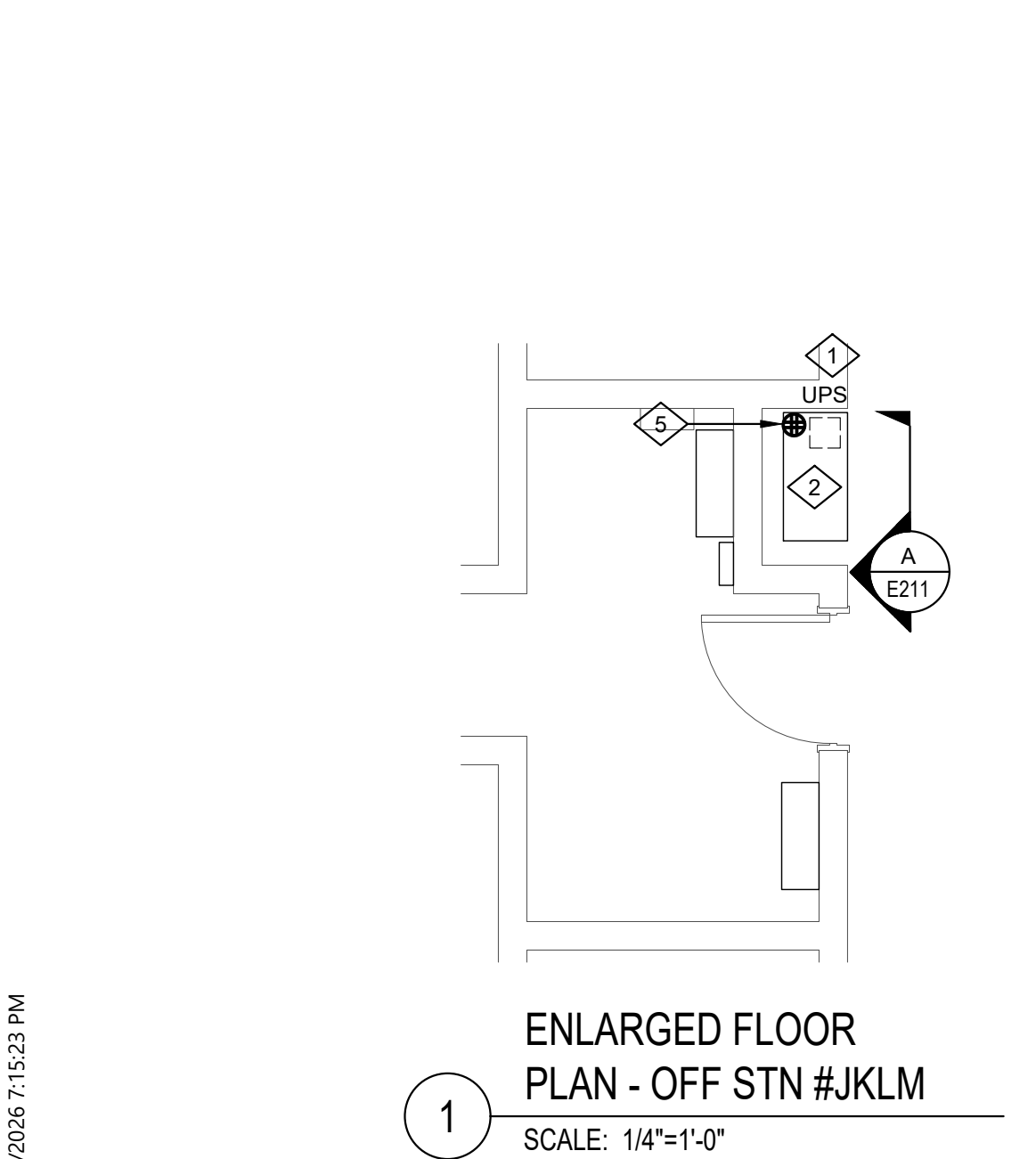
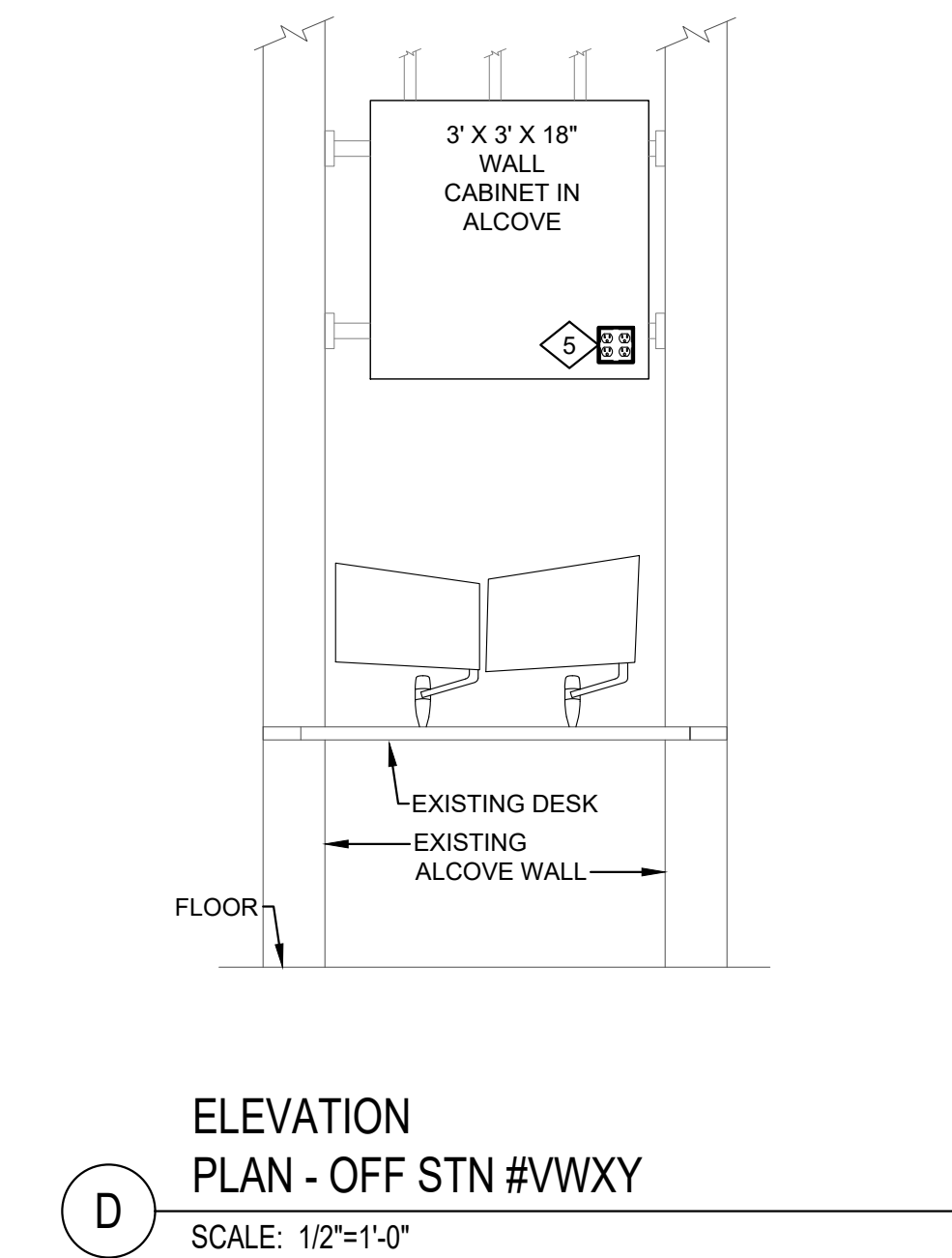
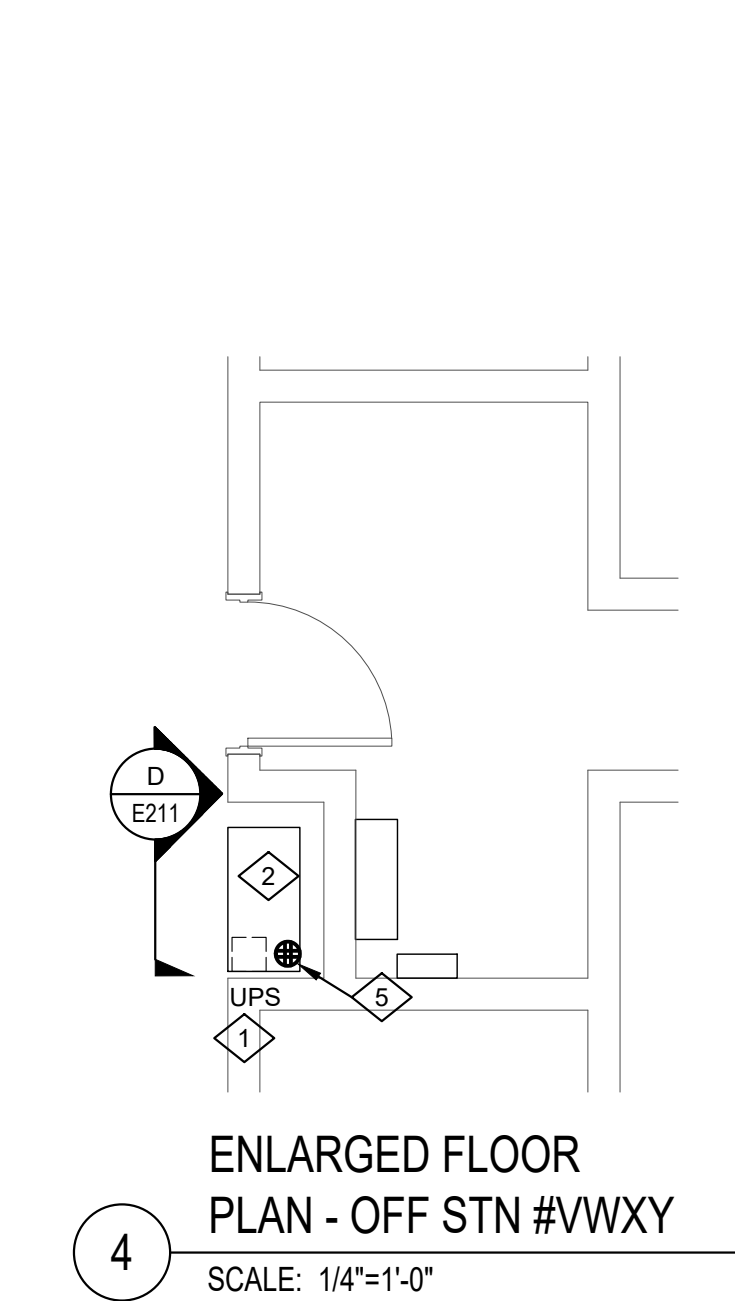
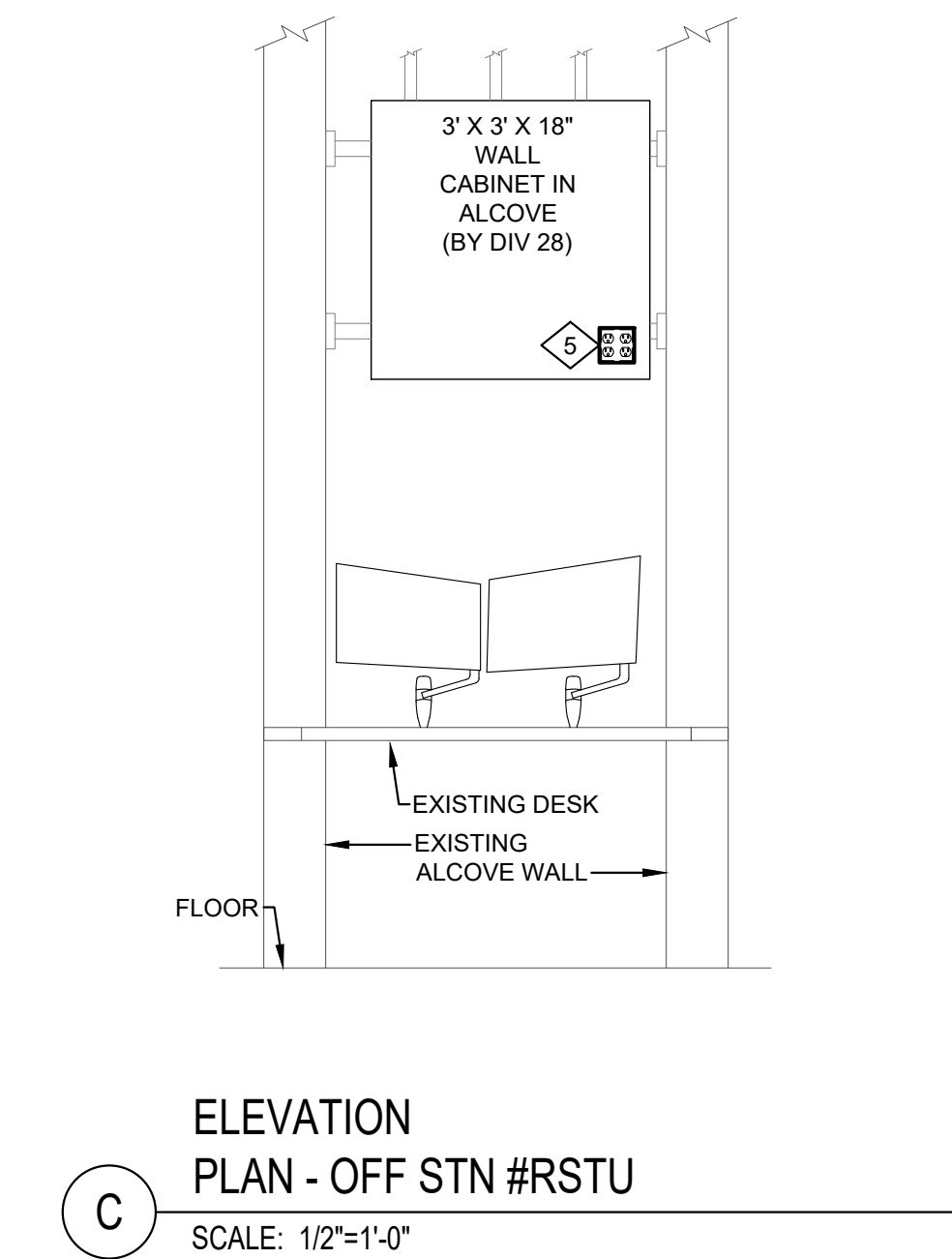
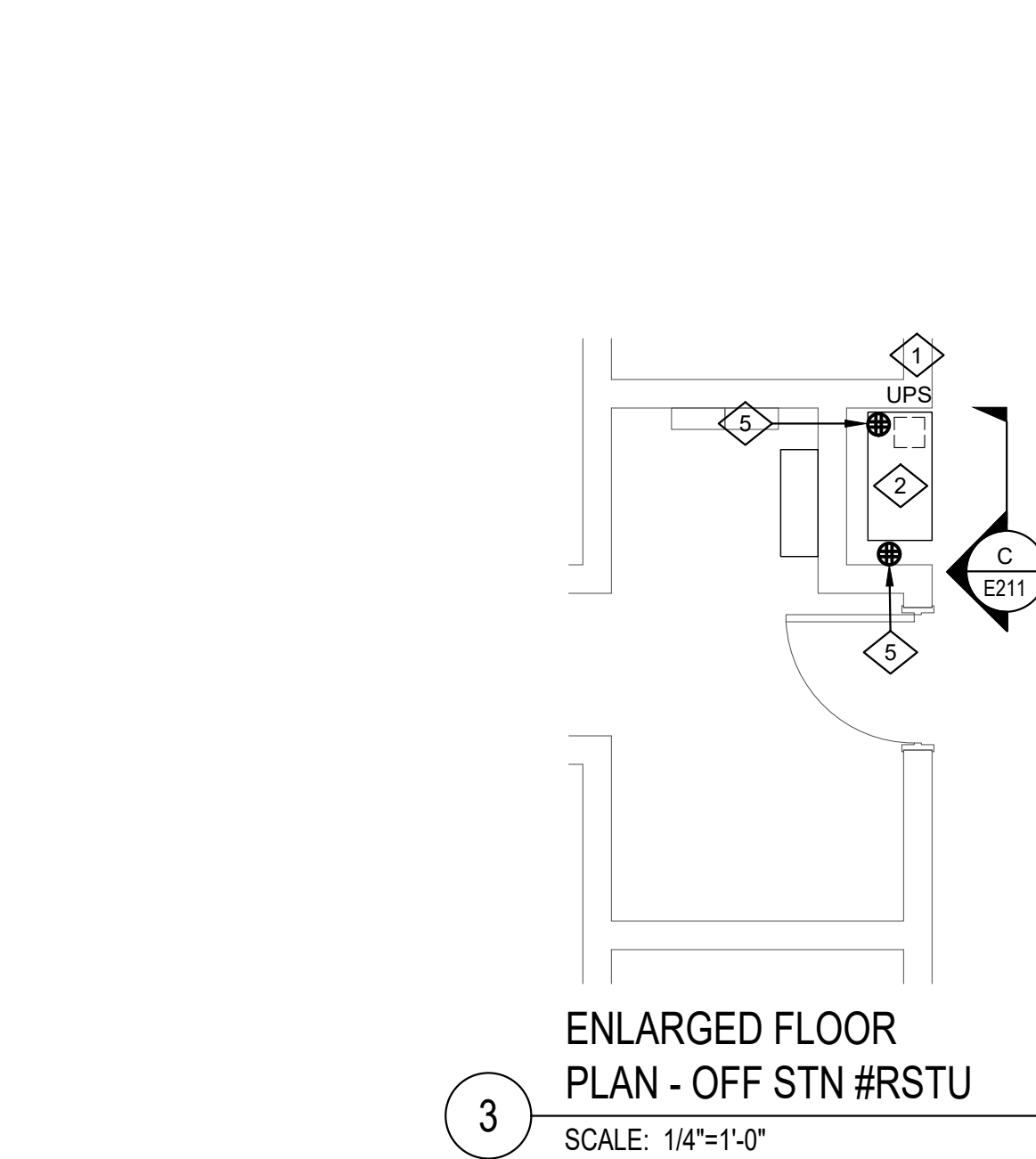
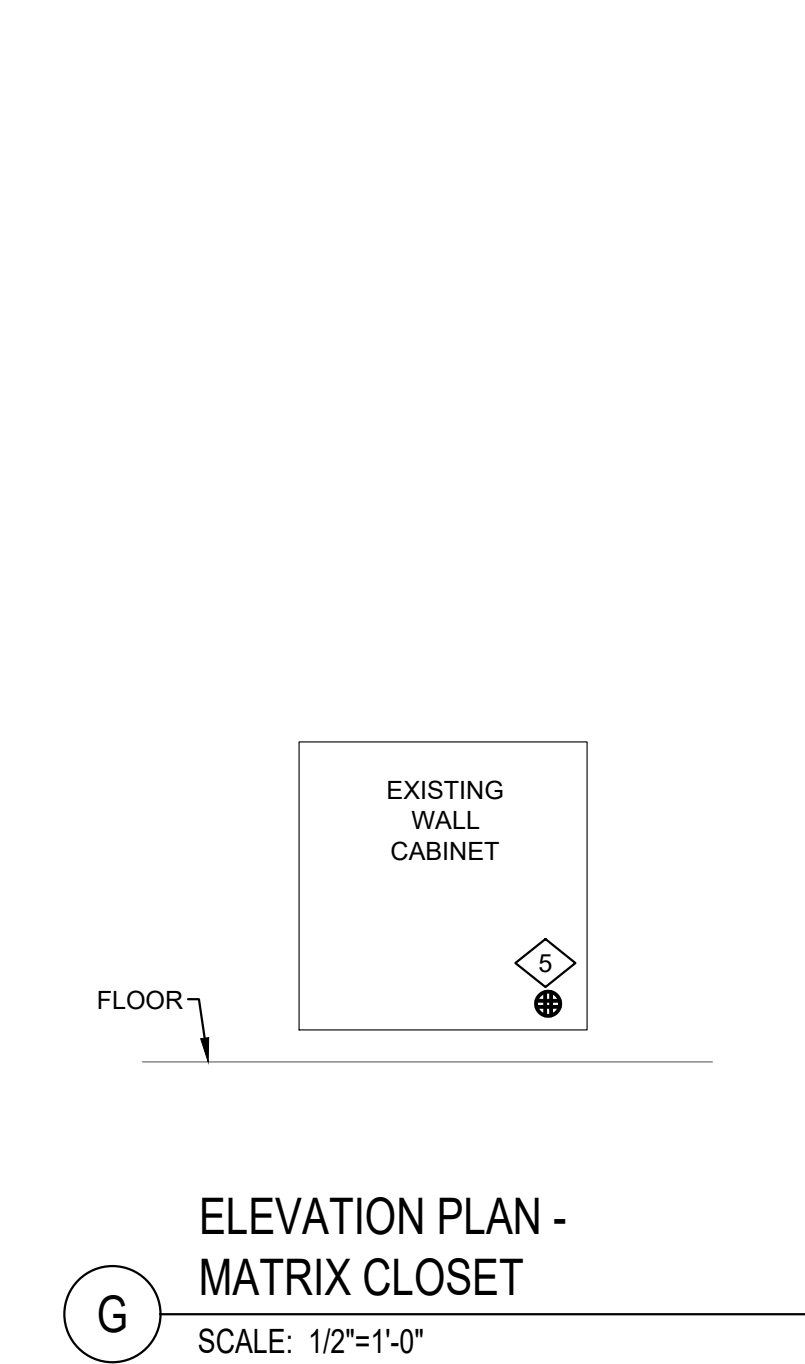
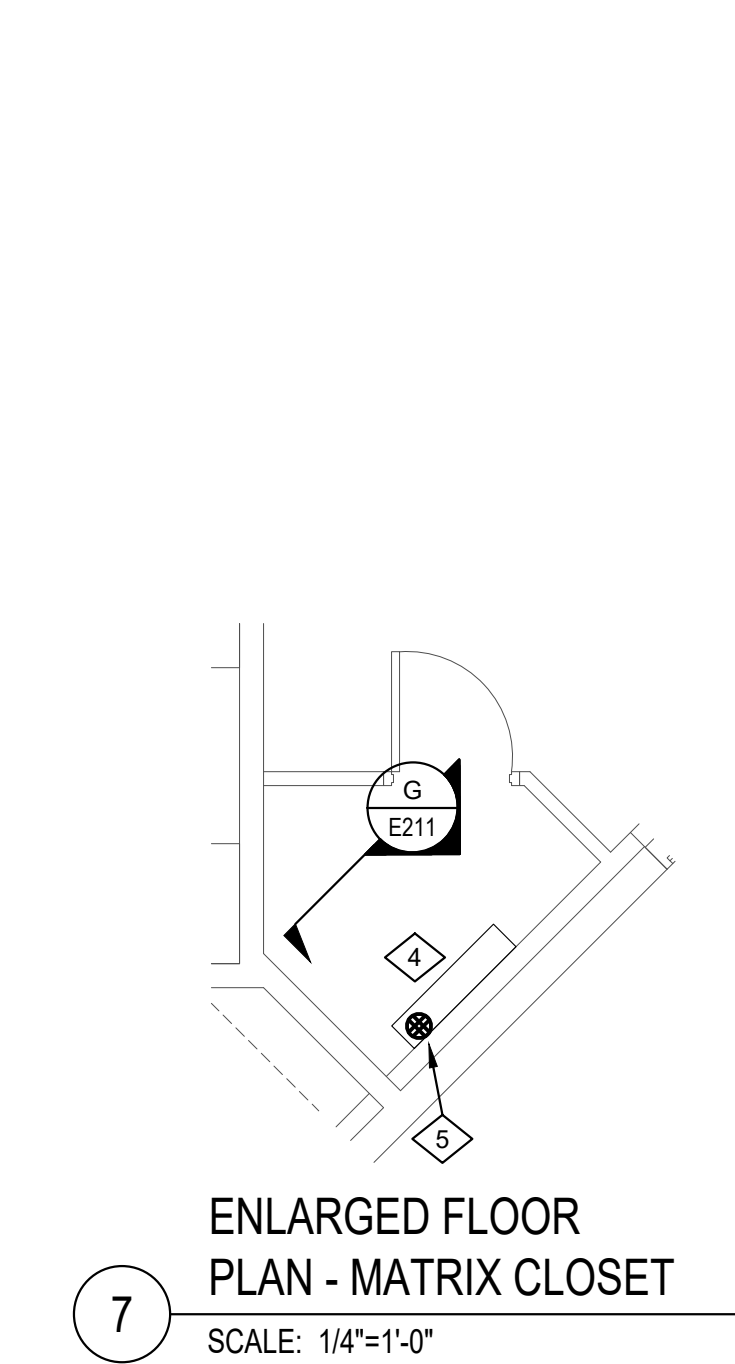
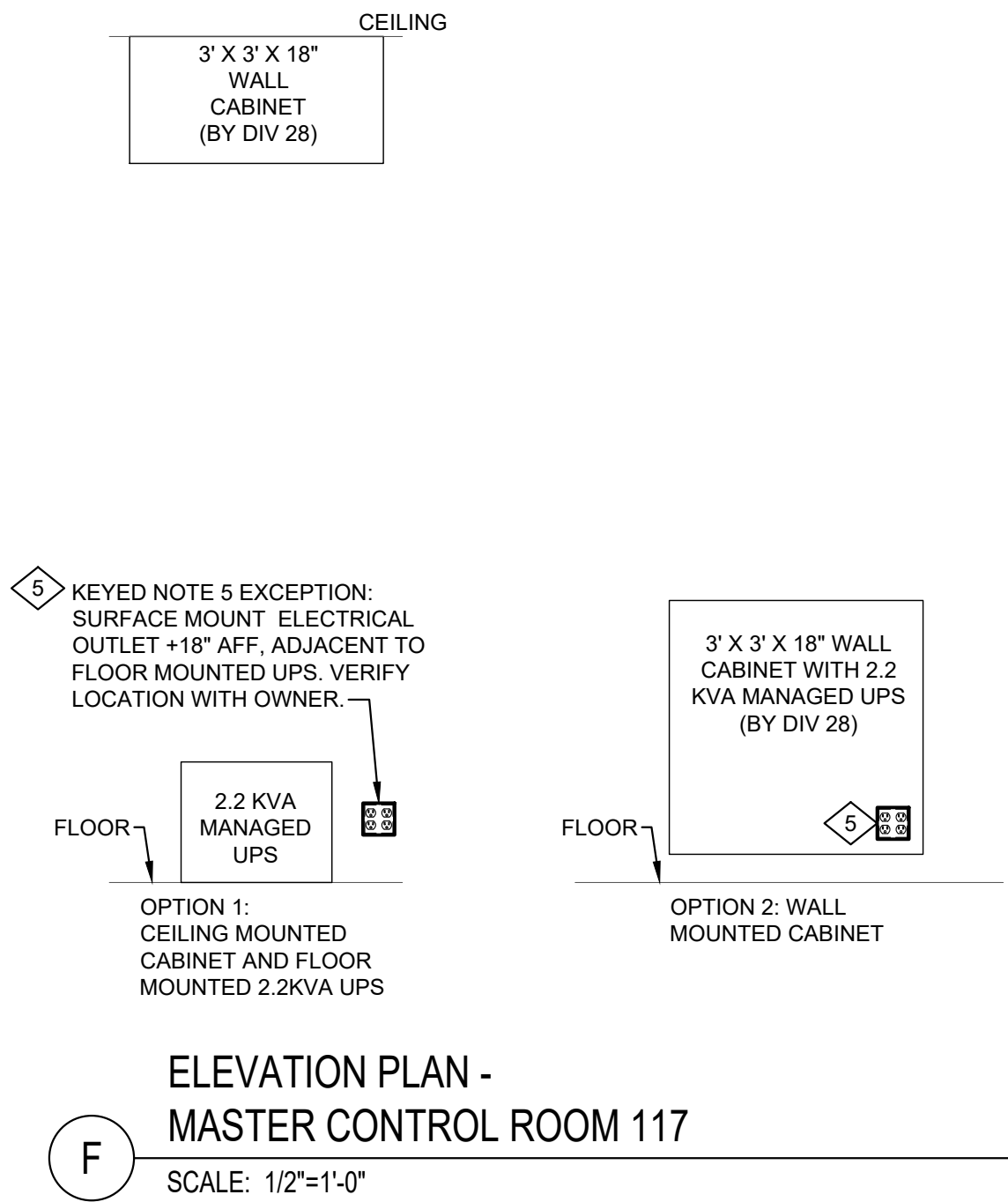
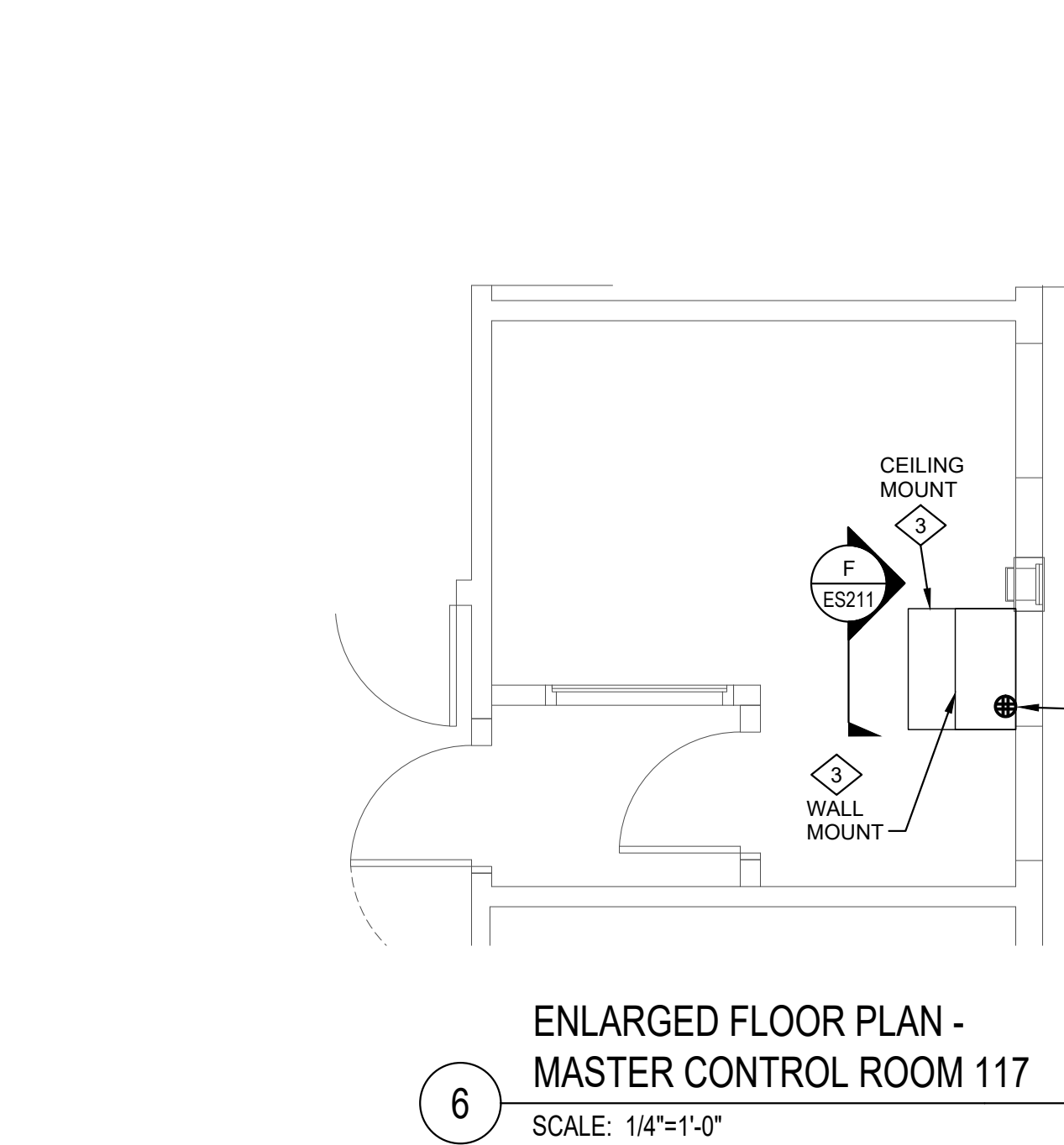


SYMBOLS	GENERAL	NOTES
◊	KEYED NOTE	
1 E**	REFERENCE DETAIL NUMBER/ REFERENCE SHEET NUMBER	

SYMBOLS	RACEWAYS	NOTES
	BRANCH CIRCUIT INSTALLED CONCEALED FROM FINISH SPACES. PROVIDE GROUND CONDUCTOR AS INDICATED IN PANEL SCHEDULE. GROUND CONDUCTOR NOT INCLUDED IN HASH MARK INDICATION.	
	BRANCH CIRCUIT INSTALLED IN OR BELOW FLOOR	
	SURFACE MOUNTED BRANCH CIRCUIT	
	BRANCH CIRCUIT HOME RUN TO PANEL. HASH MARKS INDICATES NUMBER OF CONDUCTORS. GROUND CONDUCTOR NOT INCLUDED IN HASH MARK INDICATION.	
	CONDUIT, UP	
	CONDUIT, DOWN	

SYMBOLS	RECEPTACLES/DEVICES	NOTES
	DOUBLE DUPLEX ELECTRICAL OUTLET	◊
	JUNCTION BOX, 4" SQUARE UNLESS OTHERWISE NOTED	

SYMBOLS	ABBREVIATIONS	NOTES
AFF	ABOVE FINISHED FLOOR	
AFTB	ABOVE FINISHED FLOOR TO BOTTOM	
AFTT	ABOVE FINISHED FLOOR TO TOP	
AMP	AMPERE	
C	CONDUIT	
EC	ELECTRICAL CONTRACTOR	
ELEC	ELECTRICAL	
EM	EMERGENCY	
ERV	ENERGY RECOVERY VENTILATOR	
FA	FIRE ALARM	
FAAP	FIRE ALARM ANUNCIATOR PANEL	
FACP	FIRE ALARM CONTROL PANEL	
G, GND	GROUND	
Ø PH	PHASE	
PNL	PANEL	
PWR	POWER	
SYS	SYSTEM	
T	TELEPHONE	
TTB	TELEPHONE TERMINAL BOARD	
TYP	TYPICAL	
UNO	UNLESS NOTED OTHERWISE	
V	VOLT	
VP	VANDAL PROOF	
W	WATT	
WP	WEATHERPROOF TYPE	



GENERAL NOTES

- REFER TO DIVISION 26 SPECIFICATIONS AND SECTION 28.05 00 - COMMON WORK RESULTS FOR ELECTRONIC SECURITY AND THE ES DRAWINGS FOR ADDITIONAL REQUIREMENTS.
- CORE DRILL AND PROVIDE FIRE STOP AROUND ALL CONDUITS AT ALL WALL PENETRATIONS.

KEYED NOTES

- UPS TO REMAIN.
- WALL CABINET (BY DIV 28). WALL MOUNTED IN ALCOVE ABOVE REMOTE SECURITY STATION.
- WALL CABINET (BY DIV 28).
- EXISTING PLC CABINET TO REMAIN.
- SURFACE MOUNT 5-20R DOUBLE DUPLEX ELECTRICAL OUTLET IN WALL CABINET. COORDINATE LOCATION AND MOUNTING HEIGHT WITH OWNER PRIOR TO INSTALLATION. PROVIDE A WIRE IN CONDUIT HOME RUN FROM OUTLET TO A 20A/1P CIRCUIT BREAKER IN AN EXISTING EMERGENCY (GENERATOR BACKED UP) PANELBOARD. COORDINATE WITH THE OWNER'S MAINTENANCE STAFF FOR LOCATION OF EXISTING PANELBOARD. ASSUME A NEW 20A/1P CIRCUIT BREAKER IS NEEDED AND THE PANELBOARD IS LOCATED WITHIN 50' FROM OUTLET. DRILLING THROUGH A CMU WALL WITH FIRE STOPPING, MAY BE REQUIRED FOR CIRCUIT ROUTING (COORDINATE WITH FS SPECIFICATION).



PROJECT NUMBER:
CLACKAMAS COUNTY JAIL ELECTRONICS UPDATE BID SET
2206 S. Kaen Road
Oregon City, OR 97045

SHEET TITLE:
ENLARGED PLANS AND ELEVATIONS - ELECTRICAL

DRAWN BY: BV
DATE ISSUED: 03.20.2026
BID SET
03.20.2026

SHEET:
E211
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GENERAL NOTES

- ALL CONDUIT IS 3/4" AND CONCEALED, UNO.
- CONDUIT AND NIPPLE FILL SHALL NOT EXCEED NEC CHAPTER 9, TABLE 4.
- GROUND ALL SIGNALING CIRCUITS AT ONE POINT.
- GROUND ALL DEVICE BOXES.
- PROVIDE SECURITY SCREWS ON ALL EXPOSED FIELD EQUIPMENT WITHIN THE I-3 OCCUPANCY AREAS.
- ALL SECURITY, AND CCTV VIDEO CABLES AND CONNECTORS TO BE COLOR CODED. CONFIRM COLOR CODES WITH OWNER PRIOR TO PURCHASE.
- FOLLOW ALL ADA GUIDELINES.
- ALL CONDUIT ABOVE 10' AFF TO BE RIGID, UNO.
- ALL NEW AND RELOCATED OUTDOOR CAMERAS TO BE MOUNTED ON BUILDING, 2' BELOW TOP OF PARAPET, UNO.
- CORE DRILL AND PROVIDE FIRE STOP AROUND ALL CONDUITS AT ALL WALL PENETRATIONS.

CCTV / GUI GENERAL NOTES

- REPLACE ALL EXISTING ANALOG CAMERAS WITH NEW IP CAMERAS.
- REPLACE ALL EXISTING IP CAMERAS WITH NEW IP CAMERAS.
- PROVIDE NEW NET NEW CAMERAS WHERE SHOWN.
- REPLACE ALL EXISTING CCTV COMPUTERS WITH NEW COMPUTERS, UNO. MONITORS TO BE REUSED.
- REPLACE ALL EXISTING TOUCH SCREEN COMPUTERS WITH NEW COMPUTERS.
- REPLACE ALL EXISTING TOUCH SCREEN MONITORS WITH NEW NON-TOUCH SCREEN MONITORS. EXCEPTION: REPLACE MASTER CONTROL 117 TOUCH SCREEN MONITORS WITH NEW TOUCH SCREEN MONITORS.
- EXISTING PLCs ARE MODICON, 300 SERIES. PROVIDE SOFTWARE AND FIRMWARE UPDATES TO THE LATEST VERSION.

KEYED NOTES

- DASHED LINES INDICATE FIELD OF VIEW AT 48" AFF. CORRECT FOR PARALLAX AS REQUIRED.
- NET NEW CAMERAS ARE NUMBERED STARTING AT CAMERA C-10". REVISE FINAL CAMERA NUMBERING TO APPEND TO EXISTING CAMERA NUMBERING. CONFIRM CAMERA NUMBERING AND ALL CAMERA NAMING WITH OWNER PRIOR TO PROGRAMMING. COORDINATE WITH SIGNAGE AS REQUIRED.

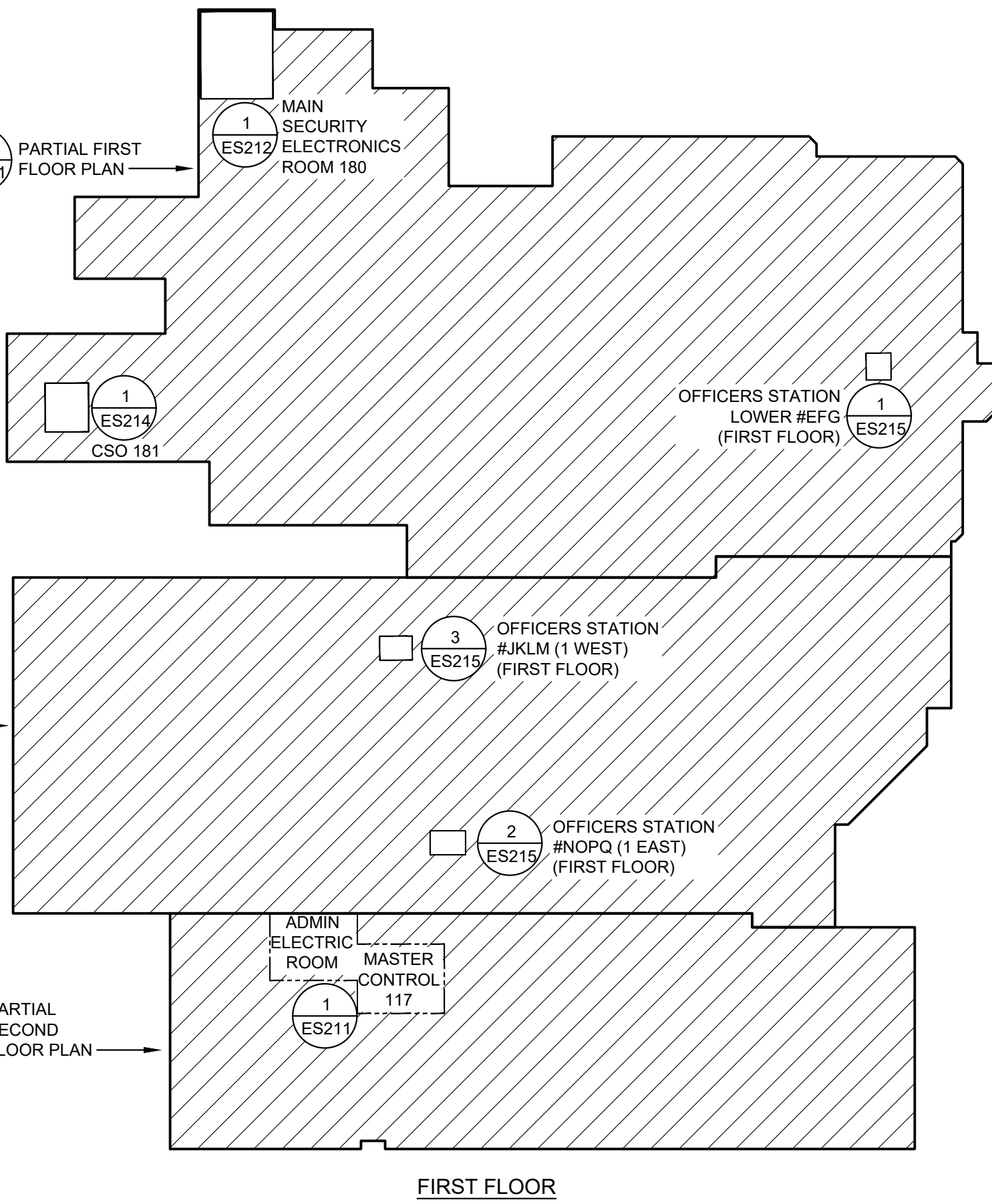
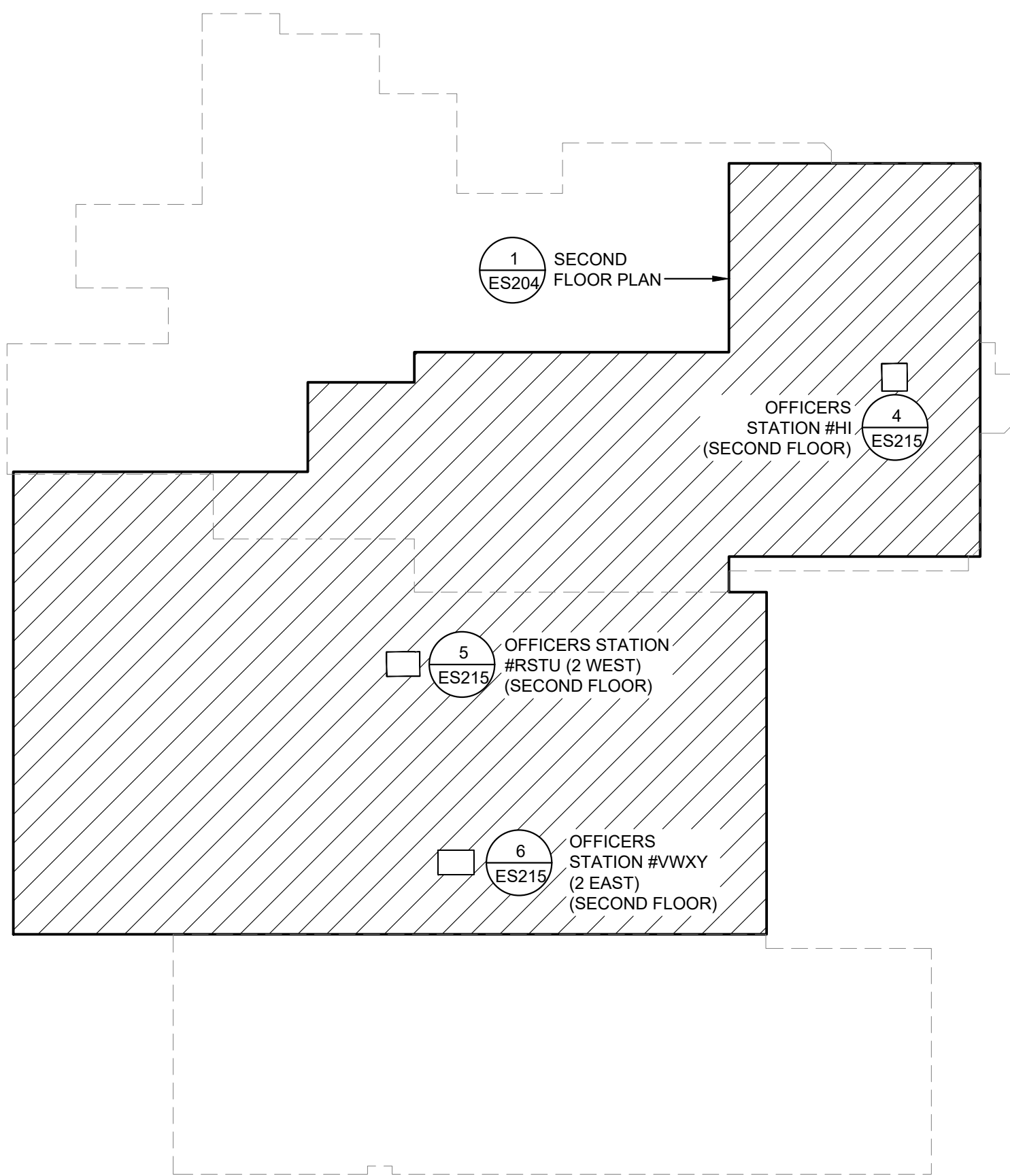
PROJECT NUMBER:
**CLACKAMAS
COUNTY JAIL
ELECTRONICS
UPDATE
BID SET**
2206 S. Kaen Road
Oregon City, OR 97045

DRAWING	DRAWING NAME
ES001	SECURITY LEGEND SHEET
ES101	SITE PLAN - SECURITY
ES201	PARTIAL FIRST FLOOR PLAN - SECURITY
ES202	PARTIAL FIRST FLOOR PLAN - SECURITY
ES203	PARTIAL FIRST FLOOR PLAN - SECURITY
ES204	SECOND FLOOR PLAN - SECURITY
ES211	ENLARGED PLANS AND ELEVATIONS
ES212	ENLARGED PLANS AND ELEVATIONS
ES213	EXISTING CONDITIONS
ES214	ENLARGED PLANS AND ELEVATIONS
ES215	ENLARGED PLANS AND ELEVATIONS
ES216	ENLARGED PLANS AND ELEVATIONS
ES217	WALL BOX ELEVATIONS
ES301	CCTV DETAILS AND SCHEDULES
ES302	DIAGRAMS

SHEET TITLE:
**SECURITY LEGEND
SHEET**

DRAWN BY: BW
DATE ISSUED: 03.20.2026
BID SET
03.20.2026

SHEET: **ES001**
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3 KEYMAP

ABBREV	DESCRIPTIONS
#	NUMBER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CAB	CABINET
CCTV	CLOSED CIRCUIT TELEVISION
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED OWNER INSTALLED
COMM	COMMUNICATIONS
CP	CONTROL PANEL
DIA	DIAMETER
DGP	DATA GATHERING PANEL
DPS	DOOR POSITION SWITCH
DWG	DRAWING
E	EXISTING
ELEC	ELECTRIC/ELECTRICAL
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING CONDUIT
EQUIP	EQUIPMENT
FBO	FURNISHED BY OWNER
FLEX	FLEXIBLE METAL CONDUIT
FT	FOOT (FEET)
GRD/GND	GROUND
GUI	GRAPHIC USER INTERFACE
HMI	HUMAN MACHINE INTERFACE
HZ	HERTZ
ID	INSIDE DIAMETER
IP	INTERNET PROTOCOL
J-BOX	JUNCTION BOX
KYBRD	KEYBOARD
LV	LOW VOLTAGE
M	MONITOR
MAX	MAXIMUM
MIN	MINIMUM
MOUSE	MOUSE
N	NEW
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NVR	NETWORK VIDEO RECORDER
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFIO	OWNER FURNISHED OWNER INSTALLED
PB	PULL BOX
PBO	PROVIDED BY OTHERS
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PS	POWER SUPPLY
PTZ	PAN/TILT/ZOOM
PVC	POLYVINYL CHLORIDE DUCT
PWR	POWER
RM	ROOM
RMC	RIGID METALLIC CONDUIT
S.C.	SCREW COVER
SHT	SHEET
STP	SHIELDED TWISTED PAIR
TBD	TO BE DEMOLISHED
TBR	TO BE REPLACED
TC	TERMINAL CABINET
TP	TWISTED PAIR
TS	TOUCH SCREEN
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UPS	UN-INTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
V	VOLT
VA	VOLT-AMPERES
VMS	VIDEO MANAGEMENT SYSTEM
VRS	VIDEO REVIEW STATION
W	WATTS
WP	WEATHERPROOF

2 ABBREVIATIONS

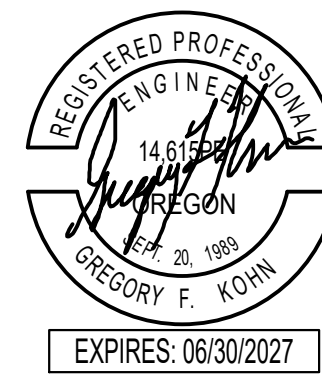
SYMBOLS	GENERAL	NOTES
KEYED NOTE		
1 ES.11	REFERENCE DETAIL NUMBER/ REFERENCE SHEET NUMBER	
+	WHEN ADDED TO SYMBOL INDICATES WALL OR BRACKET MOUNTED	
◀	WHEN ADDED TO SYMBOL INDICATES INSIDE CORNER MOUNTED	
↗	WHEN ADDED TO SYMBOL INDICATES OUTSIDE CORNER MOUNTED	

SYMBOLS	DIAGRAMS AND RACEWAYS	NOTES
RELAY COIL		
CONNECTORS, FEMALE AND MALE RESPECTIVELY		
NORMALLY CLOSED RELAY CONTACTS		
NORMALLY OPEN RELAY CONTACTS		
COMMON GROUND		
SUPPLY POSITIVE DC VOLTAGE		
CIRCUIT CONDUIT RUN		
UNDERGROUND CONDUIT		
CONDUIT RUN (SURFACE MTD.)		
OPTICAL FIBER		
CONDUIT HOMERUN		
TYPICAL OF QUANTITIES AS REQUIRED		
JUNCTION BOX (4" SQUARE OR DOUBLE DUPLEX)		
JUNCTION BOX (LARGER THAN 4" SQUARE OR DOUBLE DUPLEX AND SIZED AS REQUIRED TO MEET NEC RESTRICTIONS)		
CONDUIT SLEEVES WITH CAPS AT BOTH ENDS		
CONDUIT, UP		
CONDUIT, DOWN		

SYMBOLS	VIDEO SURVEILLANCE (CCTV)	NOTES
NEW IP CCTV CAMERA		2
EXISTING ANALOG CCTV CAMERAS TO BE REPLACED WITH NEW		
EXISTING IP CCTV CAMERAS TO BE REPLACED WITH NEW		

SYMBOLS	INTERCOM AND PAGING SYSTEM	NOTES
EXISTING REMOTE INTERCOM STATION WITH CALL REQUEST SWITCH		

1 NEW SECURITY SYMBOL SCHEDULE



SHEET NOTES

1. ALL EQUIPMENT SHOWN IS EXISTING, UNO.
2. REPLACE ALL EXISTING CAMERAS WITH NEW.
3. REPLACE ALL EXISTING CAMERA COAX WITH NEW CAT CABLE.

KEYED NOTES

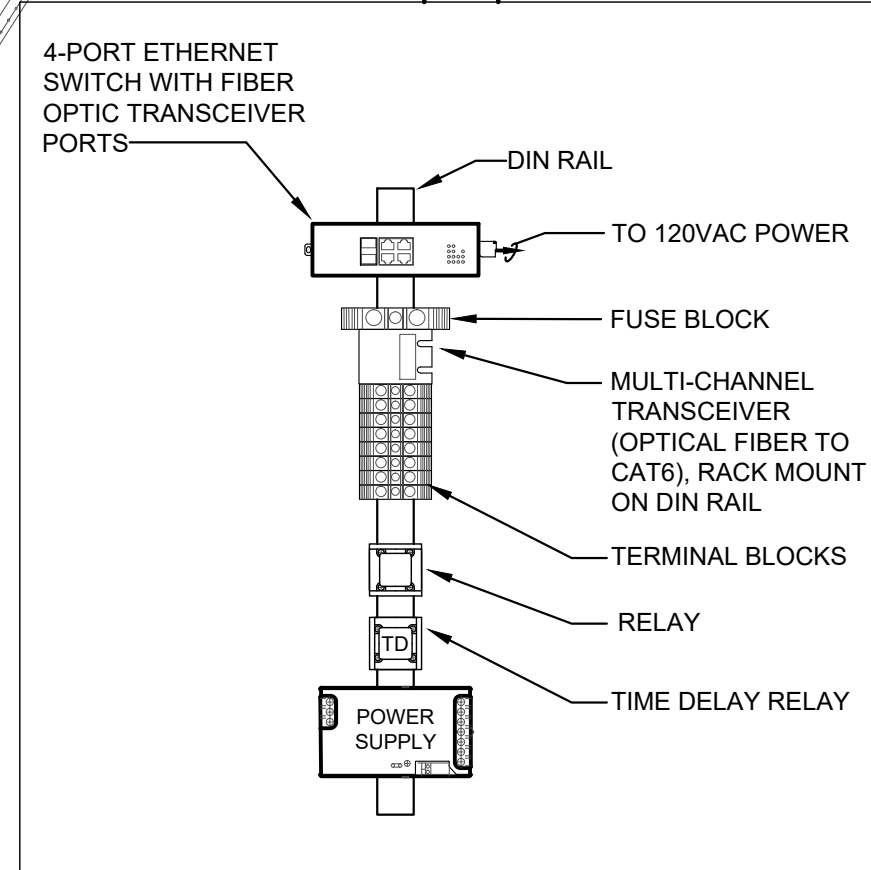
- EXISTING TO BE REPLACED WITH 2 NEW FIXED IP CAMERAS.
- EXISTING TO BE REPLACED WITH NEW FIXED IP CAMERA.

EXISTING INTERCOM VEHICLE
PEDESTAL
REPLACE EXISTING 2-GANG INTERCOM
STATION WITH A HARDING ICE-300
STATION RATED FOR EXTERIOR
WEATHER APPLICATION. CONNECT
AND TEST TO INTERCOM SYSTEM

EXISTING C-87 TO BE REPLACED WITH 3 NEW
FIXED IP CAMERAS.
POLE MOUNT NEW IP CAMERAS, REF DETAILS
2 & 3 THIS SHEET FOR POLE MOUNTED
CAMERA SUPPORT BOX AND DIAGRAM

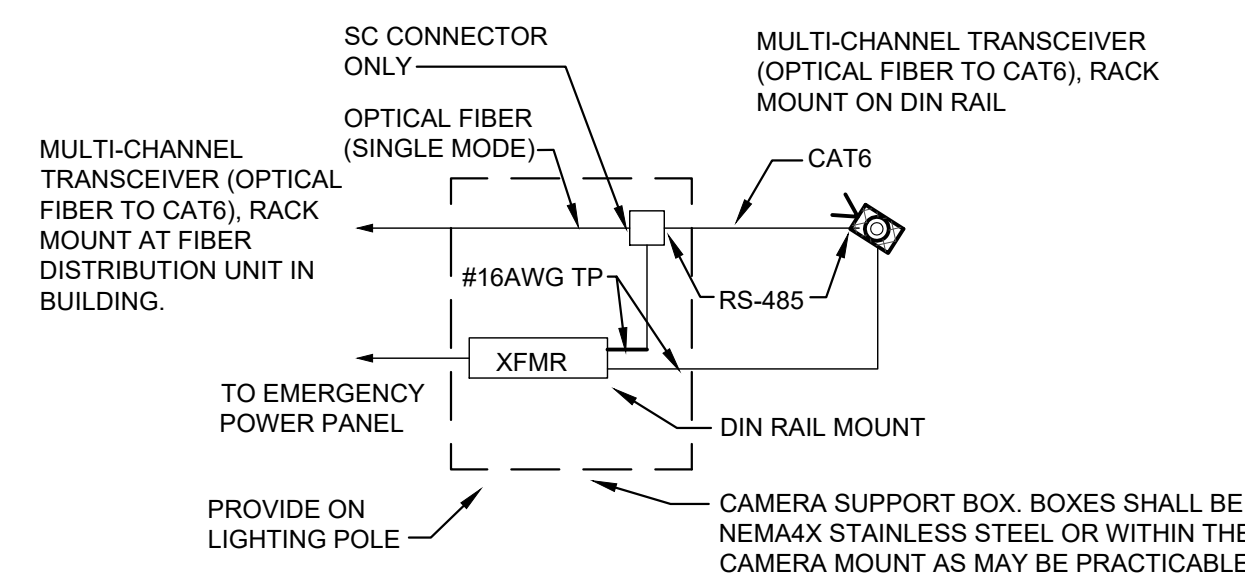
NEW 1-1/4" C UNDERGROUND CONDUIT TO
OFFICERS STATION LOWER #EFG. CONTRACTOR
SHALL INSTALL TO MINIMIZE CONDUIT/CABLE
DISTANCES AND THAT THE OVERALL CABLE
DISTANCE FROM THE POLE MOUNTED
CAMERA TO THE ETHERNET SWITCH AT
OFF STN #EFG SHALL NOT BE GREATER THAN 300'

NEW CONDUIT TO CAMERA
(CLASS 2 CABLE AND/OR
OPTICAL FIBERS)
ADD NEW CLASS 2 CABLE FOR
THE NET NEW CAMERAS



NOTE:
EQUIP POLE MOUNTED OUTDOOR BOX (24" X 24" X 6")
WITH LOCKABLE HINGED DOOR. PROVIDE KINDORF
STRUT AS REQUIRED.

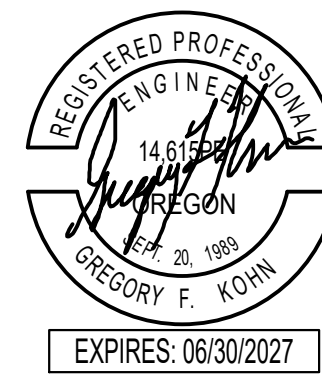
CAMERA POWER SUPPLY AND MEDIA CONVERTER BOX



CAMERA SUPPORT BOX DIAGRAM

SITE PLAN - ROOF PLAN - SECURITY

SCALE: 1"=20'



SHEET NOTES

1. ALL EQUIPMENT SHOWN IS EXISTING, UNO.
2. REPLACE ALL EXISTING CAMERAS WITH NEW.
3. REPLACE ALL EXISTING CAMERA COAX WITH NEW CAT CABLE.

KEYED NOTES

- NEW OPEN CABLE SECURED AT 2' INTERVALS IN CHASE.
- EXISTING SURFACE MOUNTED CABLE, REPLACE WITH NEW OPEN CABLE SECURED AT 2' INTERVALS.
- BID ALTERNATE 1 - REFER TO BID ALTERNATE 1 IN SPECIFICATION SECTION 01 23 00.
- BID ALTERNATE 2 - REFER TO BID ALTERNATE 2 IN SPECIFICATION SECTION 01 23 00.

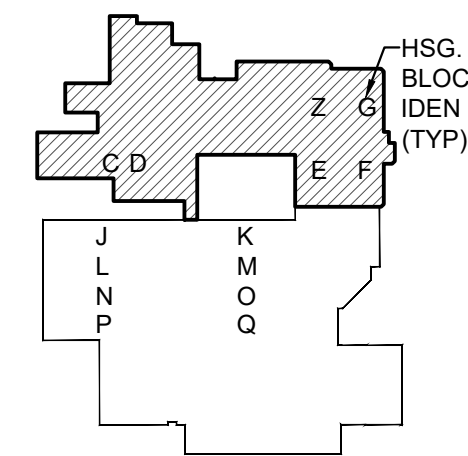
CONSULTANT:

HK Electrical
Engineers
10512 SE French Rd. Vancouver, WA 98664
PH: (503) 319-3119 WWW.HKENG.COM

PROJECT NUMBER:

**CLACKAMAS
COUNTY JAIL
ELECTRONICS
UPDATE
BID SET**

2206 S. Kaen Road
Oregon City, OR 97045



KEY PLAN

SHEET TITLE:

**PARTIAL FIRST FLOOR
PLAN -
SECURITY**

DRAWN BY:

BV

DATE ISSUED:

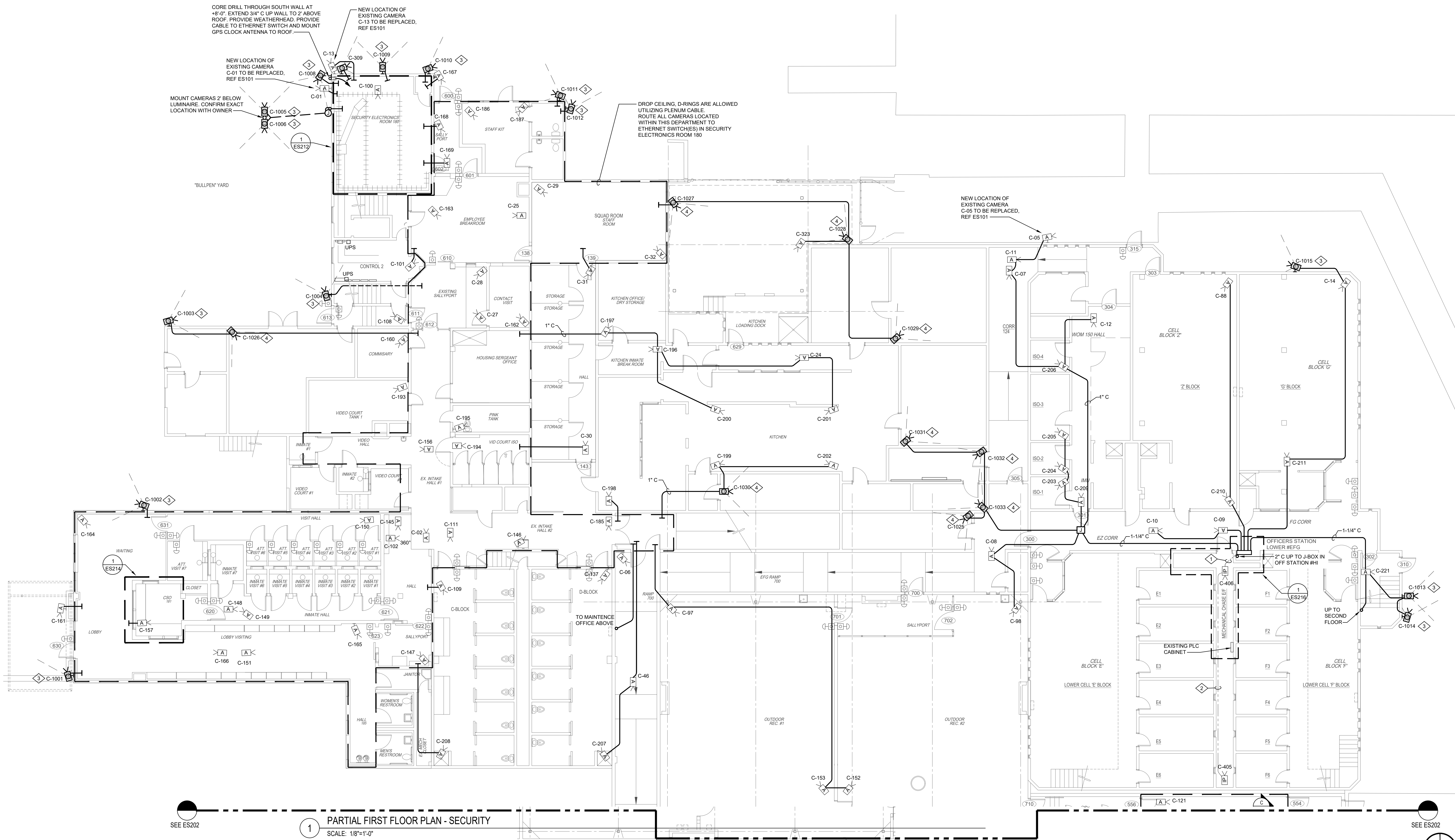
03.20.2026

BID SET

03.20.2026

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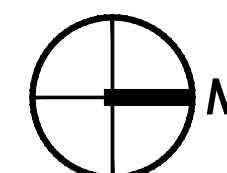
ES201
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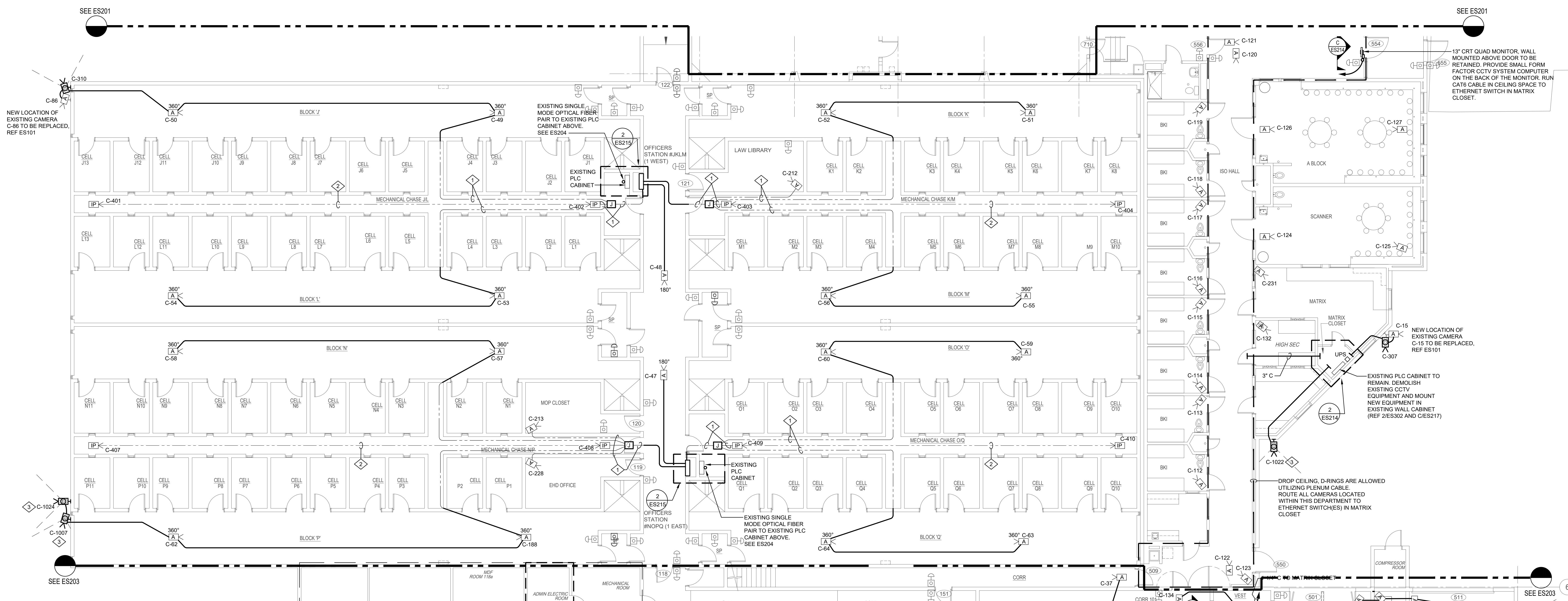


SEE ES202

1 PARTIAL FIRST FLOOR PLAN - SECURITY
SCALE: 1/8"=1'-0"

SEE ES202





1. ALL EQUIPMENT SHOWN IS EXISTING, UNO.
2. REPLACE ALL EXISTING CAMERAS WITH NEW.
3. REPLACE ALL EXISTING CAMERA COAX WITH NEW CAT CABLE.

1 NOT USED.

2 NOT USED.

3 BID ALTERNATE 1 - REFER TO BID ALTERNATE 1 IN SPECIFICATION SECTION 01 23 00.

HKElectrical
Engineers
10512 SE French Rd. Vancouver, WA 98664
PH: (503) 319-3119 WWW.HKENG.COM

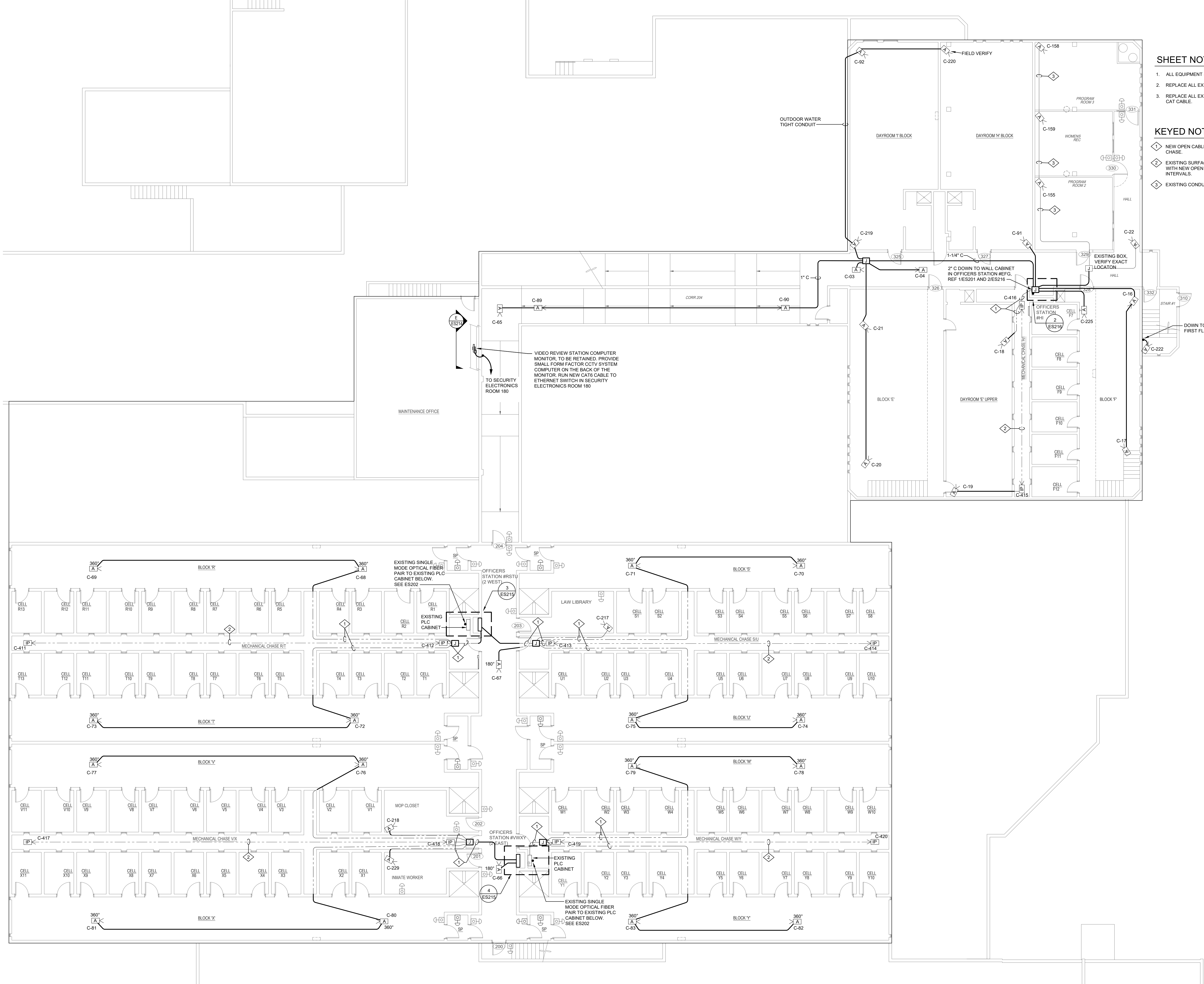


KEY PLAN

**PARTIAL FIRST FLOOR
PLAN -
SECURITY**

BID SET
03.20.2026

SHEET: **ES203**
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SHEET NOTES

1. ALL EQUIPMENT SHOWN IS EXISTING, UNO.
2. REPLACE ALL EXISTING CAMERAS WITH NEW.
3. REPLACE ALL EXISTING CAMERA COAX WITH NEW CAT CABLE.

KEYED NOTES

- 1 NEW OPEN CABLE SECURED AT 2' INTERVALS IN CHASE.
- 2 EXISTING SURFACE MOUNTED CABLE, REPLACE WITH NEW OPEN CABLE SECURED AT 2' INTERVALS.
- 3 EXISTING CONDUIT TO BE REUSED.

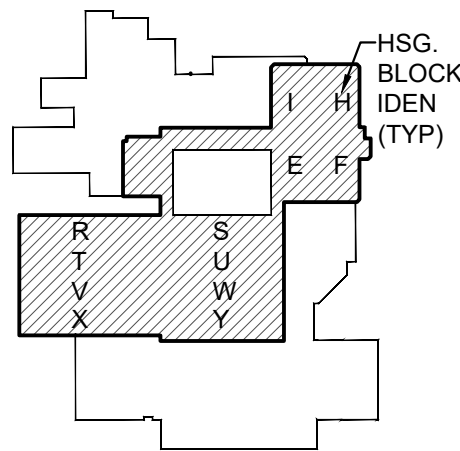


CONSULTANT:

PROJECT NUMBER:

**CLACKAMAS
COUNTY JAIL
ELECTRONICS
UPDATE
BID SET**

2206 S. Kaen Road
Oregon City, OR 97045



KEY PLAN

SHEET TITLE:

**SECOND FLOOR
PLAN -
SECURITY**

DRAWN BY:

BV

DATE ISSUED:

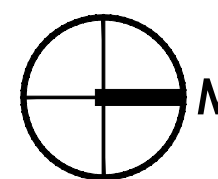
03.20.2026

BID SET

03.20.2026

1 SECOND FLOOR PLAN - SECURITY

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



SHEET:

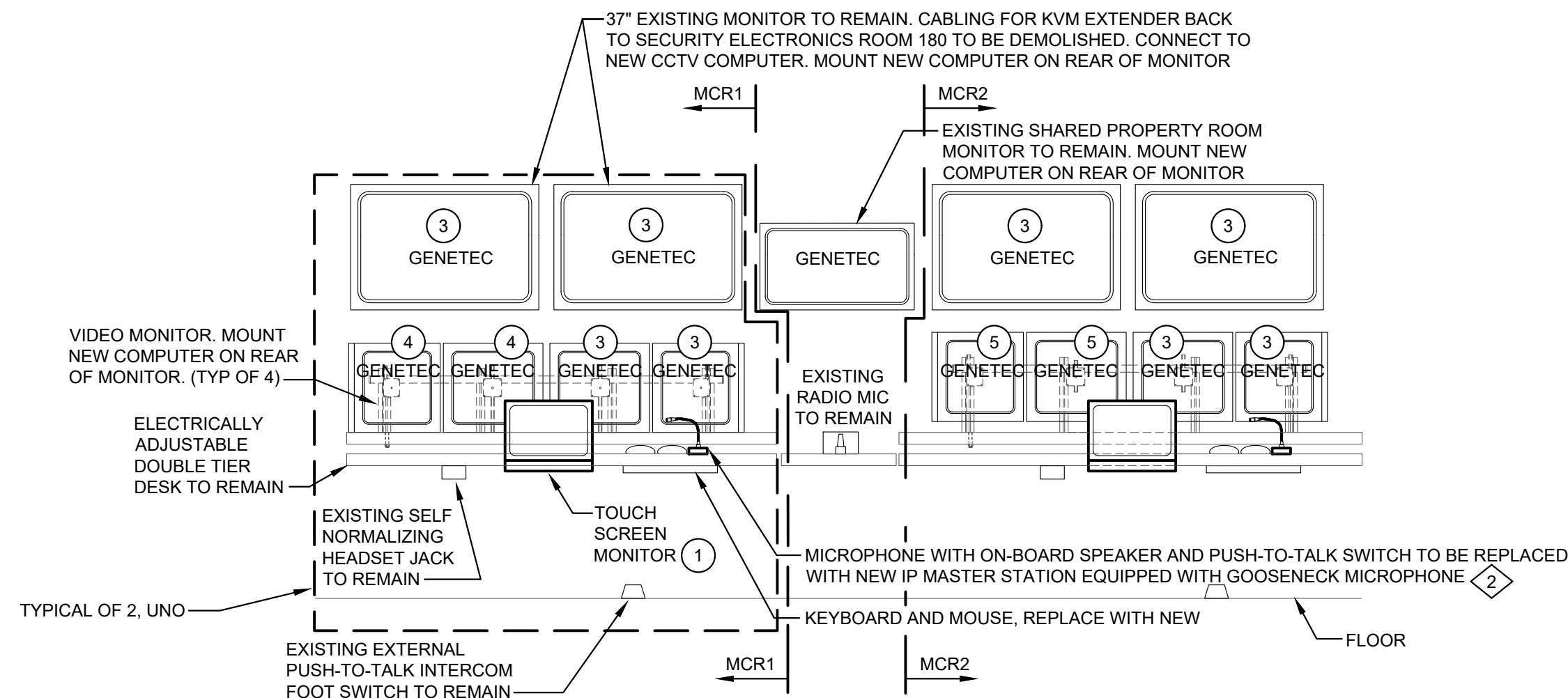
ES204
LRS Architects, Inc. ©

KEYED NOTES

1. EXISTING TERMINAL STRIPS, POWER SUPPLIES AND FUSES TO BE RETAINED.
2. REPLACE EXISTING WITH NEW IP MASTER INTERCOM STATION. COORDINATE EXACT LOCATION AND MOUNTING REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN. DEMOLISH EXISTING CABLE AND PULL NEW CAT6 CABLE IN CONDUIT TO SECURITY NETWORK SWITCH IN NEW WALL CABINET. CABLE CAN BE ROUTED IN NEW CONDUIT NECESSARY FOR NEW CCTV COMPUTER.
3. ELECTRICAL OUTLET, BY DIV 26, SURFACE MOUNTED IN WALL CABINET, REF ELECTRICAL DRAWINGS.

SHEET NOTES

1. ALL WORK SHOWN IS EXISTING, UNO.

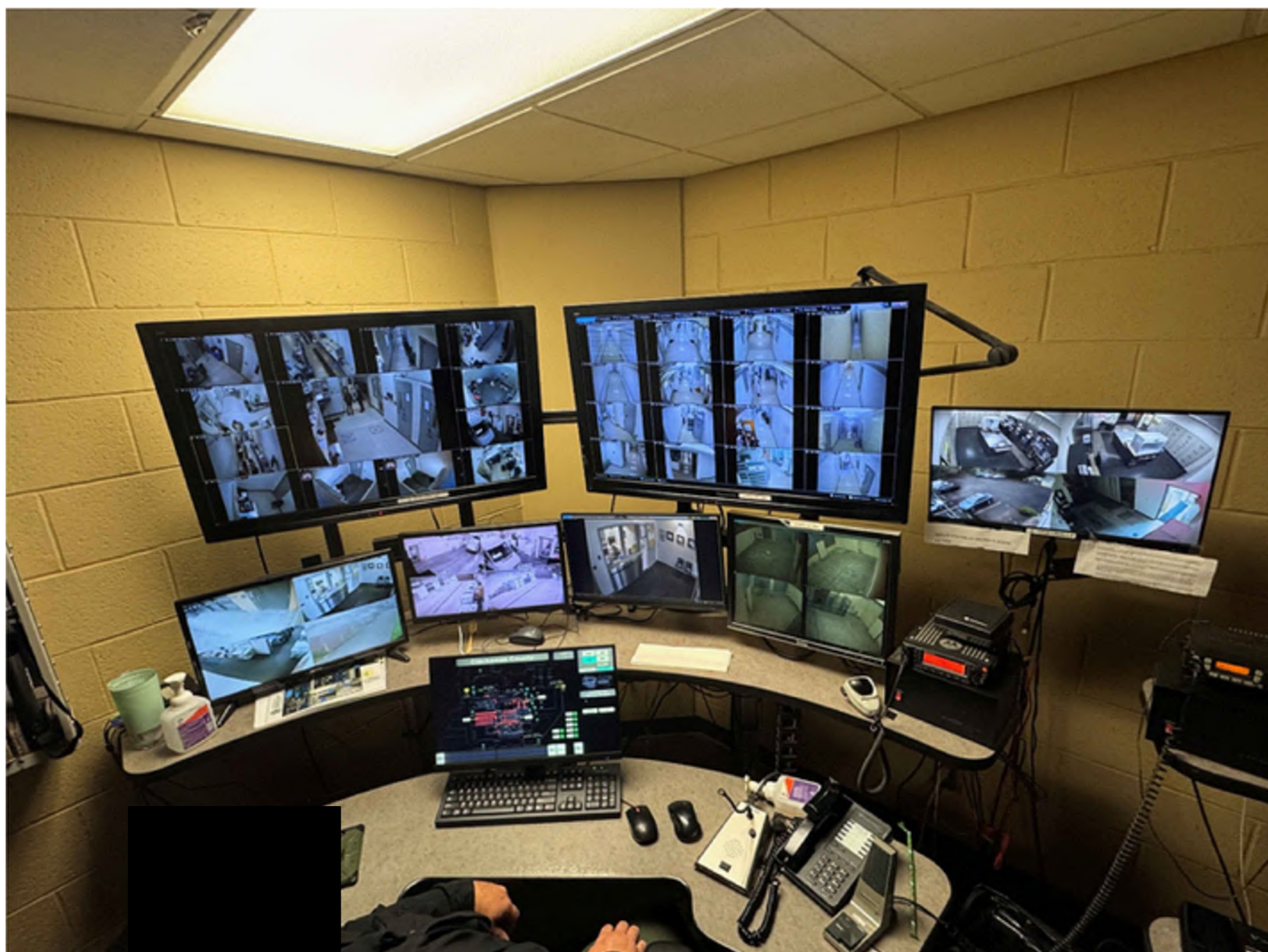


DETAIL KEYED NOTES

1. REPLACE EXISTING TOUCH SCREEN MONITORS WITH NEW 21\"/>

MASTER CONTROL ROOM 117 ELEVATION 2

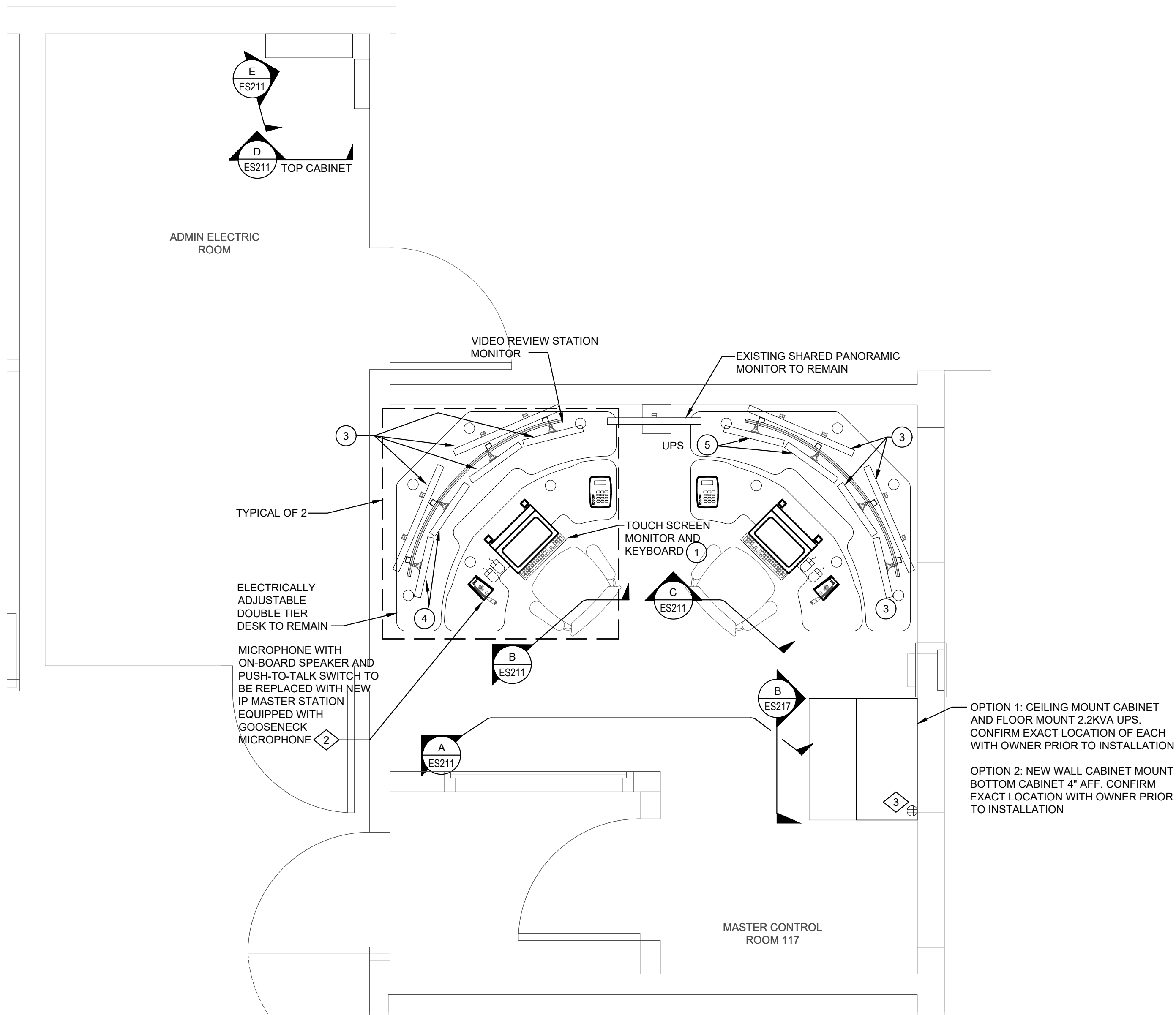
SCALE: 1/2"=1'-0"



OFFICER'S STATION - ELEVATION



OFFICER'S STATION - ELEVATION

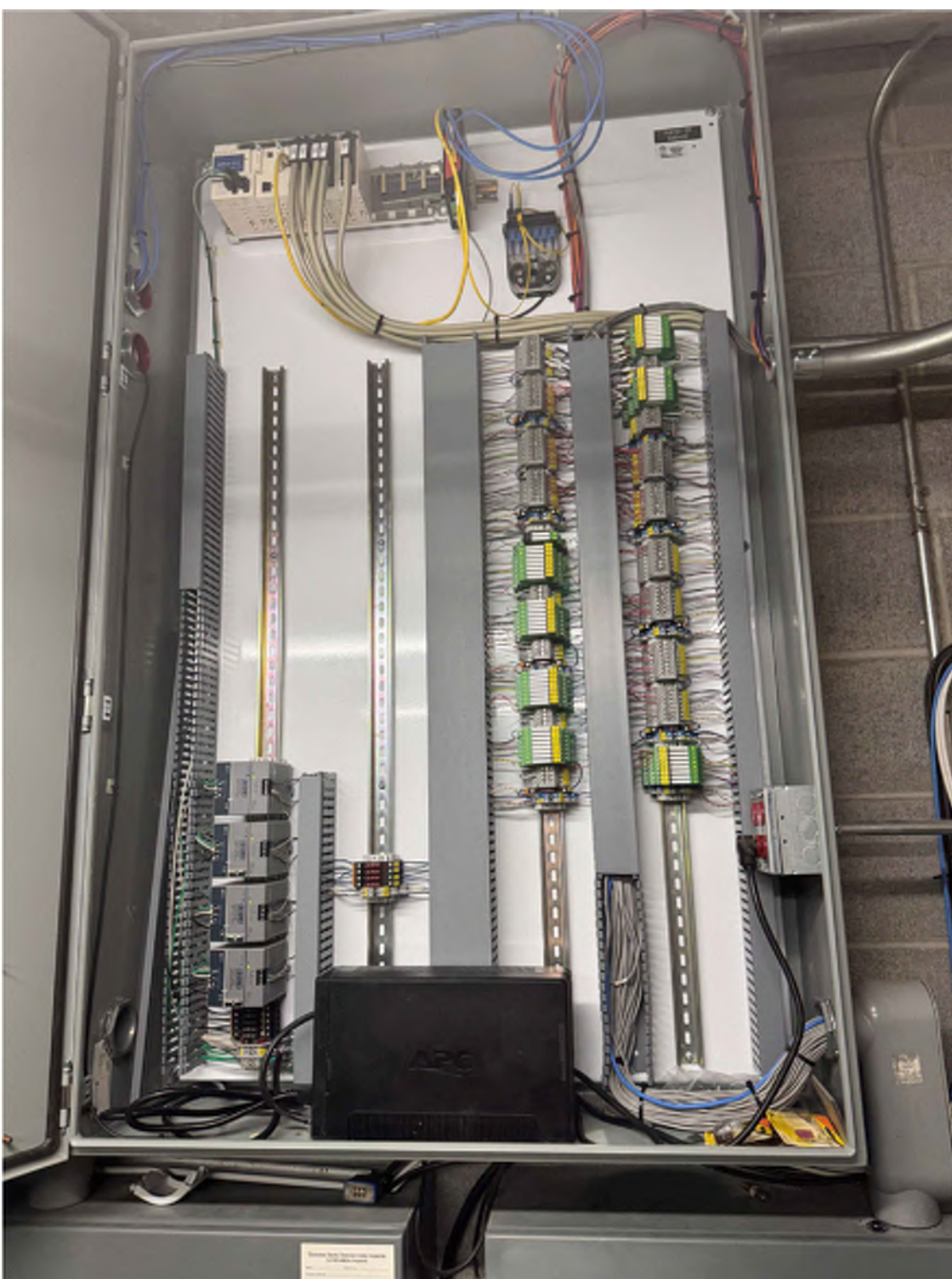


DETAIL KEYED NOTES

1. REPLACE EXISTING TOUCH SCREEN MONITORS WITH NEW 21\"/>

ENLARGED FLOOR PLAN - MASTER CONTROL 117 AND ADMIN ELECTRIC ROOMS 2

SCALE: 1/2"=1'-0"

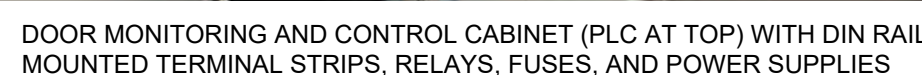
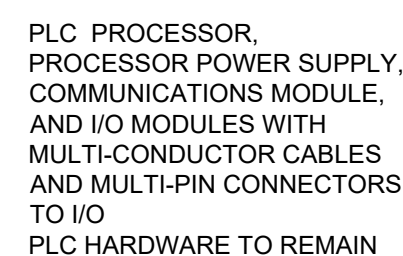


ELEVATION - PLC CABINET / PULL BOX (ADMIN)



ELEVATION





FLOOR RACK - ROW 1 FRONT ELEVATIONS
SCALE: 1"=1'-0"

B FLOOR RACK - ROW 2 FRONTELEVATIONS
SCALE: 1"=1'-0"



H FLOOR RACKS - ROW2 - REAR VIEW



MCR COMPUTER



KVM COMPUTER



MAIN COMPUTER



INTERCOM



CCTV SWITCH

SHEET NOTES

1. ALL WORK SHOWN IS EXISTING, UNO.



G FLOOR RACKS - ROW 1 - REAR VIEW



EMPTY RACK



RAID ARRAY



VIDEO SWITCHER

C FLOOR RACKS ELEVATIONS - ROW 1 - REAR VIEW



F FLOOR RACKS - ROW 2 - FRONT VIEW



CCTV SWITCH



INTERCOM



MAIN COMPUTER



KVM COMPUTER

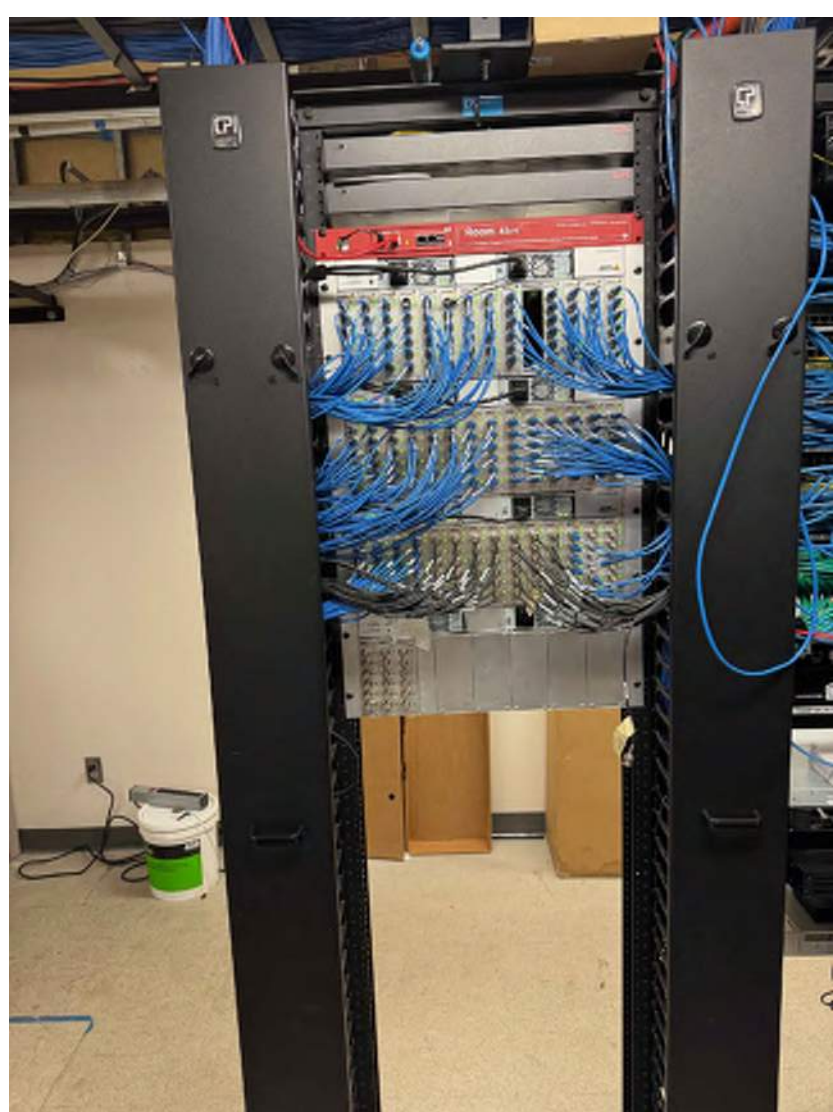


MCR COMPUTER

B FLOOR RACKS ELEVATIONS - ROW 2 - FRONT VIEW



E FLOOR RACKS - ROW 1 - FRONT VIEW



VIDEO SWITCHER



RAID ARRAY



EMPTY RACK

A FLOOR RACKS ELEVATIONS - ROW 1 - FRONT VIEW

SHEET NOTES

1. ALL WORK SHOWN IS EXISTING, UNO.



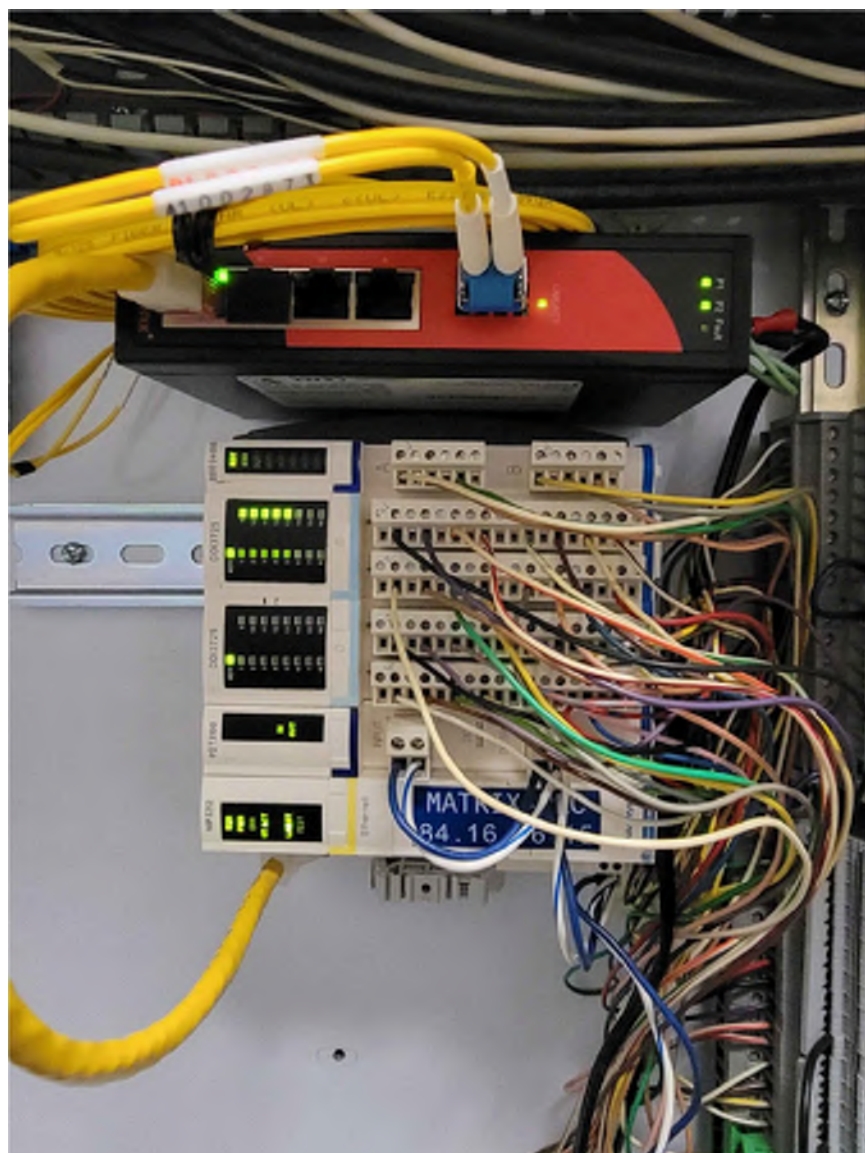
CONSULTANT:
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DRAWN BY: BV
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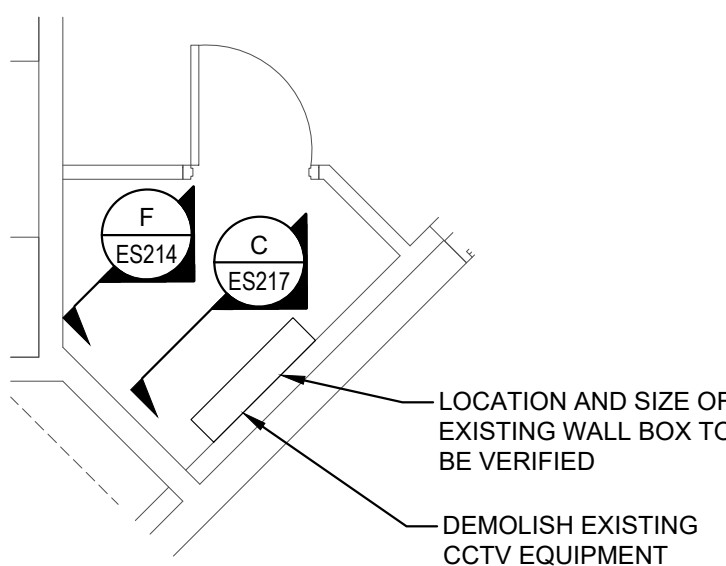
SHEET: **ES214**
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EXISTING PLCs, TERMINAL STRIPS, POWER
SUPPLIES AND FUSES TO BE RETAINED

MATRIX CLOSET ELEVATION

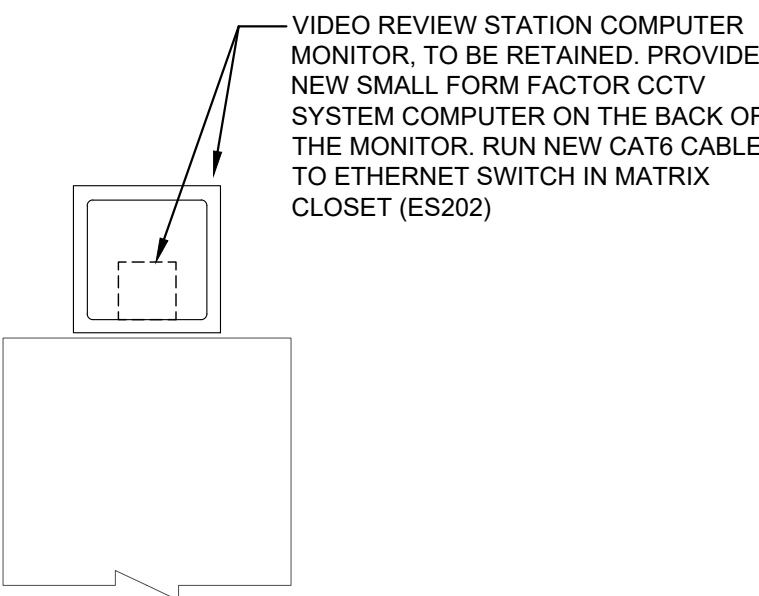
REF 1/ES202



**ENLARGED FLOOR
PLAN - MATRIX CLOSET**

SCALE: 1/4"=1'-0"

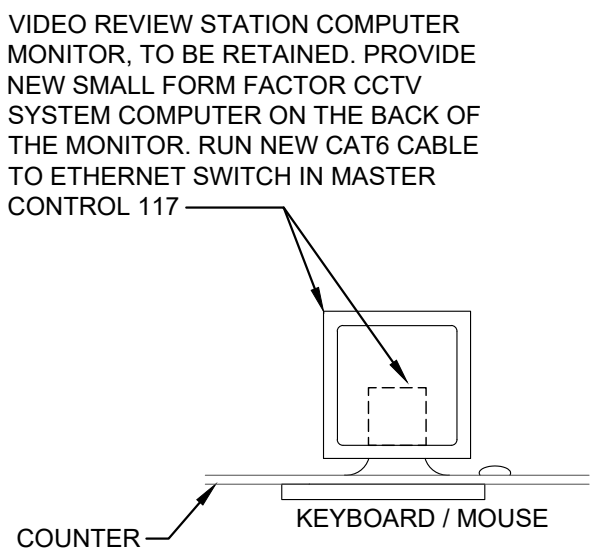
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**CORR 101 BOOKING (REF ES203) AND
ISO HALL DOOR 554 (REF ES202) - ELEVATION**

SCALE: 1/2"=1'-0"

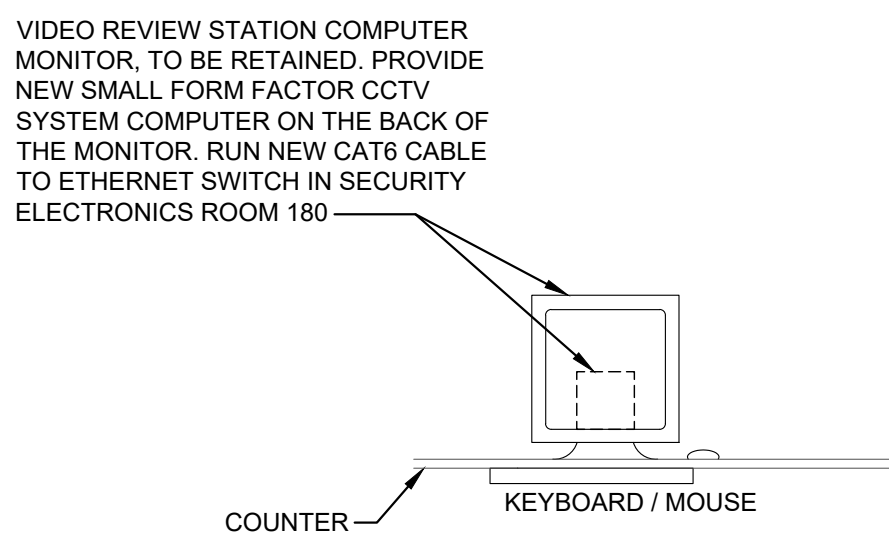
C



NURSE COUNTER ELEVATION - REF ES203

SCALE: 1/2"=1'-0"

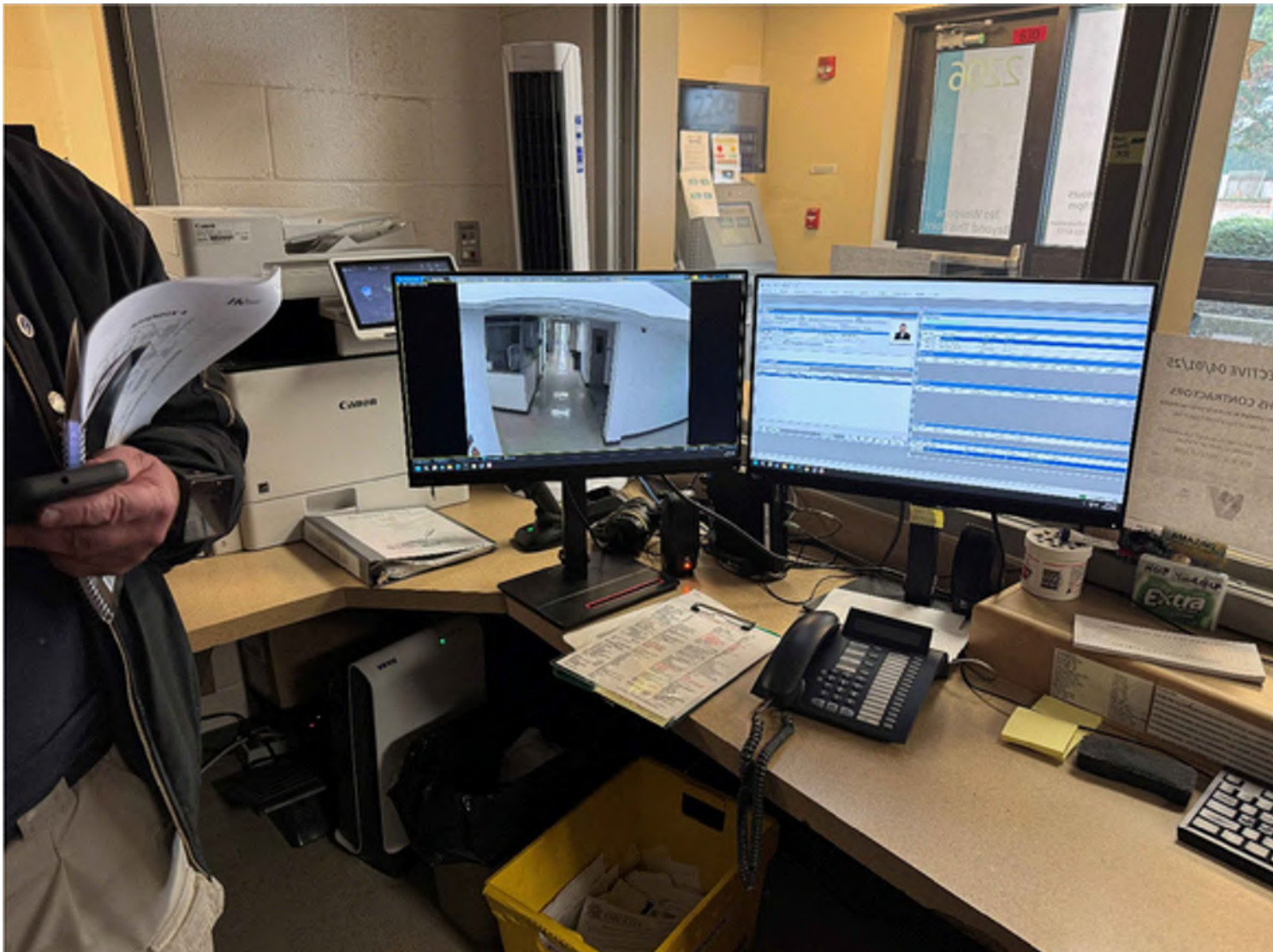
D



MAINTENANCE COUNTER ELEVATION - REF ES204

SCALE: 1/2"=1'-0"

E



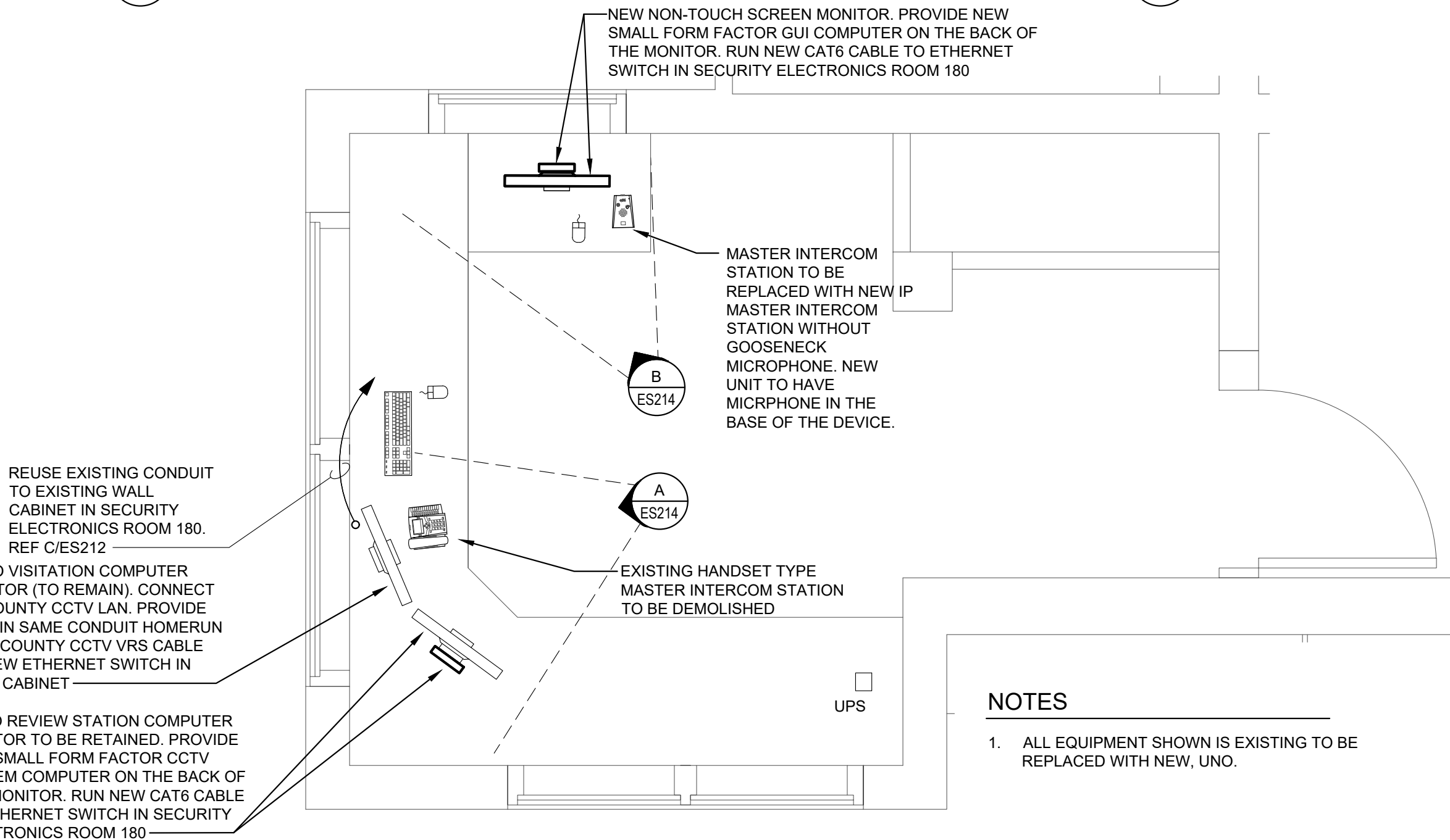
CSO #181 ELEVATION

A



CSO #181 ELEVATION

B



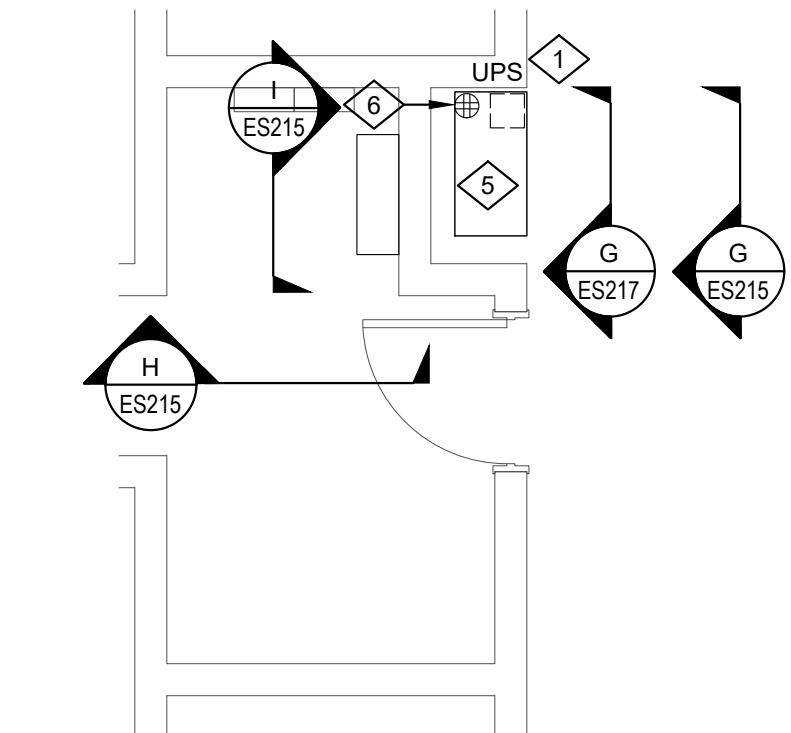
**ENLARGED FLOOR PLAN -
CSO #181 DEPUTY'S STATION**

SCALE: 1/2"=1'-0"

1



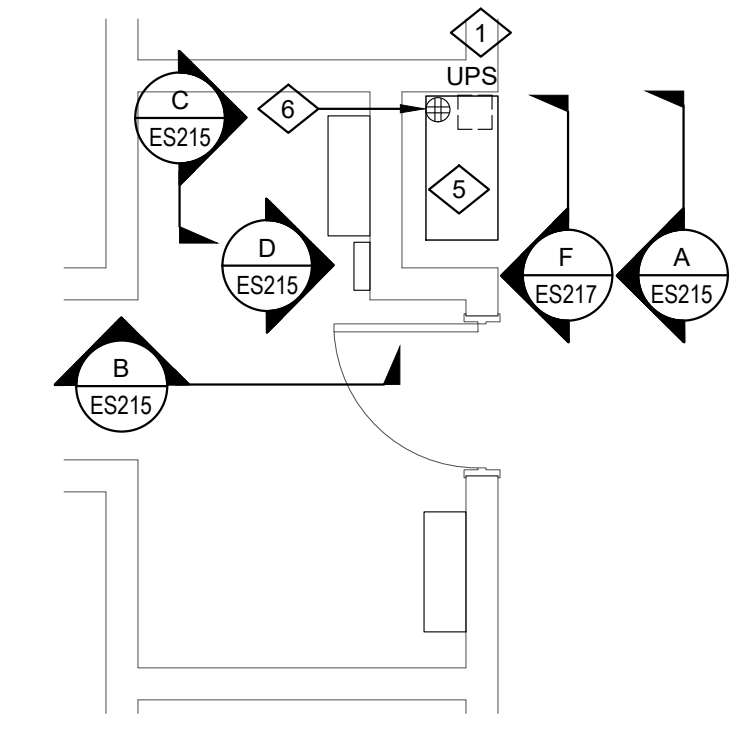
H ELEVATION - CATWALK



3 ENLARGED FLOOR PLAN - OFF STN #RSTU
SCALE: 1/4"=1'-0"



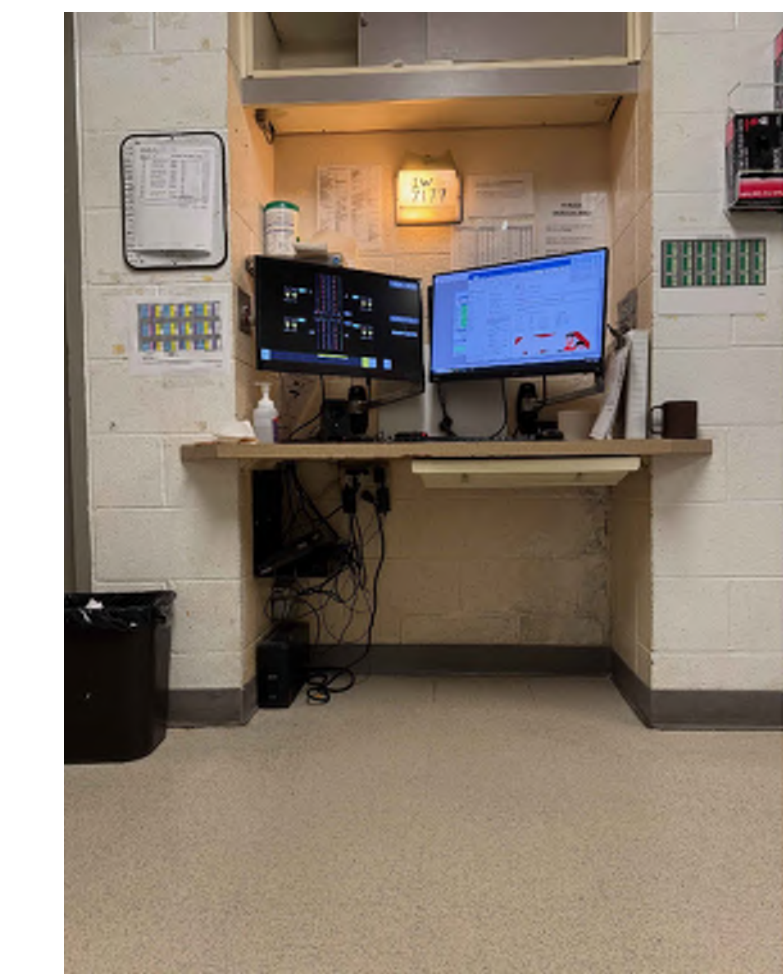
C ELEVATION - PLC CABINET / PULL BOX



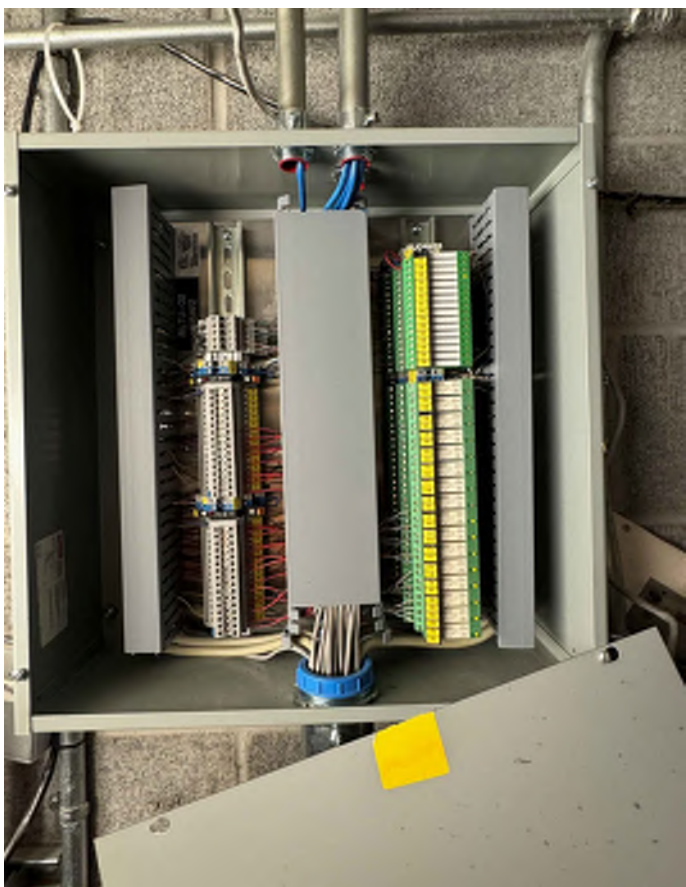
1 ENLARGED FLOOR PLAN - OFF STN #JKLM
SCALE: 1/4"=1'-0"



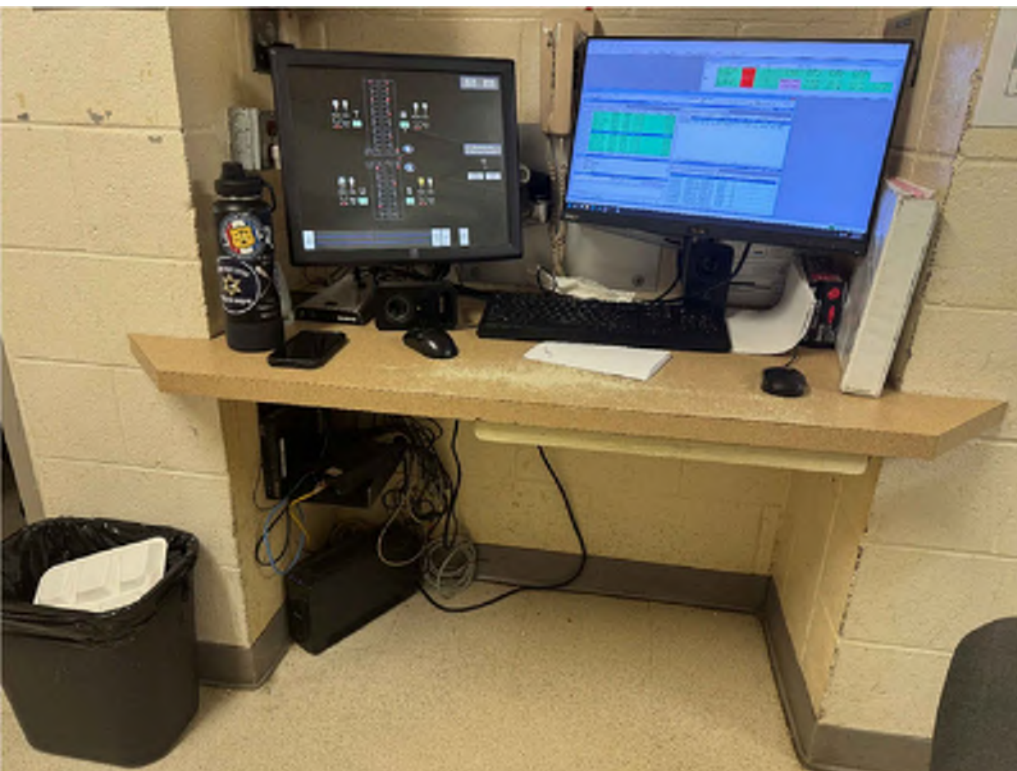
D ELEVATION



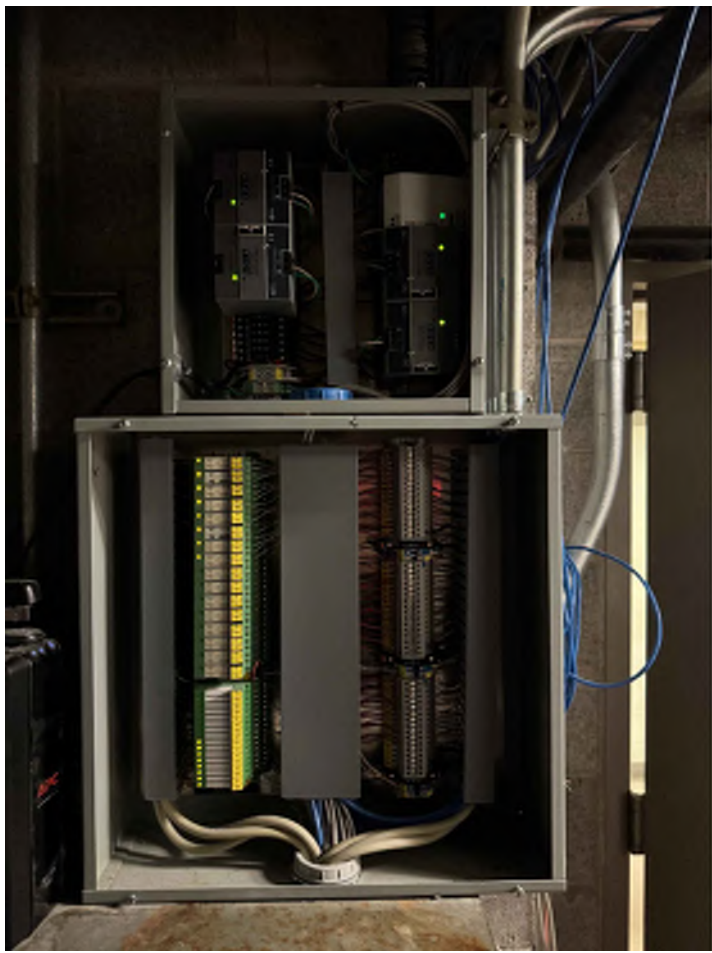
A ELEVATION - OFFICERS JKLM



I ELEVATION



G ELEVATION - OFFICERS RSTU



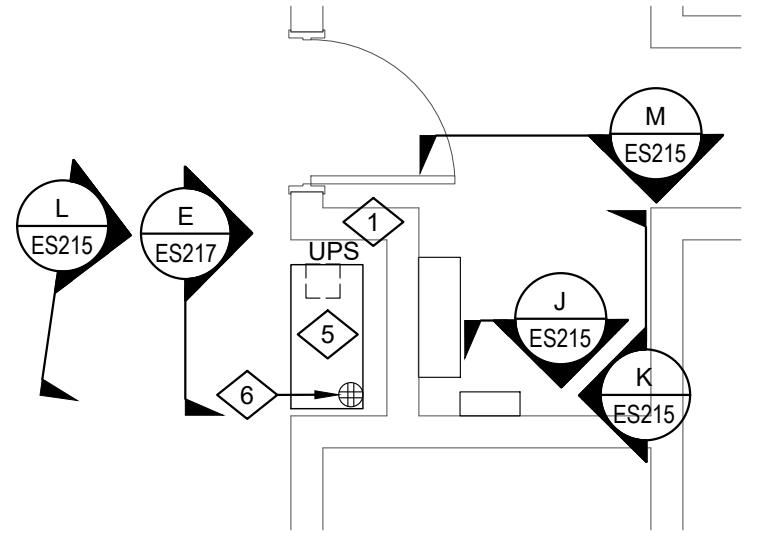
D ELEVATION



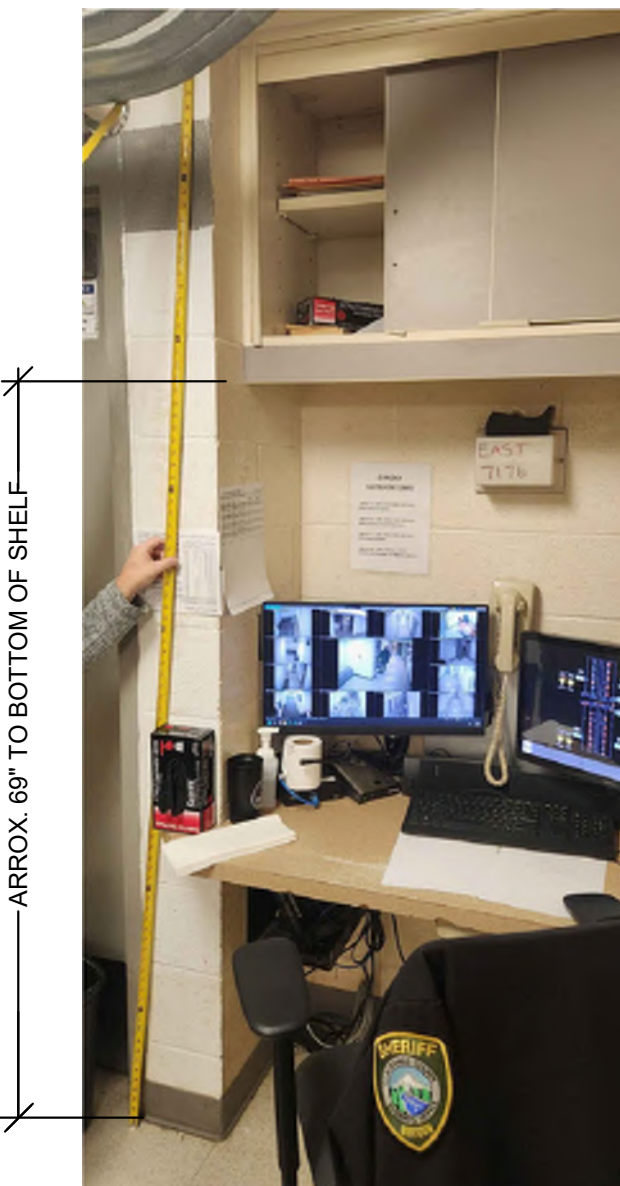
B ELEVATION - CATWALK



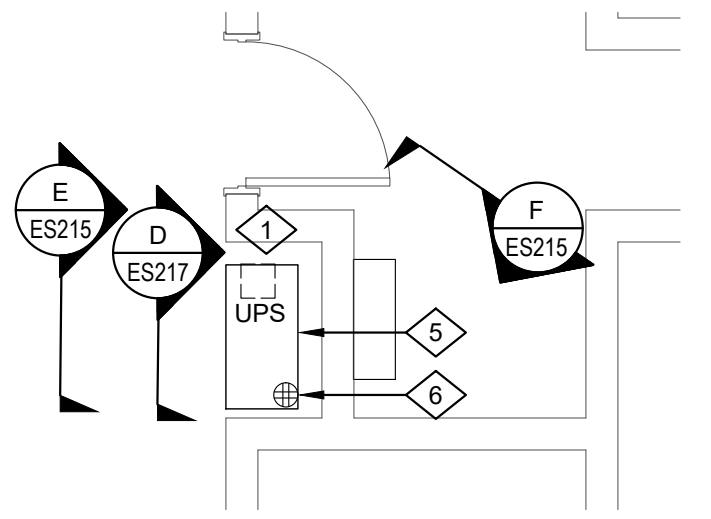
J ELEVATION - CATWALK



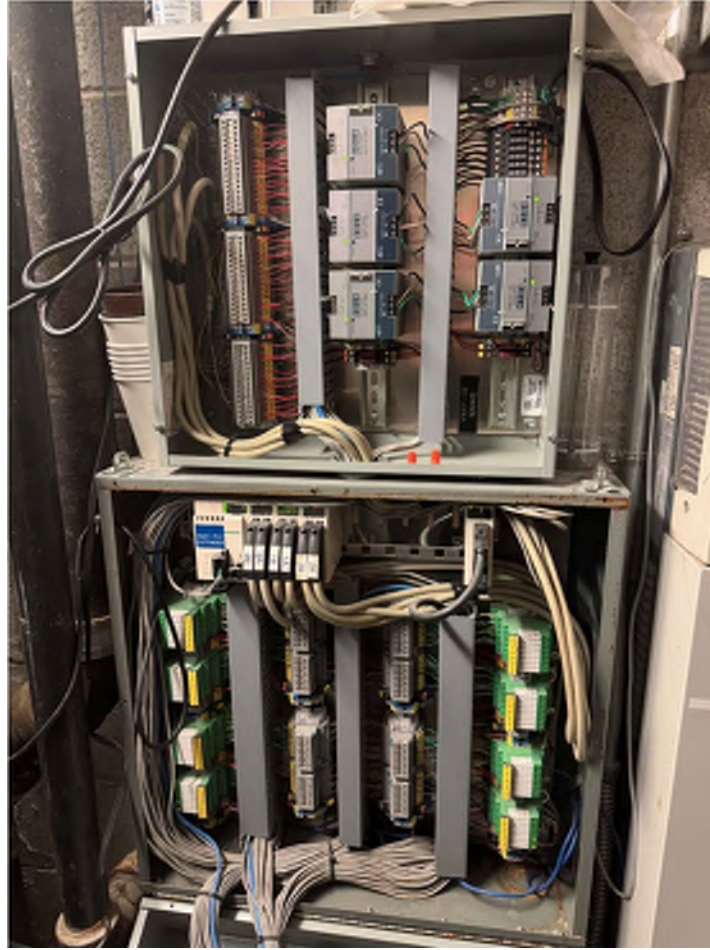
4 ENLARGED FLOOR PLAN - OFF STN #VWXY
SCALE: 1/4"=1'-0"



E ELEVATION



2 ENLARGED FLOOR PLAN - OFF STN #NOPQ
SCALE: 1/4"=1'-0"



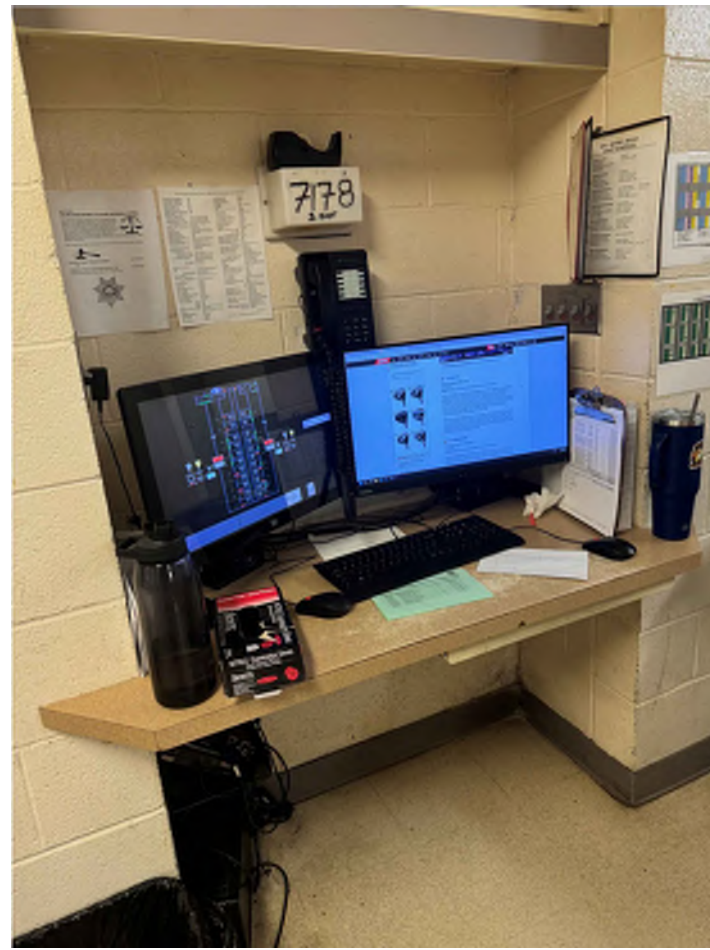
K ELEVATION



M ELEVATION



F ELEVATION - PLC CABINET / PULL BOX



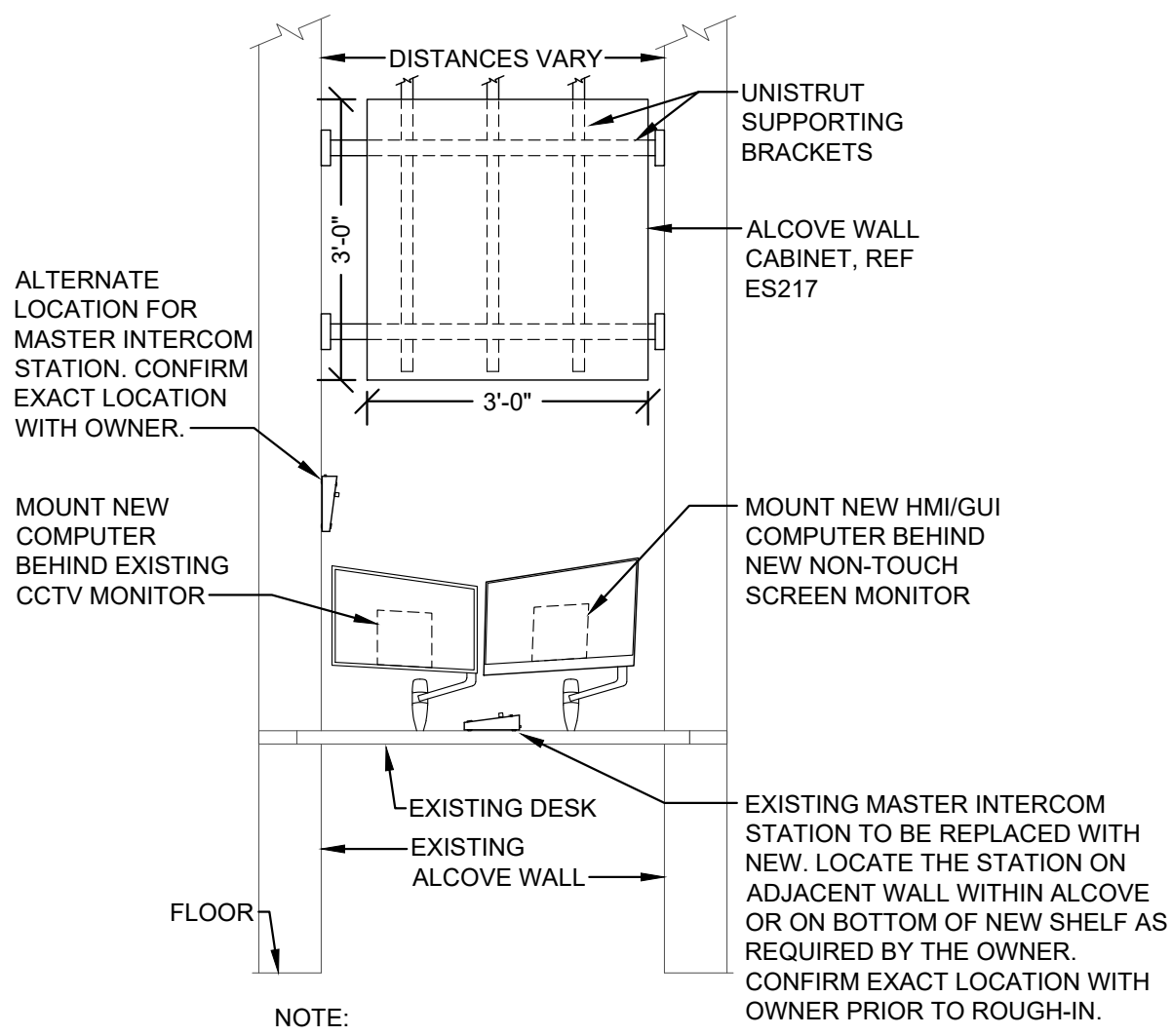
L ELEVATION - OFFICERS VWXY

SHEET NOTES

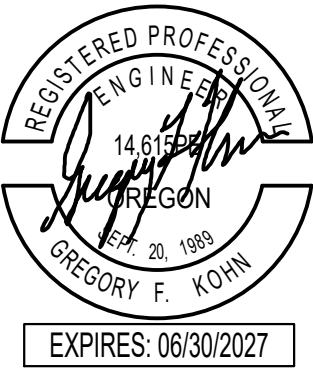
1. ALL WORK SHOWN IS EXISTING, UNO.
2. POWER SUPPLIES FOR DOOR MONITORING AND CONTROL TO BE RETAINED.
3. REPLACE ALL EXISTING CCTV COMPUTERS WITH NEW COMPUTERS, UNO. VIDEO MONITORS TO BE REUSED.

KEYED NOTES

1. UPS TO REMAIN.
2. TOUCH SCREEN MONITOR TO BE REPLACED WITH A NON-TOUCH SCREEN MONITOR, TOUCH SCREEN COMPUTER TO BE MOUNTED BEHIND NEW MONITOR.
3. REPLACE EXISTING MASTER INTERCOM STATIONS AT ALL REMOTE OFFICER'S STATIONS WITH NEW IP MASTER INTERCOM STATIONS (MICROPHONE TO BE ON BASE, NO GOOSENECK MIC). COORDINATE EXACT LOCATION AND MOUNTING REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN. DEMOLISH EXISTING CABLE AND PULL NEW CAT6 CABLE IN CONDUIT TO SECURITY NETWORK SWITCH IN NEW WALL CABINET. CABLE CAN BE ROUTED IN NEW CONDUIT NECESSARY FOR NEW CCTV COMPUTER.
4. EXISTING PLCs, TERMINAL STRIPS, POWER SUPPLIES AND FUSES TO BE RETAINED.
5. WALL CABINET 3' X 3' X 18". WALL MOUNT IN ALCOVE ABOVE REMOTE SECURITY STATION. REF: OIES215 & ES217. PROVIDE UNISTRUT BACKING TO CREATE MOUNTING BACKING TO ALLOW THE FRONT OF THE WALL CABINET TO BE FLUSH WITH THE FRONT OF THE ALCOVE.
6. ELECTRICAL OUTLET, BY DIV 26, SURFACE MOUNT IN WALL CABINET. REF: ELECTRICAL DRAWINGS.



0 WALL CABINET IN REMOTE OFFICERS' STATION ALCOVE
SCALE: 1/2"=1'-0"





CONSULTANT:
HK Electrical
Engineers
10512 SE French Rd. Vancouver, WA 98664
PH: (503) 319-3119 WWW.HKEENG.COM

SHEET NOTES

- ALL WORK SHOWN IS EXISTING, UNO.
- POWER SUPPLIES FOR DOOR MONITORING AND CONTROL TO BE RETAINED.
- REPLACE ALL EXISTING CCTV COMPUTERS WITH NEW COMPUTERS, UNO. VIDEO MONITORS TO BE REUSED.

KEYED NOTES

- UPS TO REMAIN.
- TOUCH SCREEN MONITOR TO BE REPLACED WITH A NON-TOUCH SCREEN MONITOR, TOUCH SCREEN COMPUTER TO BE MOUNTED BEHIND NEW MONITOR.
- REPLACE EXISTING MASTER INTERCOM STATIONS AT ALL REMOTE OFFICER'S STATIONS WITH NEW IP MASTER INTERCOM STATIONS (MICROPHONE TO BE ON BASE, NO GOOSENECK MIC). COORDINATE EXACT LOCATION AND MOUNTING REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN. DEMOLISH EXISTING CABLE AND PULL NEW CAT6 CABLE IN CONDUIT TO SECURITY NETWORK SWITCH IN NEW WALL CABINET. CABLE CAN BE ROUTED IN NEW CONDUIT NECESSARY FOR NEW CCTV COMPUTER.
- EXISTING PLCs, TERMINAL STRIPS, POWER SUPPLIES AND FUSES TO BE RETAINED.
- WALL CABINET, WALL MOUNT IN ALCOVE ABOVE REMOTE SECURITY STATION, REF D & E/ES216. PROVIDE UNISTRUT BACKING TO CREATE MOUNTING BACKING TO ALLOW THE FRONT OF THE WALL CABINET TO BE FLUSH WITH THE FRONT OF THE ALCOVE.
- ELECTRICAL OUTLET, BY DIV 26, SURFACE MOUNT ADJACENT TO FLOOR MOUNTED UPS +18" AFF. VERIFY LOCATION WITH OWNER.

PROJECT NUMBER:

**CLACKAMAS
COUNTY JAIL
ELECTRONICS
UPDATE
BID SET**

2206 S. Kaen Road
Oregon City, OR 97045

SHEET TITLE:

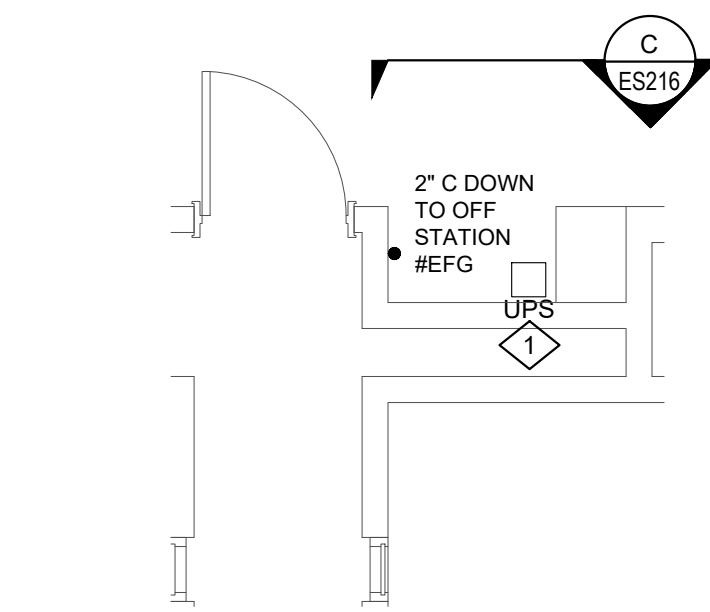
**ENLARGED PLANS AND
ELEVATIONS**

DRAWN BY: BW
DATE ISSUED: 03.20.2026

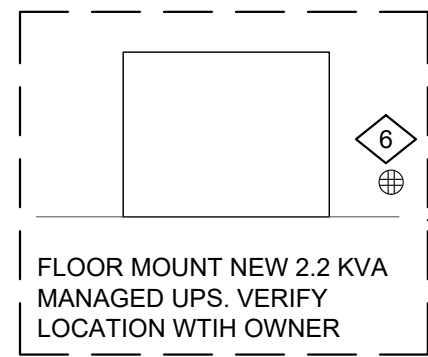
BID SET
03.20.2026

SHEET:

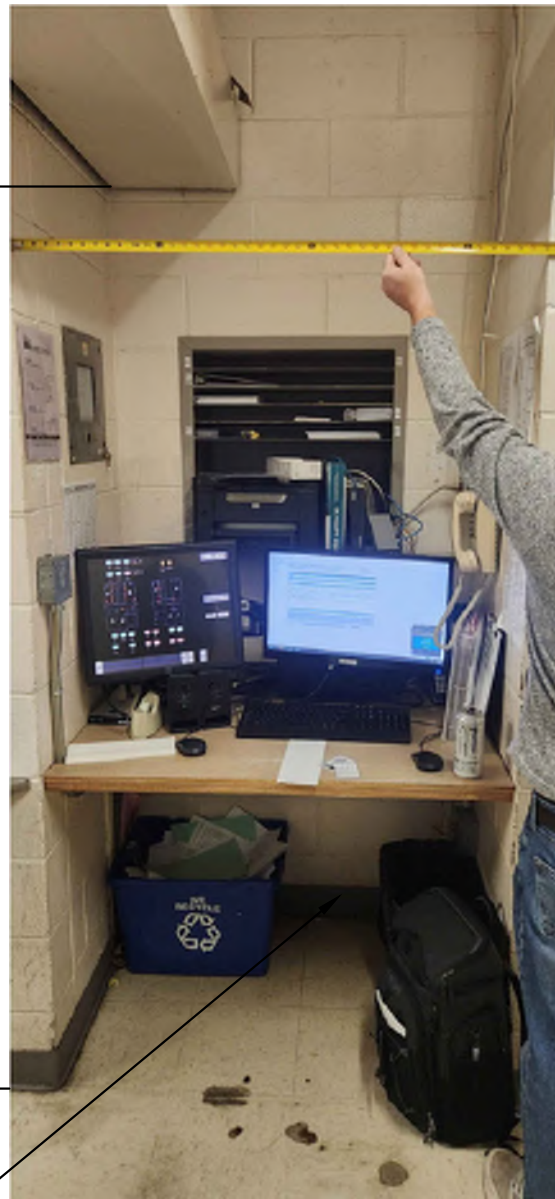
ES216
LRS Architects, Inc. ©



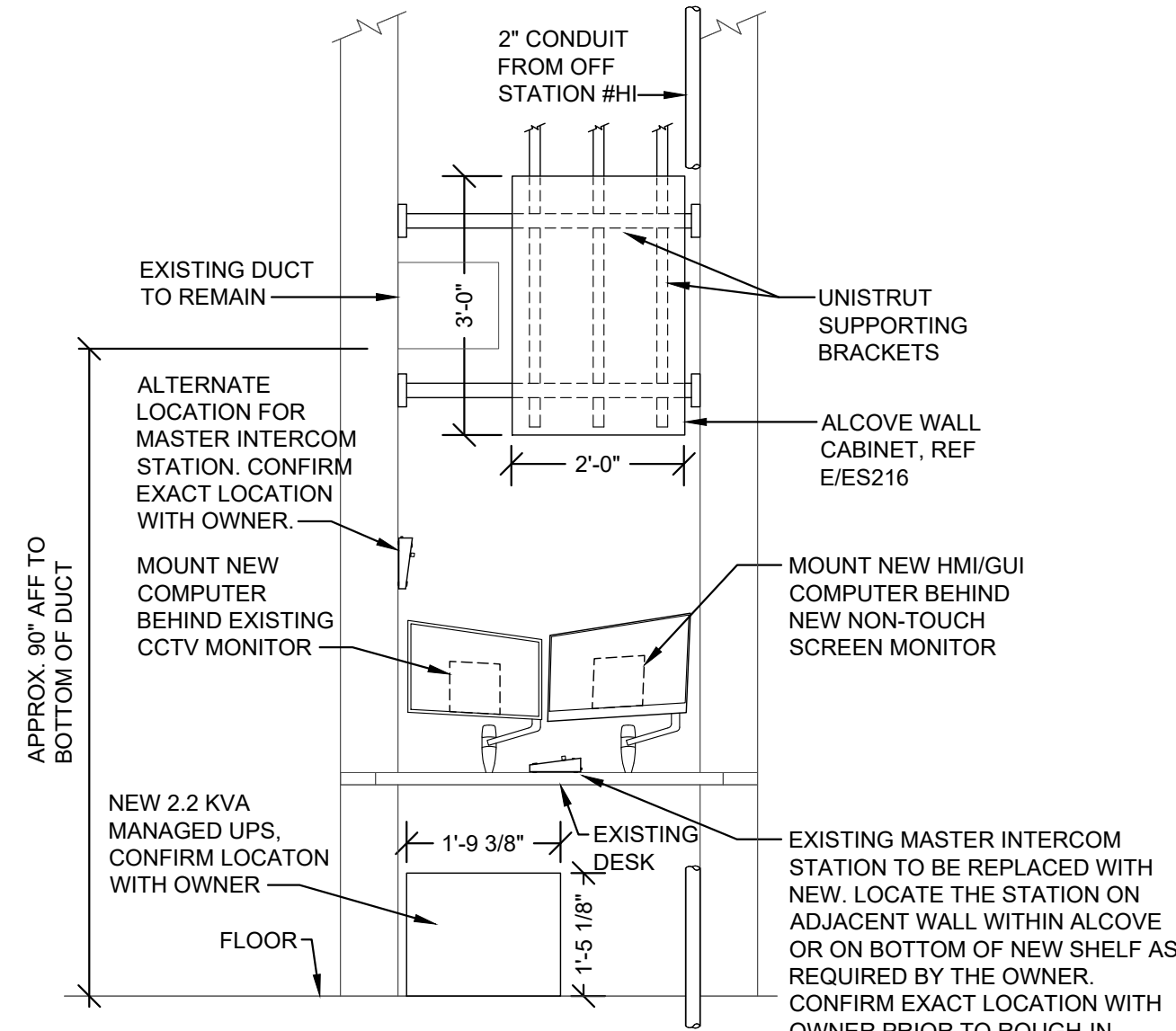
2 ENLARGED FLOOR
PLAN - OFF STN #HI
SCALE: 1/4"=1'-0"



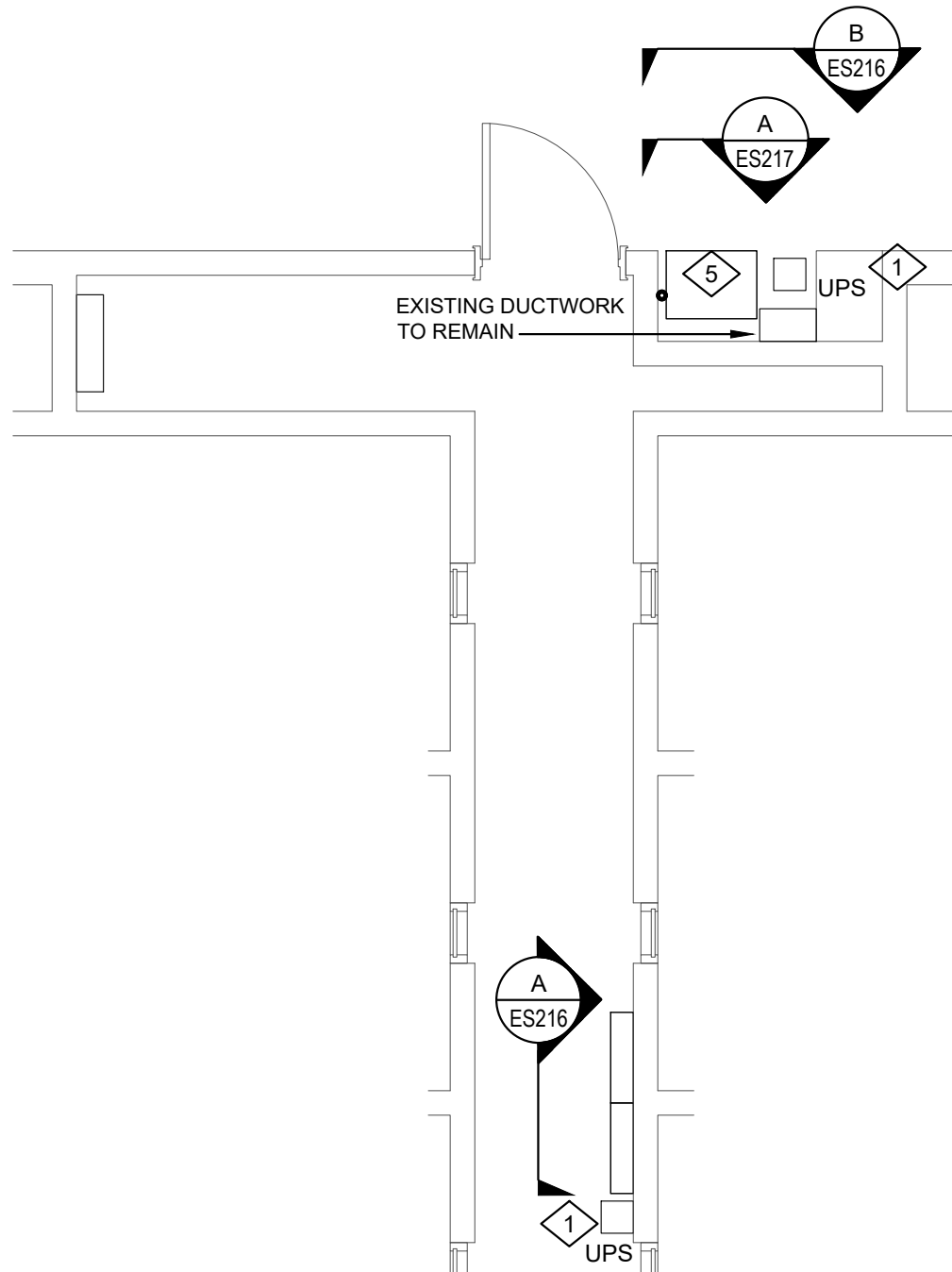
B ELEVATION - OFFICERS EFG



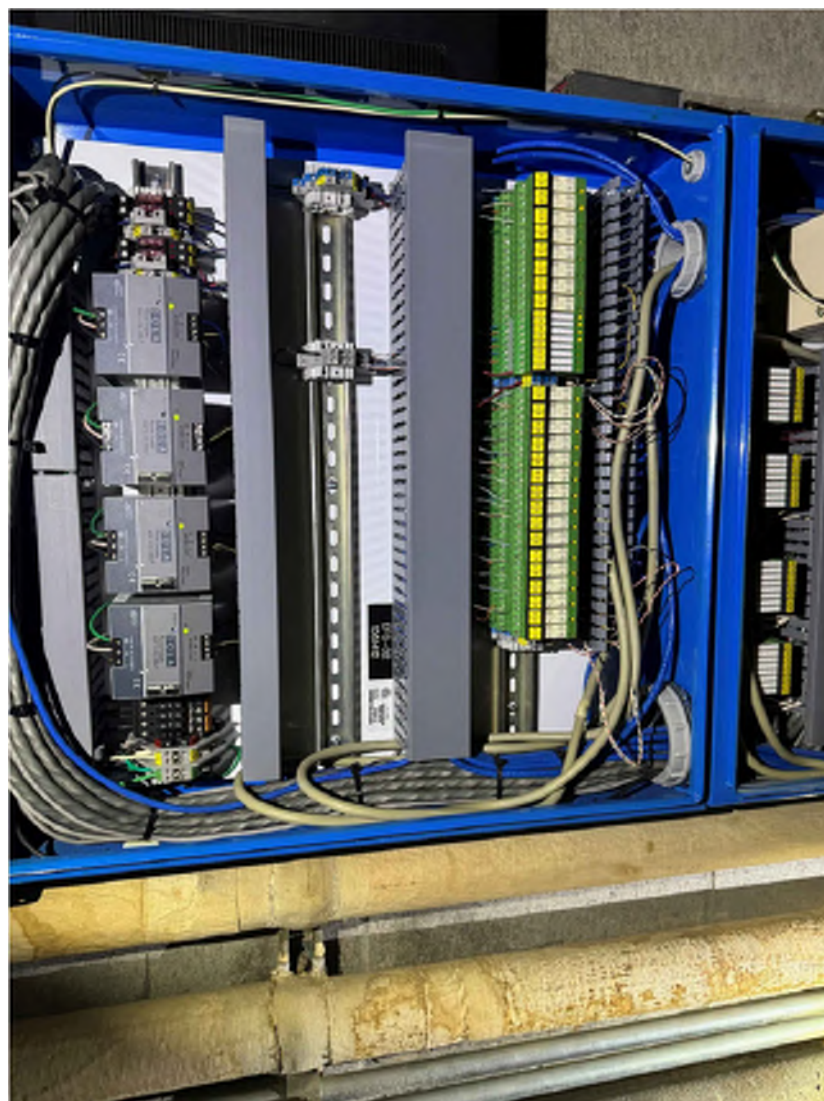
C ELEVATION - OFFICERS HI



D WALL CABINET IN REMOTE
OFFICERS' STATION #EFG ALCOVE
SCALE: 1/2"=1'-0"



1 ENLARGED FLOOR PLAN - OFF STN #EFG
SCALE: 1/4"=1'-0"

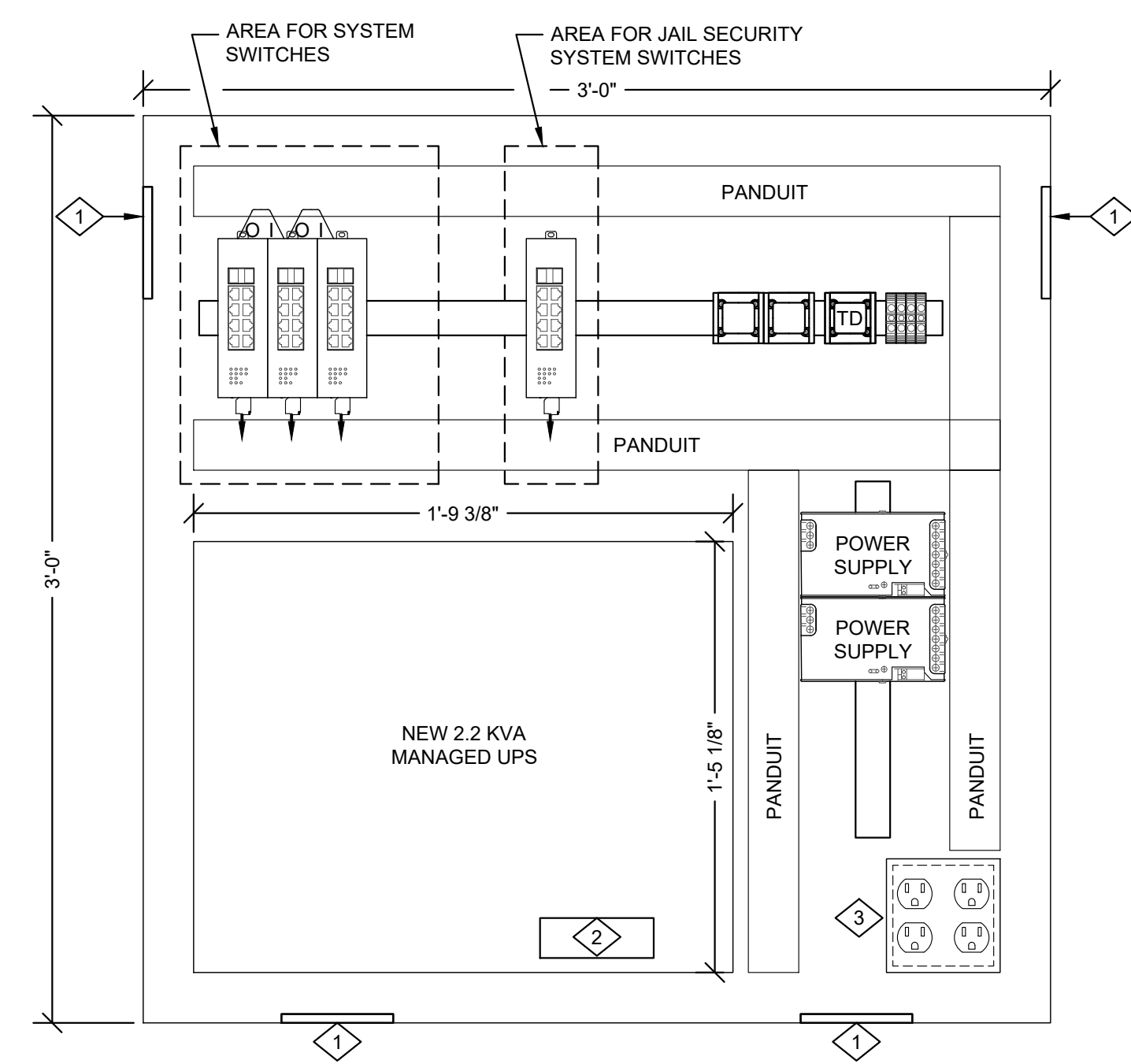


A ELEVATION - CATWALK

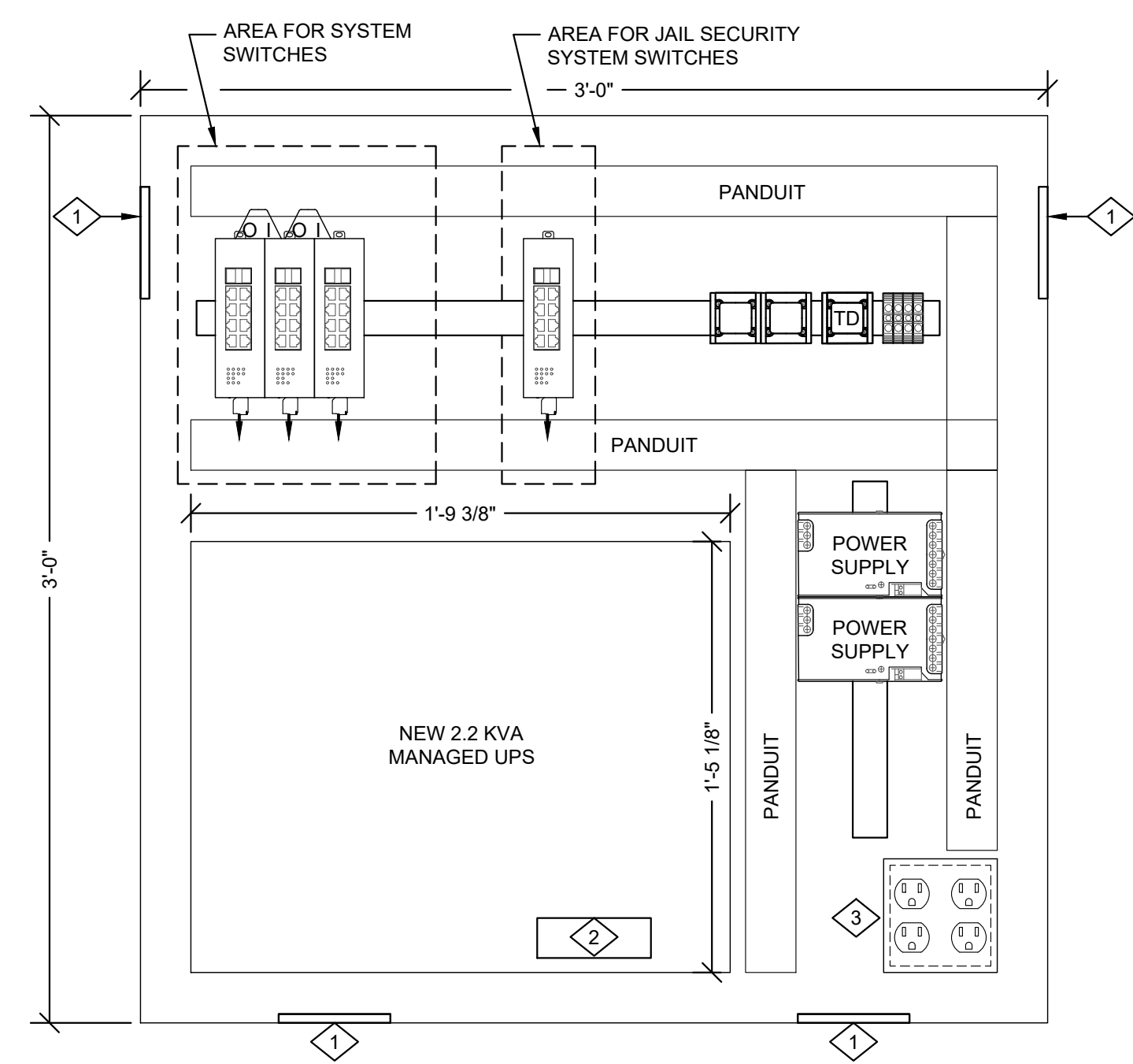


TERMINAL CABINETS TO BE RETAINED

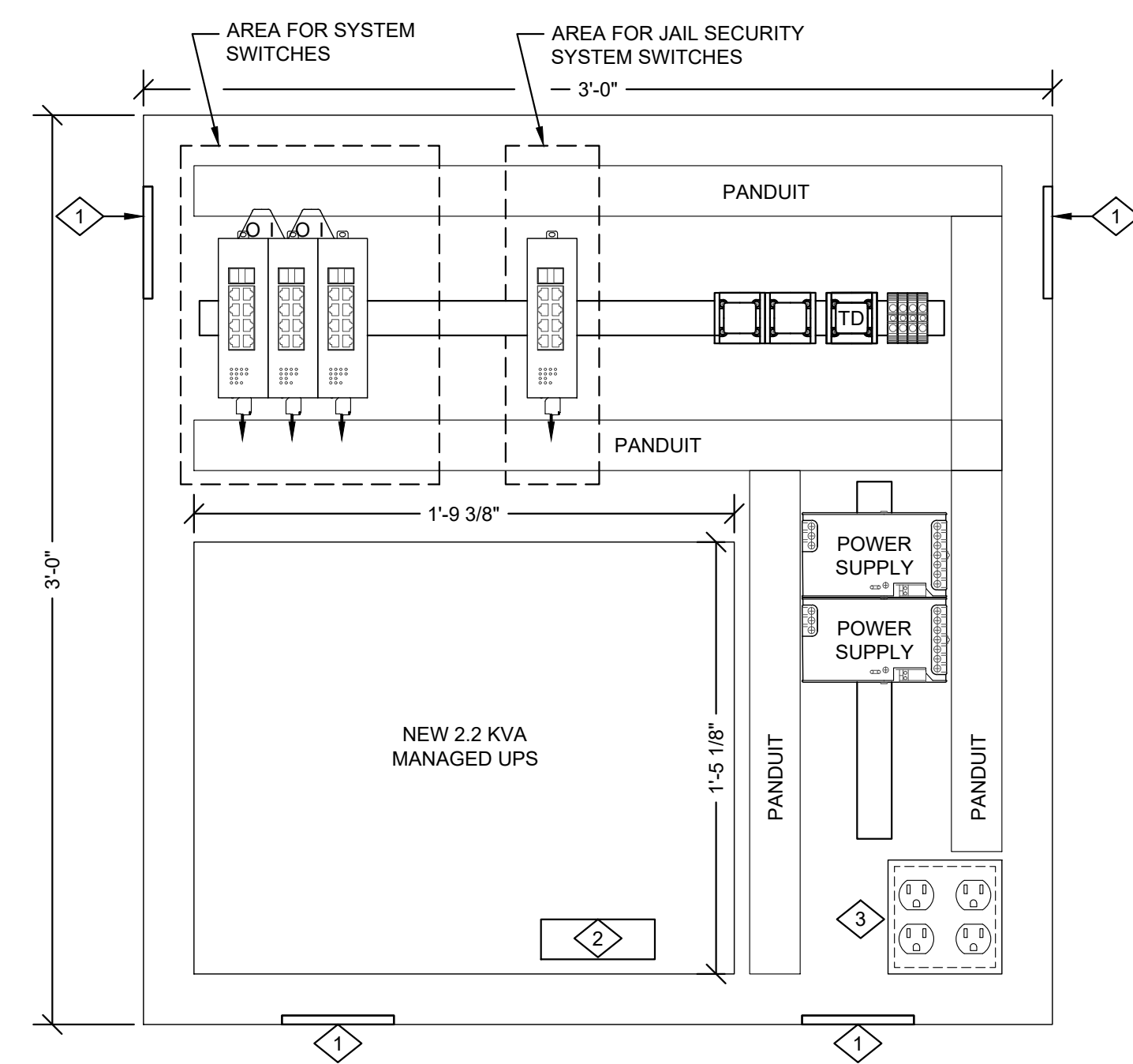
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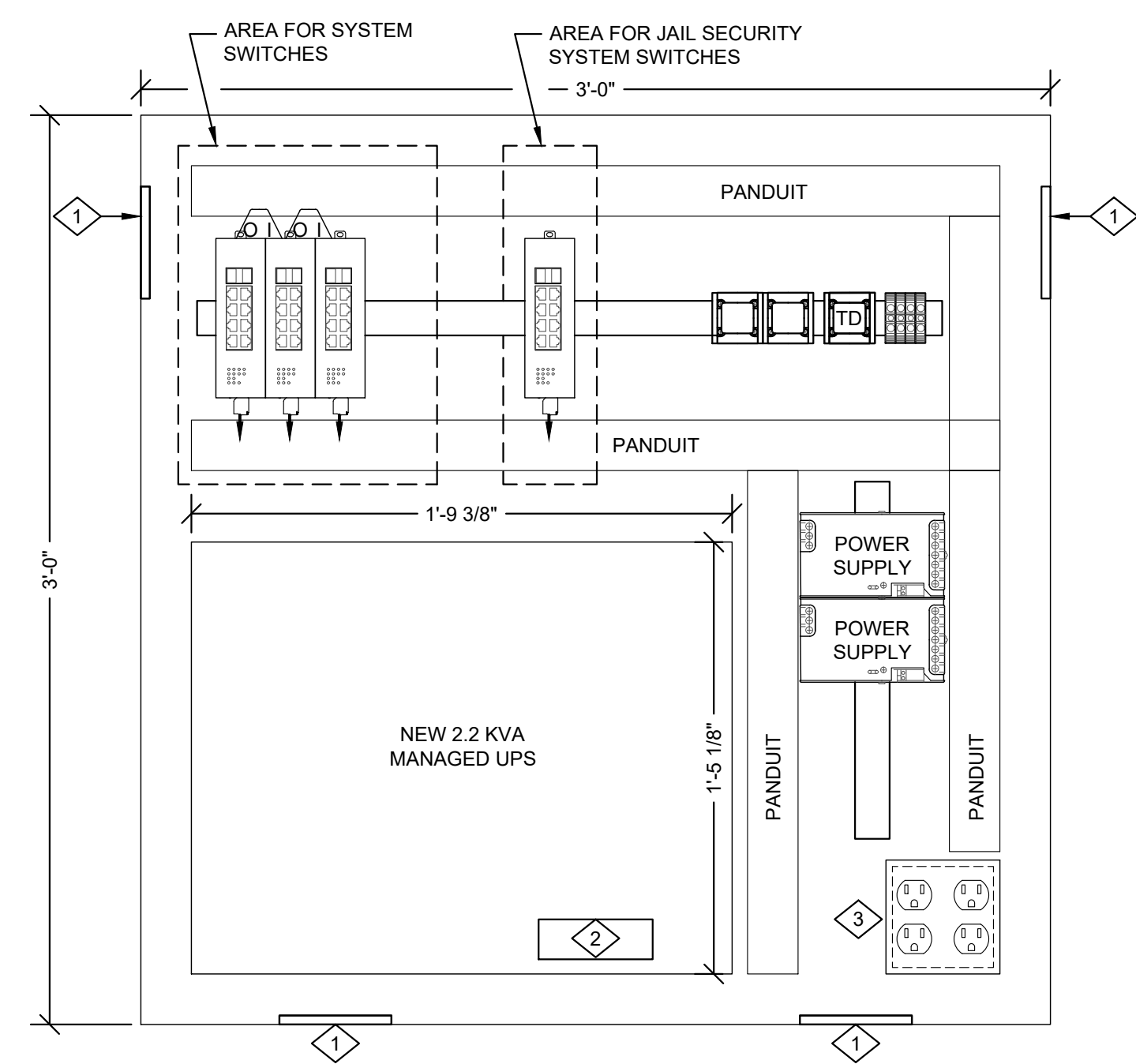
F NEW WALL CABINET - OFFICERS STATION #JKLM (1 WEST)
SCALE: 1"=6"



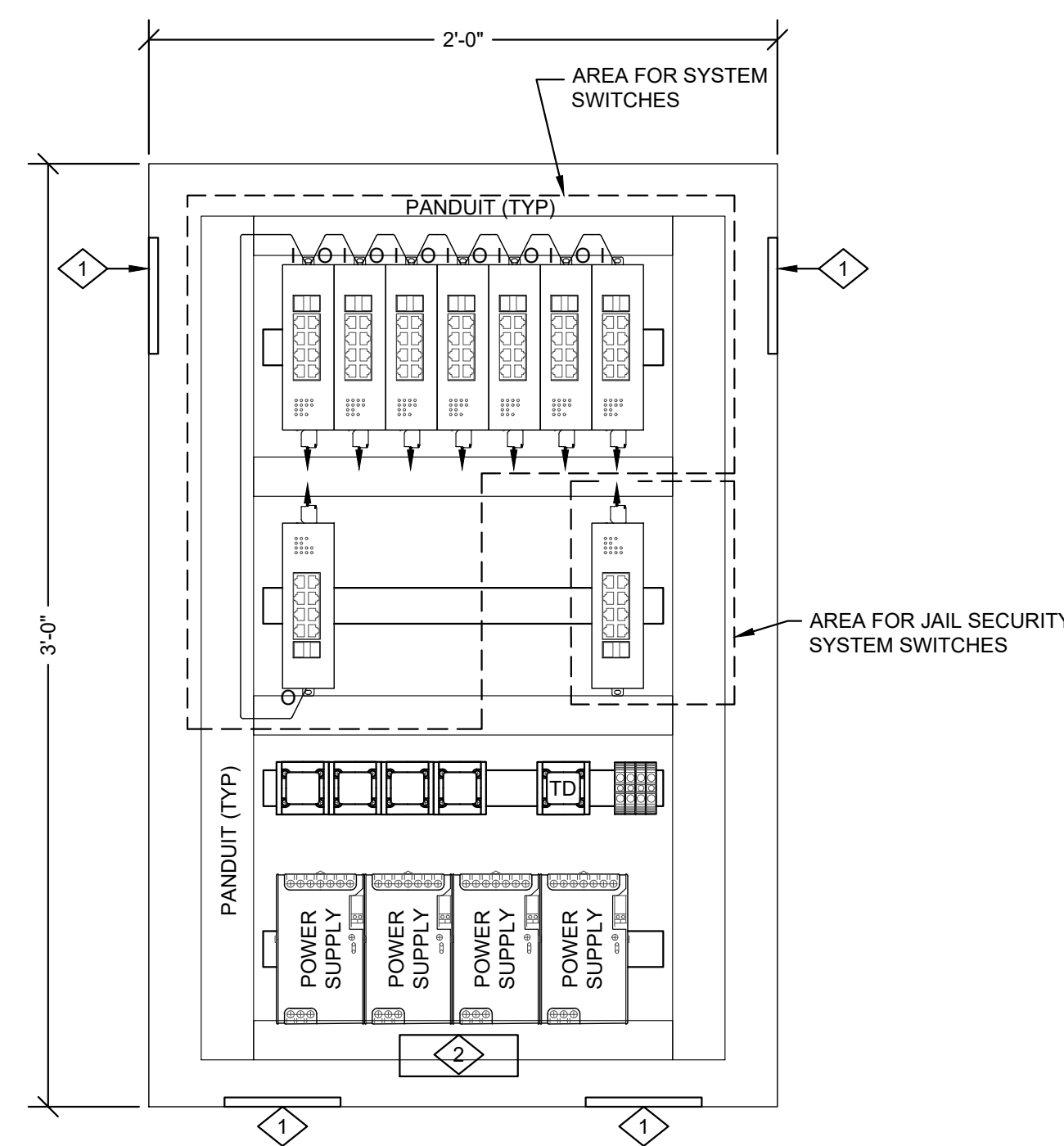
G NEW WALL CABINET - OFFICERS STATION #RSTU (2 WEST)
SCALE: 1"=6"



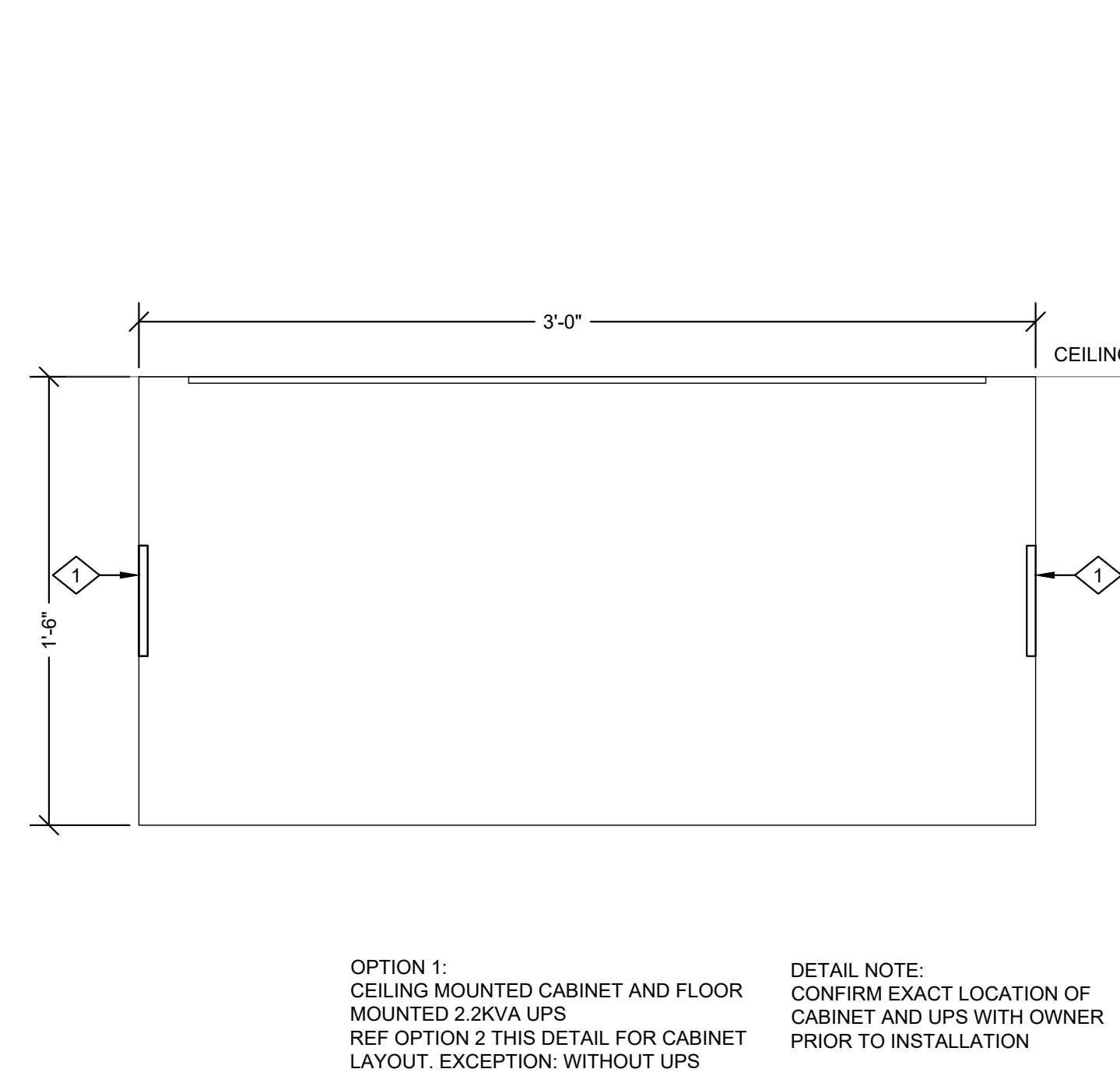
D NEW WALL CABINET - OFFICERS STATION #NOPQ (1 EAST)
SCALE: 1"=6"



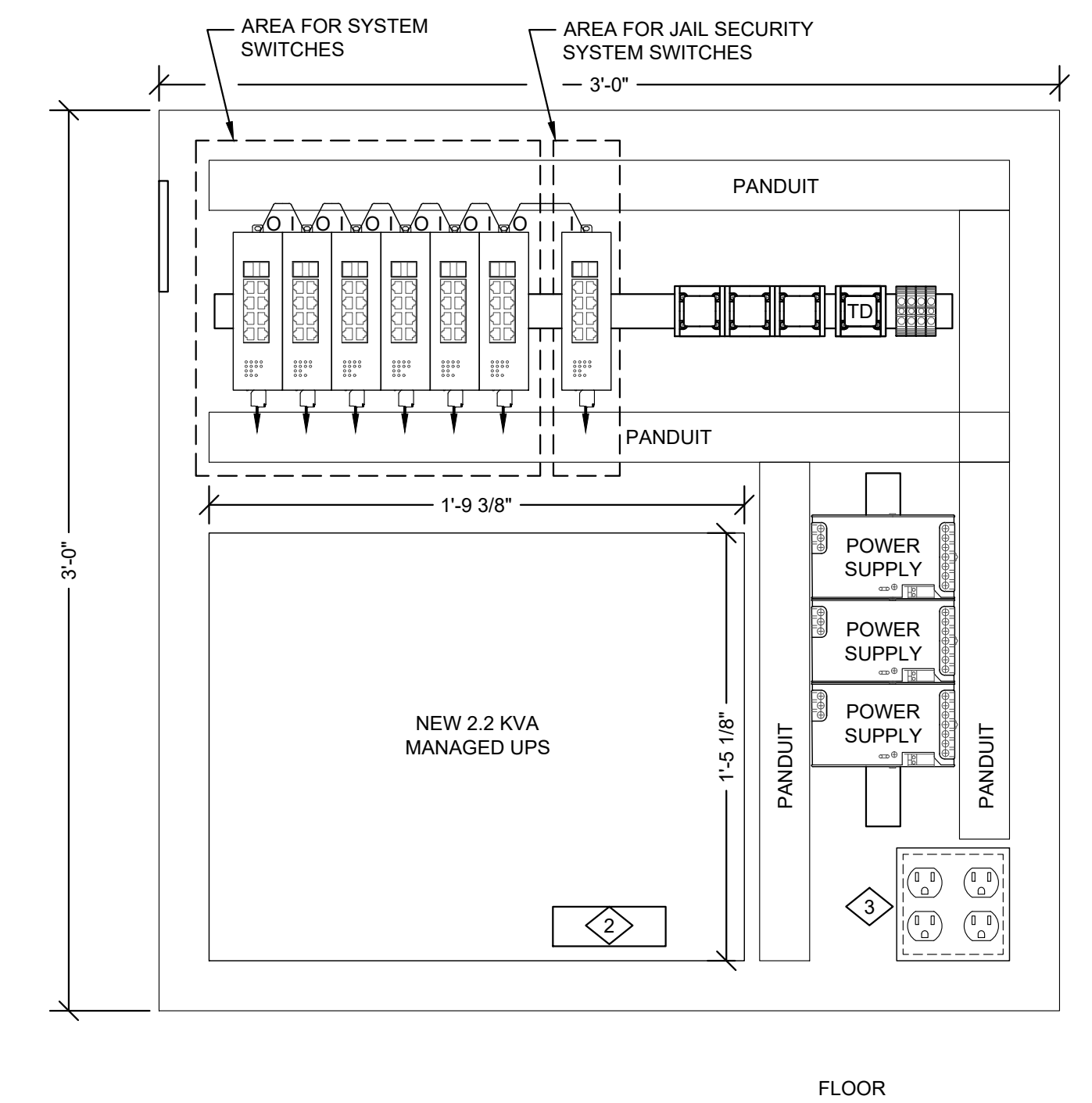
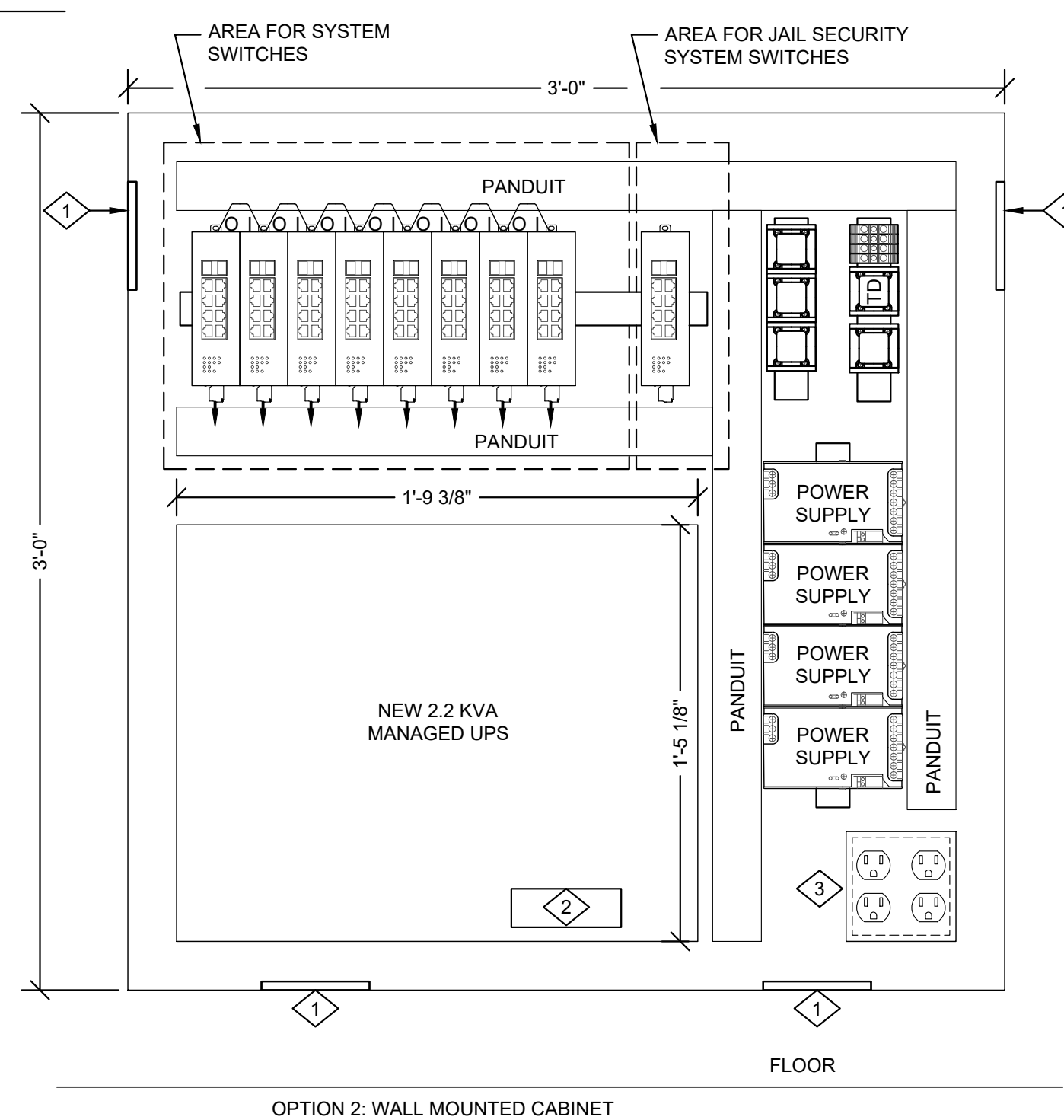
E NEW WALL CABINET - OFFICERS STATION #VWXY (2 EAST)
SCALE: 1"=6"



A NEW WALL CABINET - OFFICERS STATION LOWER #EFG
SCALE: 1"=6"



B NEW WALL CABINET - MASTER CONTROL ROOM 117
SCALE: 1"=6"



C EXISTING WALL CABINET - MATRIX CLOSET
SCALE: 1"=6"

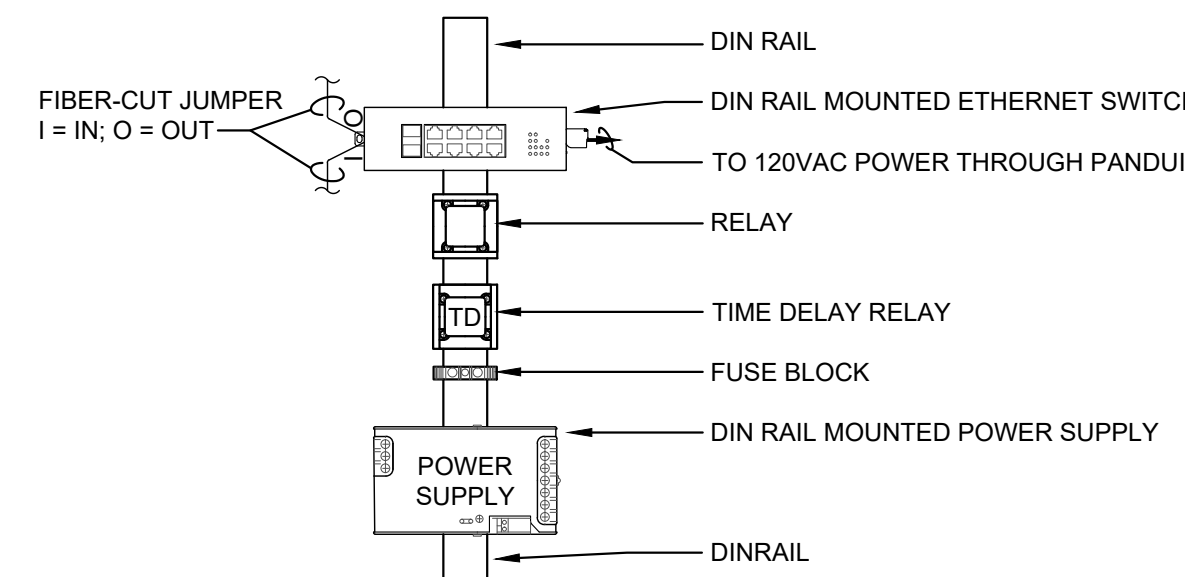
SHEET NOTES

1. PROVIDE SWITCHES AND POWER SUPPLIES IN QUANTITIES AS NECESSARY TO SUPPORT POE+ POWER FOR ALL CAMERAS TO BE CONNECTED TO THE SPECIFIC WALL CABINET MOUNTED ETHERNET SWITCHES. PROVIDE REDUNDANT POWER SUPPLIES. MAINTAIN SEPARATION BETWEEN COUNTY CCTV SYSTEM AND JAIL SECURITY SYSTEM.

KEYED NOTES

- 1 PROVIDE FILTERED AIR VENTS (FOUR TOTAL) FOR CONVECTIVE COOLING.
- 2 PROVIDE AN ALARM RESET SWITCH WITH ON-BOARD ALARM LED AND PHENOLIC LABEL.
- 3 ELECTRICAL OUTLET, BY DIV 26, SURFACE MOUNTED IN WALL CABINET, REF ELECTRICAL DRAWINGS.

LEGEND



CONSULTANT:
HK Electrical Engineers
10512 SE French Rd. Vancouver, WA 98664
PH: (503) 319-3119 WWW.HKENG.COM

PROJECT NUMBER:
CLACKAMAS COUNTY JAIL ELECTRONICS UPDATE BID SET
2206 S. Kaen Road
Oregon City, OR 97045

SHEET TITLE:
WALL BOX ELEVATIONS

DRAWN BY: BV
DATE ISSUED: 03.20.2026
BID SET
03.20.2026

SHEET:
ES217
LRS Architects, Inc. ©

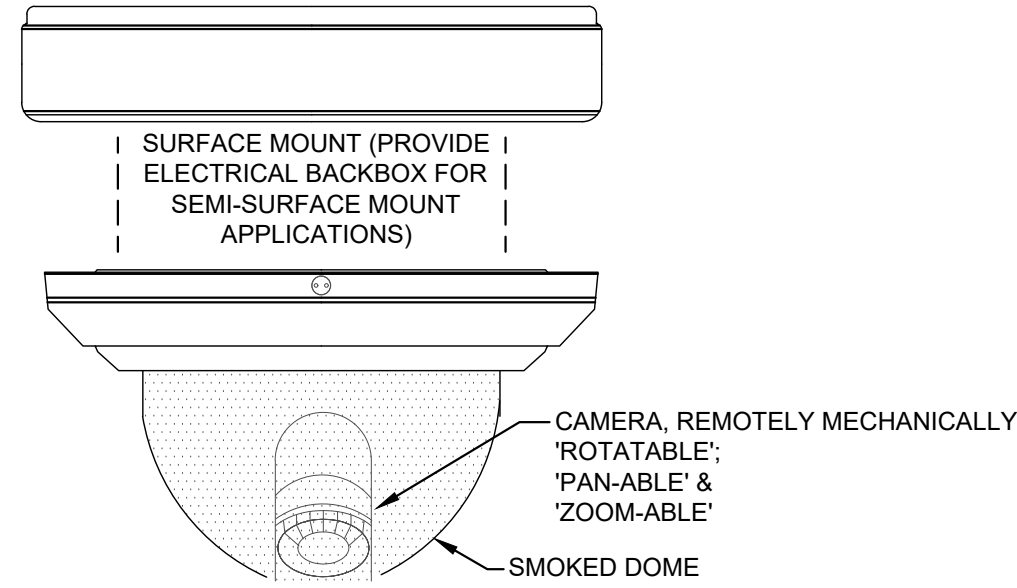


SHEET NOTES

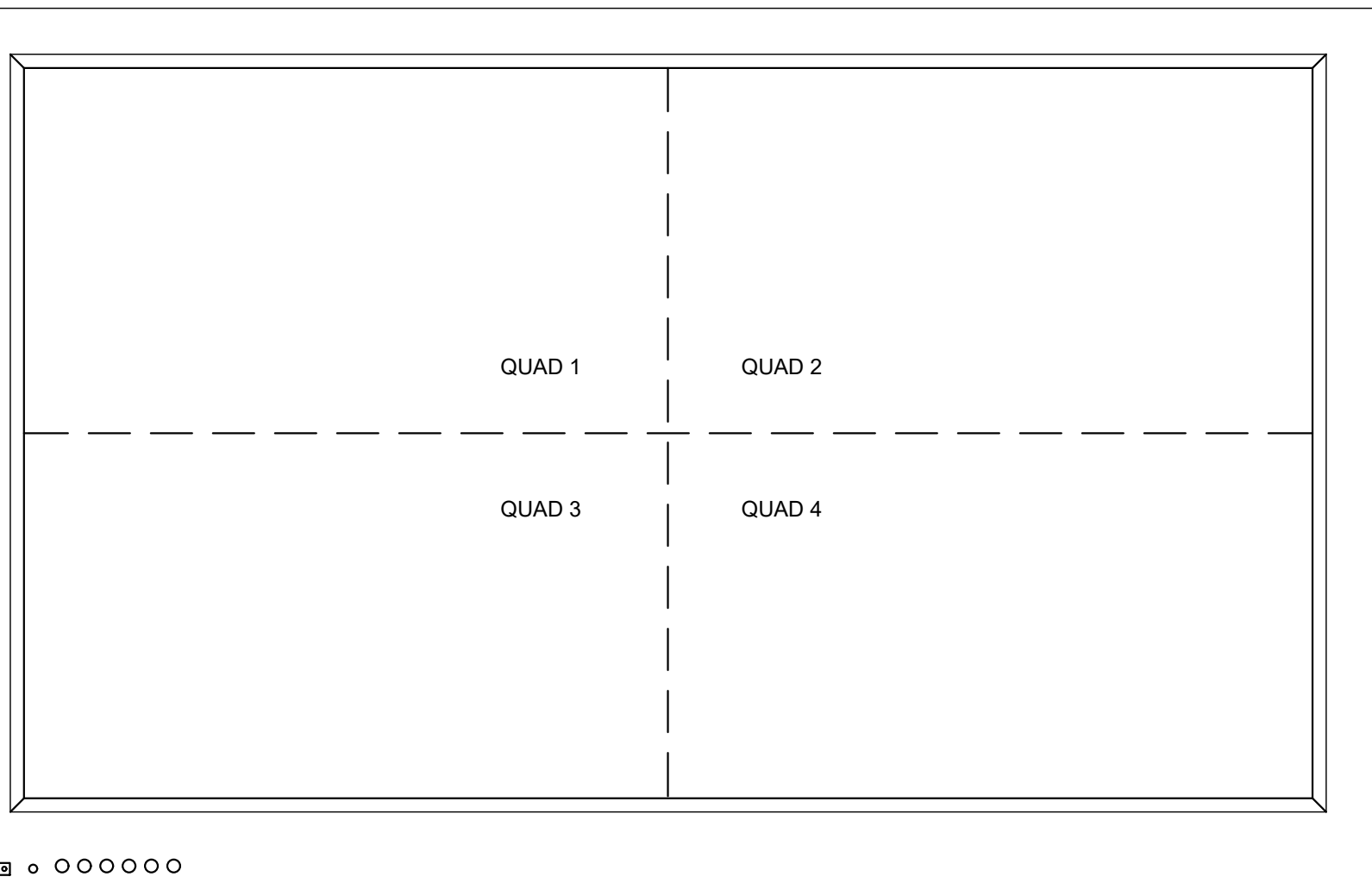
- BOOKING CAMERAS TO BE EQUIPPED WITH 1TB SD CARD.
- ALL CAMERAS ARE INDOOR, UNLESS NOTED OTHERWISE.

KEYED NOTES

- EXISTING POLE MOUNTED PTZ CAMERA TO BE REPLACED WITH TWO NEW FIXED WALL MOUNTED CAMERAS. REF ES101 AND FLOOR PLANS.
- EXISTING POLE MOUNTED CAMERA TO BE REPLACED WITH NEW FIXED WALL MOUNTED CAMERA. REF ES101 AND FLOOR PLANS.



INDOOR/OUTDOOR FIXED
CCTV CAMERA HOUSING WITH CAMERA



DETAIL NOTE

- PROVIDE NEW PROGRAMMING OF VIDEO MANAGEMENT SYSTEM TO MATCH EXISTING.

QUAD SCREEN LAYOUT

CAMERA NUMBER	LOCATION DESCRIPTION	SHEET	TYPE	MOUNT	REQUIRED RESOLUTION (RECORDING)	CAMERA STORAGE	ADDRESS (FOR OWNER USE)
C-301	PHARMACY VAULT	ES203	SINGLE VIEW	CEILING	720		
C-302	PHARMACY	ES203	SINGLE VIEW	CEILING	720		
C-303	PHARMACY DISPENSING	ES203	SINGLE VIEW	CEILING	720		
C-401	LOWER CHASE JL NORTH	ES202	SINGLE VIEW	CEILING	LOW LIGHT		
C-402	LOWER CHASE JL SOUTH	ES202	SINGLE VIEW	CEILING	LOW LIGHT		
C-403	LOWER CHASE KM NORTH	ES202	SINGLE VIEW	CEILING	LOW LIGHT		
C-404	LOWER CHASE KM SOUTH	ES202	SINGLE VIEW	CEILING	LOW LIGHT		
C-405	LOWER CHASE EF NORTH	ES201	SINGLE VIEW	CEILING	LOW LIGHT		
C-406	LOWER CHASE EF SOUTH	ES201	SINGLE VIEW	CEILING	LOW LIGHT		
C-407	LOWER CHASE NP NORTH	ES202	SINGLE VIEW	CEILING	LOW LIGHT		
C-408	LOWER CHASE NP SOUTH	ES202	SINGLE VIEW	CEILING	LOW LIGHT		
C-409	LOWER CHASE OQ NORTH	ES202	SINGLE VIEW	CEILING	LOW LIGHT		
C-410	UPPER CHASE OD SOUTH	ES202	SINGLE VIEW	CEILING	LOW LIGHT		
C-411	UPPER CHASE RT NORTH	ES204	SINGLE VIEW	CEILING	LOW LIGHT		
C-412	UPPER CHASE RT SOUTH	ES204	SINGLE VIEW	CEILING	LOW LIGHT		
C-413	UPPER CHASE SU NORTH	ES204	SINGLE VIEW	CEILING	LOW LIGHT		
C-414	UPPER CHASE SU SOUTH	ES204	SINGLE VIEW	CEILING	LOW LIGHT		
C-415	UPPER CHASEEF NORTH	ES204	SINGLE VIEW	CEILING	LOW LIGHT		
C-416	UPPER CHASE EF SOUTH	ES204	SINGLE VIEW	CEILING	LOW LIGHT		
C-417	UPPER CHASE VX NORTH	ES204	SINGLE VIEW	CEILING	LOW LIGHT		
C-418	UPPER CHASE VX SOUTH	ES204	SINGLE VIEW	CEILING	LOW LIGHT		
C-419	UPPER CHASE WY NORTH	ES204	SINGLE VIEW	CEILING	LOW LIGHT		
C-420	UPPER CHASE WY SOUTH	ES204	SINGLE VIEW	CEILING	LOW LIGHT		

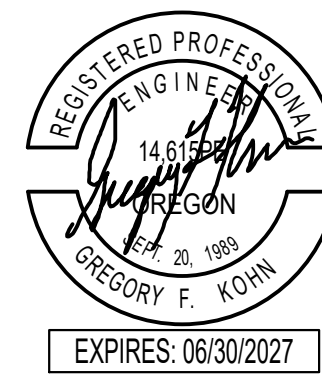
EXISTING IP CAMERAS TO BE REPLACED

CAMERA NUMBER	LOCATION DESCRIPTION	SHEET	TYPE	MOUNT	REQUIRED RESOLUTION (RECORDING)	ADDRESS (FOR OWNER USE)
BASE BID CAMERAS						
C-304		ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-305		ES202	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-306		ES101	SINGLE VIEW	POLE MOUNT	1080 OUTDOOR	
C-307		ES101	SINGLE VIEW	POLE MOUNT	1080 OUTDOOR	
C-308		ES101	SINGLE VIEW	POLE MOUNT	1080 OUTDOOR	
C-309		ES202	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-310		ES203	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
BID ALTERNATE 1 CAMERAS						
C-1001	630 EXTERIOR	ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1002		ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1003		ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1004		ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1005		ES201	SINGLE VIEW	POLE MOUNT	1080 OUTDOOR	
C-1006		ES201	SINGLE VIEW	POLE MOUNT	1080 OUTDOOR	
C-1007		ES202	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1008		ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1009		ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1010		ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1011		ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1012		ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1013		ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1014		ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1015		ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1016		ES203	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1017		ES203	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1018		ES203	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1019		ES203	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1020		ES203	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1021		ES203	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1022		ES202	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1023		ES203	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
C-1024		ES202	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR	
BID ALTERNATE 2 CAMERAS						
C-1025		ES201	SINGLE VIEW	CEILING		
C-1026		ES201	SINGLE VIEW	CEILING		
C-1027	KITCH LOAD DOCK	ES201	SINGLE VIEW	CEILING		
C-1028	KITCH LOAD DOCK	ES201	SINGLE VIEW	CEILING		
C-1029		ES201	SINGLE VIEW	CEILING		
C-1030		ES201	SINGLE VIEW	CEILING		
C-1031		ES201	SINGLE VIEW	CEILING		
C-1032		ES201	SINGLE VIEW	CEILING		
C-1033		ES201	SINGLE VIEW	CEILING		

NET NEW CAMERA SCHEDULE

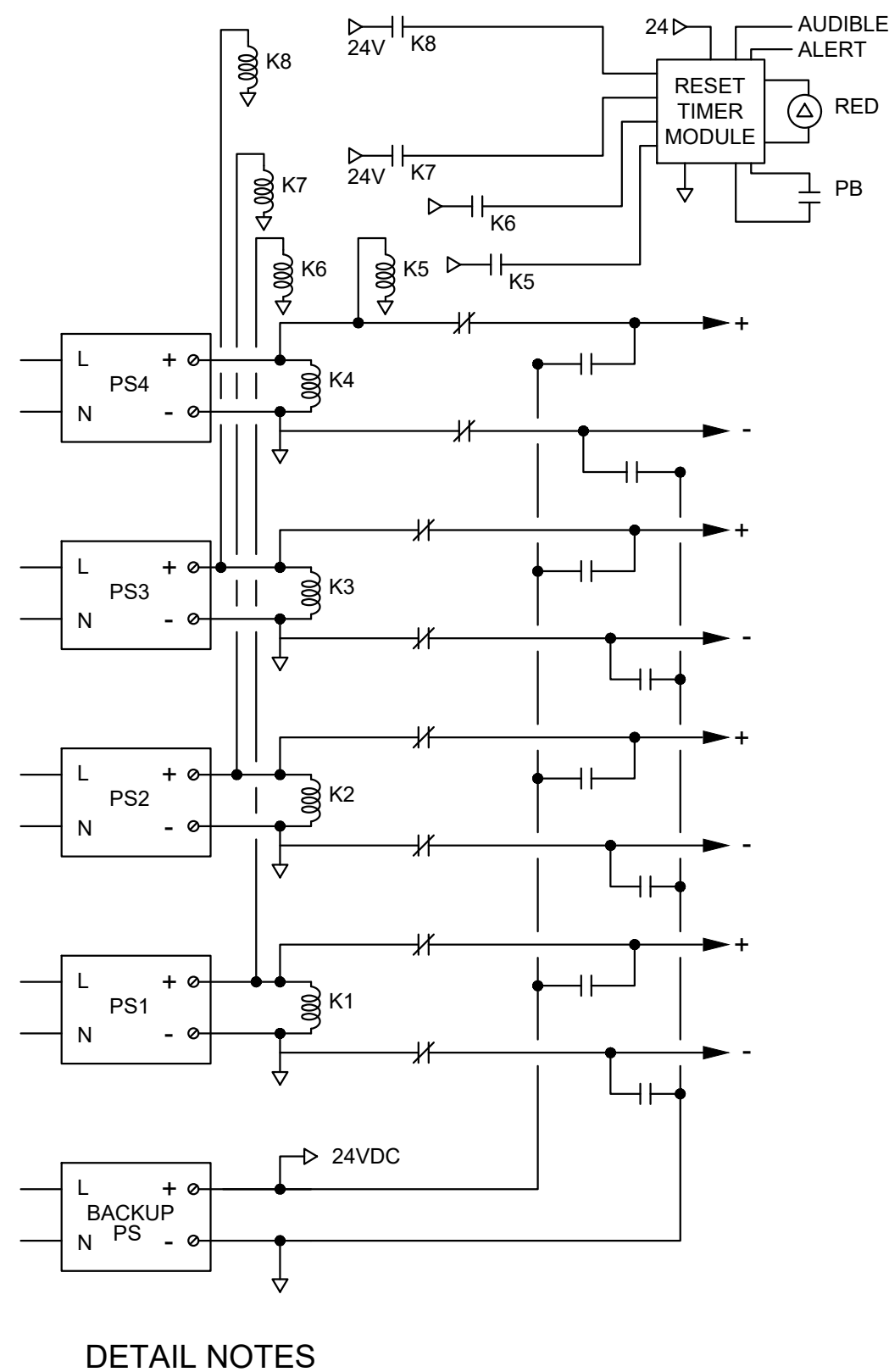
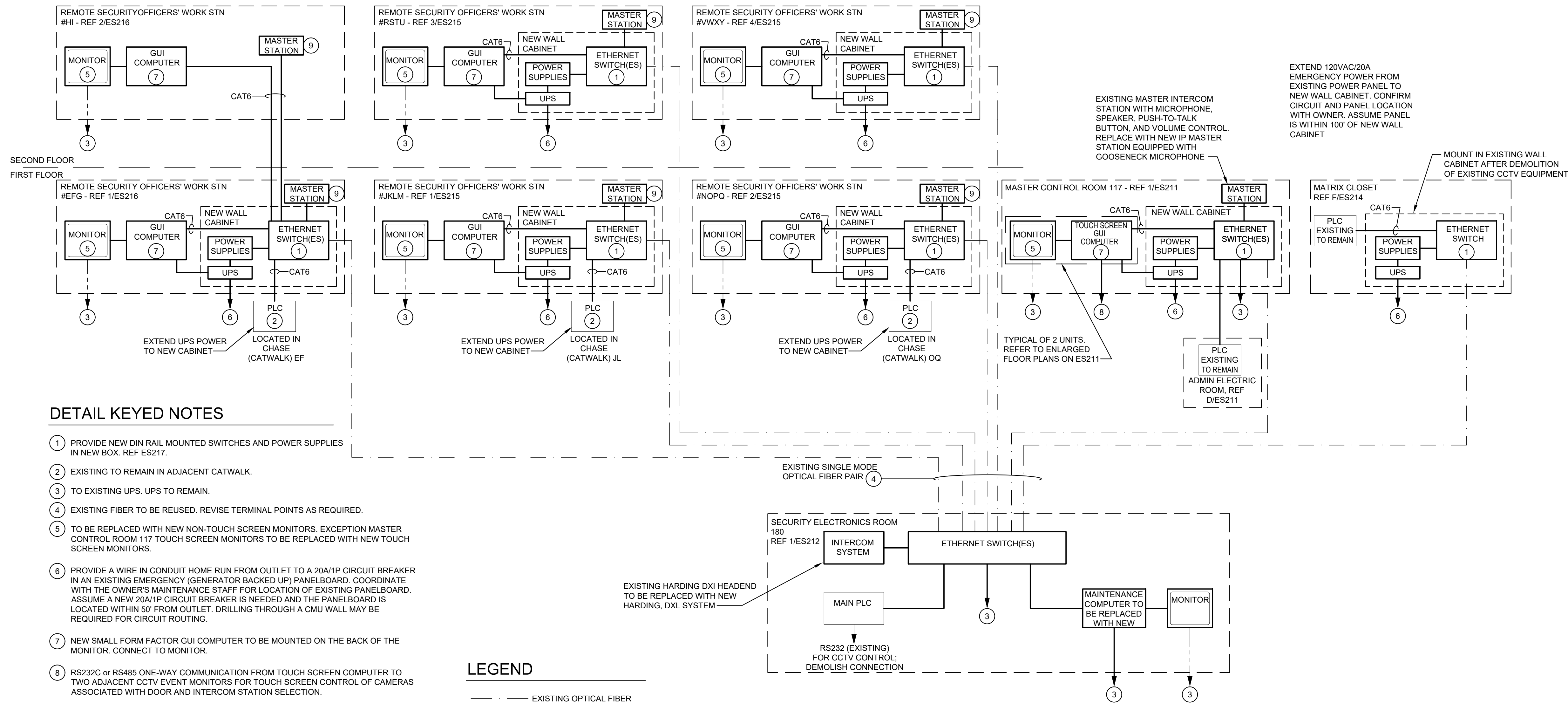
2

CAMERA NUMBER	LOCATION DESCRIPTION	SHEET	TYPE	MOUNT	REQUIRED RESOLUTION (RECORDING)	CAMERA STORAGE	ADDRESS (FOR OWNER USE)
C-01	BullPen 613	ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR		
C-02	Vid Ct Hld 612	ES201	SINGLE VIEW	CEILING	720		
C-03	EFH Up	ES204	SINGLE VIEW	CEILING	720		
C-04	EFH Up ramp	ES204	SINGLE VIEW	CEILING	720		
C-05	Door 315 Out	ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR		
C-06	EFG Ramp 700	ES201	SINGLE VIEW	CEILING	720		
C-07	Door 305 Hall	ES201	SINGLE VIEW	CEILING	720		
C-08	Door 305 300	ES201	SINGLE VIEW	CEILING	720		
C-09	EZ Corr 300	ES201	SINGLE VIEW	CEILING	720		
C-10	PG Corr 302	ES201	SINGLE VIEW	CEILING	720		
C-11	Door 315 In Z (Back Door)	ES201	SINGLE VIEW	CEILING	720		
C-12	WOM 150 Hall	ES201	SINGLE VIEW	CEILING	720		
C-13	BellPenGt	ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR		
C-14	G Block East	ES201	SINGLE VIEW	CEILING	720		
C-15	Veh Sally Out	ES202	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR		
C-16	F Block East	ES204	SINGLE VIEW	CEILING	720		
C-17	F Block West	ES204	SINGLE VIEW	CEILING	720		
C-18	E Dayroom Upper East	ES204	SINGLE VIEW	CEILING	720		
C-19	E Dayroom Upper West	ES204	SINGLE VIEW	CEILING	720		
C-20	E Day Rm West	ES204	SINGLE VIEW	CEILING	720		
C-21	E Day Rm East	ES204	SINGLE VIEW	CEILING	720		
C-22	Prog Hall	ES204	SINGLE VIEW	CEILING	720		
C-23	Load Dock 629	ES201	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR		
C-24	Kitchen 629	ES201	SINGLE VIEW	CEILING	720		
C-25	LobbyEmployee Keybox	ES201	SINGLE VIEW	CEILING	720		
C-26	Not Used						
C-27	Sally 610 Rm	ES201	SINGLE VIEW	CEILING	720		
C-28	Sally 611 612	ES201	SINGLE VIEW	CEILING	720		
C-29	Squad Rm SE	ES201	SINGLE VIEW	CEILING	720		
C-30	Kit Stor 139	ES201	SINGLE VIEW	CEILING	720		
C-31	Kit Stor 143	ES201	SINGLE VIEW	CEILING	720		
C-32	Squad Rm NW	ES201	SINGLE VIEW	CEILING	720		
C-33	Admin Lobby	ES203	SINGLE VIEW	CEILING	720		
C-34	413 414 115	ES203	180 VIEW	CEILING	720		
C-35	Door 118 West	ES203	SINGLE VIEW	CEILING	720		
C-36	151 510 410	ES203	180 VIEW	CEILING	720		
C-37	Floor Stair Door 151 200	ES203	SINGLE VIEW	CEILING	720		
C-38	Booking 504	ES203	SINGLE VIEW	CEILING	720		
C-39	Booking South	ES203	360 VIEW	CEILING	1080		
C-40	Transports	ES203	SINGLE VIEW	CEILING	1080		
C-41	Booking 510	ES203	SINGLE VIEW	CEILING	1080		
C-42	Door 507 423	ES203	SINGLE VIEW	CEILING	1080		
C-43	ID Room	ES203	SINGLE VIEW	CEILING	1080		
C-44	Veh Sally 503	ES203	SINGLE VIEW	CEILING	1080		
C-45	Veh Sally 506	ES203	SINGLE VIEW	CEILING	1080		
C-46	Door 122 East	ES201	180 VIEW	CEILING	720		
C-47	Door 122 West	ES202	180 VIEW	CEILING	720		
C-48	Door 118 East	ES202	180 VIEW	CEILING	720		
C-49	J Block South	ES202	360 VIEW	CEILING	720		
C-50	J Block Sally	ES202	360 VIEW	CEILING	720		
C-51	K Block Sally	ES202	360 VIEW	CEILING	720		
C-52	K Block North	ES202	360 VIEW	CEILING	720		
C-53	L Block South	ES202	360 VIEW	CEILING	720		
C-54	L Block Sally	ES202	360 VIEW	CEILING	720		
C-55	M Block Sally	ES202	360 VIEW	CEILING	720		
C-56	M Block North	ES202	360 VIEW	CEILING	720		
C-57	N Block South	ES202	360 VIEW	CEILING	720		
C-58	N Block Sally	ES202	360 VIEW	CEILING	720		
C-59	O Block Sally	ES202	360 VIEW	CEILING	720		
C-60	O Block North	ES202	360 VIEW	CEILING	720		
C-61	Not Used						
C-62	P Block Sally	ES202	360 VIEW	CEILING	720		
C-63	Q Block Sally	ES202	360 VIEW	CEILING	720		
C-64	Q Block North	ES202	360 VIEW	CEILING	720		
C-65	Door 204 East	ES204	SINGLE VIEW	CEILING	720		
C-66	Door 204 West	ES204	180 VIEW	CEILING	720		
C-67	Door 200 East	ES204	180 VIEW	CEILING	720		
C-68	R Block South	ES204	360 VIEW	CEILING	720		
C-69	R Block Sally	ES204	360 VIEW	CEILING	720		
C-70	S Block Sally	ES204	360 VIEW	CEILING	720		
C-71	S Block North	ES204	360 VIEW	CEILING	720		
C-72	T Block South	ES204	360 VIEW	CEILING	720		
C-73	T Block Sally	ES204	360 VIEW	CEILING	720		
C-74	U Block Sally	ES204	360 VIEW	CEILING	720		
C-75	U Block North	ES204	360 VIEW	CEILING	720		
C-76	V Block South	ES204	360 VIEW	CEILING	720		
C-77	V Block Sally	ES204	360 VIEW	CEILING	720		
C-78	W Block Sally	ES204	360 VIEW	CEILING	720		
C-79	W Block North	ES204	360 VIEW	CEILING	720		
C-80	X Block South	ES204	360 VIEW	CEILING	720		
C-81	X Block Sally	ES204	360 VIEW	CEILING	720		
C-82	Y Block Sally	ES204	360 VIEW	CEILING	720		
C-83	Y Block North	ES204	360 VIEW	CEILING	720		
C-84	Veh Sally In	ES203	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR		
C-85	Admin Pkg	ES203	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR		
C-86	S Parking	ES202	SINGLE VIEW	WALL MOUNT	1080 OUTDOOR		
C-87	To be Replaced (C-1036, 1037 1038)	ES101	PTZ	POLE MOUNT	1080		
C-88	Z Block Sally	ES201	SINGLE VIEW	CEILING	720		
C-89	Corr 204 N	ES204	SINGLE VIEW	CEILING	720		
C-90	Corr 204 S	ES204	SINGLE VIEW	CEILING	720		
C-91	H Block	ES204	SINGLE VIEW	CEILING	720		
C-92	I Block Sally	ES204	SINGLE VIEW	CEILING	720		
C-93	Medicine	ES203	SINGLE VIEW	CEILING	720 Camera Down		
C-94	Med Clinic 414	ES203	SINGLE VIEW	CEILING	720		
C-95	Old Med Iso	ES203	SINGLE VIEW	CEILING	720		
C-96	Med Hld Tank	ES203	SINGLE VIEW	CEILING	720		
C-97	Rec Yard 1 E	ES201	SINGLE VIEW	WALL MOUNT	1080		
C-98	Rec Yard 2 E	ES201	SINGLE VIEW	WALL MOUNT	1080		
C-99	Not Used						
C-100	Sec Elec 180	ES201	SINGLE VIEW	CEILING	720		
C-101	Emp Break Rm	ES201	SINGLE VIEW	CEILING	720		
C-102	C D Post	ES201	360 VIEW	CEILING	720		
C-103	Med #1	ES203	SINGLE VIEW	CEILING	720		
C-104	Med #2	ES203	SINGLE VIEW	CEILING	720		
C-105	Med #3	ES203	SINGLE VIEW	CEILING	720		
C-106	Med #4	ES203	SINGLE VIEW	CEILING	720		
C-107	Dorm Sally	ES203	SINGLE VIEW	CEILING	720		
C-108	Bull Pen 613	ES201	SINGLE VIEW	CEILING	720		
C-109	C Block	ES201	SINGLE VIEW	CEILING	720		
C-110	Bk Main Trnk	ES203	SINGLE VIEW	CEILING	1080		
C-111	C Outer	ES201	SINGLE VIEW	CEILING	720		
C-112	Bk 1	ES202	SINGLE VIEW	CEILING	1080		
C-113	Bk 2	ES202	SINGLE VIEW	CEILING	1080		



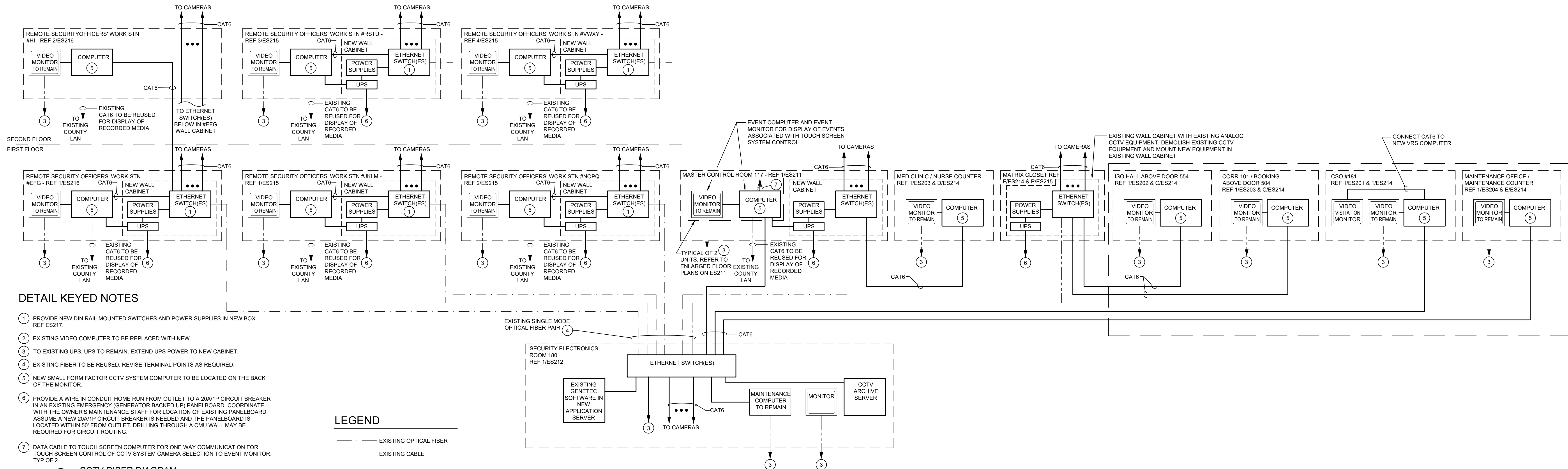
DEFINITIONS

- ALL VIDEO COMPUTER/MONITOR COMBINATIONS ARE "VIDEO REVIEW STATIONS".
- SPECIFIC VIDEO COMPUTER/MONITOR COMBINATIONS SHALL BE USED AS "EVENT MONITORS" FOR DISPLAY OF CAMERAS ASSOCIATED WITH TOUCH SCREEN CAMERA SELECTION.



1 SECURITY RISER DIAGRAM

3 POWER SUPPLY BACKUP WITH ALARM DIAGRAM



2 CCTV RISER DIAGRAM