ADDENDUM NO. 1 (AD-01)



CENTRAL ENGINEERING

Plan • Design • Construct

PROJECT MANUAL

RICHMOND REGIONAL JUVENILE DETENTION CENTER RENOVATION

SCO # 22-24596-02A

RICHMOND REGIONAL JUVENILE DETENTION CENTER RENOVATION

269 CARTLEDGE CREEK RD ROCKINGHAM, NC 28379

Prepared by: Moseley Architects Charlotte, NC JOS # 4272 MA# 621139

Date - 3/30/2023

ADDENDUM NO. 1

1

2 **GENERAL:**

- Planholders are requested to insert this Addendum in the front of their Project Manual. Inform all 3 concerned that the Bidding Documents are modified by this Addendum. 4
- 5 The following modifications and clarifications are hereby made a part of the Bidding Documents and supersede or otherwise modify the provisions of the published *Project Manual* and *Drawings*, dated 6 March 30, 2023. 7
- 8 Refer to the Drawings, Specification Sections, or other Documents, if any, attached to this Addendum, which are hereby made a part of this Addendum. 9
- 10 A Pre-Bid Conference was held on May 16, 2023. A copy of the sign-in log has been posted to www.moseleyarchitects.com/bidding for information only and is not considered a part of the Bidding 11
- 12 Documents.

MODIFICATIONS TO THE PROJECT MANUAL: 13

- PROJECT COVER SHEET 14
- 15 REPLACE this sheet.
- NOTICE TO BIDDERS SCO 16
- **REPLACE** this entire section. 17
- SECTION 064023 INTERIOR ARCHITECTURAL WOODWORK 18
- **REPLACE** this entire section. 19
- SECTION 079500 EXPANSION CONTROL 20
- 21 **REPLACE** this entire section.
- 22 SECTION 111900- DETENTION EQUIPMENT
- 23 REPLACE this entire section.
- SECTION 111960 SECURITY HARDWARE 24
- **<u>REPLACE</u>** this entire section. 25
- 26 SECTION 285150 - VIDEO INTERCOM SYSTEM
- **REPLACE** entire section. 27
- 28 SECTION 323113.53 - HIGH SECURITY CHAIN-LINK FENCES AND GATES
- 29 **REPLACE** entire section.

MODIFICATIONS TO DRAWINGS: 30

- 31 SHEET A1.2.1
- 32 REPLACE with attached.
- 33 **SHEET A2.0.0**
- **REPLACE** with attached. 34
- 35 **SHEET A2.0.1**

- 36 <u>REPLACE</u> with attached.
- 37 SHEET A3.3.1
- 38 <u>REPLACE</u> with attached.
- 39 SHEET A3.4.1
- 40 <u>REPLACE</u> with attached.
- 41 SHEET A7.1.0
- 42 <u>REPLACE</u> with attached.
- 43 SHEET SE3.1
- 44 <u>REPLACE</u> with attached.
- 45 SHEET E0.1
- 46 <u>REPLACE</u> with attached.
- 47 SHEET E2.1
- 48 <u>REPLACE</u> with attached.
- 49 <u>SHEET E2.3</u>
- 50 <u>REPLACE</u> with attached.
- 51 <u>SHEET E2.4</u>
- 52 <u>REPLACE</u> with attached.
- 53 SHEET E5.1
- 54 <u>REPLACE</u> with attached.
- 55 SHEET E5.2
- 56 <u>REPLACE</u> with attached.
- 57

58 **REFER TO DRAWINGS ATTACHED TO THE END OF THIS ADDENDUM**

- 59 A1.2.1
- 60 A2.0.0
- 61 A2.0.1
- 62 A3.3.1
- 63 A3.4.1
- 64 A7.1.0
- 65 SE3.1
- 66 E0.1
- 67 E2.1
- 68 E2.3 69 E2.4
- 09 E2.4

70 E5.1

71 E5.2

72

73 REFER TO SPECIFICATION SECTIONS ATTACHED TO THE END OF THIS ADDENDUM

- 74 PROJECT COVER SHEET
- 75 NOTICE TO BIDDERS SCO
- 76 064023
- 77 079500
- 78 111900
- 79 111960
- 80 285150
- 81 323113.53

QUESTIONS AND ANSWERS (Unless noted otherwise, reference attached <u>revised</u> Drawings and Specification Sections attached to Addendum No. 1)

- 84 QUESTION: We are an expansion joint manufacturer, and we would like to submit our products to be
- 85 considered as an equal to the specified products for the Richmond Juvenile Detention Center project. I have
- attached our standard submittal package with CSI Form (as specified) for the products listed in Section
- 87 079500. Our products are a direct equal to those specified and will not require any changes to the project
- 88 documents (with the possible exception of our inclusion in an addendum).
- 89 ANSWER: 3RD Manufacturer added to Section 079500
- 90 QUESTION: "In 2017 the General Assembly for the State of North Carolina modified legislation as it
- 91 pertains to the assessment of sales tax for services and labor. The state mandates the charging of sales tax
- 92 on all services and labor which is not deemed to be part of "Capital Improvements". The North Carolina
- 93 Department of Revenue views all renovations, modifications, and additions as Non-Capital Improvements
- 94 unless the owner completes a Form E-589CI. Please advise; will the owner be supplying this form to the
- 95 successful bidder? If not, all bidders should be advised to include sales tax on all labor related to this project.
- 96 ANSWER: Owner will supply the form to the successful bidder.
- 97 QUESTION: The last detention center we did the security contractor furnished and installed the locks and
- hinges for the swing gates and we did the overhead roll gate and operator and the security contractor tied
- 99 it into the security center is this what you envision on this job?
- 100 ANSWER: Refer to SE1.1
- QUESTION: Once again the last juvenile detention job the state did not allow barbed or razor wire is thatthe case here?
- 103 ANSWER: No
- 104 QUESTION: Will the blvd clamps need to be welded to the post and rail?
- 105 ANSWER: No
- 106 QUESTION: Will the 9ga wire go to the top and mini mesh lap over the 9ga?

- 107 ANSWER: Refer to Section 323113-53
- 108 QUESTION: Any mow strip ankle breaker?
- 109 ANSWER: No, refer to Section 323113-53
- 110 QUESTION: Provide clarification of the details for the LGMF topping-out of CMU walls.
- ANSWER: Refer to the reflected ceiling plan for termination height of interior CMU walls. Where CMU
- walls are indicated to go to deck, refer to "Wall to Underside of Deck Parallel to Joists" and "Walls to
- Underside of Deck Perpendicular to Joists" on drawing S4.0.1 for top of wall bracing. Where CMU walls
- are not indicated to go to deck, refer to "Low Wall Parallel to Joist or Beam" and "Low Wall Perpendicular to Joist or Beam" on drawing \$4.0.1. CMU walls shall be braced as indicated in these details, using the
- guidance indicated in the Notes (#1 through #5) in "Bracing Details for Non-Load Bearing Interior Masonry
- 117 Partitions" on drawing S4.0.1. The GC and their subs are responsible for determining quantities.
- 118 QUESTION: In the existing cell areas conduit for the lights is ran exposed. Once existing is demoed, will
- we need to cut the block walls and ceilings to install new conduit for new lights inside the walls and
- 120 ceilings? Then patch?
- 121 ANSWER: Yes, refer to revised Electrical.
- 122 QUESTION: Upon reviewing the specification section for the casework on this project, I noticed that the
- specifications require the casework fabricator to provide AWI Quality Certification Program certificates.
- 124 Please let me know if this requirement can be waived?
- 125 ANSWER: AWI Quality Certification Program certificate waived; refer to revised Section 064023
- 126 QUESTION: Door D118B is not listed in Detention Door Schedule. Reference: A3.3.1, A2.2.1
- 127 ANSWER: Refer to revised sheet A3.3.1
- 128 QUESTION: The drawing indicates cell doors with sliding devices, the Hardware is listed for these doors
- as hardware set SH-6. Specification 111960 page 13 lists SH6A as a "9400 Series lock" this is a swing door
- 130 lock for a narrow jamb installation.
- 131 ANSWER: Refer to revised Section 11196
- 132 QUESTION: Door DA117A is not on the Door Schedule for Detentions or commercial locks.
- 133 ANSWER: Refer to Drawing A3.3.1
- 134 QUESTION: The Detention Equipment Tables for dayrooms are listed on this drawing (A7.1.0) "Detention
- 135 Equipment Schedule" lists these as "D10-DETENTION 4-MAN TABLE AND D13-DETENTION 4 MAN
- 136 TABLE ACCESSIBLE" per detail 9 and 10/A7.2.0, these are depicted as detention style steel "spider tables".
- 137 Specifications # 111900 Part 2 Products, B, 3a, list "Basis of Design" as composite material, (Model
- 138 #ATN101) Norix brand unit.
- ANSWER: Provide spider type tables per Details 9 & 10/A7.2.0. Refer to Section 111900
- 140 QUESTION: Detention Door Schedule Door DC105 States Hardware SH-7a, there is no listing in the
- 141 specification for that hardware set.
- 142 ANSWER: Refer to revised Section 111960.
- 143 QUESTION: 111960, 2.2, D 1 and 2, Paragraph 5_paragraph_D, 1 and 2 Reference to 111930-"for additional
- 144 Security Hardware information and pneumatic lock functions." This would indicate the project does not
- require pneumatic locks as Specification Section 111930 in not in specifications.

- 146 ANSWER: Provide Electro-Mechanical locks. Refer to revised Section 111960.
- QUESTION: 111960-Page 6-#4 "Dayroom Chair". The basis of Design is Model C110/Norix, there is no
 designations on the drawings that would indicate the number of placement of these units.
- ANSWER: Disregard the specification for the Norix chair. Refer to revised Section 111900.
- 150 QUESTION: There are details on these drawings indicating multiple types of "HIGH STRENGTH STEEL
- 151 BAR FRAME", but there are no icons or references in any drawings to indicate where they are located, or
- the quantity and sizes required. Other than four "SECURITY GRILLE" references at the Sky Lights on
- 153 A10.1.0. Are these all that are required.
- 154 ANSWER: In addition to references on Drawing A10.1.0, refer to Ductwork Legend on Drawing M0.1 for
- 155 Security Bar symbol and Drawing M2.1.1 for locations of Security Bars in ductwork.
- 156 QUESTION: On sheet E5.1, the one line shows ATS-S feeding P/BD HR with a 225Y circuit. Is there
- 157 suppose to be a P/BD HR in the Main Building? We don't see a panel schedule for it. We do see the one158 for P/BD HR in the Rec building.
- 150 Ior 1700 The fit the feet building.
- 159 ANSWER: Refer to revised E5.1
- 160 QUESTION: We are seeing a spec section 264113 for lightning protection. Are you looking for us to install
- 161 roof top lighting protection systems for the Main, Rec and Vocational Buildings?
- 162 ANSWER: Refer to revised E0.1.
- 163 QUESTION: Can you please confirm that the owner is paying for any required commissioning
- services? The specs state that the owner will engage a commissioning authority, I just want to confirmthat they cover the expense.
- 166 ANSWER: Owner responsible as stated in Specifications.
- 167 QUESTION: The Division 28 Specs seem to be mixed up and all over the place. Is there a version where
- it's not all mixed up. It makes it very hard to follow along.
- 169 ANSWER: No
- 170 QUESTION: The spec called out the Aiphone JP Series. The drawings show (9) Video/Intercom Door
- stations. The JP Series only has Capacity for (4) Door Stations & (8) Masters/Sub Stations. Is this amistake?
- 173 ANSWER: Refer to revised Section 28150
- QUESTION: Will the Division 28 Contractor be responsible for all required Conduit and all undergroundwork?
- ANSWER: Specs already state that yes they are responsible for all their own conduit and cable. They cansub it out if they want but it falls on Div 28 contractor to handle not the GC.
- 179 QUESTION: Will the Division 28 Contractor be responsible for Camera Poles?
- 180

178

- 181 ANSWER: Refer to revised SE3.1.
- 182

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183 184	QUESTION: Will any of the existing exterior cameras be re-used? If not, who is responsible for the demo?
185 186 187 188	ANSWER: All existing cameras are to be removed and the General Contractor shall determine what sub is responsible.
188 189 190	QUESTION: Please provide a list or quantity of auxiliary points (lights, receptacles, water valves etc) that will be controlled from the PLC/Operator Workstation
191	ANSWER: The points are shown in the two schedules on E2.1.
192 193	QUESTION: Specification section 285020, 1.19-B indicates redundant PLC, is redundant PLC required for this project?
194	ANSWER: No redundant PLC is required.
195	QUESTION: What is size of operator control panel? Drawings list 24" while specifications list 22"
196	ANSWER: Install 24", not the 22".
197 198 199	QUESTION: Who is responsible for paying any sewer and water capacity use fees? If the GC is required could you tell us how much they will be?
200 201	ANSWER: Yes, GC is responsible, refer to Project Manual, General Conditions of the Contract, Article 40.
202 203	QUESTION: There are only 3 alternates listed in spec section 012300 however there are 4 alternates on the bid form. Can more info be provided regarding alternate #4?
204 205	ANSWER: Refer to Alternates, pp 2 of 4, Add Preferred Brand Alternate: Distech ECB Series, refer to Section 23 09 00, Building Management System for more information.
206 207	QUESTION: The following question concerns Drawing A3.4.1-3.3.1 and Specifications Section (111910 Part 1.2 H)
208 209 210 211 212 213 214	Is this paragraph it is stated that <i>when the opening contains components that have not been tested as an assembly, the manufacturer shall certify in writing that the door and frame components have been constructed in accord with the testing requirements.</i> The door is possible to construct by the fabricator to a "UL Construction" level. Regarding frame Type DHM for Cells, these frames will be multiple pieces of angle steel and break metal assembled in the field around an existing substrate, per Detail 11 and 7 on Dwg A3.4.1, the hollow metal fabricator has no way to certify or test these "field applied" pieces of steel. Please clarify acceptance regarding field assembled DHM frames on Cells, #DA1 through 12 and DB 1 through 14.
215	ANSWER: Field Assembled frames are acceptable for the cell door retrofits only. Refer to revised A3.4.1.
216	
217	
218	
219	END OF ADDENDUM NO 01
220 221	

NOTICE TO BIDDERS

Sealed proposals will be received by the North Carolina Department of Public Safety in Raleigh NC, in the office of NCDPS Central Engineering, 2020 Yonkers Road, Raleigh, NC (hand delivered) Door #4, conference room; 4216 Mail Service Center, Raleigh, NC 27699-4216 (mailing address) up to **3:00 PM (AD-01)** 5/31/2023 and immediately thereafter publicly opened and read for the furnishing of labor, material and equipment entering into the construction of:

RICHMOND REGIONAL JUVENILE DETENTION CENTER RENOVATION

Project involves the renovation/reconstruction of the existing Richmond Regional Juvenile Detention Facility located in Rockingham, North Carolina

Bids will be received for a single prime contract. All proposals shall be lump sum.

Pre-Bid Meeting

A mandatory pre-bid meeting will be held for all interested bidders on 5/16/2023 at **10:00 AM** on site at Richmond Youth Development Center, 269 Cartledge Creek Road, Rockingham, NC 28379 in the Dining Hall. The meeting will address project specific questions, security, issues, bidding procedures and bid forms. *Failure to attend the Pre-Bid Conference will disqualify your company from bidding.*

Complete plans, specifications and contract documents will be open for inspection in the offices of North Carolina Department of Public Safety – Central Engineering and can be obtained from the Architect's website - www.moseleyarchitects.com/bidding and in the online plan room of the Associated General Contractors/Reed Construction Data, Carolinas Branch (<u>isqft.com</u>), the online plan room of McGraw-Hill Dodge Corporation (<u>dodge.construction.com</u>), the online plan room at Construct Connect (<u>bidclerk.com</u>) and in Minority Plan Rooms at

MMCA, (<u>mmcaofcharlotte.org</u>) 801 East Morehead Street, Suite 126, Charlotte, NC 28202; 704- 372-3341]

NOTE: The bidder shall include <u>with the bid proposal</u> the form *Identification of Minority Business Participation* identifying the minority business participation it will use on the project and shall include either *Affidavit* **A** or *Affidavit* **B** as applicable. Forms and instructions are included within the Proposal Form in the bid documents. Failure to complete these forms is grounds for rejection of the bid. (GS143-128.2c Effective 1/1/2002.)

HUB PARTICIPATION RECORDING REQUIREMENTS:

NCDPS requires that, for construction contracts with a value of \$5000 or greater, the contractor shall comply with the document Guidelines for Recruitment and Selection of Minority Businesses for Participation in State Construction Contracts including Identification of Minority Business Participation, Affidavits A, B, C, and D, and Appendix E. These forms provided herein are hereby incorporated and made a part of this contract. A bidder's failing to comply with this requirement will be considered non-responsive and will result in bid rejection.

The NCDPS imposed contract threshold of \$5000 for HUB recruitment supersedes any reference to a higher threshold that may be noted in the bid documents, within referenced documents, or within any regulatory requirement.

Provide one of the following with **Bid Form Proposal**:

Identification of HUB Participation and Affidavit A – Listing of Good Faith Efforts **OR** Affidavit B- Intent to Self-Perform with Own Forces

Provide one of the following upon **Contract Award**: Affidavit C - Percentage of HUB Participation **OR** Affidavit D – Good Faith Efforts>

All contractors are hereby notified that they must have proper license as required under the state laws governing their respective trades.

General contractors are notified that Chapter 87, Article 1, General Statutes of North Carolina, will be observed in receiving and awarding general contracts. General contractors submitting bids on this project must have license classification for **Unlimited** (set forth the license classification required by the NC General Contractors Licensing Board under G.S. 87-1)

<u>NOTE</u>--SINGLE PRIME CONTRACTS: Under GS 87-1, a contractor that superintends <u>or manages</u> construction of any building, highway, public utility, grading, structure or improvement shall be deemed a "general contractor" and shall be so licensed. Therefore, a single prime project that involves other trades will require the single prime contractor to hold a proper General Contractors license. <u>EXCEPT</u>: On public buildings being bid <u>single prime</u>, where the total value of the general construction does not exceed 25% of the total construction value, contractors under GS87- Arts 2 and 4 (Plumbing, Mechanical & Electrical) may bid and contract directly with the Owner as the SINGLE PRIME CONTRACTOR and may subcontract to other properly licensed trades. <u>GS87-1.1- Rules .0210</u>

Each proposal shall be accompanied by a cash deposit or a certified check drawn on some bank or trust company, insured by the Federal Deposit Insurance Corporation, of an amount equal to not less than five percent (5%) of the proposal, or in lieu thereof a bidder may offer a bid bond of five percent (5%) of the bid executed by a surety company licensed under the laws of North Carolina to execute the contract in accordance with the bid bond. Said deposit shall be retained by the owner as liquidated damages in event of failure of the successful bidder to execute the contract within ten days after the award or to give satisfactory surety as required by law.

A performance bond and a payment bond will be required for one hundred percent (100%) of the contract price.

Payment will be made based on ninety-five percent (95%) of monthly estimates and final payment made upon completion and acceptance of work.

No bid may be withdrawn after the scheduled closing time for the receipt of bids for a period of 60 days.

The owner reserves the right to reject any or all bids and to waive informalities.

Designer: Moseley Architects (Name)	Owner : NC Department of Public Safety <u>-</u> Central Engineering
6210 Ardrey Kell Rd, Suite 425 Charlotte NC (Address)	2020 Yonkers Road, Raleigh, NC 27604
(704) 540-3755 (Phone)	(919)716-3400

SECTION 064023 - INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Provisions of the Contract and of the Contract Documents apply to this Section.

1.2 DEFINITIONS

A. Interior architectural woodwork includes wood furring, blocking, shims, and hanging strips for installing woodwork items unless concealed within other construction before woodwork installation.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated, including cabinet hardware and accessories and finishing materials and processes.
- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
 - 1. Show locations and sizes of furring, blocking, and hanging strips, including blocking and reinforcement concealed by construction and specified in other Sections.
 - 2. Show locations and sizes of cutouts and holes for items installed in architectural woodwork.
- C. Samples: For the following:
 - 1. Plastic laminates.
 - 2. PVC edge material.
 - 3. Solid-surfacing materials.
 - 4. Grommets.

1.4 INFORMATIONAL SUBMITTALS

- A. Woodwork Quality Standard Compliance License: Provide license showing proof of certification in AWI Quality Certification Program. (AD-01)
- B. Qualification Data: For woodwork manufacturer/fabricator and Installer.
- C. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Woodwork Quality Standard Certificate: Provide AWI Quality Certification Program "Certificate of Compliance" indicating that woodwork, including installation, complies with requirements of grades specified. (AD-01)

1.6 QUALITY ASSURANCE

A. Fabricator's Qualifications: Employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance. (AD-01)

1. Fabricator's Certification: Licensed participant in AWI's Quality Certification Program. (AD-01)

2. Installer Qualifications: Fabricator of products and licensed participant in AWI's Quality Certification Program. (AD-01)

- B. Quality Standard: Unless otherwise indicated, comply with "Architectural Woodwork Standards Edition Two," October 2014 (AWS), published jointly by Architectural Woodwork Institute (AWI), Woodwork Institute (WI), and Architectural Woodwork Manufacturer's Association of Canada (AWMAC) for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.
- C. Accessibility Requirements: Where casework is indicated to comply with accessibility requirements, comply with the Department of Justice ADA Standards for Accessible Design and ICC/ANSI A117.1.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Comply with the Architectural Woodwork Standards, Section 2.
- B. Do not deliver interior architectural woodwork until painting and similar finish operations that might damage woodwork have been completed in installation areas.
- C. Store woodwork in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.8 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install interior architectural woodwork until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during the remainder of the construction period.
- B. Field Measurements: Where interior architectural woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings.
 - 1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being concealed by construction, and indicate measurements on Shop Drawings.
 - 2. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating woodwork without field measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.9 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that architectural woodwork can be supported and installed as indicated.

PART 2 - PRODUCTS

2.1 ARCHITECTURAL WOODWORK, GENERAL

- A. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.
 - 1. The Contract Documents contain requirements that are more stringent than the Architectural Woodwork Standards. Comply with Contract Documents and Architectural Woodwork Standards.

2.2 MATERIALS

- A. General: Provide materials that comply with requirements of AWI's quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.
- B. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or, if not indicated, as required by woodwork quality standard.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering high-pressure decorative laminates that may be incorporated into the Work include, but are not limited to, the following:
 - a. Arborite.
 - b. Formica Group, Div. of Fletcher Building.
 - c. Panolam Industries International Inc.; Nevamar Div.
 - d. Panolam Industries International Inc.; Pionite Div.
 - e. Wilsonart LLC.
- C. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Avonite Surfaces, a Brand of Aristech Surfaces, LLC; "Avonite."
 - b. E. I. du Pont de Nemours and Company; "Corian."
 - c. Formica Group, Div. of Fletcher Building; "Solid Surfacing."
 - d. Hanwha L&C; "Hanex."
 - e. LG Hausys America; "HI-MACS."
 - f. Lotte Advanced Materials Co., Ltd.; "Staron."
 - g. Wilsonart LLC; "Solid Surface."
 - 2. Type: Standard type, unless Special Purpose type is indicated.
 - 3. Thickness: 1/2-inch.
 - 4. Colors and Patterns: As selected by Architect from manufacturer's full range of colors equivalent to Dupont Corian Price Groups 1-5.
 - 5. Physical Characteristics:
 - a. Fungal and Bacterial Resistance: No growth, per ASTM G 21 and G 22.
 - b. Tensile Strength: 4000 psi minimum per ASTM D 638.
 - c. Barcol Hardness: 56 minimum per ASTM D 2583.
 - d. Izod Impact Resistance: 0.28 ft-lb/in minimum per ASTM D 256 Method A.

- e. Ball Impact Resistance: No fracture at 112 inch drop minimum per NEMA LD 3-3 (1/2 lb. ball on 1/2" material).
- f. Stain Resistance: Pass per ANSI Z124.3 and/or ANSI Z124.6.
- g. Boiling Water Resistance: No effect per NEMA LD 3-3 or ISSFA SST 8.1-00.
- h. High Temperature Resistance: No effect per NEMA LD 3-3 or ISSFA SST 9.1-00.
- i. Flame Spread: <25 per ASTM E 84.
- j. Smoke Developed: <400 per ASTM E 84.
- D. Edgebanding for Plastic Laminate: Rigid PVC extrusions, through color with satin finish, 3 mm thick at doors and drawer fronts, 0.5 mm thick elsewhere.

2.3 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Nailers: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content. Provide fire-retardant-treated and pressure-preservative treated softwood lumber where indicated.
- B. Provide self-drilling screws for metal-framing supports, as recommended by metal-framing manufacturer.
- C. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage.
 - 1. Provide metal expansion sleeves or expansion bolts for post-installed anchors.
 - 2. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.
- D. Steel Plates and Angles: ASTM A36, shop primed, (field paint in Division 9 Section "Paints"). (miscellaneous clips etc.)
- E. Security Fasteners: Provide vandal-resistant ("Torx-head") security fasteners conforming to requirements in Division 11 Section "Security/Detention Equipment" for applications in exposed and semi-exposed surfaces.
- F. Installation Adhesive: Product recommended by fabricator for each substrate for secure anchorage.
 - 1. Do not use adhesives that contain urea formaledehyde.
 - 2. VOC Limits for Installation Adhesives: Installation adhesives shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Wood Glues: 30 g/L.
 - b. Multipurpose Construction Adhesives: 70 g/L.
 - c. Contact Adhesive: 250 g/L.
- G. Adhesive for Bonding Plastic Laminate: Contact cement.
 - 1. Adhesive for Bonding Edges: Hot-melt adhesive or as specified above for faces.

2.4 PLASTIC-LAMINATE CABINETS

- A. Grade: Premium, except as noted for drawer construction.
- B. AWI Type of Cabinet Construction: Reveal overlay.
 - 1. Cabinet Body Construction:
 - a. Tops and bottoms are glued and doweled to cabinet sides and internal cabinet components such as fixed horizontals, rails and verticals. Minimum 6 dowels each

joint for 24 inch deep cabinets and a minimum of 4 dowels each joint for 12 inch deep cabinets.

- 1) Tops, bottoms and sides of all cabinets are 3/4-inch thick particleboard core.
- b. Cabinet Backs Semi-exposed: Minimum 3/8-inch thick prefinished particleboard or 1/4-inch thick medium-density fiberboard fully captured four sides or 1/2-inch prefinished particleboard full overlay construction. Provide 3/4-inch x 4 inch anchor or hanging strip except where backs are ½-inch or thicker per AWI standard.
- c. Provide either of the following types of base construction to support cabinet load transfer, isolate the cabinet ends from contact with floor, and permit leveling.
 - Separate Sub-base: Cabinet sub-base shall be separate and continuous (no cabinet body sides-to-floor), exterior grade plywood with concealed fastening to cabinet bottom. Sub-base shall be ladder-type construction of individual front, back, and intermediates, to form a secure and level platform to which cabinets attach. Recess sub-base at exposed cabinet end panels 1/4 inch from face of finished end, for flush installation of finished base material by other trades.
 - 2) Integral Base: Provide end panels, cabinet bottoms, and horizontal toe kick members integrally joined together for structural strength and to facilitate load transfer directly through cabinet ends to the floor. Provide 1-3/8" x 3" x 3/8" thick injection molded, chemical resistant, polypropylene isolation supports factory-applied at the four corners of each toe base to prevent cabinets from contacting the floor. Internally-mount isolation supports to permit surface-application of continuous resilient base.
- C. Reveal Dimension: Not more than 3/4-inch.
- D. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:
 - 1. Horizontal Surfaces Other Than Tops: Grade VGS.
 - 2. Vertical Surfaces: Grade VGS.
 - 3. Cabinet Body and Shelf Edges: PVC tape, 0.5 mm minimum thickness, matching laminate in color, pattern, and finish.
 - 4. Door and Drawer Front Edges: PVC edge banding, 3 mm thick, matching laminate in color, pattern, and finish. Provide "eased" edges and corners.
- E. Materials for Semi-exposed Surfaces:
 - 1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, Grade VGS.
 - a. Edges of Plastic-Laminate Shelves: PVC tape, 0.018-inch minimum thickness, matching laminate in color, pattern, and finish.
 - b. For semi-exposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, Grade VGS.
 - 2. Drawer Sides and Backs: Per AWI standard for "Custom" Grade: 15/32-inch minimum, except provide 5/8-inch minimum at drawer boxes wider than 30 inches.
 - 3. Drawer Bottoms: Match material used at drawer sides and backs, 15/32-inch minimum; or 1/4-inch thick thermally fused melamine clad medium-density fiberboard fully captured four sides.

- F. Concealed Backs of Panels with Exposed Plastic Laminate Surfaces: High-pressure decorative laminate, Grade BKL.
- G. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 - 1. Selected by Architect from laminate manufacturer's full range (standard and premium lines) of product in standard textured finish (textured gloss, fine textured or suede finish).

2.5 SOLID-SURFACING-MATERIAL COUNTERTOPS

- A. Grade: Custom.
- B. Solid-Surfacing-Material Thickness: 1/2-inch.
- C. Colors, Patterns, and Finishes: As selected by Architect from manufacturer's full range of colors equivalent to Dupont Corian Price Groups 1-5.
- D. Fabricate tops in one piece, unless otherwise indicated. Comply with solid-surfacing-material manufacturer's written recommendations for adhesives, sealers, fabrication, and finishing.
 - 1. Fabricate tops with shop-applied edges of materials and configuration indicated.
 - 2. Fabricate tops with loose backsplashes for field application.
- E. Edge Treatment: Double Eased.

2.6 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets, except for items specified in Division 8 Section "Door Hardware." Provide all hardware necessary for complete and functioning cabinets whether included in specification or not.
- B. Butt Hinges: BHMA A156.9 Grade 1, 2-3/4-inch, 5-knuckle stainless steel hinges made from 0.095-inch-thick metal, with antifriction bearings and rounded hospital tips, and as follows:
 - 1. Semi-concealed Hinges for Flush Doors: BHMA A156.9, B01361.
 - 2. Semi-concealed Hinges for Overlay Doors: BHMA A156.9, B01521.
 - 3. Provide two hinges for doors less than 48 inches high, and provide three hinges for doors more than 48 inches high.
- C. Back-Mounted Pulls: BHMA A156.9, B02011.
 - 1. Wire Pulls: Back-mounted, stainless steel, 4 inches (100 mm) long, 5/16-inch (8 mm) in diameter.
- D. Catches: Roller catches, BHMA A156.9, B03071. Provide large roller catches, BHMA A156.9, B03112 for extra large cabinet doors, such as full-height cabinets.
- A. Shelf Rests: Injection molded plastic friction fit 2-pin locking shelf rests complying with BHMA A156.9, Type B04013. Provide integral retaining clip to fit 3/4 inch or 1 inch thick shelving and provides non-tip feature for shelving. Supports may be field fixed if desired. Structural load to 1200 pounds (300 pounds per support) without failure.
- B. Drawer Slides: Powder-coated, self-closing, heavy-duty drawer slides, designed to prevent drawer rebound; with nylon-tired, ball-bearing rollers; and meeting BHMA A156.9, Type B05011 (bottom edge mount) or B05051 (side mount), and rated as follows:

- 1. Drawers except as noted: Minimum 100 lbf dynamic load rating at 50,000 cycles. Minimum 150 lb loading static edge load test rating for one minute duration on fully extended drawer. Provide standard (3/4) extension travel.
- 2. Paper Storage and File Drawers: Minimum 120 lbf dynamic load rating at 50,000 cycles. Minimum 150 lb loading static edge load test rating for one minute duration on fully extended drawer. Provide full extension travel.
- C. Drawer Slides: BHMA A156.9, B05091.
 - 1. Heavy Duty (Grade 1HD-100 and Grade 1HD-200): Side mounted; full-extension type; zinc-plated steel ball-bearing slides.
 - a. Box Drawer Slides: 100 lbf (440 N). Accuride #7432, Knape & Vogt #KV8414, or Fulterer #FR 5000 Series.
 - b. File Drawer Slides: 150 lbf (670 N). Accuride #4032, Knape & Vogt #KV8500, or Fulterer #FR 5755.
 - c. File Drawer Slides: 200 lbf (890 N). Accuride #3640A, Knape & Vogt #KV8800, or Fulterer #FR 5302
 - d. Pencil Drawer Slides (3/4 extension): 45 lbf (200 N). Accuride #2006, Knape & Vogt #KV8200/8250, or Fulterer #FR 5162.
- D. Flush Pulls (where indicated): BHMA A156.9, B02201. Provide Hafele #151.35 or approved equivalent.
- E. Door Locks: BHMA A156.11, E07121.
- F. Drawer Locks: BHMA A156.11, E07041.
- G. Grommets for Cable Passage through Countertops: 2.5-inch OD, molded-plastic grommets and matching removable plastic caps with slot for wire passage.
 - 1. Grommet Size: To suit nominal 2 1/2-inch diameter hole, 2 9/32-inch inside diameter and 5/8 inch deep.
 - 2. Cap Size: 3-inch overall diameter, with a cord slot 7/8-inch wide.
 - 3. Color: As selected by Architect from manufacturer's full range.
- H. Wire Management: Coated steel J-hook type formed with rounded edges and designed to support data cable, with quick-latch cable retainer.
 - 1. Available Products: Subject to compliance with requirements, available products include, but are not limited to, the following:
 - a. Erico; "Caddy CAT HP" series.
 - b. ICC; "J-Hook MSJHK" series.
 - c. Cooper Tools; "BCH" series.
 - 2. Width: 2-inch unless indicated otherwise.
- I. Undercounter Utility Braces: Heavy-duty prefabricated steel braces for full cantilevered support of countertop from rear wall without reducing knee space. Provide braces designed to accommodate leveling cleats and passage of conduit and piping and complete with predrilled holes for screw fasteners.
 - 1. Load Capacity: 500 pounds minimum per pair at 16 inches o.c. as installed, and up to 1000 pounds per pair as fabricated. Install at 16 inches o.c. along full length of countertops unsupported by cabinetry unless indicated otherwise.

- 2. Size: 21 inches x 28 inches minimum for standard 30-inch deep counter unless indicated otherwise. Provide smaller sizes suitable for smaller counters as approved.
- 3. Finish: Factory finish baked enamel or primed and ready for field painting. Factory finish color as selected by Architect from manufacturer's full range.
- 4. Available Products. Subject to compliance with requirements, provide one of the following products or approved equivalent:
 - a. A & M Hardware, Inc.; "Standard Bracket."
 - b. Best Brackets; "ADA Workstation Support Standard Steel Bracket."
 - c. FastCap; "SpeedBrace."
 - d. Lyman Associates; "Counter Top Supports."
- J. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
 - 1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
 - 2. Satin Stainless Steel: BHMA 630.
- K. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.7 FABRICATION

- A. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.
- B. Complete fabrication, including assembly, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide allowance for scribing, trimming, and fitting.
 - 1. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that parts fit as intended, and check measurements of assemblies against field measurements indicated on approved Shop Drawings before disassembling for shipment.
- C. Shop-cut openings to maximum extent possible to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
 - 1. Seal edges of openings in countertops with a coat of varnish.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installation, condition interior architectural woodwork to humidity conditions in installation areas for not less than 72 hours prior to beginning of installation.
- B. Before installing interior architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming of concealed surfaces.

3.2 INSTALLATION

- A. Grade: Install interior architectural woodwork to comply with same grade as item to be installed.
- B. Assemble interior architectural woodwork and complete fabrication at Project site to the extent that it was not completed during shop fabrication.
- C. Install interior architectural woodwork level, plumb, true in line, and without distortion. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.
- D. Scribe and cut interior architectural woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Anchor interior architectural woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with interior architectural woodwork. For shop-finished items, use filler matching finish of items being installed.
- F. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
 - 1. Install cabinets with no more than 1/8-inch in 96-inch sag, bow, or other variation from a straight line.
 - 2. Resilient base at base cabinets (all exposed sides) is specified in Division 9 Section "Resilient Base and Accessories."
 - 3. For removable panels, provide zee clips. Arrange panel clearances to adjacent work to allow removal. At under-sink cabinetry access panels, provide steel cable retainer of a length that allows the removable panel to be set aside for clear service access, secured with tamper-resistant fasteners. Alternatively, provide a lock to secure the panel.
 - 4. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches o.c. with No. 10 wafer-head screws sized for 1-inch penetration into wood framing, blocking, or hanging strips or No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish.
 - 5. Present keys to Owner's representative. Identify keys by room number and casework type. Obtain receipt from Owner.
- G. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
 - 1. Align adjacent solid-surfacing-material countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
 - 2. Install countertops with no more than 1/8-inch in 96-inch sag, bow, or other variation from a straight line.
 - 3. Secure backsplashes to tops with concealed metal brackets at 16 inches o.c..
 - 4. Caulk space between backsplash and wall with sealant specified in Division 7 Section "Joint Sealants."

3.3 REPAIR, ADJUSTING, AND TOUCHUP

- A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects and to result in interior architectural woodwork being in compliance with requirements of Architectural Woodwork Standards for the specified grade.
- B. Where not possible to repair, replace defective woodwork.
- C. Adjust joinery for uniform appearance. Clean, lubricate, and adjust hardware.

3.4 CLEANING

A. Clean interior architectural woodwork on exposed and semi-exposed surfaces.

END OF SECTION 064023

SECTION 079500 – EXPANSION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Provisions of the Contract and of the Contract Documents apply to this Section.

1.2 DEFINITIONS

- A. Maximum Joint Width: Widest linear gap a joint system tolerates and in which it performs its designed function without damaging its functional capabilities.
- B. Minimum Joint Width: Narrowest linear gap a joint system tolerates and in which it performs its designed function without damaging its functional capabilities.
- C. Movement Capability: Value obtained from the difference between widest and narrowest widths of a joint opening typically expressed in numerical values (mm or inches) or a percentage (plus or minus) of nominal value of joint width.
- D. Nominal Joint Width: The width of the linear opening specified in practice and in which the joint system is installed.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Provide factory-fabricated architectural joint systems capable of withstanding the types of loads and of accommodating the kinds of movement, and the other functions for which they are designed including those specified below, without failure. Types of failure include those listed in Appendix X3 of ASTM E 1399.
 - 1. Pedestrian Traffic Joints: Support pedestrian traffic across joint.
 - 2. Joints in Fire-Resistance-Rated Assemblies: Maintain fire-resistance ratings of assemblies.
 - 3. Other Joints: Where indicated, provide joint systems that prevent penetration of water, moisture, and other substances deleterious to building components or content.
 - 4. Joints in Surfaces with Architectural Finishes: Serve as finished architectural joint closures.

1.4 SUBMITTALS

- A. Product Data: Include manufacturer's product specifications, construction details, material and finish descriptions, and dimensions of individual components and seals.
- B. Shop Drawings: For each joint system specified, provide the following:
 - 1. Placement Drawings: Include line diagrams showing entire route of each joint system, plans, elevations, sections, details, joints, splices, locations of joints and splices, and attachments to other Work. Where joint systems change planes, provide Isometric Drawings depicting how components interconnect to achieve continuity of joint covers and fillers.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain architectural joint systems through one source from a single manufacturer. Coordinate compatibility with adjoining joint systems specified in other Sections.

- B. Fire-Test-Response Characteristics: Where indicated, provide joint systems incorporating fire barriers that are identical to those of assemblies tested for fire resistance per ASTM E 119 and ASTM E 814, including hose-stream test of vertical wall assemblies, by a testing and inspecting agency acceptable to authorities having jurisdiction.
- C. Product Options: Drawings indicate size, profiles, and dimensional requirements of architectural joint systems and are based on the specific systems indicated. Other manufacturers' systems complying with requirements may be considered. Refer to Division 1 Section "Materials and Equipment."
 - 1. Do not modify intended aesthetic effects, as judged solely by Architect, without Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, those indicated in Part 2 "Architectural Joint Systems" Article.

2.2 MATERIALS

- A. Aluminum: ASTM B 221, alloy 6063-T5 for extrusions; ASTM B 209, alloy 6061-T6 for sheet and plate.
 - 1. Apply manufacturer's standard protective coating on aluminum surfaces to be placed in contact with cementitious materials.
- B. Stainless Steel: ASTM A 666, Type 304 with No. 2B finish, unless otherwise indicated, for plates, sheet, and strips.
- C. Strip Seals: Elastomeric membrane or tubular extrusions with a continuous longitudinal internal baffle system throughout complying with ASTM E 1783; used with compatible frames, flanges, and molded-rubber anchor blocks.
- D. Fire Barriers: Any material or material combination, when fire tested after cycling, designated to resist the passage of flame and hot gases through a movement joint.
- E. Accessories: Manufacturer's standard anchors, clips, fasteners, set screws, spacers, flexible moisture barrier and filler materials, drain tubes, lubricants, adhesives, and other accessories compatible with material in contact, as indicated or required for complete installations.

2.3 ARCHITECTURAL JOINT SYSTEMS

- A. General: Provide joint systems of design, basic profile, materials, and operation indicated. Provide units with the capability to accommodate joint widths indicated and variations in adjacent surfaces.
 - 1. Furnish units in longest practicable lengths to minimize number of end joints. Provide hairline mitered corners where joint changes directions or abuts other materials.
 - 2. Include closure materials and transition pieces, tee-joints, corners, curbs, crossconnections, and other accessories as required to provide continuous joint systems.

- 3. Frames for Strip Seals: Designed with semi-closed cavity that provides a mechanical lock for seals of type indicated.
- B. Architectural Joint System Type G: Preformed Foam Joint Sealant for interior and exterior joints on walls for secure applications: Preformed sealant shall be pre-coated with a pick-resistant polyurethane, pre-compressed, self-expanding, 2 hour-rated sealant system. Sealant system shall be comprised of the following components: 1.) fire-retardant-impregnated foam pre-coated on both sides with an intumescent fire-proofing material and pre-coated at the outer layers with waterproof polyurethane, 2.) field-applied epoxy adhesive primer, 3.) field-injected polyurethane sealant bands. Factory produce in precompressed sizes in roll or stick form to fit joint widths indicated; coated on one side with a pressure-sensitive adhesive and covered with protective wrapping.
 - 1. Products:
 - a. EMSEAL Joint Systems, Ltd.; Emshield SecuritySeal SSW2.
 - b. Nystrom; Nystrom model PSES2.
 - c. EMS, Inc: CSPR(2FRV-50) -Series (AD-01)
 - 2. Movement capacity of +25%, -25% (50% total) of nominal material size.
 - 3. Polyurethane external color facings to be low-modulus, waterproof, pick-resistant, factory-applied to the foam while it is partially pre-compressed to a width greater than maximum joint extension and cured before final compression. When compressed to final supplied dimension, a bellow(s) to handle movement must be created in the polyurethane coating.
 - 4. Select the sealant system model appropriate to the movement and design requirements at each joint location that meet the project specification or as defined by the structural engineer of record.
 - 5. Manufacturer's Checklist must be completed by expansion joint subcontractor and returned to manufacturer at time of ordering material.

2.4 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

2.5 ALUMINUM FINISHES

- A. Mill Finish: AA-M10 (Mechanical Finish: as fabricated; no other applied finish unless buffing is required to remove scratches, welding, or grinding produced in fabrication process.
- B. Class II, Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 607.1.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare substrates according to architectural joint system manufacturer's written instructions.

- 1. Preparation of the Work Area for Preformed Foam Joint Sealant Security Type (D)
 - a. The Contractor shall provide properly formed and prepared expansion joint openings constructed to the exact dimensions and elevations shown on manufacturer's standard system drawings or as shown on the Contract Drawings. Deviations from these dimensions will not be allowed without written consent of the engineer of record.
 - b. The Contractor shall clean the joint opening of all contaminants immediately prior to installation of expansion joint system. Repair spalled, irregular or unsound joint surfaces using accepted industry practices for repair of the substrates in question. Remove protruding roughness to ensure joint sides are smooth. Ensure that there is sufficient depth to receive the full depth of the size of the EMSHIELD SSW2 being installed plus at least ¼-inch (6mm) for the application of corner beads. Refer to Manufacturers Installation Guide for detailed step-by-step instructions.
- B. Coordinate and furnish anchorages, Placement Drawings, and instructions for installing joint systems to be embedded in or anchored to concrete or to have recesses formed into edges of concrete slab for later placement and grouting-in of frames.
- C. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary to secure joint systems to in-place construction, including threaded fasteners with drilled-in expansion shields for masonry and concrete where anchoring members are not embedded in concrete. Provide fasteners of metal, type, and size to suit type of construction indicated and to provide for secure attachment of joint systems.

3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for handling and installing architectural joint assemblies and materials, unless more stringent requirements are indicated.
- B. Coordinate installation of architectural joint assembly materials and associated work so complete assemblies comply with assembly performance requirements.
- C. Terminate exposed ends of exterior architectural joint assemblies with factory-fabricated termination devices to maintain waterproof system.
- D. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required to install joint systems.
 - 1. Install joint cover assemblies in true alignment and proper relationship to joints and adjoining finished surfaces measured from established lines and levels.
 - 2. Allow adequate free movement for thermal expansion and contraction of metal to avoid buckling.
 - 3. Set covers in horizontal surfaces at elevations that place exposed surfaces flush with adjoining finishes.
 - 4. Locate wall covers in continuous contact with adjacent surfaces.
 - 5. Securely attach in place with required accessories.
 - 6. Locate anchors at interval recommended by manufacturer, but not less than 3 inches from each end and not more than 24 inches o.c.

- E. Continuity: Maintain continuity of joint systems with a minimum number of end joints and align metal members. Cut and fit ends to produce joints that will accommodate thermal expansion and contraction of metal to avoid buckling of frames. Adhere flexible filler materials, if any, to frames with adhesive or pressure-sensitive tape as recommended by manufacturer.
- F. Joint Systems with Seals: Seal end joints within continuous runs and joints at transitions according to manufacturer's written instructions to provide a watertight installation.
- G. Fire Barriers: Install fire barriers to provide continuous, uninterrupted fire resistance throughout length of joint, including transitions and end joints.

3.3 CLEANING AND PROTECTION

A. Do not remove protective covering until finish work in adjacent areas is complete. When protective covering is removed, clean exposed metal surfaces to comply with manufacturer's written instructions.

END OF SECTION 079500

SECTION 111900 - DETENTION EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Provisions of the Contract and of the Contract Documents apply to this Section.

1.2 SUMMARY

- A. Detention Equipment Contractor (DEC):
 - 1. Provide the Detention Equipment indicated on the Drawings, in schedules and as specified in this section.
 - 2. Types of Detention Equipment:
 - a. Detention Mirror, Single & Double
 - b. Detention Bed, floor mounted
 - c. Dayroom 4-Man Table
 - d. Dayroom Chair (*AD 01)
 - e.<u>d.</u> Recessed Toilet Paper Roll Holder
 - f.<u>e.</u>Hopper Pass
 - g.f.__Detention Grab Bars, Anti-Ligature
 - h.g. Wall Embed Plates for detention grab bars
 - i.h. Security Steel Bar Grillage
 - j.i. Key Cabinet is specified in Section 111960
 - 3. Refer Division 22 Section "Security Plumbing Fixtures" for detention equipment provided in and/or as part of the construction of cabinet shower units, including, but not limited to, wall-mounted grab bars and stainless-steel shower seats.
 - 4. Furnish to the General Contractor, for installation, all embedded anchors for Detention Equipment.
 - 5. Coordinate installation of the embedded items and the actual detention equipment with the appropriate Contractors.
 - 6. Coordinate with the Security Control System Contractor (SCSC), as described in Section 285000.
- B. General Contractor:
 - 1. Install embedded anchors for Detention Equipment in accordance with manufacturer's and detention equipment subcontractor's shop drawings.
 - 2. Coordinate installation of embedded items with the DEC.

1.3 QUALITY ASSURANCE

- A. A specialty Detention Equipment Contractor (DEC) is required for this project.
- B. The DEC shall provide all detention equipment, shop drawing submittals, testing reports, and samples as described in Specification Sections 111900, 111910, 111930, 111950, and 111960. The DEC shall coordinate the work of all these specification sections with his various equipment manufacturers, fabricators, installers, and also, with work by others. Questions on the detention scope of work must be directed to the DEC before being directed to the General Contractor, Architect/Engineer, or Owner.

- C. Available Detention Equipment Contractors (DEC):
 - 1. Cornerstone Detention Decatur, AL 35601
 - 3. Pauly Jail Building Company Noblesville, IN 46062
 - Detention Equipment Service, Inc. (DESI) Landenberg, PA 19350 / Pendergrass, GA 30567
- 2. Bruner Detention & Security Harrisonburg, VA 22802
- 4. Montgomery Technology Systems (formerly CCC Group) San Antonio, TX 78219
- 6. JAILS Correctional Products Minster, OH 45865

1.4 DETENTION EQUIPMENT CONTRACTOR'S (DEC) QUALIFICATIONS

- A. It is critical that the Detention Equipment meets the requirements of the Contract Documents and that the equipment and/or systems be properly installed and functioning correctly by the Time of Completion specified.
- B. It is not, however, the intent of the Owner or Architect to unfairly restrict competition. Other equally competent DECs who meet the 'qualification criteria' specified herein shall be added to the list of 'Available Detention Equipment Contractors (DEC)' by addendum.
- C. All competent non-listed DECs may request to be listed by submitting the data requested in the Qualification Criteria, a minimum of fifteen (15) days prior to bid receipt date.
- D. All other competent DECs will be listed in an addendum. Verbal approval will not satisfy this requirement. Grounds for disqualification shall exist if, in the opinion of the Architect, the information submitted is inaccurate or does not comply with the requirements of this specification. There will be no exceptions.
- E. QUALIFICATION CRITERIA FOR THE DEC: It is critical that the Detention Equipment meets the requirements of the Contract Documents and that the equipment and systems be properly installed and functioning correctly by the Time for Completion specified for the facilities. Therefore, the DEC must meet the following qualification criteria:
 - 1. Perform at least 50 percent of the Work (on-site installation) with its employees. Submit payroll record of executing project installation labor with a minimum of 50 percent of labor performed by direct employees of the DEC Company.
 - 2. Provide a narrative of the history of the company from inception; including history of ownership, partnership, incorporation and/or other organizational information. Include information on the growth of the firm over time to include number of employees, relocation(s) of the firm, major production equipment purchases and replacements. Use only the current corporate/business entity, intending on bidding and performing the work.
 - 3. Provide a statement that the firm has been in business under its current name for minimum of ten (10) continuous years.
 - 4. Provide a list of all employees in supervisory positions stating their area of responsibility and their years of experience in that position.
 - a. Number of years as a full-time employee of the DEC
 - b. Number of years of jail experience
 - c. Completed training program for iron workers(if involved in equipment installation)
 - 5. Submit a complete list of all projects completed under the DEC's current name. Specifically highlighting projects completed in NC, SC and VA, including:

- a. Project Name, Owner, Contact Name, Address, and Phone Number
- b. Architect/Engineer of Record Name, Address, and Phone Number
- c. General Contractor or Construction Manager Name, Address, and Phone Number
- d. Total Amount of the DEC's Contract and Completion Date
- 6. Submit a listing of all jobs in which the DEC is presently and has been involved in litigation and the status thereof.
- 7. Provide a list of all jobs that your firm has been involved in liquidated damages or delay damages were filed against your firm.
- 8. Submit a letter of intent to test each detention door as described in Section 111910.
- 9. Submit for approval the name of the detention equipment manufacturers you intend to purchase from. Submit a current letter from the detention hardware manufacturer stating that the DEC is factory trained, fully authorized distributor and installer of their complete line of products.
- 10. Provide signed statement that DEC has not been found guilty of charges relating to conflicts of interest or to any criminal activity relating to construction methods, bidding, bid rigging, or bribery in the past five years.
- 11. Provide signed statement that DEC has not been found guilty of charges relating to employment of illegal aliens on construction projects in the last five (5) years.
- 12. Provide a letter from 'A' rated surety company that your company will be able to provide a 100 percent Performance/Payment bond for this project if awarded the project, but not less than \$3 million dollars.
- 13. Provide a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following:
 - a. Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, material inventory and prepaid expenses);
 - b. Net Fixed Assets;
 - c. Other Assets;
 - d. Current Liabilities (e.g. accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes); and
 - e. Other Liabilities (e.g. capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

1.5 SUBMITTALS

- A. A shop drawing submittal meeting shall be held and coordinated by the General Contractor within two weeks after submittal. All participants should have at least two (2) week's worth of review of this first Shop Drawing submittal and be prepared to comment on its appropriateness for their assigned job efforts. The meeting shall last no longer than two (2) eight-hour days. A qualified representative from each of the following entities shall be present at the meeting:
 - 1. Owner
 - 2. Architect
 - 3. General Contractor
 - 4. Detention Equipment Contractor
 - 5. Security Control System Contractor
 - 6. Security Hollow Metal Manufacturer
 - 7. Security Glazing Manufacturer

- 8. Security Hardware Manufacturer
- 9. Architectural Hardware Subcontractor
- 10. Electrical Contractor
- B. Failure to follow submittal criteria will constitute submittals being non-compliant and will be reviewed as "Rejected/Resubmit". The DEC must submit the indicated and necessary shop drawing criteria for each individual specification section as an entire section and for each subsequent resubmittal.
- C. Required submittal packages shall be submitted as a complete package for each Division 11 specification section. Failure to do so will result in the submittal being "Rejected" and returned.
- D. Manufacturer's Data
 - 1. Submit one (1) reproducible (digital format) of manufacturer's product specifications and installation instructions for each type of Detention Equipment.
- E. Shop Drawings and Samples
 - 1. Submit one (1) reproducible (digital format) copy of all proposed and/or specified detention equipment, showing plan and elevation layouts, fastener and anchorage details, inserts, and dimensional construction details.
 - 2. Submit (upon the Owner's or Architect's request) one (1) each sample of any or all proposed and/or specified detention equipment items, to the Owner for his review and final approval. Coordinate with the Owner's representative as to whom and where these samples are to be delivered.

1.6 PRODUCT HANDLING

- A. Protect units and finishes from damage during shipping, storage, handling, installation, and construction of other work in the same area.
- B. Wrap, crate, and label each item for protection from damage. Deliver pertinent items to be built-in to the General Contractor or trades in accordance with the construction progress schedule to prevent any delay.
- C. Keys shall be sent directly to the person and address as directed by the Owner, via direct mail with restricted delivery and return receipt requested.

1.7 GUARANTEE

A. Upon final completion, the Manufacturer/Installer shall provide a written warranty covering the security / detention equipment against defective materials and workmanship and guaranteeing satisfactory operation and performance for a period of one (1) year after Final Acceptance. The Manufacturer/Installer shall make necessary adjustments and replace any defective or broken parts caused by defective mechanical parts.

PART 2 - PRODUCTS

2.1 DETENTION EQUIPMENT

- A. Manufacturers: Subject to compliance with requirements, provide products by one or more of the following:
 - 1. Southern Folger Detention Equipment Co.; San Antonio, TX

- 2. Modern Detention Equipment; Cincinnati, OH
- 3. Willo Products Co.; Decatur, AL
- 4. JAILS Correctional Products; Minster, OH
- 5. Viking Products; Orange, CA
- 6. Majestic Solutions, Inc.; Madison, AL
- 7. Trussbilt; Vadnais Heights, MN
- 8. Norix Group, Inc; West Chicago, IL
- B. Individual Detention Equipment Items:
 - 1. **Detention Mirror, Single & Double:** with Embedded Back Plate

a. Basis-of-Design Model/ Manufacturer:

- 1) SS No. 432/Southern Folger Detention Equip Co.
- b. Construction:
 - 1) Mirrors:
 - a) Mirror frame shall be 11-1/4 inches by 17-1/4 inches, fabricated from 16 gauge cold finished steel, with 5/16 inch inner and outer flanges and having a tensile strength of not less than 53,000 pounds per square inch. Frame to have natural finish, chromium plated.
 - b) Mirror opening shall be 10 inches by 14 inches, made of 0.031 inch sheet steel, polished to a high degree of reflectivity, and chromium plated.
 - c) Include eight (8) chromium plated, security type, flat head machine screws, 1/4 inch diameter of proper length for use in backer plate.
 - 2) Embed Back Plates:
 - a) Provide steel embed plates and 11 gauge anchor tabs as detailed and/or required by the mirror manufacturer (refer to details on Drawings).

2. **Detention Floor-Mounted Bed:**

- a. Basis-of-Design Model/Manufacturer:
 - 1) Attenda Floor Mount Bed (Model ATN101)/Norix.
- b. Size/Mounting:
 - 1) 84 inches L by 40 inches W by 15.5 inches H.
 - 2) Bolt bed to the floor utilizing security head fasteners and concrete wedge anchors.
 - 3) Provide security sealant at joints between bed and floor and walls.
- c. Provide 10-year limited replacement warranty.

3. **Dayroom 4-Man Table:**

a. Construction - refer to details on Drawings:

- 1) Provide accessible unit with only three (3) seats where indicated on drawings.
- 2) Tabletops and seats shall be stainless steel and be smooth, true, level, and free of sharp edges. Refer to table detail for steel gauge.
- 3) **Provide checkerboard game top.**
- 4) **Provide post under each seat.**
- 5) One-piece, welded assembly; all welds neatly finished.
- a. Basis-of-Design Model/Manufacturer:
 - 1) No. XB4200 (42" diameter) / Norix (Norix Round X-base Table)
- b. Construction:

- Base: Two interlocking base panels. 1-5/8" thick 45 lb. density particle board, sandwiched between 1/8" thick hardboard and faced both sides with .050" thick, high-pressure laminate and banded on three exposed edges with heavy duty T-molding that is glued and steel pinned every twelve inches. An intermediate mounting plate joins the base to the top.
 a) Color for plastic laminate: Black
- 2) Top: 45 lb. density particle board core with embedded T-nuts for securing top to base. Decorative high-pressure laminate sealed with a specially formulated, highly durable Slammer Stone edge. Edge is radiused for safety and pressure fused to the top. 1-1/2" thick edge profile.
 - a) Provide checkerboard game top.
 - b) Colors for plastic laminate and molded table edge: As selected by
 - the Architect from the manufacturer's full range of colors.
- 3)6) 10-year limited replacement warranty. (*AD 01)
- 4. Dayroom Chair:
 - a. Basis-of-Design Model/Manufacturer:
 - 1) Integra Stacking Armless Chair (Model C110)/ Norix
 - b. Construction:
 - 1) One-piece injection molded, high-impact grade copolymer polypropylene with FRPP5 Fire Retardant.
 - <u>10-year limited replacement warranty. (*AD 01)</u>

<u>5.4.</u> Recessed Toilet Paper Roll Holder:

- a. Acceptable Manufacturer:
 - 1) SA11/ Bradley Corporation (modified)
 - 2) RTH-1/Willoughby Industries, Inc. (modified)
 - 3) 1840/Acorn Engineering Co. (modified)
- b. Construction (refer to Detail on Drawing):
 - 1) Recessed holder shall be 5 inches inside diameter and 4-1/2 inches deep made of 14 gauge Type 304 Stainless Steel.
 - 2) The face trim rim shall be beveled so as to fit flush with the wall surface and have an architectural satin finish.
 - 3) Four (4) anchor angles, 1 inch by 2-1/2 inches by 1/4 inch (1 inch wide) shall be welded to the exterior walls of the recessed enclosure with the 2-1/2 inch angle leg extended.

6.5. Hopper Pass:

- a. Acceptable Manufacturer:
 - 1) Model PHE-1/Creative Industries Inc.; Indianapolis, IN.
 - 2) Hopper Pass / Safeguard Security Services, Inc.
- b. Construction:
 - 1) Size: 16 inches wide by 10-1/8 inches high by 7-3/4 inches deep
 - 2) Material: Stainless Steel
 - 3) Class 1 bullet-resistant
 - 4) Hopper locks on staff side with a turn latch knob.

7.<u>6.</u> Detention Grab Bars, Anti-Ligature:

a. Construction (refer to details on Drawings)

8.7. Wall Embed Plates for detention grab bars:

- a. Acceptable Manufacturer:
 - 1) (Custom fabricated)
 - Construction (Refer to Detail on Drawings):
 - 1) Embed Weld Plates shall be 1/2 inch Stainless Steel plates dimensioned as indicated on the drawings with embedment anchor tabs.
 - 2) Grab Bars shall be bolted to these embed plates as noted on the Drawings.

9.<u>8.</u> Security Steel Bar Grillage:

b.

- a. Acceptable Manufacturer:
 - 1) G-S Company, Baltimore, Maryland
 - 2) Maximum Security Products Corp.; Albany, NY
 - 3) Willo Products Co.; Decatur, AL
- b. Construction:
 - Steel grating will be made into tool resisting steel assembles as per manufacturer's production practices and in accordance with ASTM A627-03 Standard Test Methods for Tool-Resisting Steel Bars, Flats, and Shapes for Detention and Correctional Facilities.
 - 2) The security gratings will consist of 7/8 inch diameter vertical double-ribbed bars spaced at 4" on center, and 3/8 inch by 2-1/4 inches horizontal flat framing bars spaced at 12 inches on center.
 - 3) The vertical ribbed bars will be welded at the points they pass through the punched intermediate flat bars and anchorage steel angles and surface welded to the face of the end anchorage angles. After the individual Security Grillage is custom cut and assembled by welding it will be placed into the manufacturer's furnaces for the final Tool-Resisting Steel treatment process.
 - 4) The anchorage angles will have holes for the grate assembles to be bolted to specific security hollow metal window frames.

2.2 DETENTION EQUIPMENT ACCESSORIES

- A. Provide accessories, anchorage inserts and security fasteners for a complete tamperproof installation.
 - 1. Exposed Security Fasteners:
 - a. Provide Torx-head (star with center reject pin) security fasteners for anchoring work in exposed security areas.
 - b. Finish shall match that specified of the item anchored.
- B. Provide tools for fastening devices.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions under which Security/Detention Equipment is to be installed. Notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have corrected.
- 3.2 INSTALLATION

- A. Comply with manufacturer's printed installation instructions.
- B. Touch-up painting of factory finish or factory primed items is the installer's responsibility.
- C. Do not paint stainless steel embed plates.
- D. Identify and coordinate the 'Filling of all Voids', by the General Contractor, between all materials of the Security/Detention Equipment, embeds and/or other physical construction items. Refer to specification Section 079200 Joint Sealants and its article on "SECURITY SEALANTS" for types of sealants to be utilized.
- E. All expenses incurred by the Architect/Engineer in troubleshooting Detention Equipment Work, caused by inadequate workmanship or other form of non-performance on the part of the subcontractor, shall be borne by that subcontractor.
- F. Coordinate installed equipment supplied to other contractors.

3.3 **PROTECTION**

- A. Protect equipment and finishes until Final Acceptance.
- B. Replace damaged equipment as directed by the Architect.

3.4 CLEANING

- A. Touch-up Painting: Cleaning and touch-up painting of field welds, bolted connections and abraded areas of the shop paint on miscellaneous metal is specified in Division 09 Section "Painting".
- B. Field finish painting of all equipment (not supplied with factory finish) in this section shall be done in accordance with Division 09 Section "Painting". All equipment shall be painted to match the color of its adjacent wall finish color, unless noted otherwise.
- C. Clean equipment thoroughly prior to Final Acceptance.

END OF SECTION 111900

SECTION 111960 - SECURITY HARDWARE (*AD 01)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Provisions of the Contract and of the Contract Documents apply to this Section.

1.2 SUMMARY

A. Detention Equipment Contractor (DEC):

- 1. Provide security hardware as indicated in the schedules and as specified herein.
- 2. Refer to Detention Door Schedule and door details; Custom/Security Hollow Metal Work Section 111910, and Security Control System Section 285000.
- 3. Coordinate Security Hardware installation with electrical requirements provided by the Electrical Contractor.
- 4. Make final electrical control hookups at door and control panels.
- 5. Coordinate all Security Hardware and electrical control needs required with other subcontractors and their equipment to have it function properly from the remote Security Control Consoles (e.g. overhead doors, architectural passage doors).
- 6. Furnish to the General Contractor any security hardware required for installation on Architectural Hollow Metal doors and frames. Provide necessary templates, etc. for installation.
- B. General Contractor:
 - 1. Coordinate installation of security hardware with DEC, Security Control System Contractor (SCSC) and Electrical Contractor.
 - 2. Install on Architectural doors and frames any required security hardware being provided by the Security Control System Contractor (SCSC).
- C. Electrical Contractor:
 - 1. Coordinate electrical requirements with General Contractor, DEC and SCSC.
 - 2. Provide all security control wiring, conduit, fittings, back boxes and junction boxes, as directed by Security Control System Subcontractor.
 - 3. Provide all power wiring, conduit, fittings and mortar boxes as required for equipment described within this section.

1.3 ACTION SUBMITTALS

- A. Required submittal for Security Hardware shall be submitted as a complete package. Failure to do so will result in the submittal being "Rejected" and returned.
- B. Manufacturer's Data:
 - 1. Submit one (1) reproducible (digital format) copy of product specifications, fabrication and installation instructions for each hardware item used.
- C. Shop Drawings:
 - 1. Shop drawings submittals for Security Hardware shall be submitted as an entire section.

- 2. Submit one (1) reproducible (digital format) copy of a horizontal hardware schedule, including all miscellaneous items. Give openings by door number and location, manufacturer's names, catalog numbers, keying information, materials, and finish in the scheduling sequence and format as recommended by security hardware manufacturer.
- 3. The Architect's approval of the hardware schedule will not relieve the Contractor or Supplier of responsibility for errors or omissions that it might contain.
- 4. A Security Hardware Coordination Conference shall be held and coordinated by the General Contractor after the first Shop Drawing submittal of the Security Hardware. All participants should have at least one (1) week worth of review of this first Shop Drawing submittal and be prepared to comment on its appropriateness for their assigned job efforts.
- 5. All security keying shall be reviewed with the Owner and approved during the Shop Drawing submittal review meeting.
- D. Samples and Templates:
 - 1. Furnish to manufacturer of hollow metal doors and frames as required for proper reinforcement and preparation of their work.
 - 2. If required, the Hardware Supplier shall furnish physical hardware and backboxes to the door and frame manufacturer for inclusion into door and frame fabrications.
- E. Security Keying Chart/ Schedule:
 - 1. Submit a Keying Chart schedule after both the Architect and Owner/User have approved the security keying shop drawings. Refer to articles titled "Cylinders, Keys, and Keying" and "Key Control" near the end of this Section.
- F. Maintenance Manual
 - 1. Submit two (2) bound Maintenance and Repair Manuals, complete with detailed parts drawings, for all manual and energized security hardware products supplied in this section.
 - 2. Provide on-site review of these manuals and spare parts with the Owner's designated representative during training period. Refer to Article 1.6 "Training" ahead.
- G. Refer to Specification Section 111900 for additional submittal requirements.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver all items in manufacturer's original packaging. Individually package and carefully mark each item for intended opening and use. Each item complete with all necessary screws, bolts, keys, instructions, and where necessary, installation templates.
- B. Storage: Store items off floor in dry area of building out of way of other work in progress. Provide maximum protection against loss and damage.
- C. Handling: Handle all items in a manner as to prevent damage.

1.5 GUARANTEE

A. Upon Final Completion, the Manufacturer/Installer shall provide a written warranty covering the security hardware against defective materials and workmanship and guaranteeing satisfactory operation and performance for a period of one (1) year after Final Completion. The Manufacturer/Installer shall make necessary adjustments and replace any defective or broken parts caused by defective mechanical parts.

1.6 TRAINING

- A. Provide two (2) eight-hour days for training of Owner personnel for maintenance and repair of all security hardware. Training shall be at Owner's convenience prior to Final Completion.
- B. Training class and agenda shall include hands-on teaching of repair and maintenance. Contractor shall provide all equipment and tools necessary to conduct training for Owner's personnel.
- C. Training shall be conducted by employee of security hardware manufacturer or factory-authorized service representative with over five years of experience maintaining/repairing locks of the type installed in this facility.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Catalog numbers of the first manufacturer listed have been used to establish the quality required. Other manufacturers seeking approval shall do so in writing per General Requirements and shall list exact catalog numbers and description of the items he proposes to furnish:

	ITEM			
1.	Hinges	Southern/Folger	Airteq	Stanley
2.	Stops	Airteq	Northwest	Rockwood
3.	Holders, Surface Bolts	Glynn–Johnson	Yale	
4.	Push, Pull	Southern/Folger	Airteq	Brink
5.	Thresholds	Pemko	NGP	Zero
6.	Weatherstrip	Pemko	Reese	Zero
7.	Security Locks	Southern/Folger	Airteq	Brink

B. Designations: Following abbreviations identify listed manufacturers:

		J~···
1.	Southern/Folger	Southern/Folger Co.; San Antonio, TX
2.	Airteq	Cornerstone Detention; Montgomery AL
3.	Brink	R.R. Brink Lock Systems, Inc.; Shorewood, IL
4.	Glynn–Johnson	Glynn–Johnson Corp.; Chicago, IL
5.	Hager	Hager Hinge Co.; St. Louis, MO
6.	Ives	H. B. Ives Div.; New Haven, CT
7.	LCN	LCN-Allegion
8.	NGP	National Guard Products
9.	Northwest	Northwest Specialty Hdwr Inc.; Clackamas, OR
10.	Norton	Norton Closer Div.; Charlotte, NC
11.	Pemko	Pemko Mfg. Co.; Emeryville, CA
12.	Reese	Reese Enterprises; Rosemount, MN
13.	Rockwood	Rockwood Manufacturing Co.; Rockwood, PA
14.	Stanley	Stanley Black & Decker; New Britain, CT
15.	Zero	Zero Weatherstripping; Bronx, NY

2.2 MATERIALS

- A. Screws, Fasteners, and Tools:
 - 1. Provide exposed fasteners to match material/finish of item being fastened. Make fastener of the same metal as item fastened, except use plated brass or stainless steel for all aluminum items. Provide twenty (20) spares of each type of fastener used for anchoring hardware.
 - 2. Provide Torx-head (with center reject pin) security fasteners for exposed fasteners on all security hardware, regardless of manufacturer. Furnish six (6) tool holders and six (6) bits for each different size screw. Holders and bits shall be left at the project after fastener installation and become the property of the user.
 - 3. Provide two (2) alignment tools for medium security locks.

B. Hinges:

- 1. Heavy Duty, $4 \frac{1}{2}$ FM ICS:
 - a. Series/Manufacturer:
 - 1) 204 FMSS / Southern Steel Co.
 - 2) 604 FMCS / Airteq
 - 3) No.4 1/2"-ICS Prison / Brink
 - b. Description:
 - 1) $4 \frac{1}{2} \times 4 \frac{1}{2}, \frac{3}{16}$ thick leaves.
 - 2) Cast stainless steel leaves, non-removable stainless steel pins, stainless steel ball bearings, three knuckle with "HT" hospital tips.
 - 3) Provide with a 1/2" long steel stud on each leaf.
 - c. Provide quantities as follows:
 - 1) Doors less than 5 feet high one pair.
 - 2) Doors over 5 feet to 7 feet 6 inches high 1-1/2 pairs.
 - 3) Doors over 7 feet 6 inches high 2 pair
 - 4) Doors 3 feet 6 inches wide and over 2 pairs.
 - 5) Doors 4 feet 6 inches wide and over -2-1/2 pairs.
- 2. Continuous Hinge (Plain Surface Type):
 - a. Series/Manufacturer:
 - 1) 4000 Series / Braun Mfg. Co., Inc. (www.hinge1.com)
 - 2) Approved Equal
 - b. Description:
 - 1) Hinge Leaf material Cold Rolled Steel
 - 2) Hinge Pin material Steel
 - 3) Shapes and lengths and gauges to be custom modified as required and/or as indicated on drawings.
 - 4) Provide quantities as indicated on the drawings and hardware sets.
 - 5) Provide USP primed.

C. Door Position Switches:

1.

- Magnetic Switch:
 - a. Series/Manufacturer:
 - 1) 200 MRS TB/Southern Steel Co.
 - 2) 6200/Airteq
 - 3) 201023/Brink
b. Mortise installation overhead mounting with switch contacts housed in the door frame and actuating magnet mortised into the top of the door.

D. Security Locks:

- 1. Maximum Security Solenoid Operation:
 - a. Series/Manufacturer:
 - 1) 10120AE-2/Southern Steel Co.
 - 2) 9912S/Airteq
 - 3) 5026S x MCLH-M/Brink
 - b. Frame mounted 115 VAC, continuous duty solenoid actuated.
 - c. Bolt is retracted by an energized solenoid valve by a push-button at the control panel and remains retracted until door is opened.
 - d. Bolt is retracted manually by key from outside and inside or outside only.
 - e. Provide galvanized at exterior installations.
 - f. Provide interlock feature as required.
 - g. Internal switches monitor status of bolt.
 - h. Provide key cylinder extension where keyed both sides.
- 2. Maximum Security Motor Operation:
 - a. Series/Manufacturer:
 - 1) 10120AM/Southern Steel Co.
 - 2) 9912M/Airteq
 - 3) 5026M x MCLH-M/Brink
 - b. Frame mounted 24 VDC, continuous duty motor actuated.
 - c. Bolt is retracted by energized motor by a push-button at control panel and remains retracted until door is opened.
 - d. Bolt is retracted manually by key from outside and inside or outside only.
 - e. Provide galvanized at exterior installations.
 - f. Provide interlock feature as required.
 - g. Internal switches monitor status of bolt.
 - h. Provide key cylinder extension where keyed both sides.
- 3. Medium Security Motor Operation:
 - a. Series/Manufacturer:
 - 1) 10300M/Southern Steel Co.
 - 2) 9424/Airteq
 - 3) 3520-300 x //Brink
 - b. Security Grade: ASTM F 1577 Grade 1.
 - c. Frame mounted 24 VDC high torque gear motor.
 - d. Latchbolt retracts when motor is energized and remains retracted until the door is opened.
 - e. Mechanically unlocked by key outside and inside or outside only.
 - f. Provide keeper with built-in limit switch; internal switches to monitor status of deadlock.
 - g. Provide interlock features as required.
 - h. Provide key cylinder extension where keyed both sides.

- 4. Medium Security Mechanical Operation: Food Pass Lock
 - a. Series/Manufacturer:
 - 1) 1017AM/Southern Steel Co.
 - 2) 5017M/Airteq
 - 3) 7017M/Brink
 - b. Keyed outside only.
 - c. Reverse bolt bevel at food pass locations. Refer to details on Drawings.
- 5. Medium Security Mechanical Operation: Paper Pass Lock
 - a. Series/Manufacturer:
 - 1) 1017AM/Southern Steel Co.
 - 2) 5017M/Airteq
 - 3) 9025/Brink
 - b. Keyed outside only.
 - c. Refer to details on Drawings
- E. Closers: (Recess Mounted)
 - Series/Manufacturers:
 - a. 2210 Series/LCN
 - b. 7970 Series/Norton
 - 2. Description:
 - a. Provide recessed door head closers unless noted otherwise.
 - b. All door closers shall be by one manufacturer and carry a 15-year warranty, except electrical components, which will carry a two-year warranty. All door closers shall be inspected, after installation, by a factory representative to insure their proper adjustments and operations.
 - c. Spring power shall be adjustable. Spring power shall provide an opening force range of 8 to 15 pounds from 0 degrees to 90 degrees.
 - d. Closers shall have separate adjustments for latch speed, general speed, and back check.
 - e. Provide accessories required to insure a proper installation.

F. Pull Loop:

1.

- 1. Series/Manufacturers:
 - a. 212-C/Southern Steel Co.
 - b. 612/Airteq
 - c. 300021/Brink
- 2. Stainless steel. Overall length 8-3/4" x 1-1/2" clearance. Fasteners shall be 2-3/8" 6 x 3/4" stainless steel Torx-head security screws with center reject pin.

G. Pull Flush:

- 1. Series/Manufacturer:
 - a. 214-S/Southern Steel Co.
 - b. 614/Airteq
 - c. 300011/Brink
- 2. Stainless steel, 4" wide, 1/8" thick x 5" high. Fasteners shall be 1/4" 20 x 5/16" stainless steel Torx-head security screws with center reject pin.

H. Push/Pull Plate:

- 1. Series/Manufacturer:
 - a. 120L/Hager
 - b. 1456/Hiawatha
 - c. 91-RKW/Rockwood
- 2. 1/8" thick stainless steel, 3.5" w x 16" h with 7/8" lip projection at bottom. Attach with stainless steel Torx-head security screws with center reject pin.

I. Door Stops:

- 1. Series/Manufacturer:
 - a. 650/Airteq (wall or floor)
 - b. 606S/Northwest (wall or floor)
 - c. 3001/ Stanley (floor); 3002/ Stanley (wall)
 - d. 462/Rockwood (wall); 467/Rockwood (floor)
 - Silicone rubber body, 2" diameter. 2-1/2" (3-1/2") high.
- 3. 5/8" x 2-1/2" diameter mounting shank.
- 4. Embedded in wall or floor with epoxy resin adhesive.

J. Thresholds:

2.

- 1. Series/Manufacturer:
 - a. 950/NGP
 - b. 2010_PK/ Pemko
 - c. S257/ Reese
 - d. 566/ Zero
- 2. Provide anti-pass thresholds as indicated in the Detention Door Schedule.
- 3. Provide aluminum mill finish, unless noted otherwise.
- 4. Set the aluminum threshold into a full bedding of mastic and secured with stainless steel Torx-head security screws with center reject pin.
- 5. Threshold shall be ADA compliant.
- 6. Threshold shall prevent the passing of paper or other contraband under the door.

K. Weatherstripping/Sound Seals:

- 1. Series/Manufacturer:
 - a. 305CR x 315CN/Pemko
 - b. DS70C x 362/Reese
 - c. 50 x 339 (modified to receive a sweep)/Zero
- 2. Extruded anodized aluminum with neoprene seal, secured with stainless steel Torx-head security screws with center reject pin.

L. Weatherstripping/Sound Seals (Bulb type):

- 1. Series/Manufacturer:
 - a. S88/Pemko
 - b. 5050/NGP
 - c. 188S/Zero
- 2. Self-adhesive silicone rubber perimeter seal.

M. **Door Bottom Sweep:**

- 1. Series/Manufacturer:
 - a. 345A (9/16" projection x 1-1/2" H)/Pemko
 - b. R199/Reese
 - c. 17/NGP

- d. 11/Zero
- 2. Extruded anodized aluminum, secured with stainless steel Torx-head security screws with center reject pin.

N. Automatic Door Bottom:

- 1. Series/Manufacturer:
 - a. 420ASL/Pemko
 - b. 372/Reese
 - c. 360/Zero
- 2. Mortised type, cam-actuated drop down silicone seal, with spring mechanism return.

O. Kickplates:

- 1. Series/Manufacturer:
 - a. 194S/Hager
 - b. K1050/Rockwood
- 2. Kickplates shall be 0.050" stainless steel with eased edges. 10" high (except reduce height 1/2" less than bottom rail when required) x 2" less than door width on singles and 1" less on pairs. Fasteners shall be full threaded, oval, undercut, metal screw; Torx-head security screws with center reject pin.

P. Door Silencers:

- 1. Series/Manufacturer:
 - a. GJ-64/Glynn-Johnson
 - b. 608/Rockwood
 - c. SR64/Ives
- 2. Provide three (3) silencers per door. Silencer design forms an air pocket to absorb shock and reduce noise of door closing. Once installed, the silencers should be tamper-proof and eliminate door rattle.

Q. Security Hardware Finishes:

		<u>U.S. Symbol</u>	ANSI Symbol	Description
1.	Hinges, Exterior	US32D	630	Satin Stainless Steel
2.	Hinges, Interior	US32D	630	Satin Stainless Steel
3.	Locks and Pulls	US26D	626	Satin Chromium
4.	Closers	AL	689	Aluminum Painted
5.	Push, Kick	US32D	630	Satin Stainless Steel
6.	Door Pulls	US32D	630	Satin Stainless Steel
7.	Escutcheons	US32D	630	Satin Stainless Steel

2.3 CYLINDERS, KEYS, AND KEYING

- A. The security locks will incorporate two (2) keying systems, one for pin tumbler (mogul cylinder) locks, and one for builder's hardware high security six-pin tumbler cylinder locks. Dye stamp each keying system's keys for identification, corresponding to the final/approved Keying Chart.
 - 1. Review all security keying with Owner for final approval during submittal phase.
 - 2. Provide a system of keys and matching locks that are color-coded and marked for identification by touch to comply with "sight and touch" requirements in 2018 North Carolina Fire Prevention Code section 403.8.3.4 and 10A NCAC 14J .0405.
 - 3. Key Food Pass locks alike and provide ten (10) keys with dye stamp identification marking.
 - 4. Key Paper Pass locks alike & provide ten (10) keys with dye stamp identification marking.

- 5. Master key mogul cylinder locks as indicated in Detention Door Schedule and as confirmed with the Owner during the Security Keying Meeting.
- 6. Provide two (2) keys in each Key Cabinet for all individual key designations.
- 7. Provide three (3) keys in each Key Cabinet for each Master key designation.
- 8. Provide a complete, detailed, schematic Keying Chart of the Security Keying System's individual key designations.
 - a. Two (2) copies of this Keying Chart, overlaid on an architectural floor plan print, shall be turned over to the Owner/User at the completion of the project. The cost for Keying Chart shall be included with the cost of materials at the time of bidding.

B. Key Control:

- 1. Provide one (1) Key Cabinet in Control Room C100. Coordinate exact location with Owner and other equipment to be wall-mounted in the control room.
- 2. Key Cabinet (wall mounted, surface):
 - a. Key Control system shall be furnished with a capacity of 1.75 times the number of individual key designations and shall be a complete dual tag system.
 - b. Key Cabinet shall have concealed-type hinge and rounded sides.
 - c. Panels must have individual hooks and label pockets formed as an integral part of the panel, for each key type, as required. (i.e. mogul, M-_; builders hardware, B-_).
 - d. Key Tags of two (2) types shall be provided, one tag to attach to the individual key designations that permanently stays in the key cabinet and one tag to attach to the individual key designation that is loaned out.
 - e. Indexing shall be provided to record information concerning locks and keys alphabetically.
 - f. Permanent Loan Registry shall be furnished to protect identity of key borrowers while Receipt Tabs shall be supplied for temporary loan.
- 3. Electronic Key Control System:
 - a. Provide wall-mounted Electronic Key Control Cabinets at locations indicated on the Drawings. DEC shall confirm with Owner the quantity of keys to be accommodated during Shop Drawing review meetings.
 - b. DEC shall verify with the Owner/user his exact key control needs. Refer to the Detention Door Schedule for proposed detention locking key types and quantities to be housed and controlled by the electronic key control system.
 - c. Manufacturer:
 - 1) KeyWatcher Illuminated Key Control System/ Morse Watchmans or approved equal.
 - d. Description:
 - 1) Provide an electronic, computer software-managed key control system, utilizing self-contained wall-mounted customized 18 gauge stainless steel cabinets.
 - 2) Proposed configuration for each cabinet is one (1) 6-module (vertical) cabinet. Cabinet shall contain 56 key slots, comprised of two (2) 16-key modules and four (4) 6-key modules.
 - 3) Cabinet shall be furnished with manufacturer's standard bottom-mounted control console with display screen, built-in keypad, and prep for consolemounted card reader. Control console shall be equipped with a factoryinstalled Lantronix Ethernet adapter for CAT5/CAT 6 connection.

- 4) Cabinets shall be sized specifically for this project's individual keying types and quantities with a minimum of 20% additional storage space for future keying expansion.
- 5) Access to a KeyWatcher unit will be by access control system credential and PIN numbers programmed remotely through Owner's computer terminal.
- 6) Provide Morse Watchmans' KeyPro III software to be loaded on Owner's designated computer. Coordinate installation of software with Owner.
- 7) Provide all standard hardware and software features of the electronic key control system, as well as the following options:
 - a) Built-in serial port
 - b) Custom configuration as required to accommodate oversized keys (i.e. paracentric, P-_; mogul, M-_; builder's hardware, B-_).
 - c) Access Control System integration (card reader provided under Section 285300. Coordinate with Security Control System Contractor).
 - d) Non-Random Key Return: Keys must be returned to specific locations.
 - e) Duress Panic Alarm (silent alarm)
 - f) Multi-user Key Access features
 - g) Audible Tamper-Alarm
 - h) Audible alarm for missing or overdue key
- 8) Provide tamperproof stainless-steel key rings with unique identification numbering and coloring.
 - a) System shall utilize SmartKey technology with a built-in identification microchip attached to each stainless-steel locking ring. Confirm with Owner the SmartKey colors/color-coding to be provided.
- e. Installation:
 - 1) Provide a 120V 20A duplex receptacle located behind each Key Watcher unit. Circuit shall be connected to generator power.
 - 2) Provide CAT 6 cabling in conduit from the KeyWatcher Ethernet adapter to Security Electronics Room C105 and connect to the Owner's designated computer.
 - 3) Install the KeyWatcher system in accordance with the manufacturer's published installation instructions.
- f. Warranty:
 - 1) Two (2) years on all parts and labor and free lifetime support via telephone.
- 4. Keys shall not leave the manufacturer's custody without prior arrangements for delivery and authorization from the Owner.

2.4 SECURITY HARDWARE SETS FOR SECURITY/DETENTION DOORS

- A. Provide security hardware equal to items scheduled. Verify electrical devices are appropriate for models indicated. Electrical control connections are included in work of Section 285000 "Security Control System."
 - 1. Smoke seals and automatic door bottoms shall be added to all doors in smoke barriers as required to meet smoke and fire ratings per UL 1784.
 - 2. Food Pass
 - a. All doors indicated with food passes in the Options column of the Detention Door Schedule shall have the following additional hardware:
 - 1 Braun Hinge 4807-E
 - 1 Food Pass Lock, Airteq 5017M

B. Security Hardware Sets Schedule:

HARDWARE SET NO	QUANTITY	CLASS	DESCRIPTION
SH1	3	Hinges	Airteq #604 FMCS
	1	Lock	Airteq 9912S x K2 x KCE
	2	Loop Pulls	Airteq #612
	1	Door Closer	LCN 2210 Series
	1	Door Position Switch	Airteq 6200
	1	Door Bottom Sweep/Rain Drip	Pemko 345A
	1	Threshold	Pemko 2010_PK
	1	Door Stop	Airteq #650
	1	Kickplate	
	1	Auto Bottom	Pemko 420ASL
	1	Weatherstrip	Pemko 305CR
SH1A	3 or 4	Hinges	Airteq #604 FMCS
	1	Lock	Airteq 9912S x K2 x KCE
	1	Loop Pull	Airteq #612
	1	Flush Pull	Airteq #614
	1	Door Closer	LCN 2210 Series
	1	Door Position Switch	Airteq 6200
	1	Door Bottom Sweep/Rain Drip	Pemko 345A
	1	Threshold	Pemko 2010_PK
	1	Door Stop	Airteq #650
	1	Auto Bottom	Pemko 420ASL
	1	Weatherstrip	Pemko 305CR
SH2	3 or 4	Hinges	Airteq #604 FMCS
	1	Lock	Airteq 9912M x K2 x KCE
	2	Loop Pull	Airteq #612
	1	Door Closer	LCN 2210 Series
	1	Door Position Switch	Airteq 6200

	1	Door Stop	Airteq #650
	1	Kickplate	
	1	Auto Bottom	Pemko 420ASL
	1	Weatherstrip	Pemko 305CR
SH2A	3 or 4	Hinges	Airteq #604 FMCS
	1	Lock	Airteq 9912M x K2 x KCE
	1	Loop Pull	Airteq #612
	1	Flush Pull	Airteq #614
	1	Door Closer	LCN 2210 Series
	1	Door Position Switch	Airteq 6200
	1	Door Stop	Airteq # 650
	1	Auto Bottom	Pemko 420ASL
	1	Weatherstrip	Pemko 305CR
SH3	3	Hinges	Airteq #604 FMCS
	1	Lock	Airteq 9912M x K1
	1	Loop Pull	Airteq #612
	1	Flush Pull	Airteq #614
	1	Door Position Switch	Airteq 6200
	1	Door Stop	Airteq # 650
	3	Silencers	
SH4	3	Hinges	Airteq #604 FMCS
	1	Lock	Airteq 9912M x K2 x KCE, Provide no mechanical latch hold back function
	2	Loop Pull	Airteq #612
	1	Door Closer	LCN 2210 Series
	1	Door Position Switch	Airteq 6200
	1	Door Stop	Airteq #650
	1	Kickplate	
	1	Auto Bottom	Pemko 420ASL

	1	Weatherstrip	Pemko 305CR
	1	Jamb-mounted Push Button (for local lock operation)	Airteq # 6300 (mount inside Control Room)
SH5	3	Hinges	Airteq #604 FMCS
	1	Lock	Airteq 9912M x K2 x KCE
	1	Push/ Pull Plate	Hager 120L
	1	Flush Pull	Airteq #614
	1	Door Closer	LCN 2210 Series
	1	Door Position Switch	Airteq 6200
	1	Door Stop	Airteq #650
	1	Auto Bottom	Pemko 420ASL
	1	Weatherstrip	Pemko S88
SH6	1	Corridor Sliding Device	Airteq 7215 (Emergency Manual Key Release, electric keyswitch Mogul , hinged housing cover)
	1	Loop Pull	Airteq #612
	1	Flush Pull	Airteq #614
	1	Emergency Pushbutton	Airteq #6300 (each side)
	1	Weatherstrip	Pemko 332CR
	1	Weatherstrip (Door Sweep)	Pemko 18061 CNB
	1	Door Skirt	
		EmergencyPushbuttonshallonlyclosedoorafterdoorisactivatedtheEmergencyReleasefunctionspecifiedinSection285020.Pushbuttonshall not otherwisebeactive.	
SH7		(NOT USED)	
SH7A	3	Hinges	Airteq #604 FMCS
	1	Lock	Airteq 9424 x K2 x KCE

	2	Loop Pull	Airteq #612
	1	Door Closer	LCN 2210 Series
	1	Door Position Switch	Airteq 6200
	1	Door Stop	Airteq #650
	1	Kickplate	
	1	Auto Bottom	Pemko 420ASL
	1	Weatherstrip	Pemko S88
	1	Jamb-mounted Push Button (for local lock operation)	Airteq # 6300 (mount inside room)
SH8	1	Lock	SS 1050D Gate Lock x K2
	1	Gate Position Switch	GE 2707A
	1	Self-closing Hinge	Coordinate with gate supplier

C. Security Spare Locks and Lock Parts:

- 1. Provide the following for the Owner's stock:
 - a. 1 Lock 9912S
 - b. 2 Locks 9912M
 - c. 2 Mogul Cylinders
 - d. 1 Builders Cylinder
- 2. One each repair parts kit for each lock series, containing springs, micro switches, screws, nuts, and washers.
- 3. One parts kit containing an assortment (minimum 25) of all hardware security screws used on this project.
- 4. One complete set of hardware security screwdrivers for all sizes of hardware security screws used on this project.
- 5. One repair parts list and assembly drawings bound in a manual for all security products supplied in this section.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors, frames and hardware for damage, defects, and suitability for intended use. Restore all parts or items found damaged, defective, or inadequate, or replace with good material before installation.

3.2 INSTALLATION

A. Mounting Heights:

1. Heights given are centerline heights up from finish floor unless noted otherwise; heights given "Number to Number" indicate that all shall be at one consistent height within limits given. Where heights of items are not listed, mount per recommendations of DHI.

10 to 13 inches

Equally spaced

42 to 48 inches

36 to 40 5/16 inches

6 to 8 inches down from head

54 inches floor to centerline

- a. Bottom hinge
- b. Top hinge
- c. Intermediate hinges
- d. Door knobs
- e. Door pull
- f. Deadlocks
- B. Fitting:
 - 1. Fit all hardware accurately and properly.
 - 2. Remove exposed parts until after painting is completed. Then reinstall.
 - 3. Securely fasten all fixed parts.
 - 4. Fit faces of mortised parts snug and flush.
 - 5. Ensure operating parts move freely and smoothly without binding, sticking, or excessive clearances.
- C. Adjusting and Finishing:
 - 1. After work has been otherwise completed, examine all hardware for complete and proper installation.
 - 2. Lubricate bearing surfaces of moving parts
 - 3. Adjust latching and holding devices to proper function
 - 4. Adjust door closer devices for proper speed and power.
 - 5. Test keys for conformance to approved Keying Chart system.
 - 6. Clean all exposed surfaces, check for surface damage and then polish.
- D. Thresholds:
 - 1. Install in one continuous piece, full width of opening. Set in full bed of sealant and fasten with countersunk anchors at 6 inches on center with Torx-head security screws with center reject pin.

3.3 DEFECTIVE WORK

- A. Where hardware is found defective in materials or installation; rework, restore, replace, or otherwise correct as directed.
- B. The following will be considered as defective materials:
 - 1. Unauthorized substitutions.
 - 2. Items delivered with missing, broken, damaged or defaced parts.
 - 3. Items of incorrect hand or function.
- C. The following will be considered as defective installation:
 - 1. Items broken, damaged, or defaced after delivery.
 - 2. Items incomplete, misaligned or incorrectly located.
- D. All expenses incurred by the Architect in troubleshooting the Security Hardware Work, caused by inadequate workmanship or other form of non-performance on the part of the subcontractor, shall be borne by that subcontractor.

END OF SECTION 111960

SECTION 285150 – VIDEO INTERCOM SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Provisions of the Contract and of the Contract Documents apply to this section.

1.2 SUMMARY

- A. This section includes the requirements and operational characteristics for a Video Intercom System. Video Intercom components include, but are not limited to, the following:
 - 1. Remote video intercom stations.
 - 2. Video Intercom master stations with color monitors and door release function.
- B. All components used in creating the video intercom system shall be from the same manufacturer and/or approved by the manufacturer for system compatibility. Equipment specified herein is for the purpose of establishing the types of equipment and the minimum quality of equipment required. It shall be the Security Systems Contractor's responsibility to assure the compatibility of all equipment, software, programming, cable, mounting methods, etc. that are used in providing a complete, fully-functional system.
- C. Security system PLC maintains control of all doors. Integrate video intercom system with security system PLC to allow video intercom system to request door unlock from PLC for doors associated with those intercoms.
- D. All remote video intercoms shall ring to reception first and then roll over to master control if reception does not answer. Both the reception and master control locations shall be able to communicate with all remote intercoms and request door unlock from PLC for each related door.
- 1.3 SYSTEM DESCRIPTION HANDS-FREE COLOR VIDEO INTERCOM MASTER MONITOR STATION ***AD-01**
 - A. An IP addressable video master station with a 7-inch color LCD monitor. It can be wall or desk mounted (desk stand included). The IX-MV7 offers handset (duplex) and hands-free (VOX/PTT) communication and call up to 500 other IX stations. It connects directly to a network using CAT-5e/6 cable. This station requires an 802.3af compliant Power-over-Ethernet network. The JP Series shall provide a large 7-inch (180 mm) touch screen monitor for clear visitor identification and easy operation control. The JP Series shall be installed at a maximum of 4 door locations and connected to a maximum of 8 inside locations with internal communication between stations. Connection to and integration of CCTV cameras for surveillance capabilities shall be available.
 - 1. The system shall be hard wired and constructed with a 2-wire communication system for the door stations and a Cat5e/6 communication system for the video locations system.
 - 2. Hearing Assistance: Provide T-Coil connection for hearing aids.
 - B. Functional Components: As indicated on the drawings or as required to complete system.
 1. Master Station.
 - a. **IX-MV7** JP-4MED: Hands-free/Handset color video intercom master station.
 - 2. Sub Master Station:
 - a. JP-4HD: Hands-free/Handset color video intercom sub master station.

- 3. Video Door Station:
 - a. <u>**IX**JP</u>-DV: PanTilt & Zoom vandal-resistant video door station, surface mount.
 - b. **IX**JP-DVF: PanTilt & Zoom vandal-resistant video door station, flush mount.
- 4. I/O Adapter: Long Distance/CCTV Adaptor:
 - a. **IXW-MA: Multi-purpose adaptor** JPW-BA: Long distance/CCTV adaptor.
- 5. Distribution Adaptor:
 - a. JP-8Z: Distribution adaptor.
- 6. Power Supply:
 - a. **PS-2420UL: 24V DC Power supply.**
- 7. External Devices:
 - a. **RY-3DL: Multiple door release adaptor.**
 - b. AC-10S: Access control keypad, surface mount.
 - c. JP-DV + AC-10S: PanTilt & Zoom vandal-resistant video door station. Surface mounted with access control keypad.
- C. System Design: Unless noted otherwise on drawings provide system layout as follows. Three wiring methods are possible; Station-to-Station, Centralized Wiring, or Combined Wiring, where both methods are employed in the same system.
 - 1. Provide Centralized Wiring: Connect master stations, and sub master stations to a central wiring adaptor.
 - a. Maximum distance of farthest sub master from distribution adapter (JP-8Z): 165 feet (50 m).
 - b. Maximum distance of master from distribution adapter (JP-8Z): 650 feet (200 m).
 - c. Maximum cumulative distance of master and sub masters from distribution adapter (JP-8Z): 980 feet (300m).

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's product data, including installation instructions.
- B. Shop Drawings: Submit the following:
 - 1. Wiring Diagrams: Indicate wiring for each item of equipment and interconnections between items of equipment.
 - 2. Include manufacturer's names, model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts
- C. Installation and Operation Manuals:
 - 1. Submit manufacturer's installation and operation manual, including operation instructions and component wiring diagrams.
 - 2. Provide detailed information required for Owner to properly operate equipment.
- D. Warranty: Submit manufacturer's standard warranty.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
- C. Handling: Protect materials during handling and installation to prevent damage.

PART 2 - PRODUCTS

4.

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Aiphone Corp., which is located at: 6670 185th Ave. NE; Redmond, WA 98052 ; Toll Free Tel: 800-692-0200; Tel: 425-455-0510; Fax: 425-455-0071; Email: request info (marketing@aiphone.com); Web: www.aiphone.com

2.2 HANDS-FREE/HANDSET COLOR VIDEO INTERCOM SYSTEM *AD-01

- A. Color Video Intercom System: <u>IX</u> JP Series Intercom System as manufactured by Aiphone Corporation.
- B. Room Master Station: <u>IX-MV7</u> JP-4MED 7 inches (180 mm) Digital PTZ Video Master Station with Memory.
 - 1. The JP Series shall accommodate up to 4 Door Stations and 8 Master Stations in a single system.
 - 2. Provide icon driven One Touch Hands Free operation. Touch the screen to communicate with visitors using the built-in microphone and speaker or use the handset at any time during conversation for privacy.
 - 3. Operation: From Master Station. Provide the following.
 - a. Room Call: Touch screen icon to call a single sub master station or all sub master stations simultaneously.
 - b. Play: Touch screen icon to play recorded images from door stations.
 - c. Settings: Touch screen icon to program settings and adjustments.
 - d. Security: Touch screen icon to activate the security mode or to change security settings.
 - e. Monitor: Touch screen icon to monitor a door station or sub master station.
 - f. Option: Touch screen icon to activate the connected external device(s).
 - Available Functions During Monitoring: Provide the following.
 - a. Pan-Tilt-Zoom/Wide camera control.
 - b. When monitoring is started, an image shall be shown in wide mode. Pan & Tilt and adjusting images shall be possible from the Master Station.
 - c. Door release shall be possible from the Master Station.
 - d. Volume control shall be possible from the Master Station.
 - e. Manual recording shall be possible from the Master Station.
 - 5. Physical Characteristics:
 - a. Power supply: DC 24V (from power supply).
 - b. Current Consumption: 390 mA.
 - c. Communication: Handset Simultaneous communication.
 - d. Communication: Hands-free Auto-voice actuation.
 - e. Ambient Temperature 32 degree F to 104 degree F (0 to 40 degrees C).
 - f. Monitor: 7 inches (180 mm) color LCD monitor.
 - g. Mounting: Wall mount.
 - h. Electrical box: 3-gang box
 - i. Material: Flame resistant ABS resin.
 - j. Color: White.
 - k. Dimensions: 5-11/16 inches H x 10-1/16 inches W x 1-7/8 inches D (145 mm by 255 mm by 48 mm).
 - l. Weight: Approx. 1.74 lbs (790 g).

C. Room Station (Sub Master Station): JP-4HD.

- 1. Provide icon driven One Touch Hands Free operation. Touch the screen to communicate using the built-in microphone and speaker or use the handset at any time during conversation for privacy.
- 2. Physical Characteristics:
 - a. Power supply: DC 24V (from power supply).
 - b. Current Consumption: 200 mA.
 - c. Communication: Handset Simultaneous communication.
 - d. Communication: Hands-free Auto-voice actuation.
 - e. Ambient Temperature: 32 degree F to 104 degrees F (0 to 40 degrees C).
 - f. Monitor: 7 inch color LCD monitor.
 - g. Electrical box: 3-gang box.
 - h. Material: Flame resistant ABS resin.
 - i. Color: White.
 - j. Dimensions: 5-11/16 inches H x 10-1/16 inches W x 1-7/8 inches D (145 mm by 255 mm by 48 mm).
 - k. Weight: Approx. 1.74 lbs (790 g).
- D. Door/Entrance Station: <u>IX-DV</u> JP-DV
 - 1. The JP-4MED shall automatically record images. Recording starts approximately 2 seconds after receiving a call.
 - 2. 170 degree wide angle and 100 degree vertical angle camera to minimize blind spots, ensuring a clear view of the door station area.
 - 3. Zoom for Clarity/ Pantilt for Control:
 - a. Video door stations feature a wide angle camera to observe more activity behind the door. In addition, digital PanTilt and Zoom can focus on an area for greater detail.
 - b. Oversized buttons and intuitive icons allow for quick navigation and control. Conventional push buttons shall not be permitted.
 - c. Equipped with an advanced light adjustment feature to compensate for varying light levels. If a picture is too dark, increase of the brightness level at the door station shall be controlled at the master station.
 - 4. Record Images of Visitors:
 - a. After a call is placed, the JP Series records 6 images per call to internal memory.
 - b. Provide an SD / SDHC card (not included) as the primary storage location, with which recording frequency increases to 4 pictures per second for up to 10 seconds per call.
 - c. Provide documentation of outside disturbances by manually recording them at any time.
 - 5. Physical Characteristics:
 - a. Operating Temperature: 14 degrees F to 140 degrees F (-10 to 60 degrees C).
 - b. Dimensions:
 - 1. JP-DV 6-13/16 inches x 3-7/8 inches x 1 inch (173 x 98 x 25 mm).
 - 2. JP-DVF 8-1/4 inches x 5-5/16 inches x 7/32 inch (209 x 135 x 5.5 mm).
 - 3. JP-DVF back box 7-3/32 inches x 4-3/8 inches x 1-25/32 inches (180 x 110 x 45 mm)
 - c. Power Supply: DC 24V (from master station).
 - d. Current Consumption: 90 mA.
 - e. Mounting:
 - 1. JP-DV: Surface mount direct to surface.
 - 2. JP-DVF: Flush mount with included back box.
 - f. Weight:
 - 1. JP-DV: 1.3 lbs (550g).

2. JP-DVF: 1.2 lbs (550g).

3. Back Box: 0.95 lbs (430g).

E. Power Supply: PS-2420UL, 24V DC Power supply.

F. Long Distance Adaptor: JPW-BA.

- 1. Power Supply: DC 24V (from power supply)
- 2. Current Consumption: 90 mA
- 3. Operating Temperature: 32 degree F to 104 degrees F (0 to 40 degrees C).
- 4. Mounting: Wall-mount
- 5. Weight: Approx. 7 oz (200 g).

G. Multi-Purpose Distribution Adaptor: IXW-MA JP-8Z.

- 1. Power Supply: DC 24V (from power supply)
- 2. Current Consumption: 90 mA
- 3. Operating Temperature: 32 degree F to 104 degrees F (0 to 40 degrees C).
- 4. Mounting: Wall-mount.
- 5. Weight: Approx. 7.5 oz (210 g).

PART 3 - EXECUTION

- 3.1 EXAMINATION
 - A. Verify that surfaces and areas are ready to receive work.
 - B. Verify field measurements are as shown on Drawings and as instructed by manufacturer.
 - C. Verify that required utilities are available, in proper location, and ready for use.

3.2 PREPARATION

- A. Verify the following compliance before starting installation.
 - 1. All units, except for the entrance station and tenant door station, are designed for indoor use only. Do not use outdoors.
 - 2. The unit turns inoperative during power failure.
 - 3. In areas where broadcasting station antennas are close by, intercom system may be affected by radio frequency interference.
 - 4. Keep the intercom wires at least 1 foot (30 cm) away from strong electrical wiring (AC 100-240 V) including, in particular, wiring for inverter electrical appliances. Noise and malfunction could result.
 - 5. Keep the unit more than 3.3 feet (1 m) away from radio or TV set.
 - 6. If a strong light shines on the main unit screen, the picture may turn white or only silhouettes will be visible.
 - 7. Other manufacturer's devices (such as sensor, detectors, door releases) used with this system, comply with the manufacturer's installation requirements.
 - 8. The LCD panel is manufactured with very high precision techniques, inevitably will have a very small portion of its picture elements always lit or not lit at all. This is not considered a unit malfunction. Please be aware of this in advance.

3.3 INSTALLATION

- A. All system equipment to be contained within equipment racks, cabinets, or closets. If more or larger equipment racks or cabinets are required than exist or are indicated on the drawings, allow for such additional equipment racks and cabinets in contract price.
 - 1. Install hands-free color video system with pan, tilt, and zoom in accordance with manufacturer's instructions at locations indicated on the Drawings.
 - 2. Mount equipment plumb, level, square, and secure.
- B. All system equipment equipped with plug in power connectors to be connected to a dedicated receptacle. Do not use tap connectors for plugging in multiple plugs into a single receptacle.
- C. All cable within equipment racks, cupboards, and cabinets, or on backboards, to be neatly bundled and secured. Wires shall not be nicked, have strands removed, or have frayed strands when removing insulation or terminating.
- D. Factory manufactured interface cables to be provided for each field interface board. Terminal blocks to be provided in cabinet or on backboard for factory cable interface to field wiring.
- E. Wiring shall be executed in strict adherence to standard broadcast practices.
- F. Identify wiring by continuous insulation color. Where multi-conductor cables are used, use the same color-coding system for identification of wiring throughout.
- G. Maintain uniform phasing and color-coding throughout system.
- H. Name identification of wiring:
 - 1. Identify wiring at all equipment locations, pull boxes, junction boxes and outlet boxes.
 - 2. Develop a uniform identification scheme for use throughout the system.
 - 3. Record wire name identification on all applicable drawings and provide wiring tables within the operating and installation manuals.
- I. Use one of the following marking materials:
 - 1. Heat shrink sleeves.
 - 2. Clear plastic tape wrap-on strips with designated labeling section.
 - 3. Slip-on identification bead markers or sleeves.
- J. Replace equipment, components, and wiring as required to achieve a fully functional system.

3.4 ADJUSTING

- A. Adjust hands-free color video system with pan, tilt, and zoom for proper operation in accordance with manufacturer's instructions.
- B. When requested by the Architect within one year after the date of Final Acceptance, provide onsite assistance in adjusting equipment and controls to suit actual occupied conditions.

3.5 DEMONSTRATION AND TRAINING

- A. Demonstration:
 - 1. Demonstrate that hands-free color video system functions properly.
 - 2. Perform demonstration at final system inspection by qualified representative of manufacturer.
- B. Instruction and Training:

- 1. Provide instruction and training of Owner's personnel as required for operation of handsfree color video system with pan, tilt, and zoom.
- 2. Provide hands-on demonstration of operation of system components and complete system, including user-level program changes and functions.
- 3. Provide instruction and training by qualified representative of manufacturer.

3.6 **PROTECTION**

A. Protect installed hands-free color video system with pan, tilt, and zoom from damage during construction.

END OF SECTION 285150

SECTION 323113.53 – HIGH-SECURITY CHAIN-LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Provisions of the Contract and of the Contract Documents apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Security chain-link fences.
 - 2. Security Gates:
 - a. Manual operation swing.
 - b. Horizontal sliding motor operation.
 - 3. Fence accessories.

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated-Design Submittal: For chain-link fences, cap fence panels, and gate framework indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation and is registered in the state where the project occurs.
- B. Structural Performance: Provide chain-link fences and gates capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Line Post Design: Provide line posts of size and in spacing indicated but not less than sizes and spacings required to comply with ASTM F 1916, Tables 1 through 5 inclusive in resisting the following wind-load criteria, based on fence height, mesh size, and pattern indicated:
 - a. Design Wind Loads: Determine design wind loads applicable to Project from basic wind speed and exposure category indicated on the Structural Drawings and according to CLFMI WLG 2445:
 - b. Fence Framework Material Group: Provide either IA, ASTM F 1043, Schedule 40 steel pipe or IC, electric-resistance-welded round steel pipe.
 - 2. Fabric Tension: Provide fences in which fabric deflections do not exceed those indicated in Table X1.1 of ASTM F 1916 when tested by applying a 30-lbf (133-N) force at midpoint between rails and horizontally between posts for every eighth lower panel along the fence line.
 - 3. Fence Post Rigidity: Provide fences in which post deflections do not exceed 3/4 inch (19 mm) when tested according to ASTM F 1916 by applying a 50-lbf (222-N) force at midheight of every eighth post along the fence line.
- C. Lightning Protection System: Maximum grounding-resistance value of 25 ohms under normal dry conditions.

1.4 ACTION SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for chain-link fences and gates:
 - 1. Fence and gate posts, rails, and fittings.
 - 2. Chain-link fabric, reinforcements, and attachments.
 - 3. Gates and hardware.
 - 4. Gate operators, including operating instructions and motor characteristics.
 - 5. Accessories:
 - a. Barbed wire.
 - b. Barbed tape.
- B. Shop Drawings: Show locations of fences, gates, posts, rails, tension wires, details of extended posts, extension arms, gate swing, or other operation, hardware, and accessories. Indicate materials, dimensions, sizes, weights, and finishes of components. Include plans, gate elevations, sections, details of post anchorage, attachment, bracing, and other required installation and operational clearances.
 - 1. Wiring Diagrams: Power and control wiring.
 - a. Gates are controlled remotely from touchscreen. Review interface requirements and operational sequences with Division 28 Section "Security Control System" subcontractor, Architect and Owner.
- C. <u>Delegated-Design Submittal: Refer to 1.3.A. and 1.3.B under "Performance</u> <u>Requirements" above.</u> <u>Samples for Verification:</u>

- Polymer-coated chain-link fabric and components: 12" square for fabric, in 6" lengths for components and on full-sized units for accessories.

2. Fence privacy slats: In 6" lengths. (*AD 01)

1.5 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of chain-link fence and gate, signed by product manufacturer.
 - 1. Strength test results for framing according to ASTM F 1043.
- B. Qualification Data: For Installer.
- C. Warranty: Sample of special warranty.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed chain-link fences and gates similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of security chain-link fences and gates that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: Five (5) years from date of Substantial Completion.

PART 2 - PRODUCTS

- 2.1 CHAIN-LINK FENCE FABRIC
 - A. Chain-Link Fence Fabric: <u>Provide fabric in two-piece height with lower fabric height of 6</u> <u>feet plus overlap and upper fabric height of 6 feet plus overlap, for overall height of 12 feet</u> <u>measured between top and bottom of outer edge of selvage.</u> <u>Provide fabric in one-piece</u> <u>heights measured between top and bottom of outer edge of selvage</u>. Comply with ASTM A 392, CLFMI CLF 2445, and with requirements indicated below: (*AD 01)
 - 1. Steel Wire Fabric: Metallic coated.
 - 2. Fabric, 12 feet-overall height and 16 feet high. (*AD 01)
 - a. Wire Diameter:
 - 1) 9 gage, unless indicated otherwise.
 - b.Mesh Size: 2 inch1)Steel Wire Lower Fabric: 2 inchb.2)Steel Wire Upper Fabric: 1/2 inch
 - weight of Metallic (Zinc) Coating: ASTM A 392, Type II, Class 2, 2.0 oz/sq.
 <u>ft. (610 g/sq. m) with zinc coating applied before [after] weaving.</u> Polymer-Coated Fabric: ASTM F 668, Class 2b over zinc-coated steel wire.
 <u>Color: Black.</u> (*AD 01)
 - d. Coat selvage ends of fabric that is metallic coated before the weaving process with manufacturer's standard clear protective coating.
 - 3. Selvage: Twisted and barbed top and bottom.

2.2 FENCE FRAMING (Security Fence)

- A. Posts and Rails: Comply with ASTM F 1043 for framing of the following material group and strength requirement for fences of height indicated:
 - 1. Framework Material Group: IA, round steel pipe, Schedule 40 or IC, round steel pipe with a yield strength of 50,000 psi (345 MPa).
 - 2. Fence Height: As indicated on the Drawings.
 - 3. Strength Requirement: Heavy industrial fence according to ASTM F 1043.
 - 4. Post Diameter and Thickness (for Standard and Security Fence): Provide posts of minimum sizes indicated below that comply with ASTM F 1083.
 - a. Line Post: 4 inches.
 - b. End, Corner and Pull Post: 4 inches.
 - c. Swing Gate Post: According to ASTM F 900.

- 5. Post Diameter and Thickness (for fence cap panels): Provide posts of minimum sizes indicated below that comply with ASTM F 1083.
 - a. Top Rail: 1.66 inches.
 - b. Line Post: 2.375 inches.
 - c. End, Corner and Pull Post: 2.875 inches.
- 6. <u>Metallic Coatings for Steel Framing: Provide one of the following Polymer coating</u> over metallic coating.
 - a. External, Type B, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. (0.27 kg/sq. m) of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film. Internal, Type D, consisting of 81 percent, not less than 0.3-mil- (0.0076-mm-) thick, zinc pigmented coating. Color: Match chain-link fabric, according to ASTM F 934. (*AD 01)
- B. Top Rails: Fabricate top rail from lengths 21 feet or longer, with swedged-end or fabricated for expansion-type coupling, forming a continuous rail along top of chain-link fabric, 1.660 inch OD minimum.
- C. Intermediate Rails: Match top rail for size, coating and strength and stiffness requirements.
- D. Bottom Rails: Match top rail for size, coating and strength and stiffness requirements.
- 2.3 TENSION WIRE
 - A. General: Provide horizontal tension wire at the following locations:
 - 1. Location: As indicated.
 - B. <u>Metallic-Coated Steel Wire: 0.177-inch- (4.5-mm-) diameter, marcelled tension wire</u> <u>complying with ASTM A 824 and the following: Polymer-Coated Steel Wire: 0.177-inch-</u> (4.5-mm-) diameter, marcelled tension wire complying with ASTM A 1664, Class 2b and the following: (*AD 01)
 - 1. Metallic Coating: Type I, aluminum coated (aluminized), with the following minimum coating weight:
 - a. Class 3: Not less than 2.0 oz./sq. ft. (610 g/sq. m) of uncoated wire surface.
 - 2. Color: Match chain-link fabric, according to ASTM F 934. (*AD 01)

2.4 SWING GATES

A. TyMetal Corporation's 2150 Pedestrian Swing Gate System is an acceptable alternative to shop-fabricated gates as specified in 2.4.B through 2.4.F below. Gates shall be provided fully factory-assembled and shipped to the project site ready for installation. (*AD 01)

A.B. General: Comply with ASTM F 900 for single and double swing gate types, as indicated.

- 1. Metal Pipe and Tubing: Galvanized steel. Comply with ASTM F 1043 and ASTM F 1083 for materials and protective coatings.
- **B.C.** Frames and Bracing: Fabricate members from round, galvanized steel tubing with outside dimension and weight according to ASTM F 900 and the following:
 - 1. Gate Fabric Height: 2 inches (51 mm) less than adjacent fence height.
 - 2. Leaf Width: As indicated.
 - 3. Frame Members:

- a. Tubing Size: 2.875 inches (73 mm) round, minimum.
- 4. Provide custom fabrications including mounting plates and housings to receive security detention locks, gate position switch, and other devices provided by Division 11 Detention Equipment Contractor (DEC) and Security Control System Contractor (SCSC). Coordinate closely with (DEC & SCSC) supplier of such equipment and devices; obtain templates (if required) and confirm dimensional requirements prior to fabrication.
- C.D. Frame Corner Construction:
 - 1. Welded and 3/8-inch- (9.5-mm-) diameter, adjustable truss rods for panels 5 feet (1.52 m) wide or wider.
- **D.E.** Extended Gate Posts and Frame Members: Extend gate posts and frame end members above top of chain-link fabric at both ends of gate frame 12 inches (305 mm), or as indicated, as required to attach barbed wire assemblies.
- E.F. Hardware:
 - 1. Hinges for gates not indicated to receive security detention locks: Offset type, malleable iron, 180-degree swing.
 - 2. Hinges for gates with security detention locks: Provide self-closing hinge(s) at gates.
 - 3. Latches for gates not indicated to receive security detention locks; Provide latches permitting operation from both sides of gate. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate.
 - 4. Lock Housings and Brackets for security detention locks: Provide galvanized custom fabrications indicated to receive locks and security devices specified in Division 11 Section "Security Hardware" and Division 28 Section "Security Control System."

2.5 HORIZONTAL-SLIDE GATES

- A. General: ASTM F 1184 for gate posts and single sliding gate types:
 - 1. Basis-of-Design: Tymetal Corp.; PLUSS Sliding Gate System or approved equivalent meeting or exceeding basis-of-design product.
 - a. Gate Leaf Width: As indicated.
 - b. Gate frame: 2-3/8" O.D. galvanized steel pipe, black polymer-coated, with galvanized steel bottom angle. (*AD 01)
 - c. Operation: Fully automatic by remote electronic control from designated security control station with a fully-enclosed drive assembly.
 - d. Post-mounted motor box with emergency hand crank and paracentric prison lock.
 - e. Drive assembly shall be as recommended by the manufacturer to suit project conditions.
 - f. Keyless three-point locking.
 - g. Coordinate with requirements of Division 28 for interface with security control system.
- B. Overhead Track Assembly: Manufacturer's standard track, with overhead framework supports, bracing, and accessories, engineered to support size, weight, width, operation, and design of gate and roller assemblies.
- C. Hardware:
 - 1. Hangers, Roller Assemblies, Stops, Bottom Guides: Manufacturer's standard hardware and components.

2. Lock: Manufacturer's standard internal device, complete with lock cam assembly, locking column, lock bar, lock bar guides, and cover.

2.6 FITTINGS

- A. General: Comply with ASTM F 626.
- B. Post and Line Caps: Each post.
 - 1. Line post caps with loop to receive tension wire or top rail.
- C. Rail and Brace Ends: Attach rails securely to each gate, corner, pull, and end post.
- D. Rail Fittings: Provide the following:
 - 1. Top-Rail Sleeves: Pressed steel or round steel tubing not less than 6 inches (152 mm) long.
 - 2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails in the fence line to line posts.
 - 3. Provide off-set type devices as required to secure top, intermediate and bottom rails at "oversize" post conditions, such that face of rails and post are in plane and chain-link fabric may be installed without distortion.
- E. Tension and Brace Bands: Pressed steel, 0.105 inch (2.66 mm) thick, with 1.2-oz/sq. ft. (366-g/sq. m) metallic (zinc) coating.
- F. Tension Bars: Steel, length not less than 2 inches (51 mm) shorter than full height of chain-link fabric with 1.2-oz/sq. ft. (366-g/sq. m) metallic (zinc) coating. Provide one bar for each gate and end post, and two for each corner and pull post unless fabric is integrally woven into post.
- G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.
- H. Barbed Wire Arms: Pressed steel or cast iron, with clips, slots, or other means for attaching strands of barbed wire, integral with post cap; for each post, unless otherwise indicated, and as follows:
 - 1. Line posts with arms designed with opening to accommodate tension wire or top rail, if indicated.
 - 2. Arms shall accommodate three (3) strands of barbed wire and double coil of barbed tape, as indicated.
 - 3. Corner arms at fence corner posts, unless extended posts are indicated.
 - 4. Type I, single slanted arm, unless indicated otherwise.
 - 5. Bolts or rivets for connection to post.
- I. Tie Wires, Clips, and Fasteners: According to ASTM F 626 and ASTM F 1916.
 - 1. High-Security Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:
 - a. Metallic-Coated Steel: 0.192-inch- (4.88-mm-) diameter wire.
 - b. Weight of Aluminum Coating: ASTM A 809, 0.4 oz/sq. ft. (122 g/sq. m).
- J. Power-Driven Fabric Fasteners: Type 304, 0.0938-inch- (2.38-mm-) thick, specially designed cap to anchor fabric to framing with a power-driven, heat-treated, knurled pin.

K. Finish:

1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz. /sq. ft. (366 g /sq. m) of zinc.

2.7 BARBED WIRE

- A. Zinc-Coated Steel Barbed Wire: Comply with ASTM A 121, Chain-Link Fence grade for the following 2-strand barbed wire. Galvanized Steel Barbed Wire, Polymer-Coated: Comply with ASTM A 1665, Type II, 2-strand barbed wire: (*AD 01)
 - 1. Standard Size and Construction: 0.080-inch- (2.03-mm-) diameter line wire with 0.080-inch- (2.03-mm-) diameter, 2-point round barbs spaced not more than 3 inches (76 mm) o.c.

2. Polymer Coating: Class 2b over zinc-coated steel wire. a. Color: Match chain-link fabric, according to ASTM F 934. (*AD 01)

2.8 BARBED TAPE

- A. Wire-Reinforced Tape (Razor Ribbon): ASTM F 1910; continuous coils with four-point, needle-sharp barbs permanently cold clenched around a core wire.
 - 1. Core Wire: High-tensile-strength, zinc-coated steel or stainless steel.
 - 2. Configuration: Double coil.
 - 3. Style: Concertina pattern.
 - 4. Coil Diameter(s): 24 inches inner coil and 30-inch outer coil.
 - 5. Coil Loop Spacing(s): 12 inches.
 - 6. Barb Length Classification: Medium, 0.4-inch
 - 7. Barb Spacing: 4 inches o.c.
 - 8. Barb Set: Manufacturer's standard.
- B. Clips: Stainless steel, 0.065 inch (1.7 mm) thick by 0.375 inch (9.5 mm) wide, capable of withstanding a minimum 150-lbf (667-N) pull load to limit extension of coil, resulting in a concertina pattern when deployed.
- C. Tie Wires: Stainless steel, 0.065 inch (1.7 mm) in diameter.

2.9 CAST-IN-PLACE CONCRETE

- A. Materials: Portland cement complying with ASTM C 150, Type I, aggregates complying with ASTM C 33, and potable water for ready-mixed concrete complying with ASTM C 94/ C 94M.
 - 1. Concrete Mixes: Normal-weight concrete, air entrained, with not less than 3000-psi (20.7-Mpa) compressive strength (28 days), 3-inch (75-mm) slump, and 1-inch (25.4-mm) maximum size aggregate.
- B. Materials: Dry-packaged concrete mix complying with ASTM C 387 for normal-weight concrete mixed with potable water according to manufacturer's written instructions.

2.10 GROUT AND ANCHORING CEMENT

A. Non-shrink, Nonmetallic Grout: Premixed, factory-packaged, non-staining, non-corrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.

B. Erosion-Resistant Anchoring Cement: Factory-packaged, non-shrink, non-staining, hydrauliccontrolled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating, and that is recommended in writing by manufacturer for exterior applications.

2.11 FENCE GROUNDING

- A. Conductors: Bare, solid wire for No. 6 AWG and smaller; stranded wire for No. 4 AWG and larger.
 - 1. Material above Finished Grade: Copper or Aluminum.
 - 2. Material on or below Finished Grade: Copper.
 - 3. Bonding Jumpers: Braided copper tape, 1 inch (25.4 mm) wide, woven of No. 30 AWG bare copper wire, terminated with copper ferrules.
- B. Connectors and Grounding Rods: Listed in UL 467.
 - 1. Connectors for Below-Grade Use: Exothermic welded type.
 - 2. Grounding Rods: Copper-clad steel.
 - a. Size: 5/8 inch by 96 inches (16 mm by 2400 mm).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance.
 - 1. Do not begin installation before final grading is completed, unless otherwise permitted by Architect.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet (152 m) or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.
- B. Coordinate post locations with all underground utilities and structures, and building foundation systems.

3.3 INSTALLATION, GENERAL

- A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements specified.
- 3.4 CHAIN-LINK FENCE INSTALLATION
 - A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
 - B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.

- 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
- 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
 - a. Exposed Concrete: Extend 2 inches (51 mm) above grade or to same elevation as concrete grade beam; shape and smooth to shed water, unless indicated otherwise.
 - b. Concealed Concrete: Top 4 inches (102 mm) below grade, or as indicated on Drawings, to allow covering with surface material. Provide at concrete "mow strip" as indicated; not required at paving areas.
- C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of as indicated on the Drawings.
- D. Line Posts: Space line posts uniformly at 10 feet (3 m) o.c.
- E. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Install braces at end and gate posts and at both sides of corner and pull posts.
 - 1. Locate horizontal braces at mid-height of fabric 6 feet (1.8 m) or higher, on fences with top rail and at 2/3 fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
- F. Barbed Wire Arms: Bolt or rivet to top of post. Angle single arms away from approach side of fence, unless otherwise indicated.
- G. Tension Wire: As required, install according to ASTM F 567 and ASTM F 1916, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch- (3.05-mm-) diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches (610 mm) o.c. Install tension wires in locations indicated before stretching fabric.
- H. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended by fencing manufacturer.
- I. Bottom Rails: Install bottom rails spanning between posts. Anchor rail at mid-span to concrete "mow strip" as detailed on the Drawings.
- J. Chain-Link Fabric: Apply fabric to secure side of enclosing framework. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
 - 1. Leave 2 inches (51 mm) between finish grade or surface and bottom selvage, unless otherwise indicated.
 - 2. Overlapping Fabric: At or between post or rail according to ASTM F 1916 with wire ties or steel strap method.
- K. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches (381 mm) o.c.
- L. Tie Wires: Power-fastened or manually fastened ties configured to wrap a full 360 degrees around rail or post and a minimum of 1 complete diamond of fabric. Twist ends one and one-

half machine twists or three full manual twists, and cut-off protruding ends to preclude untwisting by hand.

- 1. Maximum Spacing: Tie fabric to line posts at 12 inches (305 mm) o.c. and to braces at 24 inches (610 mm) o.c.
- M. Power-Driven Fasteners: Fasten 0.192- or 0.148-inch (4.87- or 3.76-mm) wire fabric with 2- or 1-inch (51- or 25.4-mm) mesh size.
 - 1. Fasten fabric to line posts 12 inches (305 mm) o.c. and to braces 24 inches (610 mm) o.c.
- N. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.
- O. Privacy Slats: Install slats in direction indicated, securely locked in place.
 - 1. Vertically, for privacy factor of 70 to 75.
- P. Barbed Wire: Install barbed wire uniformly spaced as indicated on the Drawings. Pull wire taut and install securely to extension arms and secure to end post or terminal arms.
- Q. Barbed Tape: Install according to ASTM F 1911. Install barbed tape uniformly in configurations indicated and fasten securely to prevent movement or displacement

3.5 GATE INSTALLATION

A. Install gates according to manufacturer's printed instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.6 GROUNDING AND BONDING

- A. Comply with requirements in Division 26 Section "Grounding and Bonding."
- B. Fence Grounding: Install at maximum intervals of 100 feet (30 m) except as follows:
 - 1. Gates and Other Fence Openings: Ground fence on each side of opening.
 - a. Bond metal gates to gate posts.
 - b. Bond across openings, with and without gates, except openings indicated as intentional fence discontinuities. Use No. 2 AWG wire and bury it at least 18 inches (457 mm) below finished grade.
- C. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches (152 mm) below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at grounding location, including the following:
 - 1. Each Barbed Wire Strand. Make grounding connections to barbed wire with wire-to-wire connectors designed for this purpose.
- D. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.
- E. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
 - 1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
 - 2. Make connections with clean, bare metal at points of contact.

- 3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
- 4. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
- 5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.
- F. Bonding to Lightning Protection System: If fence terminates at lightning-protected building or structure, ground the fence and bond the fence grounding conductor to lightning protection down conductor or lightning protection grounding conductor complying with NFPA 780.

3.7 FIELD QUALITY CONTROL

- A. Grounding-Resistance Testing: Engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
 - 1. Grounding-Resistance Tests: Subject completed grounding system to a megger test at each grounding location. Measure grounding resistance not less than two full days after last trace of precipitation, without soil having been moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural grounding resistance. Perform tests by two-point method according to IEEE 81.
 - 2. Excessive Grounding Resistance: If resistance to grounding exceeds specified value, notify Architect promptly. Include recommendations for reducing grounding resistance and a proposal to accomplish recommended work.
 - 3. Report: Prepare test reports, certified by testing agency, of grounding resistance at each test location. Include observations of weather and other phenomena that may affect test results.

3.8 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Horizontal Sliding Gate Operators: Energize circuits to electrical equipment and devices, start units, and verify proper motor rotation and unit operation.
 - 1. Test and adjust operator, controls, and safety devices. Replace damaged and malfunctioning controls and equipment.
 - 2. Lubricate operator and related components.
- C. Lubricate hardware and other moving parts.

3.9 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's personnel to adjust, operate, and maintain gates. Refer to Division 01 Section "Closeout Procedures."

END OF SECTION 323113.53



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	DEMOLITION PLAN KEYNOTES REPRESENTED BY n APPLIES TO DRAWINGS A1.2.1 - A1.2.nn
1	REMOVE PARTITION WALLS WHERE INDICATED, CEILINGS, FLOOR FINISHES WIT
2	REMOVE EXISTING EXTERIOR WALL, WINDOWS AND BRICK VENEER
3	REMOVE COUNTER
4	REMOVE COLUMNS
5	REMOVE PLUMBING FIXTURE. CAP EXISTING LINES
6	REMOVE STOREFRONT FRAME
7	REMOVE EXISTING CELL DOOR, LOCK, & HARDWARE. EX FRAME SHALL REMAIN
8	EXISTING HVAC AND PAD TO BE REMOVED
9	REMOVE PENAL FIXTURE. GIVE TO OWNER FOR STORAGE.
10	REMOVE EXTERIOR DOOR AND FRAME. PREPARE FOR NEW FRAME PER DOOR SCHEDULE.
11	REMOVE INTEIROR WALL FOR EXTENT SHOWN; REFER TO FLOOR PLAN A2.1.1
12	REMOVE DOOR
13	REFER TO CIVIL FOR EXTENT OF CONCRETE SIDEWALK TO BE REMOVED
14	DETENTION WINDOWS IN CELLS SHALL REMAIN. PROTECT DURING DEMOLITIO TYP.
15	EXISTING COMBINATION PENAL FIXTURE TO REMAIN. ENSURE PROPER FUNCTI AND PROTECT DURING DEMOLITION TYP.
16	EXISTING CHASE ACCESS DOOR TO REMAIN. ENSURE PROPER LOCKING FUNC COORDINATE LOCKS W/ SPECS TYP.
17	REMOVE RUBBER BASE AND VCT FLOOR FINISH. PREPARE SLAB FOR NEW FLC FINISH TYPICAL FOR ALL ROOMS AND COORIDORS.
18	REMOVE EXISTING DETENTION MIRROR - TYP.
20	REMOVE EXISTING DETENTION BUNK. TURN OVER TO OWNER FOR STORAGE.
22	REMOVE PLUMBING FIXTURE. PREPARE FOR NEW FIXTURE.
23	REMOVE TOILET ACCESSORIES
24	REMOVE RUBBER BASE AND VCT FLOOR FINISH THIS ROOM ONLY. PREPARE SI FOR NEW FINISH.
25	REMOVE CEILING & ASSOCIATED FRAMING. REMOVE ALL ASSOCIATED CEILING MOUNTED EQUIPMENT.
26	REMOVE CONDUIT & ALL ASSOCIATED EQUIPMENT MOUNTED TO UNDERSIDE C

- ROOF DECK. PATCH CONC. AS REQ'D FOR SMOOTH SURFACE FINISH.
- 27 REMOVE PARAPET DOWN TO ROOF LEVEL ALONG ENTIRE LENGTH OF WALL
- REMOVE EXISTING BUILT UP ROOFING, METAL COPING AND INSULATION DOWN TO CONC. ROOF DECK 28



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A2.1.2 A1.2.1 1/8" = 1'-0"

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DETENTION CENTER NC 28379 F PUBLIC SAFETY EK RD ROCKINGHAM, JUVENILE **HMOND REGIONAL** Α^ζΑ 2-24596-02 RTMENT (EDGE CF ATION REN Ο R C N.C 269 PROJECT NO: 621139 DATE: 03/30/2023 REVISIONS DATE DESCRIPTION 5/24/2023 AD 01

DEMOLITION PLANS

A1.2.1





	GATE SCHEDULE								
GATE #	GATE TYPE	MATERIAL	GATE SIZE	LOCATION	HARDWARE SET	NOTE			
G1	SLIDING VEHICLE GATE	BLACK VINYL COATED GALV STL	20'-0"W X 8'-0"H	PERIMETER ENTRY	AD 01	INTERFACE W/ SECURITY CONTROL SYSTEM			
G2	EXISTING VEHICLE GATE	-	-	EXIST FIRE ACCESS		PADLOCKED BY OWNER, FIRE DEPT. ACCESS			
G3	SWING GATE	GALV STL	3'-0"W X 7'-0"H	SALLY PORT - E100	SH8	INTERFACE W/ SECURITY CONTROL SYSTEM			
G4	SWING GATE	GALV STL	3'-0"W X 7'-0"H	SALLY PORT - W100	SH8	INTERFACE W/ SECURITY CONTROL SYSTEM			
G5	SWING GATE	GALV STL	3'-0"W X 7'-0"H	TO VOCATIONAL BLDG		PADLOCKED BY OWNER			
G6	SWING GATE	GALV STL	4'-0"W X 7'-0"H	TO RECREATION BLDG		PADLOCKED BY OWNER			
G7	SWING GATE	GALV STL	4'-0"W X 7'-0"H	BASKETBALL - EAST		PADLOCKED BY OWNER			
G8	SWING GATE	GALV STL	4'-0"W X 7'-0"H	BASKETBALL - WEST		PADLOCKED BY OWNER			
G9	EXISTING SWING GATE	-	-	TO EXISTING PARKING	SH8 2	INTERFACE W/ SECURITY CONTROL SYSTEM			
G10	EXISTING SWING GATE	-	-		SH8	INTERFACE W/ SECURITY CONTROL SYSTEM			

ARCHITECTURAL SITE PLAN KEYNOTES REPRESENTED BY n

	1	PAINTED BASKETBALL COURT LINES
	2	EXISTING SECURITY FENCING
*	*2A	ALTERNATE 3 - REMOVE EXISTING AND REPLACE WITH ARCHED REF A2.0.1
	3	SALLYPORT
	4	8'-0" CHAIN LINK ENCLOSURE WITH PRIVACY SLATS DUMPSTER G
	6	ADA RAMP WITH HANDRAILS - REFER TO CIVIL
	7	EXISTING ASPHALT LOT
	8	VEHICLE SLIDING GATE & PEDESTALS -MODIFY EXISTING FENCE AND NEW GATE
	9	CONTAINMENT AREA - SIZED FOR 50 INMATES AT 15 SF PER INMA
	10	EXTERIOR BASKETBALL ASSEMBLY - REFER TO DIV 11
	11	EXISTING VEHICLE GATE
	12	EXISTING MONUMENT SIGN - REFER TO ELECTRICAL
	13	EXISTING FLAG POLES - REFER TO ELECTRICAL
	14	SECURITY FENCING TO MATCH EXISTING
	15	STEPS WITH HANDRAILS- REFER TO CIVIL
	16	EXISTING STAIR - REFER TO CIVIL
	17	APPROXIMATE EXTENT OF EXISTING SIDEWALK - REFER TO CIVIL
	18	APPROXIMATE EXTENT OF NEW SIDEWALK - REFER TO CIVIL
	19	GENERATOR ON PAD - REFER TO ELECTRICAL
	20	TRANSFORMER ON PAD - REFER TO ELECTRICAL
	21	BOLLARDS
	22	GREASE INTERCEPTOR - REFER TO PLUMBING AND CIVIL
	23	PARKING - REFER TO CIVIL

- 24
- ALTERNATE 2 VOCATIONAL BUILDING AND ASSOCIATED RAMP REFER TO CIVIL ALTERNATE 1 - RECREATIONAL BUILDING, AND ASSOCIATED SIDEWALKS- REFER TO 25 CIVIL

ARCHITECTURAL SITE PLAN LEGEND

- SYMBOL DESCRIPTION
- ■ LIGHT FIXTURE, POLE MOUNT.





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ARCHITECTURAL SITE PLAN

A2.0.0



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				D	ETENTIO	N WINDO	W SCHEI	DULE		
		GLAZING			FRAME					
		STO	OP SIDE			DETAILS				
	TYPE	INSIDE	OUTSIDE	TYPE	NO.	HEAD	JAMB 1	JA		
D101A	INSG-1		•	DHM	5	1/A3.4.1	2/A3.4.1	2/A3.4.1		
D101B	INSG-1		•	DHM	5	1/A3.4.1	2/A3.4.1	2/A3.4.1		
D101C	INSG-1		•	DHM	5	1/A3.4.1	2/A3.4.1	2/A3.4.1		
D107A	INSG-1		•	DHM	5	1/A3.4.1	2/A3.4.1	2/A3.4.1		
D107B	INSG-1		•	DHM	5	1/A3.4.1	2/A3.4.1	2/A3.4.1		
D107C	INSG-1		•	DHM	5	1/A3.4.1	2/A3.4.1	2/A3.4.1		
D115A	INSG-1		•	DHM	5	1/A3.4.1	2/A3.4.1	2/A3.4.1		
D115B	INSG-1		•	DHM	5	1/A3.4.1	2/A3.4.1	2/A3.4.1		
D115C	INSG-1		•	DHM	5	1/A3.4.1	2/A3.4.1	2/A3.4.1		
DC100A	SG-10	•		DHM	7	3/A3.4.1	4/A3.4.1	4/A3.4.1		
DC100B	SG-10	•		DHM	7	3/A3.4.1	4/A3.4.1	4/A3.4.1		
DC100C	SG-10	•		DHM	8	3/A3.4.1	4/A3.4.1	4/A3.4.1		
DC100D	SG-10	•		DHM	8	3/A3.4.1	4/A3.4.1	4/A3.4.1		
DC100E	SG-10	•		DHM	7	3/A3.4.1	4/A3.4.1	4/A3.4.1		
DC100F	SG-10	•		DHM	7	3/A3.4.1	4/A3.4.1	4/A3.4.1		

DETENTION FRAME TYPES



			DOOF	R		FRAME	FRAME	FRAME	FRAME	FRAM	
										1014	
	NO.	TYPE	SIZE (NOMINAL)	MATL	TYPE	TYPE	NUMBER	DETAIL	DETAIL	DET	
D106A	SH2	DF	3'-0"x7'-0"x2"	DHM		DHM	1	3	4	4	
D112	SH2	DN	3'-0"x7'-0"x2"	DHM	SG-16F	DHM	1	3	4	4	
D114	SH2	DF	3'-0"x7'-0"x2"	DHM		DHM	1	3	4	4	
D115	SH2A	DG	3'-0"x7'-0"x2"	DHM	SG-1P	DHM		3	A	4	
D118A	SH2	DN	3'-0"x7\ ₇ 0"x2"	DHM	S/G-14F	DHM		3	4	$\sqrt{4}$	
D118B	SH2	DN	3'-0"x7'-0"x2"	DHM	SG-2P	DHM	1	3	4	4	
D122A	SH2	人DN	3'-0"x7'-0"x2"	DHM	5G-14F		$\sqrt{1}$	3	~4\	Ą	
DA1	SH6	DGT	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DA2	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DA3	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DA4	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DA5	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DA6	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DA7	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DA8	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DA9	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DA10	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DA11	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11 AD	01 7	7	
DA12	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	1-	7	
DA13	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	{7}	7	
DA1 <u>16A</u>	SH1A	DF	3'-0"x7'-0"x2"	DHM		DHM	1	12	13	13	
DA116B	- 8H2	DN	3'-0"x7'-0"x2"	DHM	SG-16F	DHM	1	3	4	- 4	
DA117A	SH5	DF	3'-0"x7''-0"x2"	DHM		DHM	1	3	4	4	
DA117,B人	SH2A	人DG	3'-6"\$7'-0"x2"	DHM	SG-16F		人 1 ,	人 4	3	3	
DB1	SH6	DG1	2'-8"x6'- 8"x 2"	DHM	SG-16F	DHM	3	11	7	$\overline{7}$	
DB2	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB3	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB4	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB5	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB6	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB7	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB8	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB9	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB10	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB11	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB12	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB13	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB14	SH6	DG1	2'-8"x6'-8"x2"	DHM	SG-16F	DHM	3	11	7	7	
DB116A	SH1A	DF	3'-0"x7'-0"x2"	DHM		DHM	1	12	13	13	
DB116B	SH2	DN	3'-0"x7'-0"x2"	DHM	SG-16F	DHM	1	3	4	4	
DB117	SH2A	DG	3'-6"x7'-0"x2"	DHM	SG-16F	DHM	6	3	4	4	
DC100	SH4	DG	3'-0"x7'-0"x2"	DHM	SG-13F	DHM	1	3	4	4	
DC105	SH7A	DF	3'-0"x7'-0"x2"	DHM		DHM	2	3	4	4	
DC108	SH2	DFG	3'-6"x7'-0"x2"	DHM	SG-16F	DHM	1	3	4	4	
DK100	SH2A	DG	3'-6"x7'-0"x2"	DHM	SG-16F	DHM	1	3	4	4	
DM101	SH2A	DN	3'-0"x7'-0"x2"	DHM	SG-16F	DHM	1	3	4	4	
DS100A	SH1	DN	3'-6"x7'-0"x2"	DHM	$\left(\left(\text{INSG-1} \right) \right)$	DHM	1	1	2	2	
DS100B	SH2	DG	3'-6"x7'-0"x2"	DHM	SG-2P	DHM	1	3	4	4	

SILL	FIRE RATING	G	NOTES
5/A3.4.1			
5/A3.4.1			~~~~
	(5	5 3/4" D FRAME
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		Ţ	

		DETE	NTION	DOO	R S
	FRAME	FRAME	FRAME	FRAME	FRAM
SECURITY GLAZING			HFAD	JAMB	JAME

		Boon								
	HDWR SET				SECURITY GLAZING			HEAD	JAMB	JA
	NO.	TYPE	SIZE (NOMINAL)	MATL	TYPE	TYPE	NUMBER	DETAIL	DETAIL	DE
DR100	SH1A	DF	3'-0"x7'-0"x2"	DHM		DHM	1	14	15	
DR107A	SH1	DF	3'-0"x7'-0"x2"	DHM		DHM	1	14	15	
DR107B	SH2A	DG	3'-0"x7'-0"x2"	DHM	SG-2P	DHM	1	3	4	









DETENTION DOOR & WINDOW SCHEDULE, DETAILS

A3.3.1





AIR BARRIER TRANSITION MEMBRANE

– 2" X 3" CFSF-S





JUVENILE DETENTION CENTER RENOVATION SCO ID# 22-24596-02A N.C. DEPARTMENT OF PUBLIC SAFETY 269 CARTLEDGE CREEK RD ROCKINGHAM, NC 28379 **RICHMOND REGIONAL**

PROJECT NO: 621139 DATE: 03/30/2023 REVISIONS DATE DESCRIPTION 5/24/2023 AD 01

> **DETENTION DOOR AND** FRAME DETAILS

> > A3.4.1



3/4" = 1'-0"

3/4" = 1'-0"

D PLAN GE	ENERAL NOTES						
CUR-SUCH AS CERAMIC TILE- NS ARE TO FACE OF WAINSCOT LIED FINISHES" IN THIS CASE DO NOT							
DULE							
DETAIL	NOTES						
2/A7.2.0							
1///.2.0							
9/A7.2.0							
10/A7.2.0							
6/7 2 0							



	TOILET	ACCESSORIES SCHEDULE	
MARK	DESCRIPTION	MOUNTING HEIGHT	REMARI
	<varies></varies>	<varies></varies>	
А	36" HORIZONTAL GRAB BAR	REFER TO WATER CLOSET ELEVATIONS	
В	42" HORIZONTAL GRAB BAR	REFER TO WATER CLOSET ELEVATIONS	
С	18" VERTICAL GRAB BAR	REFER TO WATER CLOSET ELEVATIONS	
D	TOILET TISSUE DISPENSER	REFER TO WATER CLOSET ELEVATIONS	
Е	SANITARY NAPKIN DISPOSAL	REFER TO WATER CLOSET ELEVATIONS	
F	SOAP DISPENSER	3'-4" AFF TO DISPENSING OUTLET	
G	MIRROR (18" x 36"), OVER LAV AND CONTERTOP	3'-4" AFF TO BOTTOM OF REFLECTIVE SURFACE	
Н	GRAB BAR ASSEMBLY	REFER TO SHOWER ELEVATIONS	
J	L-SHAPED FOLDING SHOWER SEAT	1'-6" TO SEAT SURFACE	
L	SHOWER CURTAIN, ROD AND HOOKS	6'-8" AFF TO ROD	
Ν	24" HORIZONTAL GRAB BAR	REFER TO TUB & SHOWER ELEVATIONS	
Т	MOP & BROOM HOLDER W/ SHELF	5'-0" AFF TO TOP OF SHELF	
V	FOLDING SHOWER SEAT	1'-6" TO SEAT SURFACE	





	HAVEN TECHNOLOGY SC-300 MASTER STATION - REFER TO DWG SE2.1	PUBLIC SIDE
	RECEPTION COUNTER TOP DESK	
(6 TALK THRU-COM	
\ر	YP SE3.1 3" = 1'-0"	



SECURITY

(SMS)

PLC NETWORK

SWITCH

CARD

ACCESS

MGMT SYSTEM 5

SECURITY / ELEC

CL105

NETWORK

VIDEO

MANAGEMENT

SYSTEM

VIDEO

STORAGE



KP-

(RX)—





	SE	CURITY - C	AMERA S	CHEDULE	
	CAMERA		MOUNTING		
NO.	TYPE	TYPE	HEIGHT	DETAIL	NOTES
01	FIXED	RECESSED	CEILING	1/SE3.1	
02	FIXED	RECESSED	CEILING	1/SE3.1	
03	FIXED	RECESSED	CEILING	1/SE3.1	
04	FIXED	RECESSED	CEILING	1/SE3.1	WIDE ANGLE
05	FIXED	RECESSED	CEILING	1/SE3.1	
06	FIXED	RECESSED	CEILING	1/SE3.1	
07	FIXED	RECESSED	CEILING	1/SE3.1	
08	FIXED	SURFACE	CEILING	2/SE3.1	WIDE ANGLE
09	FIXED	SURFACE	CEILING	2/SE3.1	
10	FIXED	SURFACE	CEILING	2/SE3.1	
11	FIXED	SURFACE	CEILING	2/SE3.1	
12	FIXED	SURFACE	CEILING	2/SE3.1	
13	FIXED	SURFACE	CEILING	2/SE3.1	
14	FIXED	SURFACE	CEILING	2/SE3.1	
15	FIXED	SURFACE	CEILING	2/SE3.1	
16	FIXED	SURFACE	CEILING	2/SE3.1	
17	FIXED	SURFACE	CEILING	2/SE3.1	
18	FIXED	SURFACE	CEILING	2/SE3.1	
19	FIXED	SURFACE	CEILING	2/SE3.1	
20	FIXED	SURFACE	CEILING	2/SE3.1	
21	FIXED	SURFACE	CEILING	2/SE3.1	
22	FIXED	SURFACE	CEILING	2/SE3.1	
23	FIXED	SURFACE	CEILING	2/SE3.1	WIDE ANGLE
24	FIXED	SURFACE	CEILING	2/SE3.1	
25	FIXED	SURFACE	CEILING	2/SE3.1	
26	FIXED	SURFACE	CEILING	2/SE3.1	
27	FIXED	SURFACE	CEILING	2/SE3.1	
28	FIXED	SURFACE	CEILING	2/SE3.1	WIDE ANGLE
29	FIXED	SURFACE	CEILING	2/SE3.1	
30	FIXED	SURFACE	CEILING	2/SE3.1	
31	FIXED	SURFACE	CEILING	2/SE3.1	WIDE ANGLE
32	FIXED	SURFACE	CEILING	2/SE3.1	
33	FIXED	SURFACE	CEILING	2/SE3.1	
34	FIXED	SURFACE	CEILING	2/SE3.1	
35	FIXED	SURFACE	CEILING	2/SE3.1	
36	FIXED	SURFACE	CEILING	2/SE3.1	
37	FIXED	SURFACE	CEILING	2/SE3.1	
38	FIXED	SURFACE	CEILING	2/SE3.1	
39	FIXED	SURFACE	CEILING	2/SE3.1	
40		SURFACE		2/3E3.1	
41		SURFACE		2/3E3.1	
42		SURFACE		2/3E3.1	
43				2/353.1	
44 15				2/303.1	
45				2/3E3.1 2/SE3.1	
ں ہ 17				2/000.1	
<u></u> <u></u> <u>4</u> 8	FIXED	SURFACE		2/SE3.1	
101		SURFACE		4/SF3 1	
102	MUI TI-I FNS 270°	SURFACE	12' AFF	4/SF3 1	
102		SURFACE	8' 8" AFF	4/SE3.1	
103	MUI TI-I FNS 270°	SURFACE	11' 8" AFF	4/SF3 1	
105	MUI TI-I FNS 270°	SURFACE	12' AFF	4/SF3 1	
106	MUI TI-I FNS 270°	SURFACE	11' 8" AFF	4/SF3 1	
107	FIXED	POLE	7' 6" AFF	5/SF3 1	
108	FIXED	POLE	7' 6" AFF	5/SF3 1	
201	FIXED	SURFACE	CEILING	2/SF3 1	AI TERNATE 1
202	FIXED	SURFACE	11' AFF	3/SF3 1	AI TERNATE 1
203	FIXED	SURFACE	11' AFF	3/SF3 1	ALTERNATE 1
203	MUI TI-I FNS 270°	SURFACE	12' AFF	4/SF3 1	AI TERNATE 1
205	MUI TI-I FNS 270°	SURFACE	12'AFF	4/SF3 1	
301	FIXED	SURFACE	10' AFF	3/SF3 1	ALTERNATE 2
302	FIXED	SURFACE	10'AFF	3/SF3 1	ALTERNATE 2
303	MULTI-LENS 270°	SURFACE	10' AFF	4/SF3 1	ALTERNATE 2
		00.07.02			



- CAMERA (REFER TO

CAMERA SCHEDULE)

304 MULTI-LENS 270° SURFACE 10' AFF 4/SE3.1 ALTERNATE 2



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DETENTION CENTER 28379 NC JUVENILE

RENOVATION SCO ID# 22-24596-02A N.C. DEPARTMENT OF PUBLIC SAFETY 269 CARTLEDGE CREEK RD ROCKINGHAM, **RICHMOND REGIONAL**

PROJECT NO: 621139 DATE: 03/30/2023 REVISIONS DATE DESCRIPTION 5/24/2023 AD 01

> **CAMERA SCHEDULE** AND DETAILS


	FIRE ALARM LEGEND		POWER LEGEND
YMBOI	L DESCRIPTION	SYM	BOL DESCRIPTION
V XX	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE, MOUNT AT 80" AFF AND NOT MORE THAN 96". SUBSCRIPT NUMBER INDICATES STROBE CANDELA RATING.	P T	 APPLIANCE RECEPTACLE, MOUNT AT +1'-6" AFF. PROVIDE NEMA CONFIGURATION TO MATCH PLUG FOR EQUIPMENT SERVED. DUPLEX RECEPTACLE. NEMA 5-20B. MOUNT AT +1'-6"AFF.
××	FIRE ALARM VISUAL STROBE NOTIFICATION DEVICE, 80" AFF AND NOT MORE THAN 96". SUBSCRIPT NUMBER INDICATES STROBE CANDELA RATING.	Щ Щ Д	J DUPLEX RECEPTACLE, NEMA 5-20R, MOUNT AT +3'-10"AFF.
∇ ××	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE WITH DEVICE GUARD, 80" AFF AND NOT MORE THAN 96". SUBSCRIPT NUMBER INDICATES STROBE CANDELA RATING. "WP INDICATES TO PROVIDE A WEATHERPROOF DEVICE	۳ ۵	 DUPLEX RECEPTACLE, NEMA 5-20R, NOUNT AT +7 -6 AFF. DUPLEX RECEPTACLE, NEMA 5-20R, RECESS FLOOR MOUNT. GFCI DUPLEX RECEPTACLE, NEMA 5-20R, MOUNT AT +1'-6"AFF. PROVIDE NEMA 3R "WHILE IN USE"
XX XX	FIRE ALARM VISUAL STROBE NOTIFICATION DEVICE, 80" AFF AND NOT MORE THAN 96". SUBSCRIPT NUMBER INDICATES STROBE CANDELA RATING.	л С	ENCLOSURE.GFCI DUPLEX RECEPTACLE, NEMA 5-20R, MOUNT AT +1'-6"AFF.
$\mathbf{\nabla}$	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE, CEILING MOUNTED. SUBSCRIPT NUMBER INDICATES STROBE CANDELA RATING.	¶	 GFCI DUPLEX RECEPTACLE, NEMA 5-20R, MOUNT AT +3'-10"AFF. DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, MOUNT AT +1'-6"AFF.
\mathbf{x}	FIRE ALARM VISUAL STROBE NOTIFICATION DEVICE, CEILING MOUNTED. SUBSCRIPT NUMBER INDICATES STROBE CANDELA RATING.	Ħ	DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, MOUNT AT +3'-10"AFF.
Х Х Х	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE WITH DEVICE GUARD, CEILING MOUNTED. SUBSCRIPT NUMBER INDICATES STROBE CANDELA RATING.		 DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, RECESS FLOOR MOUNT. POWER/COMMUNICATIONS RECESSED FLOOR BOX. POWER TO VIDEO VISIT STATION, MOUNT DUPLEX OUTLET ADJACENT TO COMM OUTLET
	FIRE ALARM VISUAL STROBE NOTIFICATION DEVICE, CEILING MOUNTED. SUBSCRIPT NUMBER INDICATES STROBE CANDELA RATING.	全 十	POWER TO CATV OUTLET, MOUNT DUPLEX OUTLET ADJACENT TO COMM OUTLET
F	FIRE ALARM MANUAL PULL STATION, MOUNT AT +3'-10"AFF.		
FK	FIRE ALARM KEY OPERATED MANUAL PULL STATION, MOUNT AT +3'-10"AFF.		
SD	FIRE ALARM DUCT SMOKE DETECTOR, FURNISH AND CONNECT UNDER DIVISION 28. INSTALL UNDER DIVISION 23. VERIFY LOCATION WITH DIVISION 23 PRIOR TO ROUGH-IN. PROVIDE ACCESSIBLE KEY OPERATED REMOTE TEST SWITCH FOR EACH DETECTOR.	Ê	MUSHROOM SWITCH, HEAVY DUTY WITH LEGEND PLATE. MOUNT W/HANDLE AT +3'-10" AFF, UNO.
S	SMOKE DETECTOR, CEILING MOUNT. SUBSCRIPT 'G' WHEN PRESENT INDICATES PROVIDE DEVICE GUARD.	Z	MANUAL MOTOR STARTER, OVERLOAD PROTECTION AS REQUIRED PER NAME PLATE RATINGS, WITH 'ON' INDICATOR PILOT LIGHT. FLUSH MOUNT W/HANDLE AT +3'-10"AFF, UNO.
H	HEAT DETECTOR, CEILING MOUNT. SUBSCRIPT 'G' WHEN PRESENT INDICATES PROVIDE DEVICE GUARD.		DISCONNECT SWITCH, FUSIBLE OR NON-FUSIBLE AS INDICATED. MOUNT W/HANDLE AT +4'-6"AFF, UNO.
TS	FIRE ALARM TAMPER SWITCH, PROVIDE UNDER DIVISION 23, MONITOR UNDER DIVISION 28.		MAGNETIC MOTOR STARTER, WITH OVERLOAD RELAYS AS REQUIRED TO SERVE MANUFACTURER REQUIREMENTS OF EQUIPMENT SERVED. PROVIDE WITH HAND-OFF-AUTOMATIC SELECTOR SWITCH AND INDICATOR LIGHTS MOUNT W/HANDLE AT +4'-6"AFF, UNO.
69 69	FIRE ALARM FLOW SWITCH, PROVIDE UNDER DIVISION 23, MONITOR UNDER DIVISION 28. POST INDICATOR VALVE SWITCH, PROVIDE UNDER DIVISION 23, MONITOR UNDER DIVISION 28. FIRE ALARM PRESSURE SWITCH, PROVIDE UNDER DIVISION 23, MONITOR UNDER DIVISION 28.		COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH. WITH OVERLOAD ELEMENTS AND FUSING AS REQUIRED TO SERVE MANUFACTURER REQUIREMENTS OF EQUIPMENT SERVED. PROVIDE WITH HAND-OFF-AUTOMATIC SELECTOR SWITCH AND INDICATOR LIGHTS MOUNT W/HANDLE AT + 4'-6"AFF, UNO.
(RI)	FIRE ALARM REMOTE INDICATOR, CEILING MOUNT.	Ē) EQUIPMENT POWER CONNECTION.
\mathbb{M}	FIRE ALARM MONITOR MODULE. NOT ALL MONITOR MODULES ARE INDICATED ON DRAWINGS. PROVIDE QUANTITY AND IN LOCATIONS REQUIRED TO ACCOMPLISH SPECIFIED MONITORING FUNCTIONS.	Ę	 VALVE POWER CONNECTION. COORDINATE CONNECTION TYPE WITH DIV 22. MOTOR CONNECTION. MOTOR CONNECTION.
©	FIRE ALARM CONTROL MODULE. NOT ALL CONTROL MODULES ARE INDICATED ON DRAWINGS. PROVIDE QUANTITY AND IN LOCATIONS REQUIRED TO ACCOMPLISH SPECIFIED CONTROL FUNCTIONS.	EL	Image: Connection to Div 23 motorized damper, verify location. Image: Power for Electric door lock connection.
₿	FIRE ALARM SPRINKLER BELL, MOUNT AT +10'-0"AFF.	G	EMERGENCY GENERATOR.
_•	FIRE ALARM/POWER CONNECTION TO DIVISION 23 SMOKE OR FIRE/SMOKE DAMPER. COORDINATE WITH DIVISION 23. REFER TO TYPICAL FIRE/SMOKE DAMPER DIAGRAM.		BRANCH CIRCUIT RUN CONCEALED, UNO. DASHED INDICATES CIRCUITRY REQUIRED TO BE RUN BELOW SLAB.
			PANELBOARD.
		Т] TRANSFORMER, PROVIDE CONCRETE HOUSEKEEPING PAD UNLESS NOTED OTHERWISE.
<u>TIVIBOI</u>		\propto	XX FEEDER TAG. REFER TO FEEDER SCHEDULE ON DWG E5.1.
þ	CIRCUIT BREAKER		
自	FUSED SWITCH		

	h h	CIRCUIT BREAKER
	卓 イ	FUSED SWITCH
	ulu M	TRANSFORMER
		TRANSFER SWITCH
	XXX	FEEDER DESIGNATION
	- → ст	CURRENT TRANSFORMER
		POTENTIAL TRANSFORMER
l		

	LIGHT FIXTURE SCHEDULE												
			FIXTURE					LAMP					
TYPE	DESCRIPTION	MANUFACTURER	SERIES NO.	VOLTAGE	WATTAGE	LUMENS	TYPE	COLOR TEMP.	MOUNTING	OPTIONS	COMMENTS		
A1	2X4 VOLUMETRIC LIGHTING	LITHONIA	2RTL4 48L GZ10 LP850	277 V	48	4800 lm	LED	5000 K	RECESSED		PROVIDE FLANGE KIT WHEN MOUNTED IN DRYWALL CEILING		
A2	2X4 VOLUMETRIC LIGHTING	LITHONIA	2RTL4 48L GZ10 LP850-EL14L	277 V	48	4800 lm	LED	5000 K	RECESSED	1400 LM BATTERY	PROVIDE FLANGE KIT WHEN MOUNTED IN DRYWALL CEILING		
B1	2X2 VOLUMETRIC LIGHTING	LITHONIA	2RTL2 40L GZ10 LP850	277 V	40	4000 lm	LED	5000 K	RECESSED				
C1	2X4 VANDAL RESIST LENS	LITHONIA	2VRTL G L48 5000LM ICW AP125FL GZ1	277 V	50	5000 lm	LED	5000 K	RECESSED				
C2	2X4 VANDAL RESIST LENS-EM	LITHONIA	2VRTL G L24 5000LM ICW AP125FL GZ1 E10WLCP	277 V	50	5000 lm	LED	5000 K	RECESSED	1400 LM BATTERY			
D1	4' MAX SECURITY	KENALL	SDSA 4 0/0 45L50K DCC 2/J 1	277 V	46	4500 lm	LED	5000 K	SURFACE		120 DEGREE OPTICS. MOUNT WITH TAMPER PROOF HARDWARE		
D2	4' MAX SECURITY-EM	KENALL	SDSA 4 0/0 45L50K DCC 2/J 1 LEL	277 V	46	4500 lm	LED	5000 K	SURFACE	1400 LM BATTERY	120 DEGREE OPTICS. MOUNT WITH TAMPER PROOF HARDWARE		
D4	4' MAX SECURITY - NL	KENALL	SDSA 4 0/0 45L50K DCC 2/J 1 DLN	277 V	46	4500 lm	LED	5000 K	SURFACE	NITE LITE	120 DEGREE OPTICS. MOUNT WITH TAMPER PROOF HARDWARE		
F1	2X4 VANDAL RESIST LENS FOR KITCHEN	LITHONIA	2VRTL G L48 5000LM ICW AP125FL GZ1 50K WL	277 V	50	5000 lm	LED	5000 K	RECESSED		PROVIDE FLANGE KIT WHEN MOUNTED IN DRYWALL CEILING		
F2	2X4 VANDAL RESIST LENS FOR KITCHEN-EM	LITHONIA	2VRTL G L48 5000LM ICW AP125FL GZ1 WL E10WLCP	277 V	50	5000 lm	LED	5000 K	RECESSED	1400 LM BATTERY			
K1	STRIP LIGHT	LITHONIA	CDS L48 DM 50K 80CRI	277 V	40	4800 lm	LED	5000 K	SURFACE OR CHAIN HUNG 10'-0"				
K2	STRIP LIGHT-EM	LITHONIA	CDS L48 DM 50K 80CRI-EL14L	277 V	40	4800 lm	LED	5000 K	SURFACE OR CHAIN HUNG 10'-0"	1400 LM BATTERY			
P1	INDOOR REC FIXTURE	LITHONIA	VCPG V4 P4 80CRI T5W PM UP2 TP WG	277 V	56	7000 lm	LED	5000 K	PENDANT 17-0" AFF		TAMPER PROOF HARDWARE, WIRE GUARD		
P2	INDOOR REC FIXTURE-EM	LITHONIA	VCPG V4 P4 80CRI T5W PM UP2 TP WG E10WH	277 V	56	7000 lm	LED	4000 K	PENDANT 17-0" AFF	10W BATTERY	TAMPER PROOF HARDWARE, WIRE GUARD		
R1	EXTERIOR WALL MOUNT	LITHONIA	TWHLED ALO 50K T3M PE TP WG	277 V	78	8000 lm	LED	5000 K	WALL 11'-6" UNO				
R2	EXTERIOR WALL MOUNT	LITHONIA	TWHLED ALO 50K T3M PE TP WG-ELSW	277 V	78	8000 lm	LED	5000 K	WALL 11'-6" UNO	BATTERY			
S1	PARKING LOT FIXTURE	LITHONIA	RSX2-LED	277 V	111	18000 lm	LED	5000 K	6"X6"X25' SQ STEEL POLE				
U1	SPOT LIGHT	LITHONIA	ESXF1-PO-SWW2-THK-DDB	277 V	34	3000 lm	LED	5000 K	GROUND REFER TO DETAIL				
V1	CHASE WALL MOUNT	LITHONIA	TWSLED P1 50K	277 V	18	2000 lm	LED	5000 K	WALL 8'-0" UNO				
X1	SINGLE FACE EXIT SIGN	LITHONIA	LES 1 R EL N	277 V	5		LED		UNIVERSAL	BATTERY	CHEVRONS AS INDICATED		
X2	DOUBLE FACE EXIT SIGN	LITHONIA	LES 2 R EL N	277 V	5		LED		UNIVERSAL	BATTERY	CHEVRONS AS INDICATED		
X3	SINGLE FACE VANDAL RESIST SIGN	LITHONIA	LV S W 1 R 120/277 EL N	277 V	5		LED		UNIVERSAL	BATTERY	CHEVRONS AS INDICATED		
X4	DOUBLE FACE VANDAL RESIST SIGN	LITHONIA	LV S W 2 R 120/277 EL N	277 V	5		LED		UNIVERSAL	BATTERY	CHEVRONS AS INDICATED		

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L. BOI	TELECOMMUNICATION DEVICE DETAILS FOR CABLING AND TERMINAL JACK REQUIREMENTS.	A. 1
	TELECOMMUNICATIONS OUTLET, MOUNT AT +3'-10"AFF UNO.	BI
	TELECOMMUNICATIONS OUTLET, . MOUNT AT +1'-6"AFF UNO.	1
	VIDEO VISIT STATION, MOUNT AT INDICATED ON ARCHITECTURAL SET	C. F
	CATV OUTLET, MOUNT AT +9'-0"AFF UNO	D. E
	MONITOR OUTLET, MOUNT AT +5'-6"AFF UNO	E. I
	SYSTEM FURNITURE COMMUNICATIONS CONNECTION VIA FLUSH WALL BOX MOUNTED +4"AFF. PROVIDE 1.25" CONDUIT WITH BUSHING FROM BOX TO ABOVE CEILING. COORDINATE WITH FURNITURE PROVIDER PRIOR TO ROUGH-IN.	F. F
)	WIRELESS ACCESS POINT	G
	TELECOMMUNICATIONS EQUIPMENT RACK.	
	2" EMT CONDUIT SLEEVE WITH NYLON BUSHING EACH END UNO, THRU WALL AT $+6$ " ABOVE FINISHED CEILING.	H. /
3	TELECOMMUNICATIONS GROUND BUS BAR, MOUNT AT +1'-6"AFF.	I. /
В	TELECOMMUNICATIONS MAIN GROUND BUS BAR, MOUNT AT +1'-6"AFF.	F
_	18" CABLE TRAY, MOUNT AT +6" ABOVE FINISHED CEILING.	J. \ F
	LIGHTING LEGEND	К. / L. V
<u>30L</u>	DESCRIPTION) 1
	LIGHT SWITCH, RATED 120/277 VOLTS, 20-AMPS, MOUNT AT +3'-10"AFF. SUBSCRIPT/SUPERSCRIPT LETTERS, NUMBERS, AND SYMBOLS INDICATES SWITCH TYPE AS FOLLOWS:	M. I
	 S3 INDICATES 3-WAY LIGHT SWITCH S4 INDICATES 4-WAY LIGHT SWITCH SD INDICATES DIMMER SWITCH SP INDICATES PILOT LIGHT, ON WHEN SWITCH IS ON SK INDICATES KEY OPERATED LIGHT SWITCH SOS INDICATES SWITCH WITH INTEGRAL OCCUPANCY SENSOR SOD INDICATES DIMMER SWITCH WITH INTEGRAL OCCUPANCY SENSOR 	N. F
))	LOWER CASE LETTER INDICATES LIGHT FIXTURE CONTROL DESIGNATION OMNI-DIRECTIONAL LIGHTING CONTROL OCCUPANCY DETECTOR, CEILING MOUNT.	
)	PHOTOELECTRIC CELL FOR LIGHTING CONTROL. WALL MOUNT AT +10-0"AFF. AIM NORTH.	
	LIGHT FIXTURE, CEILING MOUNT.	
	LIGHT FIXTURE ON EMERGENCY POWER, CEILING MOUNT.	
	LIGHTING FIXTURE.	1P 3P
	LIGHTING FIXTURE ON EMERGENCY POWER.	3R
	LIGHT FIXTURE, WALL MOUNT, HEIGHT AS INDICATED.	A
	EXIT SIGN, CEILING MOUNT. DIRECTIONAL ARROWS AS INDICATED. SHADING INDICATES FACE(S) OF SIGN.	AL ATS
9 —	EXIT SIGN, WALL MOUNT. DIRECTIONAL ARROWS AS INDICATED. SHADING INDICATES FACE(S) OF SIGN.	BFC BFG
	LIGHT FIXTURE, POLE MOUNT.	BKR C
		CAT CB
BOL	DESCRIPTION	CBL CCT
	REMOVE DEVICES, EQUIPMENT, IN ACCORDANCE WITH THE GENERAL DEMOLITION NOTES.	CKT CLG CLR
•	DEVICES ARE EXISTING TO REMAIN.	CO. COM COM
	 WITHIN HATCHED AREAS, DISCONNECT AND REMOVE ALL ELECTRICAL MATERIALS INCLUDING BUT NOT LIMITED TO LIGHTS, DEVICES, EQUIPMENT, SPEAKERS, FIRE ALARM, COMMUNICATIONS, AND CIRCUITRY. 	CU DIA DISC DIV DWC

GENERAL DEMOLITION NOTES

A. PROVIDE ALL ELECTRICAL DEMOLITION WORK REQUIRED TO INSTALL THE WORK INDICATED. REMOVE, REROUTE, AND RECONNECT ALL BRANCH CIRCUITS THAT WILL REMAIN IN USE BUT INTERFERES WITH THE WORK.

B. REMOVE ALL EXISTING CONDUITS THAT WILL NOT BE REUSED AND WHERE THEY WILL BE EXPOSED AFTER COMPLETION. ABANDON ALL OTHERS IN THE WALLS ONLY. DISCONNECT ALL WIRING INDICATED AND/OR REQUIRED TO BE REMOVED FROM ALL POWER SOURCES. REMOVE ALL WIRING FROM ABANDONED CONDUITS AND PROVIDE BLANK COVER PLATES FOR BOXES NOT UTILIZED FOR THE WORK.

. MAINTAIN CONTINUITY OF ALL EXISTING CIRCUITS TO REMAIN OR PORTIONS THEREOF AFFECTED BY THE WORK.

D. BEFORE DEMOLITION, VERIFY WITH THE OWNER ALL EQUIPMENT TO BE SALVAGED TO OWNER AND NOT REMOVED FROM THE SITE. FOR ALL REMAINING EQUIPMENT INDICATED FOR REMOVAL (AND NOT RELOCATED), REMOVE AND DISPOSE IN A LEGAL MANNER.

E. EXERCISE CARE IN REMOVING DEMOLITION ITEMS. REPAIR OR REPLACE ALL DAMAGE CAUSED TO EXISTING CONSTRUCTION AND EQUIPMENT TO REMAIN.

. DRAWINGS ARE BASED UPON EXISTING PLANS AND FIELD INVESTIGATION WITHOUT DEMOLITION. VISIT THE EXISTING BUILDING AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS AND EXAMINE ALL DRAWINGS TO AVOID CONFLICTS.

A. WHERE DEMOLITION OF TELECOMMUNICATIONS DEVICES OCCUR, REMOVE CABLING NOT INDICATED TO REMAIN BACK TO POINT OF ORIGIN.

H. DEMOLITION FLOOR PLANS ARE PROVIDED FOR REFERENCE ONLY TO AID IN DEFINING THE SCOPE OF DEMOLITION WORK.

GENERAL NOTES

- A. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE BETTER QUALITY. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE GREATER QUANTITY OF WORK.
- 3. FOLLOW MOUNTING HEIGHTS INDICATED IN THE ELECTRICAL LEGEND UNLESS OTHERWISE INDICATED. MEASURE ALL MOUNTING HEIGHTS FROM THE DEVICE CENTER LINE UNLESS OTHERWISE INDICATED.
- C. FIELD VERIFY EXACT FEEDER LOCATIONS FOR MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN.
- D. EQUIPMENT CONNECTIONS ARE INDICATED IN THEIR APPROXIMATE LOCATIONS. VERIFY EXACT LOCATIONS OF ALL CONNECTIONS WITH OTHER TRADES SUPPLYING EQUIPMENT TO AVOID CONFLICTS AT INSTALLATION.
- E. LOCATED ALL SWITCHES FOR LOCAL CONTROL OF LIGHTING ON STRIKE SIDE OF SINGLE DOORS UNLESS OTHERWISE INDICATED.
- F. PROVIDE SPECIFIC BREAKER ARRANGEMENT FOR THE PANEL BOARDS WHEREVER PHYSICALLY POSSIBLE. PROVIDE AS-BUILT DRAWINGS INDICATING ACTUAL BRANCH CIRCUIT ARRANGEMENT. PROVIDE TYPE WRITTEN PANELBOARD DIRECTORIES INDICATING ACTUAL BRANCH CIRCUIT ARRANGEMENT.
 G. PROVIDE AS-BUILT DRAWINGS INDICATING ACTUAL BRANCH CIRCUIT ARRANGEMENT. PROVIDE
- TYPEWRITTEN PANELBOARD DIRECTORIES INDICATING ACTUAL BRANCH CIRCUIT ARRANGEMENT. HAND WRITTEN SCHEDULES ARE NOT ACCEPTABLE. H. ALL CONDUIT RUNS INDICATED ARE DIAGRAMMATIC, COORDINATE ROUTING IN ALL SPACES WITH OTHER
- TRADES. I. ALL PANELBOARDS INDICATED ARE HOUSED IN A SINGLE WIDTH ENCLOSURE, UNO. THE CONTRACTOR SHALL FIELD VERIFY ROOM LAYOUT AND ADJUST ACCORDINGLY, AT NO COST TO THE OWNER, IF PROVIDING ANY
- PANELBOARD ENCLOSURES. J. WHERE POWER AND COMMUNICATION OUTLETS ARE INDICATED IN CLOSE PROXIMITY ON THE DRAWINGS, FIELD COORDINATE THE LOCATIONS TO PLACE THE OUTLETS ADJACENT TO EACH OTHER.
- K. ALL EXTERIOR RECEPTACLES SHALL BE LABELED "WR" WEATHER RESISTANT.L. WHEN GROUPING MULTIPLE LINE TO NEUTRAL BRANCH CIRCUITS IN A CONDUIT, PROVIDE DEDICATED COLOR CODED NEUTRAL CONDUCTORS FOR EACH CIRCUIT. DO NOT USE BREAKER TIES AND SHARED
- NEUTRALS EVEN THOUGH PERMITTED BY NEC. M. PROVIDE A 2" WIDE YELLOW LINE PAINTED ON THE FLOOR INDICATING THE ELECTRICAL WORKING SPACE. IN FRONT OF ALL ELECTRICAL PANELS IN ELECTRICAL ROOMS. REFER TO PLANS FOR ELECTRICAL WORKING SPACE DETAILS. STENCIL "NO STORAGE" IN 2" HIGH, YELLOW LETTERS CENTEBED IN THE OUTLINED AREA.
- N. REFER TO SPEC SECTION 264113 FOR LIGHTNING PROTECTION AND INSTALL A COMPLETE LIGHTING PROTECTION SYSTEMS FOR THE MAIN AND REC BUILDINGS. THE EXISTING VOC BUILDING WILL NOT RECEIVE LIGHTNING PROTECTION

ABBREVIATIONS

SINGLE PHASE THREE PHASE WEATHERPROOF (NEMA 3R) AMPS ABOVE FINISHED FLOOR ALUMINUM AUTOMATIC TRANSFER SWITCH BELOW FINISHED CEILING BELOW FINISHED GRADE BREAKER CONDUIT COMMUNITY ANTENNA TELEVISION (CABLE) CIRCUIT BREAKER CABLE CLOSED CIRCUIT TELEVISION CIRCUIT CEILING CLEAR COMPANY COMBINATION COMMUNICATIONS COPPER DIAMETER DISCONNECT DIVISION DRAWING EMPTY CONDUIT EMERGENCY COMMUNICATIONS STATION ECS ELEC ELECTRICAL ELEV ELEVATOR EPO EMERGENCY POWER OFF EQUIPMENT EXISTING TO REMAIN ETR EWC ELECTRIC WATER COOLER EX EXISTING EXT EXTERIOR FIRE ALARM FA FIRE ALARM ANNUNCIATOR PANEL FAAP FACP FIRE ALARM CONTROL PANEL FAGP FIRE ALARM GRAPHIC PANEL FAXP FIRE ALARM EXTENDER PANEL FFSCP FIRE FIGHTER'S SMOKE CONTROL PANEL FLA FULL LOAD AMPS FPMR FUSE PER MANUFACTURERS REQUIREMENTS/RECOMMENDATIONS FPND FUSE PER NAMEPLATE DATA GROUND GROUND FAULT PROTECTION FOR EQUIPMENT, 6-50mA PER NEC 427.22 (PROVIDE ACCESSORY FOR GE INDICATED BREAKER) GFCI GROUND FAULT CIRCUIT INTERRUPT GFP GROUND FAULT PROTECTION FOR PERSONNEL, 4-6mA (PROVIDE ACCESSORY FOR INDICATED BREAKER) HKP HOUSEKEEPING PAD HP HORSEPOWER IN ACCORDANCE WITH IAW ISOLATED GROUND IG J-BOX JUNCTION BOX KHFSS KITCHEN HOOD FIRE SUPPRESSION SYSTEM KILOHERTZ KHz KVA KILOVOLT AMPS KILOWATTS KILOWATT HOURS KWH LOCKOUT TO PREVENT UNAUTHORIZED SWITCHING (PROVIDE ACCESSORY FOR INDICATED BREAKER) ROUTE CIRCUIT TO LOAD VIA LIGHTING CONTACTOR, REFER TO LC SCHEDULE LTG LIGHTING LTS LIGHTS MAX MAXIMUM MCA MINIMUM CIRCUIT AMPACITY MCB MAIN CIRCUIT BREAKER MEGAHERTZ MHz MINIMUM MIN MAINTENANCE LOCK (PROVIDE ACCESSORY FOR INDICATED BREAKER) MLO MAIN LUG ONLY MASS NOTIFICATION SYSTEM MNS MAXIMUM OVER CURRENT PROTECTION. MOCP MTD MOUNTED NEUTRAL NORMALLY CLOSED N/C N/O NORMALLY OPEN NO. NUMBER OWNER FURNISHED CONTRACTOR INSTALLED OFCI PANELBOARD PBD PROTECTIVE DEVICE RCPT RECEPTACLE REC RECEPTACLE SEC SECURITY SPD SURGE PROTECTIVE DEVICE SPEC. SPECIFICATION(S) ST SHUNT TRIP, 120V COIL (PROVIDE ACCESSORY FOR INDICATED BREAKER) SW SWITCH SWBD SWITCHBOARD TBB TELECOMMUNICATIONS BONDING BACKBONE TC TELECOMMUNICATIONS CLOSET TELECOM TELECOMMUNICATIONS TGB TELECOMMUNICATIONS GROUNDING BUS BAR TMGB TELECOMMUNICATIONS MAIN GROUNDING BUS BAR TYP TYPICAL UNO UNLESS NOTED (INDICATED) OTHERWISE V VOLTS VFD VARIABLE FREQUENCY DRIVE W WATTS W/ WITH WG WIRE GUARD WP WEATHERPROOF XFER TRANSFER XFMR TRANSFORMER





				APPLIES RE	EYNC TO THIS I PRESENT	DTES DRAWING C ED BY	DNLY
	1.	FIXTURES THE REL/ CONTRO	S IN THIS SPA(AY NUMBER. F LLED UNO.	CE ARE RELA IXTURES CO	V CONTRO	lled refer To emergen	TO THE RELA
	2.	FIXTURES THE REL/ WITH THE	S IN THIS SPAC AY NUMBER. F E NORMAL PO	CE ARE RELA IXTURES CO WER LIGHTS	V CONTRO NNECTED 1	LLED REFER TO EMERGEN	TO THE RELANCY POWER S
	3.	PROVIDE OCCUPIE	A RELAY ON D . REFER TO	THE LIGHTIN POWER PLA	G CIRCUIT ⁻ NS	TO CONTROL	FAN IN THIS
				GEI	VERAL		S
	A.	GENERAI	NOTES FOR	LIGHTING FIX	(TURE TYPE	E "D1"& "D2":	
		a. EXPOS COND BE EM ABOVE	SED CONDUIT UIT AND BOXE BEDDED IN TH E ACT CEILING	AND BOXES ES FOR LIGH ⁻ HE STRUCTU G (JUNCTION	ARE NOT A FING NOT LO RE AND RO BOX NOT S	CCEPTABLE DCATED ABC UTED TO A J HOWN FOR (IN THE SECUR VE A SECURE UNCTION BO> CLARITY).
	В.	GENERAI	NOTES FOR	LIGHTING FIX	TURE TYPE	E "D4":	
		a. EXPOS BOXES FOR C BOX IN	SED CONDUIT S AND THE SP ELL LIGHTING N THE CHASE	AND BOXES ECIFIED LIGH EMBEDDED (NOT INDICA	IN THE CEL ITING FIXTU IN THE STF FED FOR CL	LS ARE NOT JRE IN THE C RUCTURE AN ARITY).	ACCEPTABLE ELL WITH COI D TERMINATE
		b. Prov The M For T Circu Be Ill	IDE A RELAY (AIN LIGHTING HE RELAY NUI IT INDICATED UMINATE AT A	CONTROLLEI IN EACH CEI MBER. ALSO TO THE NIGI ILL TIMES.) Conduct LL Lighting Provide A It Light In	FOR OF THE A FIXTURE RI N UNSWITCH EACH CELL	CIRCUIT INDIC EFER TO THE HED CONDUC ⁻ LIGHTING FIX ⁻
	C.		NR FIXTURES I				
$\left\langle \right\rangle$	~ D.	IN THE EX EXISTING THE EXIS	KISTING PORT BLOCK WALL TING SURFAC	ION OF THE S AND CEILII	BUILDING, F NGS TO INS	REMOVE ALL TALL NEW C	EXPOSED CO ONDUIT AND
		\nearrow	\nearrow	\nearrow	\nearrow	\nearrow	\nearrow

F					
			277V LIGHTIN	G RELAY SCHEDULE	
				CONTROL MEANS	NOTES
RHA-1	MDP	5	WEST CELLS LIGHTING	SECUBITY SYSTEM	NOTED
RHA-2	MDP	5	WEST CELLS COBBIDOB	SECUBITY SYSTEM	
BHA-3	MDP	1	WEST DOBM LIGHTING	SECUBITY SYSTEM	
RHA-4	MDP	1	FAST DOBM LIGHTING	SECUBITY SYSTEM	
RHA-5	MDP	5	EAST CELLS LIGHTING	SECURITY SYSTEM	
RHA-6	MDP	5	EAST CELLS CORRIDOR	SECURITY SYSTEM	
RHA-7		-	SPARE	SECURITY SYSTEM	
RHA-8			SPARE	SECURITY SYSTEM	
RHA-9			SPARE	SECURITY SYSTEM	
RHA-10			SPARE	SECURITY SYSTEM	
RHA-11			SPARE	SECURITY SYSTEM	
RHA-12			SPARE	SECURITY SYSTEM	
			120V REI	AY SCHEDULE	
		CIBCUIT	120V REI	AY SCHEDULE	
RELAY	PANEL	CIRCUIT #	120V REI	AY SCHEDULE	NOTES
RELAY RLB-1	PANEL	CIRCUIT # 35	120V REI CIRCUIT DESCRIPTION REC W117	CONTROL MEANS	NOTES
RELAY RLB-1 RLB-2	PANEL LB LB	CIRCUIT # 35 37	120V REI CIRCUIT DESCRIPTION REC W117 TV W117	CONTROL MEANS SECURITY PANEL SECURITY PANEL	NOTES
RELAY RLB-1 RLB-2 RLB-3	PANEL LB LB LB	CIRCUIT # 35 37 39	120V REI CIRCUIT DESCRIPTION REC W117 TV W117 EWC W117	AY SCHEDULE CONTROL MEANS SECURITY PANEL SECURITY PANEL SECURITY PANEL	NOTES
RELAY RLB-1 RLB-2 RLB-3 RLB-4	PANEL LB LB LB LB	CIRCUIT # 35 37 39 41	120V REI CIRCUIT DESCRIPTION REC W117 TV W117 EWC W117 REC E117	AY SCHEDULE CONTROL MEANS SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL	NOTES
RELAY RLB-1 RLB-2 RLB-3 RLB-4 RLB-5	PANEL LB LB LB LB LB	CIRCUIT # 35 37 39 41 43	120V REI CIRCUIT DESCRIPTION REC W117 TV W117 EWC W117 REC E117 TV E117	AY SCHEDULE CONTROL MEANS SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL	NOTES
RELAY RLB-1 RLB-2 RLB-3 RLB-4 RLB-5 RLB-6	PANEL LB LB LB LB LB LB	CIRCUIT # 35 37 39 41 43 45	120V REI CIRCUIT DESCRIPTION REC W117 TV W117 EWC W117 REC E117 TV E117 EWC E117	AY SCHEDULE CONTROL MEANS SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL	NOTES
RELAY RLB-1 RLB-2 RLB-3 RLB-4 RLB-5 RLB-6 RLB-7	PANEL LB LB LB LB LB LB LB	CIRCUIT # 35 37 39 41 43 45	120V REI CIRCUIT DESCRIPTION REC W117 TV W117 EWC W117 REC E117 TV E117 EWC E117 SPARE	AY SCHEDULE CONTROL MEANS SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL	NOTES
RELAY RLB-1 RLB-2 RLB-3 RLB-4 RLB-5 RLB-6 RLB-7 RLB-8	PANEL LB LB LB LB LB LB	CIRCUIT # 35 37 39 41 43 45	120V REICIRCUIT DESCRIPTIONREC W117TV W117EWC W117REC E117TV E117EWC E117SPARESPARESPARE	AY SCHEDULE CONTROL MEANS SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL	NOTES
RELAY RLB-1 RLB-2 RLB-3 RLB-4 RLB-5 RLB-6 RLB-7 RLB-8 RLB-9	PANEL LB LB LB LB LB LB	CIRCUIT # 35 37 39 41 43 45	120V REICIRCUIT DESCRIPTIONREC W117TV W117EWC W117EWC W117REC E117TV E117EWC E117SPARESPARESPARESPARESPARE	AY SCHEDULE CONTROL MEANS SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL SECURITY PANEL	NOTES
RELAY RLB-1 RLB-2 RLB-3 RLB-4 RLB-5 RLB-6 RLB-7 RLB-8 RLB-9 RLB-10	PANEL LB LB LB LB LB LB	CIRCUIT # 35 37 39 41 43 45	120V REICIRCUIT DESCRIPTIONREC W117TV W117EWC W117REC E117TV E117EWC E117SPARESPARESPARESPARESPARESPARESPARESPARESPARESPARESPARESPARESPARESPARESPARE	AY SCHEDULE CONTROL MEANS SECURITY PANEL SECURITY PANEL	NOTES
RELAY RLB-1 RLB-2 RLB-3 RLB-4 RLB-5 RLB-6 RLB-7 RLB-8 RLB-9 RLB-10 RLB-11	PANEL LB LB LB LB LB LB	CIRCUIT # 35 37 39 41 43 45 	120V REI	AY SCHEDULE CONTROL MEANS SECURITY PANEL SECURITY PANEL	NOTES

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KEYNOTES
APPLIES TO THIS DRAWING ONLY REPRESENTED BY
COORDINATE OUTLET LOCATION WITH COMPUTER STATIONS INDICAT ARCHITECTURAL PLANS.
GENERAL NOTES
SMOKE DETECTORS DENOTED WITH TAGS ARE PART OF THE SMOKE REFER TO THE FIRE ALARM/SMOKE CONTROL MATRIX ON MECHANIC/ DETAILS, DETECTORS SHALL ALSO INITIATED ANNUNCIATION PER ZO

REFER TO THE FIRE ALARM/SMOKE CONTROL MATRIX ON MECHANICAL DRAWINGS DETAILS. DETECTORS SHALL ALSO INITIATED ANNUNCIATION PER ZONE.
B. ALL WORK IN THE RECREATION BUILDING SHALL BE BID AS PART OF ALTERNATE #1.
C. ALL WORK IN THE VOCATIONAL BUILDING SHALL BE BID AS PART OF ALTERNATE #2.

				L				ION: R1		F
CKT BRKR POLE		ICB 120/208 Wye KR POLE LOAD		A		в		C		
1	20 A	1	FACP (L) [RED BREAKER]	1.0	3.7					
3	20 A	1	REC R102, R104, R107			1.1	3.7			PHP-0
5	20 A	1	REC R100					0.9	3.7	
7	20 A	1	REC R100	0.7	0.3					EF-R-
9	20 A	1	RCP-3 (ML)			0.1	1.1			
11	20 A	1	ELECTRONIC VALVES					2.0	1.1	
13	20 A	1	MISCELLANEOUS INDOOR REC	0.5	1.1					
15	20 A	1	SPARE			0.0	1.1			
17	20 A	1	SPARE					0.0		SPAC
19	20 A	1	SPARE	0.0						SPAC
21	20 A	1	SPARE			0.0				SPAC
23	20 A	1	SPARE					0.0		SPAC
				7 k	κVA	7 k	κVA	8 k	кVА	
				61	A	57	7 A	63	3 A	
(GE) = (ST) = (L) = P (LC) =	PROVI PROVII ROVIDE ROUTE	DE GFO DE SHU E LOCK E TO LO	CI BREAKER FOR EQUIPMENT, 6-50 INT BREAKER CONNECTED TO THE OUT BREAKER TO PREVENT UNAL AD VIA LIGHTING CONTACTOR, RE	IMA PEF E FIRE S JTHORIZ F DETA	NEC 42 UPRESS ZED SWI IL ON DV	27.22 DE SION SY TCHING WG E4.X	ED. NEU ⁻ STEM	FRAL.		

		Demand Factor	Estimated Demand
INTERIOR LIGHTING	0 VA	0.00%	0 VA
EXTERIOR LIGHTING	0 VA	0.00%	0 VA
RECEPTACLES	2700 VA	100.00%	2700 VA
AC / HEAT PUMP	11562 VA	100.00%	11562 VA
ELECTRIC HEAT	4400 VA	100.00%	4400 VA
KITCHEN	0 VA	0.00%	0 VA
MISCELLANEOUS	3600 VA	100.00%	3600 VA
	\sim	\sim	\mathcal{A}

PΑ	NEL	BO	ARD SCHEDULE	Μ	IP		LOCAT	ION: VO	C BLDG	-
400 Al	MP MCE	3	120/208 Wye	3 PH 4 W		MOUNT: SURFACE				F
скт	BRKR	POLE	LOAD		A		В		С	
1	45 A			3.1	3.8					
3	45 A	2	nr-1			3.1	3.8			HP-2
5								5.5	6.1	
7	50 A	3	AHU-2	5.5	6.1					
9						5.5	0.6			EF-V-
11	20 A	1	SPARE					0.0	0.5 (RECE
13	20 A	1	SPARE	0.0	0.0					SPAR
15		1	SPACE ONLY							ŠPAĆ
17		1	SPACE ONLY							SPAC
19		1	SPACE ONLY							SPAC
21		1	SPACE ONLY							SPAC
23		1	SPACE ONLY							SPAC
25		1	SPACE ONLY							SPAC
27		1	SPACE ONLY				15.0			
29		1	SPACE ONLY						15.0	FANE
				18	kVA	27	kVA	27	kVA	

(GE) = PROVIDE GFCI BREAKER FOR EQUIPMENT, 6-50mA PER NEC 427.22 DED. NEUTRAL. (ST) = PROVIDE SHUNT BREAKER CONNECTED TO THE FIRE SUPRESSION SYSTEM L) = PROVIDE LOCKOUT BREAKER TO PREVENT UNAUTHORIZED SWITCHING. LC) = ROUTE TO LOAD VIA LIGHTING CONTACTOR, REF DETAIL ON DWG E4.X. (ML) = PROVIDE BREAKER WITH MAINTENANCE LOCKOUT, LOCKABLE OFF.

Load Classification	Connected Load	Demand Factor	Estimated Demand
INTERIOR LIGHTING	0 VA	0.00%	0 VA
EXTERIOR LIGHTING	0 VA	0.00%	0 VA
RECEPTACLES	360 VA	100.00%	360 VA
AC / HEAT PUMP	40908 VA	100.00%	40908 VA
ELECTRIC HEAT	0 VA	0.00%	0 VA
KITCHEN	0 VA	0.00%	0 VA
MISCELLANEOUS	600 VA	100.00%	600 VA

148 A

	DIV 23 ELECTRICAL CONNECTION SCHEDULE - VOC BLDG												
		#											
TAG	VOLTAGE	POLES	LOAD	PANEL	CCT#	WIRE	DISCONNECTING MEANS	REM					
AHU-1	208 V	2	12.2 kVA	MP	6,8	2#4,#10G,1"C	600V, 60A, 2P, N\F DISC						
AHU-2	208 V	3	16.6 kVA	MP	5,7,9	3#4,#10G,1"C	600V, 60A, 3P, N\F DISC						
EF-V-1	120 V	1	0.1 kVA			2#12,#12G,3/4"C	MOTOR RATED SWITCH WITH OVERLOAD	CONNECT TO EX					
EF-V-2	120 V	1	0.1 kVA			2#12,#12G,3/4"C	MOTOR RATED SWITCH WITH OVERLOAD	CONNECT TO EX					
EF-V-3	120 V	1	0.1 kVA	MP	10	2#12,#12G,3/4"C	MOTOR RATED SWITCH WITH OVERLOAD	REFER TO NOTE					
HP-1	208 V	2	6.2 kVA	MP	1,3	2#6,#10G,1"C	600V, 60A, 2P, NEMA 3R, DISC FPND						
HP-2	208 V	2	7.7 kVA	MP	2,4	2#6,#10G,1"C	600V, 60A, 2P, NEMA 3R, DISC FPND						

238 A

237 A

ADD1

		#						
TAG	VOLTAGE	POLES	LOAD	PANEL	CCT#	WIRE	DISCONNECTING MEANS	REMARKS
EF-R-1	120 V	1	0.1 kVA	LR	8	2#12,#12G,3/4"C	PROVIDED WITH UNIT	
EF-R-2	120 V	1	0.1 kVA	LR	8	2#12,#12G,3/4"C	PROVIDED WITH UNIT	
EF-R-3	120 V	1	0.1 kVA	LR	8	2#12,#12G,3/4"C	PROVIDED WITH UNIT	
EUH-5	208 V	2	2.2 kVA	LR	10,12	2#12,#12G,3/4"C	PROVIDED WITH UNIT	
EUH-6	208 V	2	2.2 kVA	LR	14,16	2#12,#12G,3/4"C	PROVIDED WITH UNIT	
EWH-3	480 V	3	12.0 kVA	HR	15,17,19	3#12,#12G,3/4"C	600V, 30A, 3P, N\F DISC	
PHP-8	208 V	3	11.2 kVA	LR	2,4,6	3#8,#10,1"C	PROVIDED WITH UNIT	
RCP-3	120 V		0.1 kVA	LR	9	2#12,#12G,3/4"C	MOTOR RATED SWITCH WITH OVERLOAD	

TO PANELS, EQUIPMENT,

TRANSFORMERS, ETC.

• • • •

TGB

CL102

#3/O

- (1)#4/O, 1"C

#3/O

CONCRETE ENCASED

ELECTRODE

MINIMUM 1/2" DIAMETER MIN 20' LENGTH

FOUNDATION

ELECTRICALLY CONDUCTIVE STEEL REBAR, OR,

ENCASED BY MIN 2" CONCRETE IN BUILDING

MIN 20' LENGTH #3AWG BAR COPPER CONDUCTOR:

____<u>_</u>

IBT

S102

PROVIDE (1)#3/O GROUNDING

STRUCTURAL STEEL AND

TGB AND NEAREST

CONDUCTOR BETWEEN EACH

COPPER WATER LINE, TYPICAL.

NO SCALE

GROUNDING SYSTEM DIAGRAM- VOC BLDG NO SCALE

. RECONNECT EXISTING GROUNDING AND BONDING IN "MDP"

NO SCALE

COPPER FEEDER SCHEDULE

						-	
FEEDER ID	# OF SETS	BUILDING WIRE QUANTITY & SIZE TYPE THHN - DRY TYPE THWN - WET	MINIMUM CONDUIT SIZE		FEEDER ID	# OF SETS	BUILDING WIRE QUANTITY & SIZE TYP THHN - DRY TYPE THWN - WET
30	1	3#10,#10 G	3/4"		(30Y)	1	4#10,#10 G
35	1	3#8,#10 G	3/4"		(35Y)	1	4#8,#10 G
40	1	3#8,#10 G	3/4"		(40Y)	1	4#8,#10 G
45	1	3#6,#10 G	1"		(45Y)	1	4#6,#10 G
50	1	3#6,#10 G	1"		50Y	1	4#6,#10 G
60	1	3#4,#10 G	1"		60Y	1	4#4,#10 G
70	1	3#4,#8 G	1 1/4"		(70Y)	1	4#4,#8 G
80	1	3#3,#8 G	1 1/4"		80Y	1	4#3,#8 G
90	1	3#2,#8 G	1 1/4"		90Y	1	4#2,#8 G
100	1	3#1,#8 G	1 1/4"		(100Y)	1	4#1,#8 G
(110)	1	3#2,#6 G	1 1/2"		(110Y)	1	4#2,#6 G
125	1	3#1,#6 G	1 1/2"		(125Y)	1	4#1,#6 G
150	1	3#1/0,#6 G	2"		(150Y)	1	4#1/0,#6 G
175	1	3#2/0,#6 G	2"		(175Y)	1	4#2/0,#6 G
200	1	3#3/0,#6 G	2"	ſ	(200Y)	1	4#3/0,#6 G
225	1	3#4/0,#4 G	2 1/2"		(225Y)	1	4#4/0,#4 G
250	1	3-250kCM,#4 G	2 1/2"		(250Y)	1	4-250kCM,#4 G
300	1	3-350kCM,#4 G	2 1/2"		(300Y)	1	4-350kCM,#4 G
350	2	3#2/0,#3 G	2"		(350Y)	2	4#2/0,#3 G
400	2	3#3/0,#3 G	2"		(400Y)	2	4#3/0,#3 G
450	2	3#4/0,#2 G	2 1/2"		(450Y)	2	4#4/0,#2 G
500	2	3-250kCM,#2 G	2 1/2"		500Y	2	4-250kCM,#2 G
600	2	3-350kCM,#1 G	3"		600Y	2	4-350kCM,#1 G
700	2	3-500kCM,#1/0 G	4"		(700Y)	2	4-500kCM,#1/0 G
800	3	3-350kCM,#1/0 G	3"	ſ	(800Y)	3	4-350kCM,#1/0 G
1000	3	3-500kCM,#2/0 G	4"		(1000)	3	4-500kCM,#2/0 G
1200	4	3-350kCM,#3/0 G	3"		(1200)	4	4-350kCM,#3/0 G
1600	5	3-500kCM,#4/0 G	4"		(1600)	5	4-500kCM,#4/0 G
100SE	1	3#1	2"		800SE	3	3-500kCM
400SE	1	3-500kCM	4"		(200SB	4	3-500kCM
	•						•

NOTES: 1. ELECTRICAL CONTRACTOR TO VERIFY CONDUIT SIZE REQUIRED IF WIRE TYPES OTHER THAN THOSE LISTED ABOVE ARE USED.

2. FEEDER SIZES BASED ON TABLE 310.15(B)(16), 75° C.

3. SIZES ADJUSTED PER NEC 110.14.

		TF	RANSFO	RMER SCHE	EDULE	
kVA	TYPE	PRIMARY	SECONDARY	COPPER PRIMARY FEEDER	COPPER SECONDARY FEEDER	BONDING CONDUCTOR
15 kVA	LINEAR	480V-3Ø	208Y/120V	3#10, #10 G, 3/4" C.	4#4, #8 G, 1-1/4" C.	#8
30 kVA	LINEAR	480V-3Ø	208Y/120V	3#6, #10 G, 1" C.	4#1, #6 G, 1-1/2" C.	#6
45 kVA	LINEAR	480V-3Ø	208Y/120V	3#4, #8 G, 1-1/4" C.	4#1/0, #6 G, 2" C.	#6
75 kVA	LINEAR	480V-3Ø	208Y/120V	3#1, #6 G, 1-1/2" C.	4-250kCM, #2 G, 2-1/2" C.	#2
112.5 kVA	LINEAR	480V-3Ø	208Y/120V	3#2/0, #6 G, 2" C.	(2 SETS) 4-3/0, #2 G, 2-1/2" C.	#2
150 kVA	LINEAR	480V-3Ø	208Y/120V	3#4/0, #4 G, 2-1/2" C.	(2 SETS) 4-250kCM, #2/0 G, 2-1/2" C.	#2/0
225 kVA	LINEAR	480V-3Ø	208Y/120V	(2 SETS) 3#2/0, #3 G, 2" C.	(3 SETS) 4-350kCM, #2/0 G, 3" C.	#2/0
300 kVA	LINEAR	480V-3Ø	208Y/120V	(2 SETS) 3#4/0, #2 G, 2-1/2" C.	(4 SETS) 4-350kCM, #4/0 G, 4" C.	#3/0
500 kVA	LINEAR	480V-3Ø	208Y/120V	(3 SETS) 3-350kCM, #1/0 G, 4" C.	(6 SETS) 4-350kCM, 300kCM G, 4" C.	#3/0

POWER ONELINE DIAGRAM - VOC BLDG

MINIMUM CONDUIT SIZE
3/4"
3/4"
3/4"
1"
1"
1"
1 1/4"
1 1/4"
1 1/4"
1 1/4"
1 1/2"
1 1/2"
2"
2"
2"
2 1/2"
2 1/2"
2 1/2"
2"
2"
2 1/2"
2 1/2"
3"
4"
3"
4"
3"
4"
4"
4"

BRKR 20 A 20 A 20 A 20 A 20 A 20 A 20 A 20 A	POLE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LOAD LTG LTG EXTERIOR LIGHTING EXTERIOR LIGHTING SPARE SPARE SPARE		2.7	A 	2.4	B 	1.7	C	LOAD SPACE ONLY SPACE ONLY SPACE ONLY SPACE ONLY	POLE 1 1 1 1 1 1	BRKR 	СК ⁻ 2 4 6
20 A 20 A 20 A 20 A 20 A 20 A 20 A 20 A	1 1 1 1 1 1 1 1 1 1	LTG LTG ETG EXTERIOR LIGHTING EXTERIOR LIGHTING SPARE SPARE		2.7		2.4		1.7		SPACE ONLY SPACE ONLY SPACE ONLY SPACE ONLY	1 1 1		2 4 6
20 A 20 A 20 A 20 A 20 A 20 A 20 A 20 A	1 1 1 1 1 1 1 1	LTG EXTERIOR LIGHTING EXTERIOR LIGHTING SPARE SPARE		2.5		2.1		1.7		SPACE ONLY	1		6
20 A 20 A 20 A 20 A 20 A 40 A	1 1 1 1 1	EXTERIOR LIGHTING SPARE SPARE SPARE								SPACE UNLT			8
20 A 20 A 20 A 40 A 20 A	1 1 1	SPARE SPARE				2.1		0.0		SPACE ONLY SPACE ONLY	1		10
20 A 40 A 20 A	1			0.0		0.0				SPACE ONLY SPACE ONLY	1		14
40 A 20 A		SPARE		8.6	8.6			0.0		SPACE ONLY	1		18 20
20 A	3	DOAS-W1 (ML)				8.6	8.6	8.6	8.6	DOAS-E1 (ML)	3	40 A	22 24
	3	KEF-1 (ML)		0.4	2.5	0.4	2.5			EUH-7 (ML)	3	20 A	26 28
				18.0	18.0			0.4	2.5				30 32
90 A	3	EWH-2 (ML)				18.0	18.0	18.0	18.0	EWH-1 (ML)	3	90 A	34 36
40 A	3	PHP-9 (ML)		6.7	13.0	6.7	13.0	0.7	10.0	PHP-3 (ML)	3	50 A	38 40
60 A	3	ATS-X		5.4	9.6	37	9.6	0.7	13.0	MALL-1 (ML)	3	60 A	42
00 A	0		D	0.0	32.4	0.7	0.0	2.0	9.6				48
100 A	3	MANUFACTURER REQUIREMENTS)				0.0	31.0	0.0	31.0	ATS-S	3	225 A	52 54
175 A	3	LK VIA TK		29.6	40.9	32.5	41.8			LA VIA TA	3	175 A	56 58
				199	kVA	199	kVA	30.9 193	42.8 kVA				60
PROVII PROVIDE ROVIDE PROVIDE PROVIDE Classific IOR LIG	DE GFO DE SHL E LOCK TO LO DE BRE Cation GHTING	CI BREAKER FOR EQUIPM INT BREAKER CONNECT OUT BREAKER TO PREV AD VIA LIGHTING CONTA EAKER WITH MAINTENAN	AENT, 6-50 ED TO THI ENT UNAL CTOR, RE CE LOCKO Connec 967 170	oma per E fire s JTHORIZ F DETAI OUT, LOO Cted Loa 75 VA	NEC 42 UPRESS ED SWI IL ON D CKABLE	27.22 DE SION SY TCHING WG E4.X OFF. mand Fa 125.00°	ED. NEU STEM actor	TRAL. Estimate 120 213	ed Dema 94 VA 33 VA	nd Panel Tot Total Conn. Load: 59	t als 0.5 kVA		
PTACLE EAT PU	ES IMP		343 2661	80 VA 141 VA		64.54% 100.009	% %	221 266 ⁻	90 VA 141 VA	Total Est. Demand: 54 Total Conn. Current: 71	9.0 kVA 0 A		
RIC HE	AT		1177	737 VA 50 VA		100.00°	%	1177 <u>597</u>	737 VA 68 VA	Total Est. Demand 66	0 A	ADD1]
	ous		614	70 VA		100.009	%	614	70 VA				
NFI	γ BO				γ Δ	Y	LOCAT			AL FED	FROM: T	γ Ά	
ИР МСВ		120/208 Wye		3 P	H 4 W		MOL	JNT: SU	RFACE	PANEL ASSEMBLY RATED	(KAIC): 1	0KAIC	
BRKR	POLE	LOAD			4		В		С	LOAD	POLE	BRKR	ск
20 A	1	REC ROOF		0.7	0.5	0.5	0.5			EF-2 (ML) EF-3 (ML)	1	20 A	2
20 A 20 A	1 1	WASHER S100 (GP)		0.7	0.5	0.5	0.5	0.7	0.5	EF-3 (ML) EF-4 (ML) EF-5 (ML)	1	20 A 20 A 20 A	4 6 8
20 A 20 A	1	REC S100 BEC CL 100 SP100 K104	1	0.7	0.5	0.5	0.5	13	0.1	EF-7 (ML) BCP-1 (ML)	1	20 A 20 A 20 A	10
20 A	1	REC M106 (GP) BEC M107 (GP)	т	0.9	0.1	0.9	0.2	1.0	0.1	RCP-2 (ML) BAS PANEL	1	20 A	14
20 A 20 A	1 1	REC M101 REC M105		0.7	0.5	0.0		0.7	0.5	COMPRESSOR (ML) LOCKS (L)	1	20 A 20 A	18
20 A 20 A	1	REC M104 REF M103				0.7	0.5	0.7	1.0	ELECTRONIC VALVES ELECTRONIC VALVES E116	1	20 A 20 A	22 24
20 A 20 A	1	REC M103 REC M103		0.5	0.8	0.2	1.0			ELECTRONIC VALVES E116 ELECTRONIC VALVES W116	1	20 A 20 A	26 28
20 A 20 A	1 1	REC M101 COPIER M102		0.7	0.9			0.7	1.0	ELECTRONIC VALVES W116 MAU-1-CP (ML)	1	20 A 20 A	30 32
20 A 20 A	1 1	REC CL105 REC CL105				0.7	0.0	0.7	0.0	SPARE SPARE	1	20 A 20 A	34 36
20 A 20 A	1 1	REC CL105 REC CL105		0.7	0.0	0.7	0.0			SPARE SPARE	1	20 A 20 A	38 40
20 A 20 A	1	REC CL107 TV CL107		0.7	0.0			1.3	0.0	SPARE SPARE	1	20 A 20 A	42
20 A 20 A	1	TV CL101		0.0	0.0	1.3	0.0	0.7	0.0	SPARE SPARE	1	20 A 20 A	46
20 A 20 A	1	SPARE SPARE		0.0	0.0	0.0	0.0	0.0	0.0	SPARE SPARE	1	20 A 20 A	50 52 54
20 A 20 A	1	SPARE SPARE		0.0	0.0	0.0	0.0			SPARE SPARE	1	20 A 20 A	56 58
20 A	1			0.1	1.6			0.0	0.0		1	20 A	60 62
30 A	2	DATA CL102				0.1	1.6	0.1	1.1		2	25 A	64 66
30 A	2	DATA CL102		0.1	1.1	0.1	1.0				2	20 A	68 70
40 A	2	PHP-5 (ML)		3.8	1.1			0.1	1.0	EUH-2 (ML)	2	20 A	72 74
40 A	2	PHP-6 (ML)				3.8	1.1	3.8	3.0	DRYER S100	2	40 A	76 78
40 A	2	PHP-7(ML)		3.8	3.0	3.8	3.0			DRYER S100	2	40 A	80 82
					18.0		40.4	3.8	3.0			005.4	84 86
	3	NOT USED					19.4		17.4	PANEL LB	3	225 A	88 90
PROVII PROVIDE ROVIDE ROUTE PROVIDE Classific	DE GFO DE SHL E LOCK TO LO DE BRE	CI BREAKER FOR EQUIPM INT BREAKER CONNECT OUT BREAKER TO PREV IND VIA LIGHTING CONTA EAKER WITH MAINTENAN	AENT, 6-50 ED TO THI ENT UNAL CTOR, RE CE LOCKO	34 DmA PER E FIRE S JTHORIZ F DETAI DUT, LOO Cted Loa	1 A NEC 42 UPRES ED SWI IL ON D CKABLE	35 27.22 DE SION SY TCHING WG E4.X OFF.	0 A ED. NEU [*] STEM	35 TRAL.	8 A ed Dema	nd Panel Tot	tals		
	GHTINC	3	0	VA 00 VA		0.00%		0 0 216	VA 50 VA	Total Conn. Load: 12 Total Est. Demand: 11	5.5 kVA 3.9 kV∆		
EAT PU	MP AT		594 440	00 VA 00 VA		100.009	%	594 440	00 VA	Total Conn. Current: 34 Total Est. Demand. 31	8 A 6 A		
EN LLANE(OUS		0	VA 00 VA		0.00%) %	0 292	VA 00 VA	ADD	1		
			0 292	VA 00 VA		0.00%	2 %		VA 00 VA				\supset
	175 A PROVIDE PROVI	175 A 3 PROVIDE GFO PROVIDE SHU OVIDE SHU OVIDE BRE Iassification OR LIGHTING IOR LIGHTING IOR LIGHTING IANEOUS PMCB BRKR POLE 20 A 1 20 A 1	175 A 3 LK VIA TK PROVIDE GFCI BREAKER FOR EQUIPR PROVIDE LOCKOUT BREAKER CONNECT ROVIDE LOCAD VIA LIGHTING CONTA PROVIDE BREAKER WITH MAINTENAN Iassification Internation OR LIGHTING TAGLES CAT PUMP Itaget and the state of the stat	175 A 3 LK VIA TK PROVIDE GFCI BREAKER FOR EQUIPMENT, 6.55 PROVIDE LOCKOUT BREAKER TO PREVENT UNAL ROUTE DERAKER TO PREVENT UNAL ROUTE LOCAD VIA LIGHTING CONTACTOR, RE PROVIDE BREAKER WITH MAINTENANCE LOCK Image: Contact Contactor, Con	175 A 3 LK VIA TK 199 PROVIDE GFCI BREAKER FOR EQUIPMENT, 6-500 AP EF PROVIDE SHUNT BREAKER TO PREVENT UNAUTHORIZ SOVIDE LOCKOUT BREAKER TO PREVENT UNAUTHORIZ SOVIDE DECKOUT BREAKER TO PREVENT UNAUTHORIZ OUTE TO LOAD VIA LIGHTING CONTACTOR, REP DETA PROVIDE BREAKER WITH MAINTENANCE LOCKOUT, LO Issification Connected Lea ORI LIGHTING 1706 VA IOR LIGHTING 1776 VA IOR LIGHTING 1776 VA NE LEDEDARD SCHEDUE LA PMOB 120/208 Wye 3 P MARK POLE LOAD A 20A 1 REC STIDO, STIOJ 0 20A 1 REC STIDO (GP) 0.7 20A 1 REC MTIDI (GP) 0.9 20A 1 REC MTIDI (GP) 0.9 20A 1 REC MTIDI (GP) 0.7 20A 1 REC MTIDI (GP) 0.7 20A 1 REC MTIDI (GP)	175 A 3 LK VIA TK 200 40.9 199 V/A 719 A 719 A PROVIDE GFCI BREAKER FOR CONNECTED TO THE FIRE SUPERS PROVIDE ISOLUT BREAKER TO PREVENT UNAUTHORIZED SWI 710 A ROVIDE LOCKOUT BREAKER TO PREVENT UNAUTHORIZED SWI 710 A ROVIDE DERKER WITH MAINTENANCE LOCKOUT, LOCKAU 700 A IACLES 34380 VA IAT PUMP 266141 VA RICHATTING 177237 VA IANE OUR 61470 VA IALEDEN 61470 VA IANE OUR 61470 VA IANE OUR 117737 VA RICHAT 117737 VA IANE OUR 0.7 IANE OUR 0.7 IANE OUR 0.7 IANE OUR 0.7 IA REC BIOG (GP) 20.1 1 20.1 1 20.1 1 20.1 1 20.1 1 20.1 1 20.1 1 20.1 1 20.1 1	1756 A 3 LK VIA TK 226 4.0.9 32.5 178 A 3 LK VIA TK 189 719 A 72 78 PROVIDE CORCUMENT, 650 APER INCE 427.22 DE PROVIDE SHUNT BREAKER FOR EQUIPMENT, 650 APER INCE 427.22 DE PROVIDE SHUNT BREAKER TO REVENT UNALITORIZED SWITCHING CONTACTOR, REF DETAIL ON DWG LEGA-COUND BREAKER TO REVENT UNALITORIZED SWITCHING CONTACTOR, REF DETAIL ON DWG LEGA-COUND COUND	176 A 3 K VIA TK 25 4 0 9 22 4 18 198 KL PROVIDE GFCI BREAKER FOR EQUIPMENT, 5600A PER NC 422 SED. NEUROVIDE SUBJET 501.06 VILCONTACTOR, REPERTAL, DIN WERKS, STOR SYSTEM SUBJET, DIN WERKS, S	175 A 3 K VIA TK 20 0.0 2.5 1.13 0.0 0.				

PA		LB(DARD	SCHED	ULE	H	R		LOCAT		LECTRIC 101 LIBEACE	AL FE	D FROM: A	ATS-R		2	PA		.BO	ARD
скт	BRK	R POL	E	LOAD	-		A		В		С	LOAD	POLE	BRKR	скт	,	скт	BRKR	POLE	
1 3	20 A 20 A	1	LTG R10	- R107		0.4		0.7		0.0		SPACE ONLY SPACE ONLY	1		2 4	Ē	1 3	20 A	3	SEF-1 (N
5 7 9	20 A 20 A 20 A		SPARE			0.0		0.0		0.9		SPACE ONLY SPACE ONLY SPACE ONLY	1 1		8 10		5 7 9	30 A	3	SEF-2 (M
11 13 15	20 A 20 A		SPARE SPARE			0.0		4.0	7.2	0.0		SPACE ONLY SPACE ONLY	1		12 14 16		11 13 15	30 A	3	SEF-3 (N
17 19	20 A	3	EWH-3 (ЛL)		4.0	7.6 kVA	12	kVA	4.0	6.8 2 kVA	LR VIA TR	3	50 A	18 20	F	17 19 21	30 A	3	SEF-4 (M
GE) = ST) =		VIDE G		ER FOR EQUIP	MENT, 6-50 FD TO THE	43)mA PEF F FIRF S	3 A R NEC 42 SUPBES	4 27.22 DI SION SY	3 A ED. NEU ⁄STEM	4 ITRAL.	12 A	-					23 25 27	20 A	3	SEF-5 (M
L) = P LC) = ML) =	ROVII ROUT	DE LO TE TO /IDE B	CKOUT BRE LOAD VIA L REAKER W	AKER TO PREV GHTING CONT TH MAINTENAN	/ENT UNAL ACTOR, RE	JTHORIZ EF DETA OUT, LO	ZED SW IL ON D CKABLE	ITCHING WG E4.) OFF.	а. К.								29 31			SPACE (
_oad (NTEB	Classi	ficatio	n IG		Connec 110	cted Loa	id De	emand F 125.00	actor %	Estimat	t ed Dem a 375 VA	and Panel T	Fotals				33 35 37		1	SPACE C SPACE C SPD (BR
EXTER RECE	RIOR I PTACI		NG		93	6 VA 00 VA		125.00 100.00	%	11	170 VA 700 VA	Total Conn. Load: 3 Total Est. Demand: 3	35.5 kVA 36.0 kVA			F	39 41	100 A	3	REQUIR
ELECI KITCH	IEAT F TRIC F IEN	IEAT			1157- 157- 0	62 VA 43 VA VA		100.00	% % ,	15	743 VA 743 VA 0 VA	Total Est. Demand 4	43 A 43 A			((GE) = ST) =	PROVI PROVI	DE GF(DE SHL	CI BREAK JNT BREA
MISCE	ELLAN	EOUS			360	00 VA		100.00	%	36	500 VA					(((L) = P LC) = ML) =	ROVID ROUTE PROVI	E LOCK TO LC DE BRI	OUT BRE DAD VIA LI EAKER WI
PA 50 AM	NE IP MCE	LB(DARD	SCHED 480/277 Wy	e ULE	Н 3 Р	Х РН 4 W		LOCAT MO	rion: ^{Ei} S' UNT: SI	LECTRIC 101 URFACE	AL FE PANEL ASSEMBLY RATE	D FROM: A D (KAIC): 2	ATS-X 22KAIC		L	oad (Classifi	cation	ì
скт	BRK		.E	LOAD			A		В		С	LOAD	POLE	BRKR	скт	E F A	EXTER RECER	RIOR LI PTACLE EAT PL	GHTINC ES JMP	G
1 3 5	20 A 20 A 20 A		INTERIC EXTERIC	r lighting R lighting		2.9		1.6		0.0		SPACE ONLY SPACE ONLY SPACE ONLY	1		2 4 6	E		RIC HE EN	EAT	
7 9	20 A 20 A		SPARE SPARE			0.0		0.0		0.0		SPACE ONLY SPACE ONLY	1		8 10	IV.	AIGOL		000	
11 13 15		1	SPACE (SPACE (SPACE (DNLY DNLY DNLY								SPACE ONLY SPACE ONLY SPACE ONLY	1 1 1		12 14 16	Ī		NEL	BO	ARD
17 19 21	 30 A	1	SPACE (SPD (BF MANUFA	ONLY EAKER SIZE PE CTURER	ĒR	0.0	2.5	0.0	2.1			SPACE ONLY PANEL LX/TX	1	 30 A	18 20 22	2	25 АК СКТ			
23			REQUIR	EMENTS)		5 k	KVA 1 A	4	kVA 4 A	0.0	2.0 kVA 7 A				24	þ	1	20 A 20 A	1	REC ROO
GE) = ST) = L) = P	PRO PRO PROVII	VIDE G VIDE S	FCI BREAK HUNT BREA	ER FOR EQUIP KER CONNECT AKEB TO PBEN	MENT, 6-50 Ed to the /Ent unal)ma per E fire s JThoriz	R NEC 42 SUPRES ZED SW	27.22 DI SION SY ITCHING	ED. NEU 'STEM	ITRAL.	, , ,						5 7 9	20 A 20 A	1	REC A10 REC A10
LC) = ML) =	ROU1 PROV	TE TO	LOAD VIA L REAKER W	GHTING CONT TH MAINTENAN	ACTOR, RE	F DETA OUT, LO	IL ON D	WG E4.) E OFF.	ζ.								9 11 13	20 A 20 A 20 A	1	REC A10 BODY SC
.oad (NTER	Classi RIOR L	ficatio	n IG		Conneo	cted Loa	id De	emand F 125.00	actor %	Estimat 36	ted Dem 664 VA	and Panel T					15 17 19	20 A 20 A 20 A	1 1 1	COUNTE COUNTE
RECEI	PTACI	LIGHTI LES PUMP	NG		0	VA VA VA		0.00%	% , , ,	20	0 VA 0 VA 0 VA	Total Conn. Load: Total Est. Demand: Total Conn. Current:	11.2 kVA 12.3 kVA 13 A				21 23 25	20 A 20 A 20 A	1 1 1	COUNTE REF A11 REC A11
	TRIC H IEN				0	VA VA		0.00%	, , , , , ,	36	0 VA 0 VA	Total Est. Demand	15 A			-	27 29 31	20 A 20 A	1	VV A116 VV A116 BEC A11
		2000			000		Į	100.00	/0			•				SEC1	33 35 07	20 A 20 A	1	REC A11 REC W1
	NE MP MC	LB(DARD	SCHED 120/208 Wy		L 3 P	K PH 4 W		LOCAT	FION: KI K	ITCHEN 100 ECESSE	FE D PANEL ASSEMBLY BATE	d from: T d (kaic): 1	INKAIC			37 39 41	20 A 20 A 20 A	1 1 1	EWC W117 REC E11
СКТ	BRK		.E	LOAD	0		A		B		C	LOAD	POLE	BRKR	скт		43 45 47	20 A 20 A 20 A	1 1 1	TV E117 EWC E11 REC C10
1 3	20 A 20 A	1 1	REC K10 REC K10	0 (GP) 1 (GP)		0.4		0.7				SPACE ONLY SPACE ONLY	1		2 4		49 51 53	20 A 20 A 20 A	1 1 1	REC C10 REC W1 ⁻ REC C10
5 7 9	20 A 20 A 20 A	<u>1</u> <u>1</u> <u>1</u>	REACH- REACH- ICE MAP	N FREEZER N REFRIGERAT ER (GP)	FOR	0.4		0.9		0.9		SPACE ONLY SPACE ONLY SPACE ONLY	1 1 1		6 8 10	-	55 57 59	20 A 20 A 20 A	1	EXT GAT EXT GAT
11 13 15	20 A 20 A 20 A		WORKT WORKT	ABLE (GP) ABLE (GP) ABLE (GP)		0.4	1.0	0.4	0.2	0.4	0.2	LIGHTS, COOLER EVAP. COIL, COOLER LIGHTS & DOOB HEAT	1	20 A 20 A 20 A	12 14 16		61 63		1	SPACE C
17 19 21	20 A 20 A		COFFEE EXHAUS	BREWER (GP) T FAN		1.0	0.7	1.0	0.7	1.4	0.5	HEAT TAPE, FREEZER COND. UNIT, COOLER	1	20 A 20 A	18 20	-	65 67 69		1 1	SPACE C SPACE C SPACE C
23 25	20 A 20 A 20 A		FOOD P	ROCESSOR (GF T MIXER (GP)	D)	0.8	0.3	1.0	0.7	0.8	0.3	EVAP. COIL, FREEZER	2	20 A	24 26		71 73 75		1 1 1	SPACE C SPACE C SPACE C
27 29 31	20 A 20 A 20 A		JUICE D HOT FO	WER (GP) SPENSER (GP) DD HOLDING C	ABINET	1.0	1.1	1.7	1.1	0.7	1.1	COND. UNIT, FREEZER	3	20 A	28 30 32	-	77 79 81		1 1 1	SPACE C SPACE C SPACE C
33 35 37	20 A 20 A 20 A		SINKS (SPARE SPARE	iP)		0.0	1.8	1.2	2.1	0.0	2.1	HOT FOOD TABLE (GP)	2	30 A	34 36 38	F	83		1	SPACE C
39 41 43	20 A 20 A 20 A		SPARE SPARE SPARE			0.0	8.0	0.0	1.8	0.0	1.8	COMBI OVEN (ST)	3	30 A	40 42 44		GE) = ST) =	PROVI PROVI	DE GF(DE SHL	CI BREAKI JNT BREA
45 47	20 A		SPARE SPACE	DNLY			0.0	0.0	8.0	-	8.0	INDUCTION RANGE (ST)	3	90 A	46 48	(((L) = P LC) = ML) =	ROUTE	E TO LC DE BRI	DAD VIA LI
49 51 53		1	SPACE (SPACE (ONLY ONLY ONLY			0.4		6.4		6.4	DISHWASHER BOOSTER	3	70 A	50 52 54	L	.oad (NTER	Classifi	cation AHTING	ì
55 57 59	 	1 1 1	SPACE O SPACE O SPACE O	DNLY DNLY DNLY			6.4		6.4		6.4	DISHWASHER	3	70 A	56 58 60	F	RECEP	PTACLE EAT PL	SHTING S JMP	i
GE) =	PRO	VIDE G	FCI BREAK	ER FOR EQUIP	MENT. 6-50	30 24)mA PEF	kVA 6 A 3 NEC 42	33 27 27.22 DI	kVA 73 A ED. NEU	31 20 1TRAL.	kVA 60 A					EK	ELECT	RIC HE EN		
ST) = L) = P LC) =	PROV PROVII ROUT	/IDE S DE LO TE TO	HUNT BREA CKOUT BRE LOAD VIA L	KER CONNECT AKER TO PREN GHTING CONT	ED TÓ THE /ENT UNAL ACTOR, RE	E FIRE S JTHORIZ F DETA	SUPRES ZED SW	SION SY ITCHING WG E4.>	/STEM 3. K.											
(ML) = Load (⊧ PRO\ Classi	/IDE B	REAKER W	TH MAINTENAN	CE LOCKO	DUT, LO	CKABLE	OFF. Emand F	actor	Estimat	ted Dema	and Panel T	Fotals			6			BO	ARD
NTER EXTEF	RIOR L RIOR I PTACI	IGHTIN LIGHTI FS	IG NG		0	VA VA 30 VA		0.00%	, , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1(0 VA 0 VA 080 VA	Total Conn. Load: 9	93.0 kVA 60 8 kVA			-	скт	BRKR	POLE	
	IEAT F	PUMP HEAT			0	VA VA VA		0.00%	, , , , , ,		0 VA 0 VA	Total Conn. Current: 2 Total Est. Demand	258 A 169 A			ŀ	1 3	20 A 20 A	1	FACP C1 FAXP S1
(ITCH /ISCE	IEN ELLAN	EOUS			9199	50 VA VA		65.00% 0.00%	%	59	768 VA 0 VA					F	5 7 9	20 A 20 A 	1 1 1	FASCP (I PRE-ACT SPACE C
			DARD	SCHED	ULE	L	S		LOCAT		LECTRIC	AL FE	D FROM: T	rs Iokaic		F	11		1	SPACE C
	BRK		.E	LOAD	e	3 P	A 4 VV		B		C		POLE		скт	(0)	GE) = ST) = L) = P	PROVI PROVI BOVID	DE GF(DE SHL	CI BREAKI JNT BREA
1 3	20 A	<u>1</u>	DAMPE	S		0.8	0.6					DAMPERS SPACE ONLY	1	20 A 	2	() (1	LC) = ML) =	ROUTE	E TO LC	AD VIA LI EAKER WI
5 7 9		1	SPACE SPACE	DNLY DNLY						-		SPACE ONLY SPACE ONLY SPACE ONLY	1		6 8 10		.oad (NTER	Classifi	cation	ì
11		1	SPACE	DNLY		1 k	(VA	0	kVA	 0	 kVA	SPACE ONLY	1		12	L F A	RECER	PTACLE EAT PL	ENTING ES JMP	J
GE) = ST) =	PROV PROV	VIDE G		ER FOR EQUIP	MENT, 6-50 ED TO THE	12 MA PEF E FIRE S	2 A R NEC 42 SUPRES	C 27.22 DI SION SY	D A ED. NEU (STEM	ITRAL.	υA					E		RIC HE		
∟) = P LC) = ML) =	(ROVII ROU1 PRO\	JE LO TE TO /IDE B	LOAD VIA L REAKER W	AKER TO PREN GHTING CONT TH MAINTENAN	VENT UNAL ACTOR, RE NCE LOCKO	UTHORIZ EF DETA OUT, LO	LED SW IL ON D' CKABLE	UCHING WG E4.) E OFF.	а. К.									UNC		
.oad (NTER	Classi RIOR L	ficatio IGHTIN	n IG		Connec 0	cted Loa	id De	emand F 0.00%	actor	Estimat	t ed Dem a 0 VA	and Panel T	Fotals							
EXTER RECE	RIOR L PTACI	LIGHTI LES PUMP	NG		0	VA VA 00 V∆		0.00%	, , , , , ,		0 VA 0 VA 400 VA	Total Conn. Load:	1.4 kVA 1.4 kVA 4 A							
LEC1		IEAT			0	VA VA		0.00%	, o , , , , ,		0 VA 0 VA	Total Est. Demand 4	4 A							
· · ·	ELLAN	EOUS			0	VA		0.00%	0		0 VA									

NTERIOR LIGHTING	
EXTERIOR LIGHTING	
RECEPTACLES	
AC / HEAT PUMP	
ELECTRIC HEAT	
KITCHEN	
/ISCELLANEOUS	

NELBOARD

60 AM	P MCB	50 AMP MCB 120/208 Wye		3	PH 4 V	V	МО	UNT: SU	RFACE	PANEL ASSEMBLY RATED (K	AIC): 10	KAIC	
СКТ	BRKR	POLE	LOAD		A B		в		С	LOAD	POLE	BRKR	СКТ
1	20 A	1	FACP C100 (L) [RED BRE/	AKER] 1.0	0.5	5				GEN BATTERY	1	20 A	2
3	20 A	1	FAXP S101 (L) [RED BREA	AKER]		1.1 1.0					2	20 4	4
5	20 A	1	FASCP (L) [RED BREAKEI	R]				1.0	1.0	GENHEATER	2	20 A	6
7	20 A	1	PRE-ACTION(L)	1.0						SPACE ONLY	1		8
9		1	SPACE ONLY							SPACE ONLY	1		10
11		1	SPACE ONLY							SPACE ONLY	1		12
(GL) = (ST) = (L) = P (LC) = (ML) =	PROVIE ROVIDE ROUTE PROVIE	DE SHU E LOCK TO LO DE BRE	INT BREAKER CONNECTE OUT BREAKER TO PREVE AD VIA LIGHTING CONTAG EAKER WITH MAINTENANC	D TO THE FIRE NT UNAUTHOF CTOR, REF DET CE LOCKOUT, L	SUPRI RIZED S AIL ON OCKAE	ESSION SY WITCHING DWG E4.) BLE OFF.	/STEM A. K.						
Load Classification		Connected Lo	bad	Demand F	actor	Estimate	ed Dema	nd Panel Tota	s				
INTER	IOR LIG	HTING		0 VA		0.00%	, o	0	VA				
EXTERIOR LIGHTING		0 VA		0.00%	/ 0	0	VA	Total Conn. Load: 6.6 k	XΑ				
RECEPTACLES		0 VA		0.00%	, o	0	VA	Total Est. Demand: 6.6 k	XΑ				
AC / HEAT PUMP		0 VA		0.00%	/ 0	0	VA	Total Conn. Current: 18 A					
ELECTRIC HEAT		0 VA		0.00%	, o	0	VA	Total Est. Demand 18 A					
KITCHEN			0 VA		0.00%	, o	0 VA						
MISCELLANEOUS			3600 VA		100.00	%	360	00 VA					

(ST) = PROVIDE SHUNT BR (L) = PROVIDE LOCKOUT B (LC) = ROUTE TO LOAD VIA (ML) = PROVIDE BREAKER
Load Classification
INTERIOR LIGHTING

NEL	BO	ARD SCHEDI	JLE	H	S		LOCAT	ION: ELE	ECTRICA	L FED	FROM: A	TS-S	
/IP MCE	3	480/277 Wye		3 P	H 4 W		MOL	JNT: SU	RFACE	PANEL ASSEMBLY RATED	(KAIC): 22	2KAIC	
BRKR	POLE	LOAD			4	E	3	()	LOAD	POLE	BRKR	скт
				0.4	0.4								2
20 A	3	SEF-1 (ML)				0.4	0.4			SSF-1 (ML)	3	20 A	4
	↓ '							0.4	0.4		<u> </u>	$\vdash \!$	6
~ ^			1	5.8	5.8								8
30 A	3	SEF-2 (ML)	1			5.8	5.8	_	50	SSF-2 (ML)	3	30 A	10
	 '	 						5.8	5.8		<u> </u>	↓	12
20 1			1	3.0	5.8	2.0	5.9					20 4	14
30 A	3				<u> </u>	3.0	5.0	3.0	5.8	33F-3 (ML)		30 A	18
	├ ───'	<u> </u>		3.0	5.8			3.0	5.0			├───┦	20
30 A	3	SFF-4 (ML)		0.0	0.0	3.0	5.8			SSF-4 (MI)	3	30 A	22
007.			1			0.0	0.0	3.0	5.8		ľ		24
		<u> </u>		0.4	0.4				V		+	├ ── १	26
20 A	3	SEF-5 (ML)				0.4	0.4		1	SSF-5 (ML)	3	20 A	28
								0.4	0.4			†	30
	1	SPACE ONLY			1					SPACE ONLY	1	1	32
	1	SPACE ONLY							1	SPACE ONLY	1	<u> </u>	34
	1	SPACE ONLY								SPACE ONLY	1		36
		SPD (BREAKER SIZE PER	i – 1	0.0	1.4								38
100 A	3	MANUFACTURER				0.0	0.0			LS VIA TS	3	30 A	40
	<u> </u>	REQUIREMENTS)						0.0	0.0				42
			!	32	κVA	31 k	κVΑ	31	κVA				_
Provi Provij Rovidi Route Provi	DE GFC DE SHU E LOCK TO LO DE BRE	XI BREAKER FOR EQUIPME INT BREAKER CONNECTEI OUT BREAKER TO PREVE AD VIA LIGHTING CONTAC EAKER WITH MAINTENANC	ENT, 6-50 D TO THE NT UNAL TOR, RE E LOCK(mA PER E FIRE S JTHORIZ F DETA OUT, LO	I NEC 42 UPRESS IED SWI IL ON D CKABLE	27.22 DE SION SYS TCHING. NG E4.X OFF.	2 A D. NEUT STEM	TRAL.	2 A				
Classifi	cation		Connec	ted Loa	d De	mand Fa	actor	Estimate	d Deman	nd Panel To	tals		
IOR LIC	λΗΤΙΝG	i	0	VA		0.00%		0	VA				
IOR LI	GHTINC	j į	0	VA		0.00%		0	VA	Total Conn. Load: 94	.5 kVA		
PTACLE	S		0	VA		0.00%		0	VA	Total Est. Demand: 94	.5 kVA		
EAT PU	IMP		944	96 VA		100.00%	6	9449	96 VA	Total Conn. Current: 11	4 A		
RIC HEAT		0 VA			0.00% 0 VA		Total Est. Demand 11	4 A					

0 VA 0.00% 0 VA 0 VA 0.00% 0 VA

SCHEDUL	EL	В		LOCA	TION: 111		F	ED FROM: L	A	
120/208 Wye	3 P	H 4 W		MO	UNT: SU	RFACE	PANEL ASSEMBLY RATED (KAIC): 10KAIC			
LOAD		A	1	В		c	LOAD	POLE	BRKR	СКТ
)F	0.7	0.5					EF1 (ML)	1	20 A	2
3			0.7	0.5			EF6 (ML)	1	20 A	4
1					0.7	0.5	EF8 (ML)	1	20 A	6
5	0.7	1.0								8
A105			0.7	1.0			EUH-4 (ML)	2	20 A	10
A114			•		0.7	1.6				12
ANNER A101	0.7	16			•		CU-1/DSS-1(ML)	2	25 A	14
	0.1		10	3.8						16
REC A115 (GP)				0.0	0.7	38	PHP-1 (ML)	2	40 A	18
REC A115 (GP)	0.7	3.8			0.7	0.0				20
REC A115 (GP)	0.7	0.0	0.7	3.8			PHP-2 (ML)	2	40 A	20
			0.7	0.0	0.7	38				22
<u>()</u> <u>A116</u>	0.0	20			0.7	3.0	PHP-4 (ML)	2	40 A	24
,7110	0.9	3.8	0.2	1.0					20.4	20
			0.3	1.0	0.0				20 A	20
	10				0.6	0.0			20 A	30
	1.3	0.0	0.7				SPARE		20 A	32
- // 0)			0.7	0.0			SPARE	1	20 A	34
/ (LC)					0.7	0.0	SPARE	1	20 A	36
LC)	0.7	0.0			_		SPARE	1	20 A	38
7 (GP) (LC)			1.8	0.0			SPARE	1	20 A	40
(LC)					0.7	0.0	SPARE	1	20 A	42
_C)	0.7	0.0					SPARE	1	20 A	44
' (GP) (LC)			1.8	0.0			SPARE	1	20 A	46
					0.5	0.0	SPARE	1	20 A	48
	0.5	0.0					SPARE	1	20 A	50
5, A118			0.7	0.0			SPARE	1	20 A	52
, A118					0.7	0.0	SPARE	1	20 A	54
MOTOR (ML)	0.5	0.0					SPARE	1	20 A	56
CONTROL			1.0	0.0			SPARE	1	20 A	58
CONTROL					1.0	0.0	SPARE	1	20 A	60
ILY		0.0					SPARE	1	20 A	62
ILY				0.0			SPARE	1	20 A	64
ILY						0.0	SPARE	1	20 A	66
ILY		0.0					SPARE	1	20 A	68
NLY				0.0			SPARE	1	20 A	70
NLY						0.0	SPARE	1	20 A	72
		0.0				5.0	SPARE	1	20 A	74
		0.0		0.0			SPARE	1	20 A	76
				0.0		0.0	SPARE	1	20 4	78
		0.0				0.0	SPARE	1	20 4	80
		0.0		0.0			SPARE	1	20 4	82
				0.0		0.7			20 A	02
	10		10		17	0.7			20 A	04
			19							
R FOR EQUIPMENT, ER CONNECTED TO KER TO PREVENT L CHTING CONTACTOR	15 6-50mA PEF 0 THE FIRE S JNAUTHORIZ R, REF DETA	0 A { NEC 42 SUPRES SED SWI IL ON D	16 27.22 DE SION SY TCHING WG E4.X	2 A ED. NEU STEM	14: ITRAL.	5 A				
"H MAINTENANCE LO	OCKOUT, LO	CKABLE	OFF.		_			_		
Co	nnected Loa	d De	mand Fa	actor	Estimate	ed Deman	d Pane	I Totals		
	0 VA		0.00%		0	VA				
	0 VA		0.00%		0	VA	Total Conn. Load	: 54.8 kVA		
	17440 VA		78.67%	, 0	137	20 VA	Total Est. Demand	: 51.1 kVA		
						00.1/4				

	17440 VA	78.67%	13720 VA	Total Est. Demand: 51.1 kVA
0 VA		0.00%	0 VA	Total Est. Demand 142 A
	0 VA	0.00%	0 VA	
	8160 VA	100.00%	8160 VA	
) SCHED	ULE LX	LOCA	TION: ELECTRICAL S101	FED FROM: TX
120/209 \\/\	2 04 4	M/ MC		DANEL ASSEMBLY DATED (KAIC): 10KAIC

HA	HR	HB
LA	LK	LB
	LB2	LX
	LS	

