ADDENDUM NO. 2

TO: PLANS AND SPECIFICATIONS FOR STATE OF MISSOURI

Community Supervision Center
Joplin, MO
PROJECT No.: C2512-01

Bid Opening Date is: 1:30 PM, THURSDAY, NOVEMBER 12TH, 2026

Bidders are hereby informed that the Construction Plans and/or Specifications are modified as follows:

SPECIFICATION CHANGES:

1. Section 000110 – Table of Contents

   a. ADD Section 023200 – Geotechnical Conditions
   b. ADD Section 270010 – Supplemental Requirements for Communications
   c. ADD Section 270526 – Grounding and Bonding for Communication Systems
   d. ADD Section 270528 – Pathways for Communication Systems
   e. ADD Section 270529 – Hangers and Support for Communications Systems
   f. ADD Section 270536 – Cable Trays for Communication Systems
   g. ADD Section 270544 – Sleeves and Sleeve Seals for Communication Pathways and Cabling
   h. ADD Section 270553 – Identification for Communication Systems
   i. ADD Section 271116 – Communications Racks, Frames and Enclosures
   j. ADD Section 271513 – Communications Copper Horizontal Cabling

2. Section 023200 – Geotechnical Investigations

   a. ADD section in its entirety

3. Section 075423 – Thermoplastic Polyolefin (TPO) Membrane Roofing

   a. REVISE 2.01.A. Specified Manufacturer

      ADD: 5. Kingspan Roofing and Waterproofing
      ADD: 6. DuroLast

4. Section 084313 – Aluminum-Framed Entrances and Storefronts

   a. REMOVE AND REPLACE section in its entirety

5. Section 087100 – Door Hardware

   a. REMOVE AND REPLACE section in its entirety

6. Section 101413 – Exterior Signage

   a. REMOVE AND REPLACE section in its entirety

7. Section 102113.17 – Compact Laminate (Phenolic) Toilet Compartments
    a. REVISE 2.01.A.1.a. Other Acceptable Manufacturers
        ADD: 4) Scranton Products
8. Section 107316.13 – Metal Canopies
    a. REMOVE AND REPLACE section in its entirety
9. Section 270010 – Supplemental Requirements for Communications
    a. ADD section in its entirety.
10. Section 270526 – Grounding and Bonding for Communication Systems
    a. ADD section in its entirety.
11. Section 270528 – Pathways for Communication Systems
    a. ADD section in its entirety.
12. Section 270529 – Hangers and Support for Communications Systems
    a. ADD section in its entirety.
13. Section 270536 – Cable Trays for Communication Systems
    a. ADD section in its entirety.
14. Section 270544 – Sleeves and Sleeve Seals for Communication Pathways and Cabling
    a. ADD section in its entirety.
15. Section 270553 – Identification for Communication Systems
    a. ADD section in its entirety.
16. Section 271116 – Communications Racks, Frames and Enclosures
    a. ADD section in its entirety.
17. Section 271513 – Communications Copper Horizontal Cabling
    a. ADD section in its entirety.

DRAWING CHANGES:

1. SHEET G-101
    a. REMOVE AND REPLACE Sheet in its entirety.
2. SHEET A-011
    a. REMOVE AND REPLACE Sheet in its entirety.

3. SHEET A-101
    a. REMOVE AND REPLACE Sheet in its entirety.
4. SHEET A-102
    a. REMOVE AND REPLACE Sheet in its entirety.
5. SHEET A-211
    a. REMOVE AND REPLACE Sheet in its entirety.
6. SHEET A-422
    a. REMOVE AND REPLACE Sheet in its entirety.
7. SHEET A-501
    a. REMOVE AND REPLACE Sheet in its entirety.
8. SHEET A-511
    a. REMOVE AND REPLACE Sheet in its entirety.
9. SHEET E101
    a. REMOVE AND REPLACE Sheet in its entirety.
10. SHEET E201
    a. REMOVE AND REPLACE Sheet in its entirety.
11. SHEET E301
    a. REMOVE AND REPLACE Sheet in its entirety.
12. SHEET E401
    a. REMOVE AND REPLACE Sheet in its entirety.
13. SHEET E701
    a. REMOVE AND REPLACE Sheet in its entirety.
14. SHEET E702
    a. REMOVE AND REPLACE Sheet in its entirety.
15. SHEET T101
    a. REMOVE AND REPLACE Sheet in its entirety.
16. SHEET T202
    a. REMOVE AND REPLACE Sheet in its entirety.

GENERAL COMMENTS:

1. **The Pre-Bid Meeting was held October 27, 2026 at 10:00 AM, followed by a walk-through of the site. The Pre-Bid Meeting sign-in sheet is attached.**
2. **Bidders needing additional site inspection should contact Nathan Graessle at 573-508-6646 to schedule a time if access to the facility is required.**

3. **Please contact Mandy Roberson, Contract Specialist, at 573-690-9411 or mandy.roberson@oa.mo.gov, for questions about bidding procedures, MBE/WBE/SDVE/HDVE goals, and submittal requirements.**
4. **The deadline for technical questions is November 5, 2026 at noon.**
5. **Changes to, or clarification of, the bid documents are only made as issued in the addenda.**
6. **All correspondence with respect to this project must include the State of Missouri project number as indicated above.**
7. **Current Planholders list available online at: C2512-01 New Community Supervision Center :: State of Missouri Office of Administration**
8. **Prospective Bidders contact American Document Solutions, 1400 Forum Blvd Suite 1C, Columbia MO 65201, 573-446-7768 to order official plans and specifications.**
9. **All bids shall be submitted on the bid form without additional terms and conditions, modifications, or stipulations. Each space on the bid form shall be properly filled including a bid amount for the alternate. Failure to do so will result in rejection of the bid.**
10. **MBE/WBE/SDVE/HDVE participation requirements can be found in DIVISION 00. The MBE/WBE/SDVE/HDVE participation goals are 0%/0%/3%/3%, respectively. Only certified firms as of the bid opening date can be used to satisfy the MBE/WBE/SDVE/HDVE participation goals for this project. If a bidder is unable to meet a participation goal, a Good Faith Effort Determination Form must be completed. Failure to complete this process will result in rejection of the bid.**
11. **The Contractor shall pay not less than the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed, as determined by the Missouri Department of Labor and Industrial Relations. Bidders are to adhere to Prevailing Wage Hourly Rate of Wages, and the Department of Labor and Industrial Relations can be contacted to determine the applicable wage rate for the work on this project.**

ATTACHMENTS:

1. Pre-bid Meeting Sign-In Sheet

2. Specification Sections: 023200, 084313, 087100, 101413, 107316.13, 270010, 270526, 270528, 270529, 270536, 270544, 270553, 271116, 271513

3. Drawing Sheets: G-101, A-011, A-101, A-102, A-211, A-422, A-501, A-511, E-101, E-201, E-301, E-401, E-701, E-702, T-101, T-202

October 30, 2026

END ADDENDUM NO. 1

Pre-Bid Meeting Attendance Sheet
New Community Supervision Center
Joplin, MO

Project No. C2512-01
October 27, 2026, 10:00 AM

Name & Title	Company Name Type of Contracting	Phone	E-Mail Address
NATHAN GRAESSLE PM	OA-FMOC	573- 508-6646	NATHANIEL.GRAESSLE@ OA.MO.GOV
Justin Burr PM DOC	DOC- const	573 291.8797	Justin.Burr@doc.mo.gov
Dustin Dollens PM	Doc-Construction	573 291-8371	Dustin.Dollens@Doc.mo.gov
Phillip King Sales	O'Brien Ready mix	417 952-7065	Pking@OBrienreadymix.com
JUSTIN UNDERWOOD	BRANCO	417 451-5250	estimating@branco.com
STEPHEN BUECHLER	KCI	417-894-3506	sbuechler@KCIconstruction.com

Pre-Bid Meeting Attendance Sheet
New Community Supervision Center
Joplin, MO

Project No. C2512-01
October 27, 2026, 10:00 AM

Name & Title	Company Name Type of Contracting	Phone	E-Mail Address
Nicki Lopez workplace strategist	Grooms office environments	417-434-3422	nlopez@groomsinc.com
Jaaron Williams	~~Precon@wrightconstruct.com~~ Wright Construction Services	636-220-6850	Precon@wrightconstruct.com
Ethan Turner	Chad Prater Construction General Contractor	417-540-7394	eturner@praterconst.com
Kassidy Teel	Crossland Construction GC	620-429-1414	bid@crossland.com
John Carr	RESmith Construction	417-623-4545 417-385-3905	johnpaul@resmithconst.com estmating@resmithconst.com
Zachary Kimbrell	KZ Dirtworks LLC site prep/hauling/ Landscaping	620-238-3197	kzdirtworks@gmail.com

Pre-Bid Meeting Attendance Sheet
New Community Supervision Center
Joplin, MO

Project No. C2512-01
October 27, 2026, 10:00 AM

Name & Title	Company Name Type of Contracting	MBE/WBE/ SDVE Status	Phone	E-Mail Address
Walter Brand Project Manager/Estimator	Bill's Electric Electrician		417-986-8309	Wbrand@bcijoplin.com
Jeff [illegible] PM/Estimator	Dirk Heavy Contractors		417-513-3165	jeff@DirkHeavy.com
Sam Sullivan PM/Estimator	Dirks Heavy		417-658-8268	Sam@Dirksheavy.com

Pre-Bid Meeting Attendance Sheet
New Community Supervision Center
Joplin, MO

Project No. C2512-01
October 27, 2026, 10:00 AM

Name & Title	Company Name Type of Contracting	MBE/WBE/ SDVE Status	Phone	E-Mail Address
Kaitlyn Schopen	ACI Boland		816.381.2020	kschopen@aciboland.com
Joe Gendre	electrical		620 714-1125	jag.geelectric@yahoo.com
Colton Marion	Marion Company		417.451-5743	estimating@marionllc.net
Doug Arnold PM	Arnold Plumbing	WBE	4174391587	darnold@arnoldplumbingco.com
Ian Stewart Estimator	MacCo Builders		417-499-5135	istewart@maccobuilders.com
Kirk Harris Estimator	MacCo Builders		620-210-1196	kharris@macco builders.com

Pre-Bid Meeting Attendance Sheet
New Community Supervision Center
Joplin, MO

Project No. C2512-01
October 27, 2026, 10:00 AM

Name & Title	Company Name Type of Contracting	MBE/WBE/ SDVE Status	Phone	E-Mail Address
Michael Owensby Estimator/PM	Advanced Concrete Technology Concrete		417-823-5905	mikeowensby@advconcreti.com
David Forrest Owner	Swmo Electric Electrical Contracting		417-456-2064	swmoelectric@gmail.com
Felipe Hernandez	Hernandez Concrete Construction LLC		(417)499-6826	Felipe@Hernandezconcrete construction.com
Kyle (Estimator) Hackworth	Hernandez Concrete Construction LLC		479-586-3830	kyle@hernandezconcrete construction.com

SECTION 02 32 00
GEOTECHNICAL INVESTIGATIONS

PART 1 GENERAL

1.01 EXISTING SITE CONDITIONS

A. Certain information relating to existing surface and subsurface conditions and structures is available to bidders.

B. Neither the Owner nor the Architect guarantees the accuracy and completeness of information and data provided on the survey and geotechnical report, including that concerning type and location of underground materials and utilities.

C. Report discrepancies between conditions shown and actual conditions to the Architect.

1.02 GEOTECHNICAL REPORT

A. Geotechnical Report: Prepared by Kaw Valley Engineering, INC (located at 14700 West 114th Terrace, Lenexa, Kansas 66215), and dated June 29, 2026.
   1. Availability:
      a. A copy of the geotechnical report is included in the Project Manual after the last page of this Section.

B. This report identifies properties of below grade conditions and offers recommendations for the design of foundations, prepared primarily for the use of Architect.

C. The recommendations described shall not be construed as a requirement of this Contract, unless specifically referenced in Contract Documents.

D. This report, by its nature, cannot reveal all conditions that exist on the site. Should subsurface conditions be found to vary substantially from this report, changes in the design and construction of foundations will be made, with resulting credits or expenditures to the Contract Price accruing to Owner.

E. Geotechnical Report is for Bidder’s and Contractor’s review and information only. Contractor's and Bidder's are responsible for making their own determination of site conditions as may be necessary to prepare their bids and perform the Work.
   1. Variations between conditions indicated and actual conditions will not be considered reason for change in Contract amount or time.

PART 2 PRODUCTS - NOT APPLICABLE TO THIS SECTION

PART 3 EXECUTION - NOT APPLICABLE TO THIS SECTION

END OF SECTION 02 32 00

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GEOTECHNICAL ENGINEERING REPORT
JOPLIN CSC C2512-01
2303 WEST 20TH STREET
JOPLIN, KANSAS

Prepared For:

ACI/BOLAND, INC
1710 Wyandotte Street
Kansas City, Missouri 64108

Prepared By:

KAW VALLEY ENGINEERING, INC.
14700 West 114th Terrace
Lenexa, Kansas 66215

June 29, 2026

Project No. **C26G2670**

KAW VALLEY ENGINEERING, INC.

Office: 913.894.5150
Fax: 913.894.5977
Web: www.kveng.com
Address: 14700 West 114th Terrace
Lenexa, KS 66215

June 29, 2026 **C26G2670**

Mr. Dominic Spadafore
ACI/Boland, Inc.
1710 Wyandotte Street
Kansas City, Missouri 64108

RE: GEOTECHNICAL ENGINEERING REPORT
JOPLIN CSC C2512-01
2303 WEST 20TH STREET
JOPLIN, MISSOURI

Dear Mr. Spadafore:

This report presents the results of a subsurface exploration and geotechnical engineering analysis conducted for the referenced project. This exploration was conducted in general accordance with our proposal dated March 24, 2026. Authorization to proceed was provided previously. The purpose of this study was to define the subsurface conditions at the site and develop geotechnical parameters related to design and construction of the project.

EXECUTIVE SUMMARY

Information, conclusions, and recommendations which, in our opinion, are significant to the design and construction of this project, are provided below. Additional details, the general subsurface profile, other related items, and general information regarding the various phases of our exploration are included in the main body of the report.

Typical subsurface conditions consist of up to 12.5 feet of existing fill material overlying lean (low plasticity) clay and bedrock. The undocumented fill material consists of various materials including clay, limestone and chert fragments, broken asphalt, asphalt millings, sand, and gravel. Shale, sandstone, and limestone bedrock were encountered at depths ranging from 4.0 to 13.5 feet below existing ground surface. Due to the highly variable nature of the existing fill material, KVE recommends utilizing ground improvement measures, such as rammed aggregate piers, to densify the existing fill. Utilizing the ground improvement system, the building may be supported on shallow foundations bearing upon the existing soils. A net allowable bearing pressure would be determined by the ground improvement designer.

PROJECT AND SITE DESCRIPTION

The proposed project is located at 2303 West 20th Street in Joplin, Missouri. At the time of the geotechnical exploration, the subject property was an undeveloped green area. Multiple trees are present on the subject property. Based on the available historical aerial photographs, the project site has seen extensive site work and tree clearing since at least 1991.

The proposed project consists of the construction of a slab-on-grade building with associated parking lots and drives. The proposed building has an anticipated finish floor elevation of 1030.0 feet. Less than 2.0 feet of fill is anticipated to reach grade. Additionally, there is a proposed pickleball court planned for this project. Planned maximum structural loads are 100 kips for columns and 10 kips per linear foot for load bearing walls. The site and surrounding area are displayed on Plate 1.

FIELD EXPLORATION

The field exploration was performed from June 15 to 17, 2026, and included drilling fifteen test borings, identified as Borings B-1 through B-15. Borings B-1 through B-10 were performed for the proposed building, with the remaining borings for the associated parking lot and drive. The boring locations were estimated using measurements from the existing surface features. The boring elevations were determined using rod and level surveying. KVE CP #2020 was used as a benchmark with an elevation of 1,030.7 feet. The boring locations are displayed on Plate 1 and the elevations are shown on the logs of the borings.

The borings were drilled using an ATV-mounted CME 750 drill rig, with 4-inch O.D. continuous flight augers. Samples were obtained utilizing thin-walled steel (Shelby) tubes and a split-barrel sampler (standard penetration test). Soil samples were obtained at various intervals through the depths of the borings. The borings were drilled to depths ranging from 10.0 to 20.0 feet below the existing ground surface. Detailed logs of the borings are displayed on Plates 2 through 16.

The borings were logged in the field by the driller, based upon visual classifications of materials encountered during drilling, as well as the driller's interpretation of the subsurface conditions between samples. Final boring logs included with this report represent the engineer's interpretation of the field logs and include revisions based upon results of the laboratory testing and an engineer's review of the soil samples.

LABORATORY TESTING PROGRAM

The laboratory testing program was designed to determine the pertinent engineering and index properties of the soil. Moisture content and Atterberg limits were determined for select samples. Results of the laboratory tests are displayed upon the borings logs. All tests were performed in general accordance with applicable ASTM standards.

SUBSURFACE CONDITIONS

Stratigraphy. Typical subsurface conditions consist of up to 12.5 feet of existing fill material overlying lean (low plasticity) clay and bedrock. The undocumented fill material consists of various materials including clay, limestone and chert fragments, broken asphalt, asphalt millings, sand, and gravel. Shale, sandstone, and limestone bedrock were encountered at depths ranging from 4.0 to 13.5 feet below existing ground surface. A cross section of the borings is included in Appendix A.

Moisture contents for the samples ranged from 7.0 to 34.7 percent. Atterberg limits tests indicated the upper site soils classify as lean (CL) clays in general accordance with the Unified Soil Classification System. These soils typically have low to medium swell potentials.

Groundwater. Groundwater was encountered at depths ranging from 3.0 to 8.5 feet below the existing ground surface. It should be understood that the level of the groundwater may fluctuate due to rainfall and other climatic factors, and that groundwater may or may not be present during construction or at other times during the life of the project.

DESIGN CONSIDERATIONS AND RECOMMENDATIONS

The recommendations submitted herein are based, in part, upon data obtained from our subsurface exploration. The nature and extent of subsurface variations that may exist at the proposed project site will not become evident until construction. If variations appear evident, then the recommendations presented in this report should be evaluated. In the event that any changes in the nature, design, locations or depth of the proposed project are planned, the conclusions and recommendations contained in this report will not be considered valid unless the changes are reviewed and our recommendations modified in writing.

Site Preparation. Initial site preparation for the proposed project should commence with stripping of all vegetation and topsoil from the building and pavement areas. A minimum stripping depth of approximately 12 inches should be anticipated. However, stripping depths will likely vary and should be adjusted to remove all vegetation and root systems. Soils removed during site stripping operations could be used for final site grading outside the proposed building and pavement areas.

The existing fill at this site should be thoroughly evaluated as this material varied significantly in moisture content, consistency, and density. Soft or unstable areas should be undercut and replaced with structural fill. If required, the exposed grade should be moisture conditioned prior to placement of structural fill.

Relocation of any existing utility lines within the zone of influence of proposed construction areas should also be completed as part of the site preparation. The lines should be relocated to areas outside of the proposed construction. Excavations created by removal of the existing lines should be cut wide enough to allow for use of heavy construction equipment to recompact the fill. In addition, the base of the excavations should be thoroughly evaluated by a geotechnical engineer or engineering technician prior to placement of fill. All fill should be placed in accordance with the recommendations presented in the *Structural Fill* section of this report.

Any required tree removal should also be accomplished at this time. Care should be taken to thoroughly remove all root systems from the proposed building area. Materials disturbed during removal of stumps should be undercut and replaced with structural fill. A zone of desiccated soils may exist in the vicinity of the trees. The desiccated soils have a higher swell potential and should also be undercut and replaced with structural fill.

Following stripping and cutting to grade, the exposed soils should scarified, moisture conditioned, and recompacted. The moisture content of the exposed grade should be adjusted to within the range recommended for structural fill to allow the exposed material to be compacted to a minimum density of 95% of maximum density as determined by the standard Proctor compaction procedure. Extremely wet or unstable areas that hamper compaction of the subgrade may require undercutting and replacement with structural fill or other stabilization techniques. Suitable structural fill should be placed to design grade as soon as practical after reworking the subgrade to avoid moisture changes in the underlying soils.

Structural Fill. All imported and structural fill should consist of approved materials, free of organic matter and debris. Structural fill within 12 inches of the slab-on-grade or within 8 inches of pavement base materials should consist of low volume change (LVC) material. LVC materials consist of either cohesive or non-cohesive materials. Cohesive LVC is defined as having a liquid limit less than 45 percent and a plasticity index between 10 and 25 percent. The majority of the on-site soils meet the requirements for LVC material. As an alternative to using cohesive LVC material, MoDOT Type 5 aggregate base or similar well graded gravel may be utilized as imported non-cohesive LVC fill.

Fill material should be placed in lifts having a maximum loose lift thickness of 8 inches. All fill should be compacted to a minimum of 95 percent of the material's maximum dry density as determined by ASTM D 698 (Standard Proctor compaction).

The moisture content of the fill at time of compaction is dependent upon the type of fill material being placed. For cohesive LVC fill material or the well graded gravel, the moisture content of the material should be within a range of 2 percent below to 2 percent above optimum moisture content as defined by the Standard Proctor compaction procedure.

Moisture contents for cohesive materials should be maintained until completion of the slab or pavement, whereas the moisture content for the well graded gravel does not need to be maintained.

The geotechnical engineer should approve all fill material. Approval requires that a moisture-density relationship and Atterberg limits be performed for each proposed material prior to its use in the structural fill.

All utility trenches should be backfilled with either on-site or imported fill material. Granular materials such as clean sand or gravel should not be used to bed utilities or backfill trenches unless the bottom of the trench is graded so that water flows away from the structure and pavement areas.

Where fill is being placed on a slope steeper than 5:1 (horizontal:vertical), the existing slope should be benched as fill placement progresses. These benches should be stepped vertically between 12 and 36 inches. This procedure would better key the fill into the original slope and will facilitate compaction of the fill.

Final slopes greater than 3:1 (horizontal:vertical) should not be used for ease of maintenance.

Continuous observation by the geotechnical engineer or his representative should be maintained during site preparation and compaction of all fill and backfill material.

Foundations. Due to the variability encountered in the existing fill and on the basis of the planned maximum loading conditions, KVE recommends that ground improvement measures, such as rammed aggregate piers, be utilized for this project. Upon installation of the ground improvement system, the building may be supported by a combination of isolated shallow spread and strip or trench footings founded entirely upon the existing soils. The size, depth, spacing of the piers, and allowable bearing pressure will be determined by the ground improvement designer. In the past, KVE has seen projects obtained a bearing capacity of 5,000 pounds per square foot (psf) due to ground improvement.

The base of exterior footings and interior footings in unheated areas should be placed a minimum of 3 feet below the lowest adjacent exterior grade for frost protection.

Isolated footings should have a minimum width of 24 inches. Strip and trench footings should have minimum widths of 18 and 12 inches, respectively. The base of footing excavations should be free of all water, loose debris, and not allowed to become excessively wet or dry prior to placement of concrete.

All footing excavations should be observed by the geotechnical engineer of record or a representative to verify the suitability of the bearing material prior to placement of reinforcing steel.

Uplift. Uplift forces, if any, may be resisted by the weight of the footings.

Lateral Loads. A coefficient of base friction of 0.47 may be used for the contact between concrete and densified soils, based upon an internal friction angle of 25 degrees for the existing soils.

Lateral Pressures. Unrestrained walls below grade should be designed for an equivalent active fluid pressure of 45 psf/ft. Restrained walls below grade should be designed for an "at-rest" equivalent fluid pressure of 65 psf/ft. These pressures assume no hydrostatic loads are allowed to build up behind the walls, and do not include a factor of safety.

Slab-On-Grade. The slab-on-grade should be designed such that axial column loads are not transferred through the slab. A 4-inch layer of open graded gravel (ASTM C33 No. 57) should be placed directly below the slab-on-grade. A moisture barrier should be placed between the slab and the open graded gravel. Soils within 12 inches below the slab-on-grade should meet the requirements for lower plasticity cohesive soil (also referred to as low volume change (LVC) soil). We recommend that the slab-on-grade be designed for a modulus of subgrade reaction of 125 pounds per cubic inch.

Thickened slab sections can be used to support interior non-load bearing walls provided that:

- Loads do not exceed 900 pounds per linear foot.
- Thickened sections have a minimum thickness and width of 8 inches and 12 inches, respectively.
- Thickness and reinforcement are consistent with structural requirements.

Seismic Soil Classification. According to the 2018 International Building Code, the site soils are best characterized by the "Class D" site classification. This classification can be utilized by the structural engineer as a seismic design parameter.

Settlement. Settlement of the structure is dependent on the ground improvement system and shall be evaluated by the designer.

Pavement Sections. The CBR value for the soil types encountered on the site are typically estimated to be 2 to 5; therefore, the following pavement sections are recommended for parking areas and drives. Recommendations for both flexible and rigid pavements are presented in Table 1.

Table 1 – Recommended Pavement Sections for Pavement Life of 20 Years

Loading Type	Concrete	Asphaltic Concrete	Asphaltic Concrete with Aggregate Base
Light Traffic (employee/customer parking, and small delivery truck parking)	5″ Portland Cement Concrete 4″ Well Graded Granular Base 8" Moisture Conditioned and Compacted On-Site Soils	6″ Hot-Mixed Asphalt Concrete 8" Moisture Conditioned and Compacted On-Site Soils	5″ Hot-Mixed Asphalt Concrete 6″ Well Graded Granular Base Course 8" Moisture Conditioned and Compacted On-Site Soils
Heavy Traffic (delivery drives and loading docks)	8″ Portland Cement Concrete 4″ Well Graded Granular Base 8" Moisture Conditioned and Compacted On-Site Soils	8″ Hot-Mixed Asphalt Concrete 8" Moisture Conditioned and Compacted On-Site Soils	7″ Hot-Mixed Asphalt Concrete 6″ Well Graded Granular Base Course 8" Moisture Conditioned and Compacted On-Site Soils

Portland cement concrete for pavement, sidewalks, and curbs should have a minimum design strength of 4,000 pounds per square inch (psi).

Pavement in any dumpster area should be the Portland cement concrete section as recommended in the truck access and drives section. Also, preventive maintenance action(s) may be needed for the asphaltic concrete parking and drives in order to maintain the service condition (i.e. crack sealing).

Drainage. The site should be graded so that surface water flows away from the structure and pavement areas and is not allowed to accumulate near or under the slab-on-grade. Where sidewalks or paving do not immediately adjoin the structure, a grade of at least 5 percent for a minimum of 10 feet from the perimeter walls is recommended.

Pickleball Courts. KVE recommends that the courts should be constructed utilizing either concrete or asphalt pavement. The subgrade beneath the proposed court should be evaluated. Areas of soft/unstable material should be undercut and replaced with structural fill.

Soil Excavation. Project soils along the project are classified as Type C as indicated by the OSHA Excavation Standard Handbook. The maximum allowable slope for excavation in Type C soils is 1.5:1 (horizontal to vertical). Any fill soils can also generally be classified as Type C. However, because of the potential variability in fill, any questionable materials should be evaluated by qualified personnel. If the above temporary slopes cannot be achieved, flatter slopes or shoring will be required.

To avoid unnecessary collapsing or sliding, no more trench should be excavated ahead of the current pipe placement than is necessary. All trenches should be backfilled before the end of the day.

Landscaping. Consideration should be given to limiting landscaping and irrigation adjacent to the building and pavement areas. Trees and large bushes can draw moisture from subgrade soils resulting in settlement of foundations and pavements.

OBSERVATION OF CONSTRUCTION

The conclusions and recommendations given in this report are based on interpretation of field boring and laboratory data coupled with our experience. Variations may occur from conditions observed within test borings; therefore, it is imperative to involve the geotechnical engineer in the final design and construction process.

Field observation services are viewed as a continuation of the design process. Unless these services are provided, the geotechnical engineer will not be responsible for improper use of recommendations, or failure by others to recognize conditions which may be detrimental to the successful completion of the project.

LIMITATIONS

The analyses, conclusions, and recommendations contained in this report are based on the site conditions and project layout described herein and further assume that the conditions observed in the exploratory borings are representative of the subsurface conditions throughout the site, i.e., the subsurface conditions elsewhere on the site are the same as those disclosed by the borings. If, during construction, subsurface conditions different from those encountered in the exploratory borings are observed or appear to be present beneath excavations, we should be advised at once so that we can review these conditions and reconsider our recommendations where necessary.

If there is a substantial lapse in time between the submittal of this report and the start of work at the site, or if conditions or the project layout have changed due to natural causes or construction operations at or adjacent to the site, we recommend that this report be reviewed to determine the applicability of conclusions and recommendations considering the changed conditions and time lapse.

We recommend that we be retained to review the project layout and those portions of plans and specifications which pertain to foundations and earthwork to determine if they are consistent with our findings and recommendations. In addition, we are available to observe construction, particularly site grading, earthwork, and foundation construction. We would be available to make other field observations as may be necessary.

This report was prepared for the exclusive use of the owner, architect, and engineer for evaluating the design of the project as it relates to the geotechnical aspects discussed herein. It should be made available to prospective contractors for information on factual data only and not as a warranty of subsurface conditions included in the report. Unanticipated soil conditions may require that additional expense be made to attain a properly constructed project. Therefore, some contingency fund is recommended to accommodate such potential extra costs.

* * * * * *

The following plates are attached to and complete this report:

Plate 1 - Boring Location Plan

Plates 2 through 16 - Logs of Borings

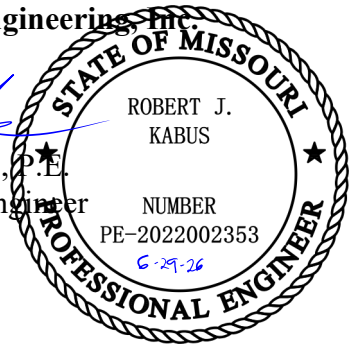
Boring Log Reference Legend

Appendix A – Boring Cross Section

* * * * * *

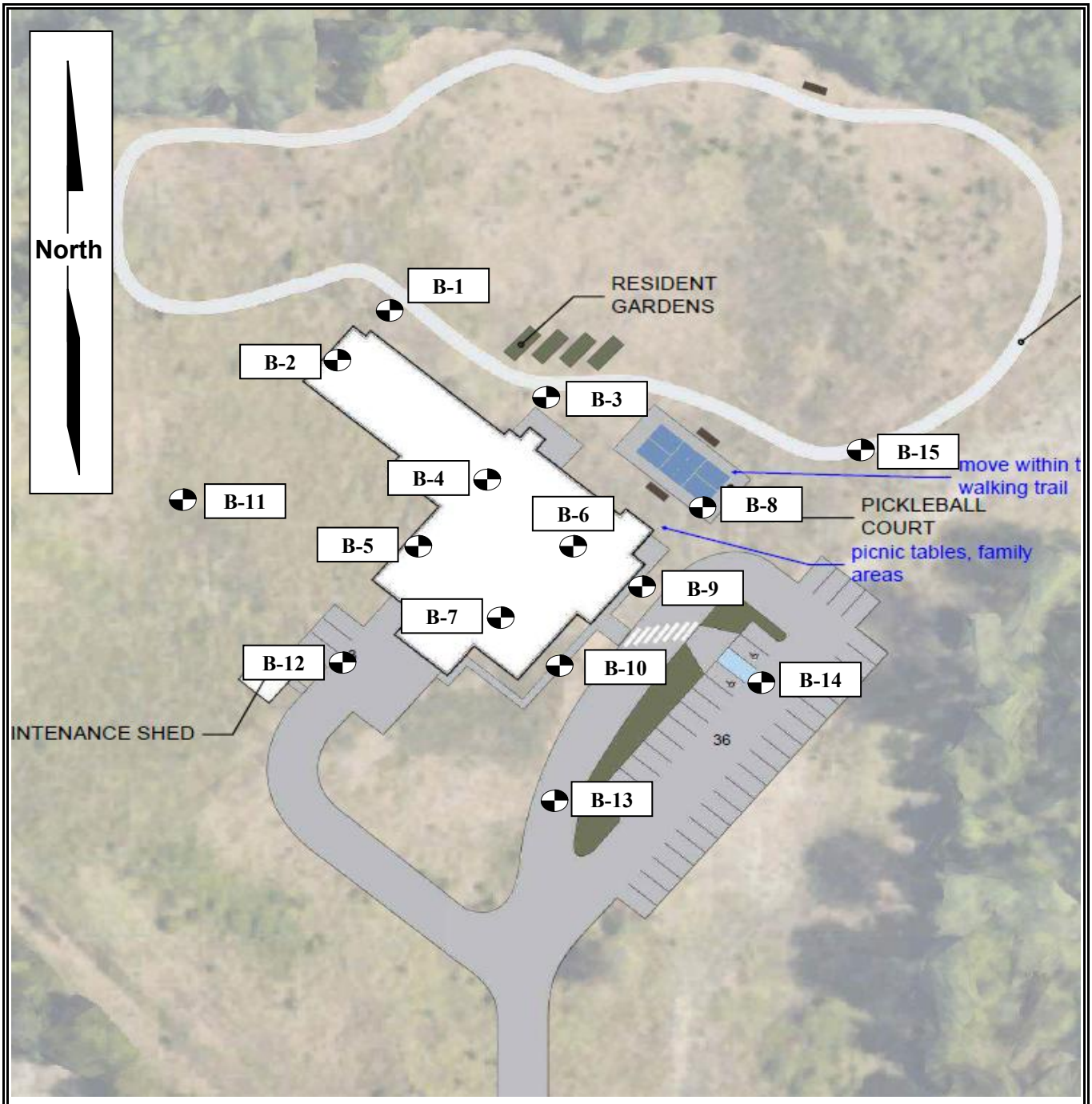
We appreciate the opportunity to be of service to you on this project. Please contact us if you have any questions or comments.

Respectfully submitted,
Kaw Valley Engineering, Inc.



Robert J. Kabus, P.E.
Geotechnical Engineer

Jessica A. Nixon, P.E.
Geotechnical Engineer



Site Plan and Boring Locations

Plate 1

Joplin CSC C2512-01 **2303 West 20th Street** **Joplin, Missouri**			KAW VALLEY ENGINEERING
Approved By: RK	**Not to Scale**	**Project No. C26G2670**	

LOG OF BORING B-1

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/15/26 - 6/15/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 3.0'
Water level upon completion: 3.0'
24 Hour water level: 2.5'

SURFACE ELEVATION: 1028.6'

FIELD DATA				LABORATORY DATA								
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)
	5		T = 19/9/14		7.0	22	22	NP				
	10		T = 14/17/4		16.5	22	15	7				
	15		T = 50=1"									
	20											
	25											
	30											

DESCRIPTION OF STRATUM

FILL: Fat clay; light brown; firm; moist; with limestone fragments and asphalt debris — 1022.6'

FILL: Fat clay; dark gray; firm; moist; with gravel and asphalt debris — 1016.1'

SANDSTONE: Brown with orange; well cemented; with limestone fragments — 1015.0'

BORING TERMINATED AT 13.6'

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-2

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/15/26 - 6/15/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 6.0'
Water level upon completion: 3.5'
24 Hour water level: 3.0'

SURFACE ELEVATION: 1029.1'

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT (LL)	ATTERBERG LIMITS PLASTIC LIMIT (PL)	ATTERBERG LIMITS PLASTICITY INDEX (PI)	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
			T = 2/3/3		25.4								FILL: Fat clay; light brown; firm; moist; with limestone fragments and asphalt debris
													1026.1' FILL: Fat clay; dark gray and brown; firm; moist; with gravel and wood debris
	5		T = 3/3/11		17.3								1023.1' FILL: Gravel and asphalt debris
			T = 3/3/6										1019.6' LEAN CLAY: Dark gray; soft; moist; with sand 1019.3' SANDSTONE: Brown with orange; well cemented
	10												1017.1' LIMESTONE: Gray; hard; weathered 1016.8'
			BORING TERMINATED AT 12.3'										AUGER REFUSAL AT 12.3'
	15												
	20												
	25												
	30												

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-3

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/15/26 - 6/15/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 3.5'
Water level upon completion: 3.0'
24 Hour water level: 3.5'

SURFACE ELEVATION: 1029.5'

FIELD DATA				LABORATORY DATA									
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													FILL: Fat clay; light brown; firm; moist; with limestone fragments and chert
			T = 10/5/10		17.5								
	5												1023.5'
													LEAN CLAY: Dark gray; soft; moist; with sand
			T = 10/5/10		8.7								1020.5'
	10												SANDSTONE: Brown with orange; well cemented; with limestone lenses
													1018.8'
			BORING TERMINATED AT 10.7'										AUGER REFUSAL AT 10.7'
	15												
	20												
	25												
	30												

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-4

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/16/26 - 6/16/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 3.5'
Water level upon completion: 3.5'
24 Hour water level: 3.5'

SURFACE ELEVATION: 1029.5'

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT (LL)	ATTERBERG LIMITS PLASTIC LIMIT (PL)	ATTERBERG LIMITS PLASTICITY INDEX (PI)	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
			T = 5/7/10		17.4								FILL: Fat clay; light brown; firm; moist; with limestone fragments, asphalt debris and chert
			T = 33/20/7		10.1	24	18	6					
	5												1024.0'
													FILL: Gravel with sand
			T = 0/50=1"										1021.0'
													SANDSTONE: Light brown; well cemented; with limestone lenses 1020.0'
	10												**BORING TERMINATED AT 9.5'**
	15												
	20												
	25												
	30												

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-5

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/16/26 - 6/16/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 5.0'
Water level upon completion: 4.0'
24 Hour water level: 3.5'

SURFACE ELEVATION: 1029.5'

FIELD DATA				LABORATORY DATA								
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													FILL: Fat clay; light brown; firm; moist; with limestone fragments and asphalt debris
	5		T = 28/7/5		15.8								1023.5'
													FILL: Sand; gray; poorly graded; coarse grained; medium dense
			T = 7/35/50=5"		17.0								1020.2'
	10												SANDSTONE: Brown with orange; well cemented; with limestone fragments 1019.0'
													BORING TERMINATED AT 10.5'
													AUGER REFUSAL AT 10.5'
	15												
	20												
	25												
	30												

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-6

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/16/26 - 6/16/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 4.0'
Water level upon completion: 4.0'
24 Hour water level: 3.0'

SURFACE ELEVATION: 1029.6'

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
			T = 3/5/5		12.8	30	17	13					FILL: Lean clay; dark gray; firm; moist; with limestone fragments, asphalt debris, and chert
			T = 10/7/6		12.6								
	5												1024.1'
			T = 7/9/7										FILL: Sand; light brown; poorly graded; coarse grained; medium dense; with gravel
													1020.6'
	10												SANDSTONE: Brown with orangel poorly cemented; with limestone fragments and chert
													1018.6'
			T = 3/4/7										SHALE: Orange brown; soft; highly weathered; with limestone fragmentse and chert
	15												
													1012.6'
			T = 5/8/14										SHALE: Gray with orange brown; soft; highly weathered
	20												
													1007.6'
			T = 10/18/18										SHALE: Dark gray; moderately hard; weathered; with limestone fragments
													1005.1'
	25		**BORING TERMINATED AT 24.5'**										
	30												

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-7

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/16/26 - 6/16/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 4.0'
Water level upon completion: 3.0'
24 Hour water level: 3.5'

SURFACE ELEVATION: 1029.5'

FIELD DATA				LABORATORY DATA									
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
			T = 12/7/7		15.7								FILL: Fat clay; light brown; with limestone fragments and asphalt debris
	5												1023.2'
													SANDSTONE: Brown with orange brown; well cemented; with limestone fragments and chert 1021.8'
			BORING TERMINATED AT 7.7'										AUGER REFUSAL AT 7.7'
	10												
	15												
	20												
	25												
	30												

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-8

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/16/26 - 6/16/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 4.0'
Water level upon completion: 3.0'
24 Hour water level: 2.5'

SURFACE ELEVATION: 1029.6'

FIELD DATA				LABORATORY DATA									
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
			T = 2/4/4		18.5								FILL: Lean clay; brown; firm; moist
			T = 0/0/2		21.1								with limestone fragments below 3.0'
	5												1022.6'
			T = 2/2/2		23.4								FAT CLAY: Light gray with light brown; firm; moist; with sand
	10												with limestone fragments below 12.0'
													1016.1'
			T = 9/4/5										SHALE: Light gray with brown; soft; highly weathered
	15												
			T = 7/10/11										1009.6'
	20												**BORING TERMINATED AT 20.0'**
	25												
	30												

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-9

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/16/26 - 6/16/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 6.0'
Water level upon completion: 2.0'
24 Hour water level: 2.5'

SURFACE ELEVATION: 1029.4'

FIELD DATA				LABORATORY DATA									
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													FILL: Lean clay, dark gray; soft; moist; with sand
	5		T = 3/2/3		17.9	32	15	17					
													1023.4'
													SANDSTONE: Light brown; poorly cemented; with limestone fragments and chert
													1021.4'
	10		T = 3/4/5		34.7								SHALE: Gray with orange brown; soft; highly weathered; with limestone fragments and chert
	15		T = 4/7/8										1014.4'
													BORING TERMINATED AT 15.0'
	20												
	25												
	30												

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-10

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/16/26 - 6/16/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 6.0'
Water level upon completion: 13.0'
24 Hour water level: 3.0'

SURFACE ELEVATION: 1029.3'

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
			T = 2/7/4		16.4								FILL: Fat clay; light brown; stiff; moist; with limestone fragments and asphalt debris
			T = 7/5/2		21.7								1024.8' LEAN CLAY: Dark gray; soft; moist
	5												1023.3' SAND: Gray; poorly graded; coarse grained; loose
			T = 10/4/6										1020.3' SHALE: Orange brown with light gray; highly weathered; with chert
	10												
	15		T = 4/8/10										1014.3' **BORING TERMINATED AT 15.0'**
	20												
	25												
	30												

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-11

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/16/26 - 6/16/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 3.0'
Water level upon completion: 1.5'
24 Hour water level: 1.5'

SURFACE ELEVATION: 1026.8'

FIELD DATA				LABORATORY DATA								
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)
	0											
	5		T = 2/1/6		22.3							
	10		T = 0/2/42		29.5							
	15											
	20											
	25											
	30											

DESCRIPTION OF STRATUM

FILL: Fat clay; brown; firm; moist; with limestone fragments and chert

1020.8'

LEAN CLAY: Dark gray; soft; moist

1017.3'

1016.8'

SANDSTONE: Brown; well cemented; with limestone fragments

BORING TERMINATED AT 10.0'

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-12

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/16/26 - 6/16/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 4.0'
Water level upon completion: 3.0'
24 Hour water level: 3.0'

SURFACE ELEVATION: 1028.5'

FIELD DATA				LABORATORY DATA								
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)
			T = 4/2/3		23.3	NP	NP	NP				
			T = 50=1"									

DESCRIPTION OF STRATUM

FILL: Fat clay; light brown; firm; moist; with limestone fragments — 1025.5'

FILL: Lean clay; dark gray; soft; moist — 1025.0'

FILL: Sand; brown and dark gray; poorly graded; coarse grained; loose — 1023.0'

SANDSTONE: Brown with orange; poorly cemented; with limestone fragments and chert — 1019.9'

BORING TERMINATED AT 8.6'

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-13

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/17/26 - 6/17/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 3.0'
Water level upon completion: 5.0'

SURFACE ELEVATION: 1029.0'

FIELD DATA				LABORATORY DATA								
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)
			T = 2/2/3		24.0							
			T = 1/3/4		25.8							

DESCRIPTION OF STRATUM

FILL: Fat clay; light brown; firm; moist; with limestone fragments

1026.0'

LEAN CLAY: Dark gray; soft; moist; with sand

1020.0'

SHALE: Orange brown with gray; soft; highly weathered

1019.0'

BORING TERMINATED AT 10.0'

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-14

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/17/26 - 6/17/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 4.0'
Water level upon completion: 3.0'

SURFACE ELEVATION: 1029.5'

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
			T = 3/2/4		20.5								FILL: Lean clay; dark brown; slightly moist; with gravel
													1025.5'
	5		T = 7/21/11										SANDSTONE: Brown; poorly cemented; with limestone fragments and chert
													1023.8'
			BORING TERMINATED AT 5.7'										
	10												
	15												
	20												
	25												
	30												

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

LOG OF BORING B-15

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, Kansas 66215
Telephone: (913)894-5150
Fax: (913)894-5977

CLIENT: ACI/Boland, Inc.
PROJECT: Joplin CSC C2512-01
NUMBER: C26G2670
LOCATION: 2303 West 20th Street - Joplin, MO

DATE(S) DRILLED: 6/17/26 - 6/17/26

DRILLING METHOD(S): 4" CFA
DRILL RIG: CME 750
DRILL RIG OPERATOR: Les Scott
LOGGED BY: Les Scott

GROUNDWATER INFORMATION:
Water level while drilling: 8.5'
Water level upon completion: Trace

SURFACE ELEVATION: 1029.8'

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS/SIX INCHES REC: % RQD: %	RECOVERY (IN)	MOISTURE CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT LL	ATTERBERG LIMITS PLASTIC LIMIT PL	ATTERBERG LIMITS PLASTICITY INDEX PI	DRY DENSITY POUNDS/CUBIC FT	COMPRESSIVE STRENGTH, Qu SOILS (POUNDS/SQ.FT)	COMPRESSIVE STRENGTH, Qu ROCK (POUNDS/SQ.IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													FILL: Lean clay; dark gary; soft; moist; with gravel
	5		T = 2/2/2		19.6	35	13	22					1023.8'
													LEAN CLAY: Gray with brown; soft; moist; with sand
			T = 0/2/1		30.2								1019.8'
	10												**BORING TERMINATED AT 10.0'**
	15												
	20												
	25												
	30												

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - BLOWS PER SIX INCHES
REC - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
Surficial Conditions: Grass

BORING LOG REFERENCE LEGEND

DESCRIPTIVE SOIL CLASSIFICATION

Soil description is based on the Unified Soil Classification System as outlined in ASTM Designation D-2487. The Unified Soil Classification group symbol for soil descriptions shown on the boring logs corresponds with the group names listed below. The description includes soil constituents, consistency, relative density, color and any other appropriate descriptive terms. Geologic description of bedrock, when encountered, is also shown in the description column. Refer to the appropriate notes for bedrock classification.

Group Symbol	Group Name	Group Symbol	Group Name	Group Symbol	Group Name	Group Symbol	Group Name
GW	Well graded gravel	SW	Well graded sand	CL	Lean clay	CH	Fat clay
GP	Poorly graded gravel	SP	Poorly graded sand	ML	Silt	MH	Elastic silt
GM	Silty gravel	SM	Silty sand	OL	Organic clay Organic silt	OH	Organic clay Organic silt
GC	Clayey gravel	SC	Clayey sand			PT	Peat

CONSISTENCY OF FINE-GRAINED SOILS

Unconfined Compressive Strength, Qu, psf

< 500	Very Soft
500 – 1,000	Soft
1,001 – 2,000	Firm
2,001 – 4,000	Stiff
4,001 – 8,000	Very Stiff
8,001 – 16,000	Hard
> 16,000	Very Hard

RELATIVE PROPORTIONS

Descriptive Term(s) (Components also Percent in Sample)	Sand & Gravel Percent of Dry Wt.	Fines Percent of Dry Wt.
Trace	< 15	<5
Some	15 – 29	5 - 12
Modifier	> 30	> 12

RELATIVE DENSITY OF COARSE-GRAINED SOILS

N - (blows/ft)	Relative Density
0 – 3	Very Loose
4 – 9	Loose
10 – 29	Medium Dense
30 – 49	Dense
50+	Very Dense

GRAIN SIZE TERMINOLOGY

Major Component	Size Range
Cobbles	12 in to 3 in
Gravel	3 in to #4 sieve
Sand	#4 to #200 sieve
Silt or Clay	Passing #200 sieve

Water levels indicated on the boring logs are the levels measured in the borings at the times indicated. In pervious soil the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels is not possible with only short-term observation.

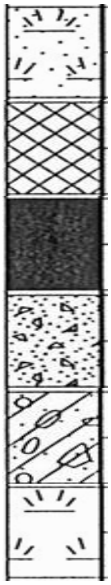
DEFINITIONS OF ABBREVIATIONS

CR – Core recovery, length of core recovered in each run compared to the length drilled expressed as percent
LL – Liquid limit of specimen
N – Number of blows to penetrate last 12 inches with 140-pound hammer in standard penetration test
Blow count reported for each 6-inch interval on logs
PL – Plastic limit of specimen
RQD – Rock quality designation, aggregate length of core pieces greater than 4 inches long,
expressed as percent of length drilled
TW – Thin walled tube
SS – Standard penetration test
NQ2 – 2 inches diameter core
CFA – Continuous flight augers
HSA – Hollow stem augers
EOB – End of boring

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BORING LOG SYMBOLS

SURFACE MATERIALS



TOPSOIL

FILL MATERIAL

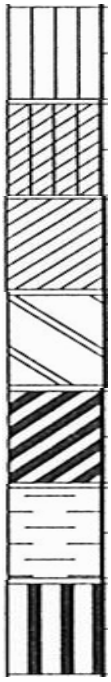
ASPHALTIC CONCRETE

CONCRETE

GRANULAR BASE

PEAT

COHESIVE SOILS



SILT

CLAYEY SILT

LEAN CLAY

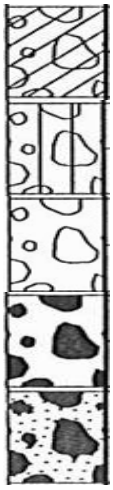
LEAN TO FAT CLAY

FAT CLAY

ORGANIC CLAY / ORGANIC SILT

ELASTIC SILT

LARGE GRANULAR SOILS



CLAYEY GRAVEL

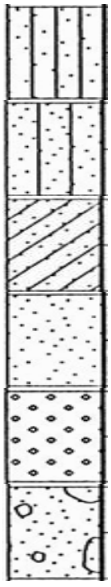
SILTY GRAVEL

POORLY GRADED GRAVEL

WELL GRADED GRAVEL

COBBLES & BOULDERS

GRANULAR SOILS



SANDY SILT

SILTY SAND

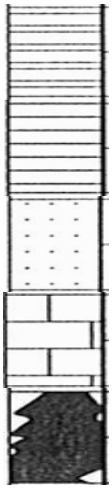
CLAYEY SAND

POORLY GRADED SAND

WELL GRADED SAND

GRAVELLY SAND

BEDROCK UNITS



SHALE

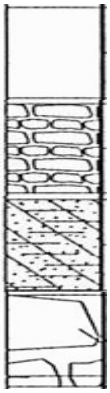
FISSILE SHALE

SANDSTONE

LIMESTONE

COAL

WEATHERED BEDROCK



VOID

WEATHERED SHALE

WEATHERED SANDSTONE

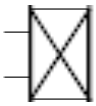
WEATHERED LIMESTONE

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SAMPLING METHOD


SHELBY TUBE


SPLITSPOON BARREL


NQ CORE BARREL


GRAB SAMPLING

WATER READING SYMBOLS

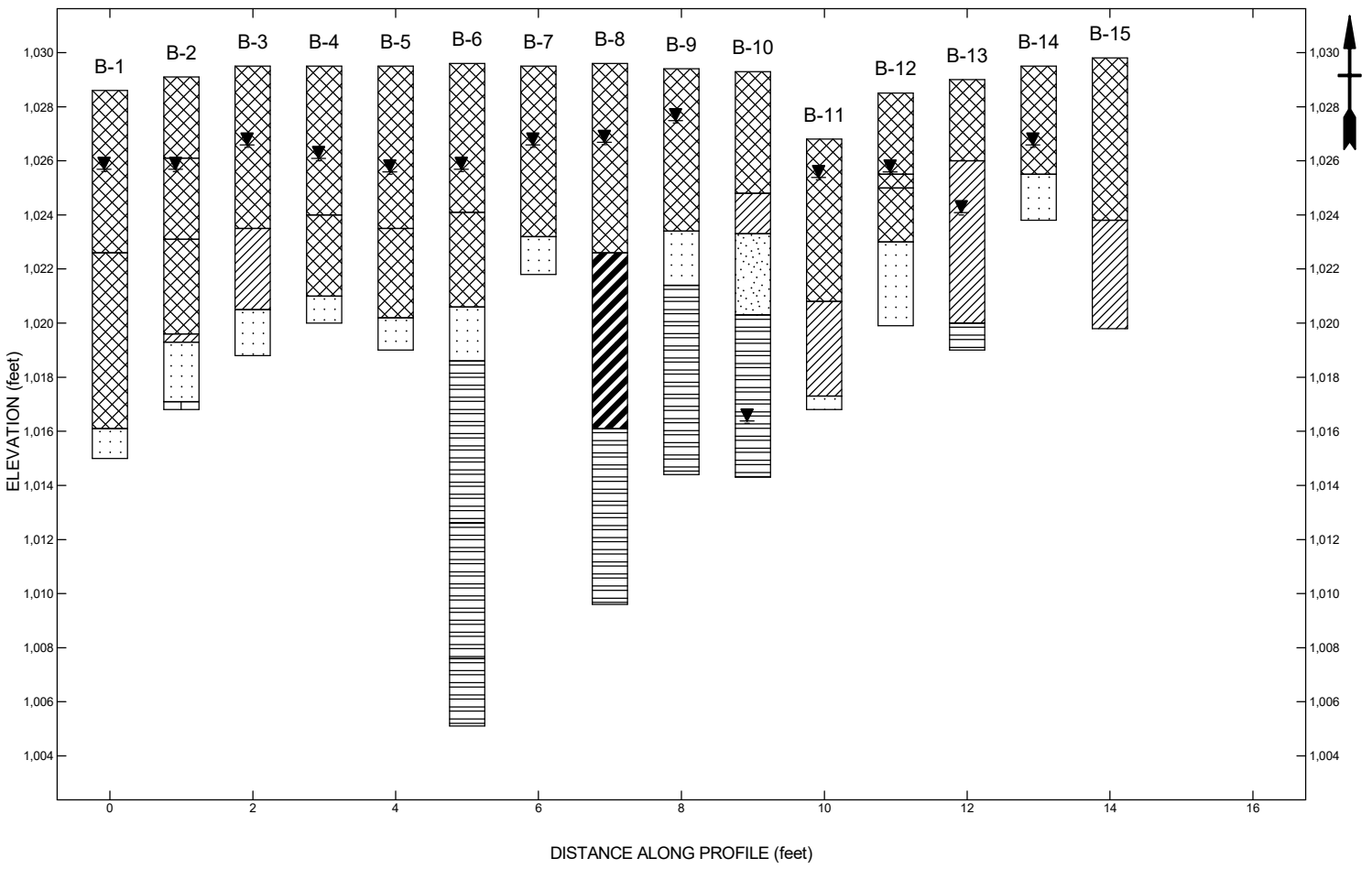

WATER LEVEL WHILE BORING


WATER LEVEL AFTER BORING/CORING


24 HOUR WATER READING

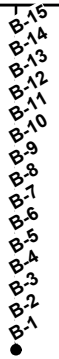
KAW VALLEY ENGINEERING

A P P E N D I X A
BORING CROSS SECTION



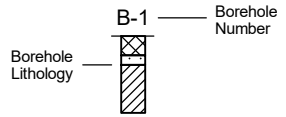
Lithology Graphics

- Fill (made ground)
- Sandstone
- USCS Low Plasticity Clay
- USCS Poorly-graded Sand
- Shale
- Limestone
- USCS High Plasticity Clay

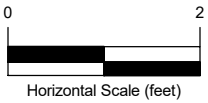


Site Map Scale 1 inch equals 10 feet

Explanation



- Water Level Reading after drilling.
- Delayed Water Level Reading



Vertical Exaggeration: 0.5x

Kaw Valley Engineering, Inc.
14700 W 114th Terrace
Lenexa, KS 66215

Joplin CSC C2512-01

Section Name A-A'
Figure Title

JOB NUMBER	PLATE NUMBER
C26G2670	Plate A-1

SECTION 08 43 13
ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract (including General Conditions, Supplementary General Conditions, and Division 1 Specification Sections) shall apply to this Section.

1.02 SECTION INCLUDES

A. Exterior aluminum storefront framing.

B. Interior aluminum storefront framing.

C. Entrance doors and frames, interior and exterior.

1.03 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-In-Place Concrete

B. Section 05 40 00 - Cold-Formed Metal Framing

C. Section 06 10 00 - Rough Carpentry

D. Section 08 80 00 - Glazing

E. Section 09 21 16 - Gypsum Board Assemblies

1.04 DESIGN AND PERFORMANCE REQUIREMENTS

A. Product to comply with the specified performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction, as determined by testing of aluminum storefront systems representing those indicated for this project.

B. Aluminum storefront systems shall withstand movements of supporting structure including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.

C. Failure includes any of these events:
   1. Thermal stresses transferring to the building structure.
   2. Glass breakage.
   3. Loosening or weakening of fasteners, attachments, and other components.

D. Delegated Design: Design aluminum storefronts and entrance doors, including comprehensive engineering analysis by a qualified professional engineer, using the design criteria specified below.
   1. General Design Criteria:
      a. Building Code: 2018 IBC.
      b. Structural Design Standard: See Structural Drawings
      c. Occupancy Risk Category: See Structural Drawings
   2. Seismic Design Criteria:
      a. Seismic Design Category: Category B.
      b. Site Class: [Global - Soil Class] - Stiff Soil
   3. Wind-Resistance Design Criteria:
      a. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code.
      b. Ultimate Design Wind Speed, V_{ULT}: See Structural Drawings.
      c. Exposure Category: See Structural Drawings
      d. Nominal Design Wind Speed, V_{ASD}: See Structural Drawings.

E. Performance Testing:

1. Air Infiltration Test: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E283, at a minimum static-air-pressure difference of 6.24 lbf/sq. ft. (300 Pa).
2. Water Resistance Test (ASTM E331): There shall be no uncontrolled water leakage at a static minimum static air pressure differential of 10.0 psf (479 Pa)
3. Condensation Resistance Factor - CRF (AAMA 1503): Not less than 71 (frame) and 68 (low-e glass)
4. Thermal Transmittance (AAMA 1503): U-factor of not more than 0.41 Btu/sf^2/^{o}F (3.23 W/sq. m x K) with Low-e glass.
5. Sound Transmission (AAMA 1801):
   a. Sound Transmission Class (STC): 31 STC (minimum)
   b. Outdoor-Indoor Transmission Class (OITC): Minimum 25 OITC.

F. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

1.05 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for aluminum-framed systems.

B. Shop Drawings: For aluminum-framed systems.
1. Storefront Framing Systems: Include plans, elevations, sections, details, and attachments to other work. Include details of provisions for system expansion and contraction and drainage of moisture in the system to the exterior.
2. Entrance Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams. Coordinate final entrance door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of entrance door hardware.

C. Delegated-Design Submittal: For aluminum-framed systems indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
1. Detail fabrication and assembly of aluminum-framed systems.
2. Include design calculations.

D. Finish Samples:
1. For Initial Selection: For units with factory-applied color finishes.
2. For Verification: For each type of exposed finish required, in manufacturer's standard sizes.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer and testing agency.

B. Seismic Qualification Certificates: For aluminum-framed systems, accessories, and components, from the manufacturer.
1. The Basis for Certification: Indicate whether withstand certification is based on the actual test of assembled components or calculation.

C. Welding certificates

D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for aluminum-framed systems, indicating compliance with performance requirements.

E. Source quality-control reports.

F. Field quality-control reports.

G. Warranty samples

1.07 CLOSEOUT SUBMITTALS

A. Maintenance Data: For aluminum-framed systems and entrance doors to include in maintenance manuals.

1.08 QUALITY ASSURANCE

A. Test reports shall be accompanied by the storefront manufacturer’s letter of certification stating that the tested storefront meets or exceeds the requirements of the

B. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

C. Testing Agency Qualifications: Qualified according to ASTM E699 for testing indicated.

D. Engineering Responsibility: Prepare data for aluminum-framed systems, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in systems similar to those indicated for this Project.

E. Product Options: Information on Drawings and Specifications establishes requirements for systems' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.
   1. Do not revise intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If revisions are proposed, submit comprehensive explanatory data to Architect for review.

F. Accessible Entrances: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC A117.1.

G. Source Limitations for Aluminum-Framed Systems: Obtain from a single source from a single manufacturer.

H. Welding Qualifications: Qualify procedures and personnel according to AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."

1.09 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of structural supports for aluminum-framed systems by field measurements before fabrication and indicate measurements on Shop Drawings.

1.10 WARRANTY

A. Installation Warranty: The installation contractor shall warrant the installation to be free of defects in material and workmanship for (1) year from the Date of Substantial Completion.

B. Special Manufacturer Extended Warranty: The manufacturer shall warrant the products, including aluminum finish, to be free of defects in material and workmanship for (3) years from the Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Specified Manufacturer: Kawneer Corporation
   1. Other acceptable manufacturers with equivalent products to the specified manufacturer shall include:
      a. Tubelite
      b. EFCO Corporation
      c. Manko Window Systems, Inc
      d. Special-Lite
   2. Substitutions: See section 003625.

2.02 MATERIALS

A. Aluminum Extrusions (ASTM B221): Alloy and temper recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish, and not less than 0.070-inch (min.) wall thickness

B. Thermal Barrier: All exterior aluminum shall be separated from interior aluminum by a rigid, structural thermal barrier. The barrier material shall be poured-in-place, two-part polyurethane. A nonstructural thermal barrier is unacceptable.

C. Glazing: Refer to Section 08 80 00

D. Glazing Gaskets: Manufacturer's standard compression types; replaceable, extruded EPDM rubber.

E. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.

F. Bond-Breaker Tape: Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.

G. Glazing Sealants: For structural-sealant-glazed systems, as recommended by the manufacturer for joint type, and as follows:
   1. Structural Sealant: ASTM C1184, single-component neutral-curing silicone formulation that is compatible with system components with which it comes in contact, specifically formulated and tested for use as a structural sealant and approved by a structural-sealant manufacturer for use in aluminum-framed systems indicated.
      a. Color: Black
   2. Weatherseal Sealant: ASTM C920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O; A single-component neutral-curing formulation that is compatible with structural sealant and other system components with which it comes in contact; recommended by structural-sealant, weather seal-sealant, and aluminum-framed-system manufacturers for this use.
      a. Color: Matching structural sealant.

H. Fasteners: Aluminum, non-magnetic stainless steel, or other materials to be non-corrosive and compatible with aluminum framing members, trim hardware, anchors, and other components.

I. Anchors, Clips, and Accessories: Aluminum, non-magnetic stainless steel, or zinc-coated steel or iron complying with ASTM B633 for SC 3 severe service conditions or other suitable zinc coatings; provide sufficient strength to withstand design pressure indicated.

J. Reinforcing Members: Aluminum, non-magnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B633 for SC 3 severe service conditions or other suitable zinc coatings; provide sufficient strength to withstand design pressure indicated.

K. Concealed Flashing: Dead-soft, 0.018-inch- (0.457-mm-) thick stainless steel, ASTM A240/A240M of type recommended by manufacturer.

L. Bituminous Paint: Cold-applied, asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos; formulated for 30-mil (0.762-mm) thickness per coat.

2.03 EXTERIOR ALUMINUM STOREFRONT SYSTEMS

A. Storefront Framing at Entrance Doors:
   1. Product: Kawneer; Tri-Fab VG 451T, Thermally broken storefront system.
      a. Framing Member: Manufacturer's standard extruded-aluminum framing members of thickness required, and reinforced as required to support imposed loads
         1) Framing Depth: 4-1/2 inches (114 mm).
         2) Face Dimension: 2 inches (50 mm).
      b. Construction: Frame components shall be screw spline construction.
      c. Glazing Plane: Center plane
      d. Glazing System: Retained mechanically with gaskets on four sides

B. Storefront Framing for Exterior Window Applications, Type 1 :

1. Product (Standard): Kawneer; Tri-Fab VG 451T, Thermally broken storefront system.
    a. Framing Member: Manufacturer's standard extruded-aluminum framing members of thickness required, and reinforced as required to support imposed loads
        1) Standard Framing Depth: 4-1/2 inches (114 mm) unless indicated otherwise.
        2) Face Dimension: 2 inches (50 mm).
    b. Construction: Frame components shall be shear block construction.
    c. Glazing Plane: Exterior plane.
    d. Glazing System: Retained mechanically with gaskets on four sides

2.04 INTERIOR ALUMINUM STOREFRONT SYSTEM

A. Product: Kawneer; Tri-Fab VG 450, Non-Thermal storefront system.
    1. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
        a. Framing Depth: 4-1/2 inches (114 mm).
        b. Framing Face Width: 1-3/4 inches (45 mm).
    2. Construction: Frame components shall be shear block construction.
    3. Glazing Plane: Center
    4. Glazing System: Retained mechanically with gaskets on four sides.

2.05 ALUMINUM ENTRANCE DOORS

A. Exterior Entrance Doors: Manufacturer's glazed full-lite entrance doors, manual-swing operation.
    1. Product: Kawneer; Series 500T Insulpour Thermal Entrances, wide stiles.

B. Physical Properties:
    1. Overall Door Thickness: 1-3/4 inches
    2. Material Thickness: 0.125-inches minimum extruded aluminum
    3. Wide Stile Doors:
        a. Vertical Stiles: 5-inches wide.
        b. Top Rail: 5-inches high
        c. Bottom Rail: 10-inches high
        d. Intermediate Rail for mounting of panic hardware: 8-1/4 inches high.
    4. Glazing Stops and Gaskets: Square, extruded aluminum stops shaped to accommodate 1/4-inch or 1-inch glazing with the manufacturer’s standard glazing gaskets.
        a. Provide non-removable glazing stops at the exterior side of doors and storefronts.

C. Door Hardware: Refer to Section 08 71 00.

D. Performance:
    1. Opening-Force Requirements:
        a. Egress Doors: Not more than 15 lbf (67 N) to release the latch and not more than 30 lbf (133 N) to set the door in motion and not more than 15 lbf (67 N) to open the door to its minimum required width.
        b. Accessible Interior Doors: Not more than 5 lbf (22.2 N) to fully open the door.

2.06 FINISHES

A. Kawneer Permanodic™ AA-M10C21A31, AAMA 611, Architectural Class II Clear Anodic Coating (Color #17 Clear) (Standard).

2.07 FABRICATION

A. General
    1. All exposed work shall be carefully matched to produce continuity of line and design with all joints. System design shall be such that raw edges will not be visible at joints.

B. Storefront Framing:
    1. Exterior Framing:
        a. Frame components shall be screw spline construction at entrance door locations, and shear block construction at exterior window locations

2. Fabricate components that, when assembled, have the following characteristics:
    a. Profiles that are sharp, straight, and free of defects or deformations.
    b. Accurately fitted joints with ends coped or mitered.
    c. The means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
    d. Physical and thermal isolation of glazing from framing members.
    e. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
    f. Provisions for field replacement of glazing from the interior for vision glass, and from the exterior for spandrel glazing (or metal panels)
    g. Fasteners, anchors, and connection devices that are concealed from view to the greatest extent possible.
3. Structural-Sealant-Glazed Framing Members: Include accommodations for using a temporary support device to retain glazing in place while structural sealant cures.

C. Entrance Doors:
1. Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.
    a. Exterior Doors: Provide compression weather stripping at fixed stops.
2. Doors: Reinforce doors as required for installing entrance door hardware.
    a. At pairs of exterior doors, provide sliding-type weather stripping retained in adjustable strip and mortised into the door edge.
    b. At exterior doors, provide weather sweeps applied to door bottoms.
3. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.

D. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting the performance of the Work.

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

3.02 INSTALLATION

A. General:
1. Comply with manufacturer's written instructions.
2. Do not install damaged components.
3. Fit joints to produce hairline joints free of burrs and distortion.
4. Rigidly secure nonmovement joints.
5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration.
6. Seal joints watertight unless otherwise indicated.

B. Metal Protection:
1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or applying sealant or tape, or by installing nonconductive spacers as recommended by the manufacturer for this purpose.

C. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to the exterior.

D. Set continuous sill members and flashing in full sealant bed as specified in Section 079200 - Submittal Procedures to produce weathertight installation.

E. Install components plumb and true in alignment with established lines and grades, and without warp or rack.

F. Install glazing as specified in Section 08 80 00.

G. Install perimeter joint sealants as specified in Section 07 92 00 to produce weathertight installation.

3.03 ERECTION TOLERANCES

A. Install aluminum-framed systems to comply with the following maximum erection tolerances:
   1. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet (3 mm in 3.7 m); 1/4 inch (6 mm) over total length.
   2. Alignment:
      a. Where surfaces abut in line, limit offset from true alignment to 1/16 inch (1.5 mm).
      b. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch (0.8 mm).

B. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch (3 mm).

3.04 FIELD QUALITY CONTROL

A. Manufacturer's Field Services: Provide periodic site visits by the manufacturer’s field service representative.

B. Repair or remove work if test results and inspections indicate that it does not comply with specified requirements.

C. Additional testing and inspecting, at the Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

D. Aluminum-framed assemblies will be considered defective if they do not pass tests and inspections.

3.05 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating entrance door hardware to function smoothly as recommended by the manufacturer.

B. Clean aluminum surfaces immediately after installing aluminum-framed entrance doors. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

C. Clean glass immediately after installation. Comply with glass manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels and clean surfaces.

D. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the construction period.

E. Protect installed systems from damage.

END OF SECTION 08 43 13

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SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Mechanical and electrified door hardware
2. Electronic access control system components

B. Section excludes:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

C. Related Sections:

1. Division 01 "General Requirements" sections for Allowances, Alternates, Owner Furnished Contractor Installed, Project Management and Coordination.
2. Division 06 Section "Rough Carpentry"
3. Division 06 Section "Finish Carpentry"
4. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
5. Division 08 Sections:
   a. "Metal Doors and Frames"
   b. "Flush Wood Doors"
   c. "Stile and Rail Wood Doors"
   d. "Interior Aluminum Doors and Frames"
   e. "Aluminum-Framed Entrances and Storefronts"
   f. "Stainless Steel Doors and Frames"
   g. "Special Function Doors"
   h. "Entrances"
6. Division 26 "Electrical" sections for connections to electrical power system and for low-voltage wiring.
7. Division 28 "Electronic Safety and Security" sections for coordination with other components of electronic access control system and fire alarm system.

1.02 REFERENCES

A. UL LLC

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Keying Systems and Nomenclature
4. Installation Guide for Doors and Hardware

C. NFPA – National Fire Protection Association

1. NFPA 70 – National Electric Code
2. NFPA 80 – Standard for Fire Doors and Other Opening Protectives
3. NFPA 101 – Life Safety Code
4. NFPA 105 – Smoke and Draft Control Door Assemblies
5. NFPA 252 – Fire Tests of Door Assemblies

D. ANSI - American National Standards Institute

1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
2. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
3. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
4. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
5. ANSI/SDI A250.8 - Standard Steel Doors and Frames

1.03 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
2. Prior to forwarding submittal:
   a. Review drawings and Sections from related trades to verify compatibility with specified hardware.
   b. Highlight, encircle, or otherwise specifically identify on submittals: deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

B. Action Submittals:

1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
   a. Wiring Diagrams: For power, signal, and control wiring and including:
      1) Details of interface of electrified door hardware and building safety and security systems.
      2) Schematic diagram of systems that interface with electrified door hardware.
      3) Point-to-point wiring.
      4) Risers.

3. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.
   a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.

4. Door Hardware Schedule:
    a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.
    b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
    c. Indicate complete designations of each item required for each opening, include:
        1) Door Index: door number, heading number, and Architect's hardware set number.
        2) Quantity, type, style, function, size, and finish of each hardware item.
        3) Name and manufacturer of each item.
        4) Fastenings and other pertinent information.
        5) Location of each hardware set cross-referenced to indications on Drawings.
        6) Explanation of all abbreviations, symbols, and codes contained in schedule.
        7) Mounting locations for hardware.
        8) Door and frame sizes and materials.
        9) Degree of door swing and handing.
        10) Operational Description of openings with electrified hardware covering egress, ingress (access), and fire/smoke alarm connections.

5. Key Schedule:
    a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.
    b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
    c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
    d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
    e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
    f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

C. Informational Submittals:

1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
2. Provide Product Data:
    a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
    b. Include warranties for specified door hardware.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
    a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
    b. Catalog pages for each product.
    c. Final approved hardware schedule edited to reflect conditions as installed.
    d. Final keying schedule

e. Copy of warranties including appropriate reference numbers for manufacturers to identify project.
f. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.

E. Inspection and Testing:

1. Submit written reports to the Owner and Authority Having Jurisdiction (AHJ) of the results of functional testing and inspection for:
   a. Fire door assemblies, in compliance with NFPA 80.
   b. Required egress door assemblies, in compliance with NFPA 101.

1.04 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with a minimum of 5 years documented experience supplying both mechanical and electromechanical door hardware similar in quantity, type, and quality to that indicated for this Project. Supplier to be recognized as a factory direct distributor by the manufacturer of the primary materials with a warehousing facility in the Project's vicinity. Supplier to have on staff, a certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
   a. For door hardware: DHI certified AHC or DHC.
   b. Can provide installation and technical data to Architect and other related subcontractors.
   c. Can inspect and verify components are in working order upon completion of installation.
   d. Capable of producing wiring diagram and coordinating installation of electrified hardware with Architect and electrical engineers.

4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

B. Certifications:

1. Fire-Rated Door Openings:
   a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.
   b. Provide only items of door hardware that are listed products tested by UL LLC, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

2. Smoke and Draft Control Door Assemblies:
   a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105

b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.

3. Electrified Door Hardware
   a. Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

4. Accessibility Requirements:
   a. Comply with governing accessibility regulations cited in "REFERENCES" article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.

C. Pre-Installation Meetings

1. Keying Conference
   a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
      1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
      2) Preliminary key system schematic diagram.
      3) Requirements for key control system.
      4) Requirements for access control.
      5) Address for delivery of keys.

2. Pre-installation Conference
   a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   b. Inspect and discuss preparatory work performed by other trades.
   c. Inspect and discuss electrical roughing-in for electrified door hardware.
   d. Review sequence of operation for each type of electrified door hardware.
   e. Review required testing, inspecting, and certifying procedures.
   f. Review questions or concerns related to proper installation and adjustment of door hardware.

3. Electrified Hardware Coordination Conference:
   a. Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping

B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer's original packaging.

C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.

D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.06 COORDINATION

A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

1.07 WARRANTY

A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.

1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.
    a. Mechanical Warranty
        1) Locks
            a) Schlage ND Series: 10 years
            b) Falcon: 10 years
        2) Exit Devices
            a) Falcon: 10 years
        3) Closers
            a) Falcon SC Series: 10 years
    b. Electrical Warranty
        1) Exit Devices
            a) Von Duprin: 3 years

1.08 MAINTENANCE

A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

B. Turn over unused materials to Owner for maintenance purposes.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. The Owner requires use of certain products for their unique characteristics and project suitability to ensure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: "No Substitute."

   1. Where "No Substitute" is noted, submittals and substitution requests for other products will not be considered.

B. Approval of alternate manufacturers and/or products other than those listed as ''Scheduled Manufacturer'' or ''Acceptable Manufacturers'' in the individual article for the product category are only to be considered by official substitution request in accordance with section 01 25 00.

C. Approval of products from manufacturers indicated in ''Acceptable Manufacturers'' is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.

D. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.02 MATERIALS

A. Fabrication

   1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer’s recognized installation standards for application intended.
   2. Finish exposed screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
   3. Provide concealed fasteners wherever possible for hardware units exposed when door is closed. Coordinate with “Metal Doors and Frames”, “Flush Wood Doors”, “Stile and Rail Wood Doors” to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.

B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

   1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

C. Cable and Connectors:

   1. Where scheduled in the hardware sets, provide each item of electrified hardware and wire harnesses with number and gage of wires enough to accommodate electric function of specified hardware.
   2. Provide Molex connectors that plug directly into connectors from harnesses, electric locking and power transfer devices.
   3. Provide through-door wire harness for each electrified locking device installed in a door and wire harness for each electrified hinge, electrified continuous hinge, electrified pivot, and electric power transfer for connection to power supplies.

2.03 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Ives 5BB series

2. Acceptable Manufacturers and Products:
   a. McKinney TB series
   b. Best FBB series

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. Provide five knuckle, ball bearing hinges.
3. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
   a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
   b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high

4. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
   a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
   b. Interior: Heavy weight, steel, 5 inches (127 mm) high

5. 2 inches or thicker doors:
   a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
   b. Interior: Heavy weight, steel, 5 inches (127 mm) high

6. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
7. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
8. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
   a. Steel Hinges: Steel pins
   b. Non-Ferrous Hinges: Stainless steel pins
   c. Out-Swinging Exterior Doors: Non-removable pins
   d. Out-Swinging Interior Lockable Doors: Non-removable pins
   e. Interior Non-lockable Doors: Non-rising pins

9. Provide hinges with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component. Provide mortar guard for each electrified hinge specified.

2.04 CONTINUOUS HINGES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Select
   b. Roton

B. Requirements:

1. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
2. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.
3. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
4. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
5. On fire-rated doors, provide aluminum geared continuous hinges classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
6. Provide aluminum geared continuous hinges with electrified option scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
7. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

2.05 ELECTRIC POWER TRANSFER

A. Manufacturers:

1. Scheduled Manufacturer and Product:
   a. Von Duprin EPT-10

2. Acceptable Manufacturers and Products:
   a. Security Door Controls PTM
   b. Precision EPT-12C

B. Requirements:

1. Provide power transfer with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
2. Locate electric power transfer per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.

2.06 PIVOT SETS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Rixson
   b. ABH

B. Requirements:

1. Provide pivot sets complete with oil-impregnated top pivot, unless indicated otherwise.
2. Where offset pivots are specified, Provide one intermediate pivot for doors less than 91 inches (2311 mm) high and one additional intermediate pivot per leaf for each additional 30 inches (762 mm) in height or fraction thereof. Intermediate pivots spaced equally not less than 25 inches (635 mm) or not more than 35 inches (889 mm) on center, for doors over 121 inches (3073 mm) high.

3. Provide appropriate model where pivot sets are scheduled at fire rated openings.
4. Provide pivots with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware. Locate electrified pivot nearest to electrified locking component. If manufacturer of electrified locking component requires another device for power transfer, then provide recommended power transfer device and appropriate quantity of pivots.
5. Provide mortar guard for each electric pivot specified, unless specified in hollow metal frame specification.

2.07 CYLINDRICAL LOCKS – GRADE 1

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage ND series

2. Acceptable Manufacturers and Products:
   a. Sargent 11-Line
   b. Corbin-Russwin CL3100 series

B. Requirements:

1. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3-hour fire doors.
2. Indicators: Where specified, provide escutcheon with lock status indicator window on top of lockset rose:
   a. Escutcheon height (including rose) 6.05 inches high by 3.68 inches wide.
   b. Indicator window measuring a minimum 3.52-inch by .60 inch with 1.92 square-inches of front facing viewing area and 180-degree visibility with a total of .236 square-inches of total viewable area.
   c. Provide snap-in serviceable window to prevent tampering. Lock must function if indicator is compromised.
   d. Provide messages color-coded with full text and symbol, as scheduled, for easy visibility.
   e. Unlocked and Unoccupied message will display on white background, and Locked and Occupied message will display on red background.
3. Cylinders: Refer to "KEYING" article, herein.
4. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2-inch latch throw. Provide proper latch throw for UL listing at pairs.
5. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
6. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
7. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
8. Provide electrified options as scheduled in the hardware sets.
9. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.
   a. Lever Design: Rhodes

2.08 CYLINDRICAL LOCKS – GRADE 1

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Falcon TM series

2. Acceptable Manufacturers and Products:
    a. Dormakaba CL800 series
    b. Best 9K series

B. Requirements:

1. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3-hour fire doors.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2-inch latch throw. Provide proper latch throw for UL listing at pairs.
4. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
5. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
7. Provide electrified options as scheduled in the hardware sets.
8. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.
    a. Lever Design: <INSERT LEVER DESIGN>.

2.09 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
    a. Von Duprin 98/35A series

2. Acceptable Manufacturers and Products:
    a. Detex Advantex series
    b. Falcon 24/25 series

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide smooth touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide exit devices at pool gates with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
7. Provide flush end caps for exit devices.
8. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
9. Provide exit devices with manufacturers’ approved strikes.
10. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
11. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
12. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.

13. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
14. Provide electrified options as scheduled.
15. Top latch mounting: double- or single-tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
16. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.
17. Special Options:
    a. CX
        1) Provide delayed egress devices, where scheduled, that are UL 294 listed, meet National Fire Protection Association (NFPA) and International Building Code (IBC) governing delayed egress, and/or other local and national fire codes acceptable to authority having jurisdiction as required.
            a) Provide non-handed and field sizable device with 3/4 (19mm) throw deadlocking latch bolt. Device incorporates an internal RX switch that detects attempt to exit from applying less than 15lbs to the push pad, which causes this switch to start an irreversible alarm cycle. Key switch in device is capable of arming, disarming, or resetting the device; and indicator lamp determines status of the device.
            b) Provide devices capable of standard 15 second release delay and indefinite release delay as required by code, when tied into fire alarm system will release immediately when an alarm condition exists.
            c) Provide devices with all control inputs – door position input, external inhibit input, fire alarm input; auxiliary locking; nuisance alarm and internal horn; and, remote signaling output self-contained in the device assembly.

2.10 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
    a. Falcon 24/25 series

2. Acceptable Manufacturers and Products:
    a. Precision Apex series
    b. Von Duprin 78/75 series

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide flush end caps for exit devices.
7. Provide exit devices with manufacturer's approved strikes.
8. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
9. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
10. Provide cylinder or hex-key dogging as specified at non fire-rated openings.

11. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
12. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
13. Provide electrified options as scheduled.
14. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

2.11 ELECTRIC STRIKES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Von Duprin 6000 Series

2. Acceptable Manufacturers and Products:
   a. Folger Adam 300 Series
   b. HES 1006 Series

B. Requirements:

1. Provide electric strikes designed for use with type of locks shown at each opening.
2. Provide electric strikes UL Listed as burglary resistant that are tested to a minimum endurance test of 1,000,000 cycles.
3. Where required, provide electric strikes UL Listed for fire doors and frames.
4. Provide transformers and rectifiers for each strike as required. Verify voltage with electrical contractor.

2.12 POWER SUPPLIES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Schlage/Von Duprin PS900 Series

2. Acceptable Manufacturers and Products:
   a. Dynalock 5000 series
   b. Securitron BPS series

B. Requirements:

1. Provide power supplies approved by manufacturer of supplied electrified hardware.
2. Provide appropriate quantity of power supplies necessary for proper operation of electrified locking components as recommended by manufacturer of electrified locking components with consideration for each electrified component using power supply, location of power supply, and approved wiring diagrams. Locate power supplies as directed by Architect.
3. Provide regulated and filtered 24 VDC power supply, and UL class 2 listed.
4. Provide power supplies with the following features:
   a. 12/24 VDC Output, field selectable.
   b. Class 2 Rated power limited output.
   c. Universal 120-240 VAC input.
   d. Low voltage DC, regulated and filtered.

e. Polarized connector for distribution boards.
f. Fused primary input.
g. AC input and DC output monitoring circuit w/LED indicators.
h. Cover mounted AC Input indication.
i. Tested and certified to meet UL294.
j. NEMA 1 enclosure.
k. Hinged cover w/lock down screws.
l. High voltage protective cover.

2.13 KEYING

A. Scheduled System:

1. New factory registered system:
   a. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Requirements:

1. Construction Keying:
   a. Temporary Construction Cylinder Keying.
      1) Provide construction cores that permit voiding construction keys without cylinder removal, furnished in accordance with the following requirements.
         a) Split Key or Lost Ball Construction Keying System.
         b) 3 construction control keys, and extractor tools or keys as required to void construction keying.
         c) 12 construction change (day) keys.
      2) Owner or Owner’s Representative will void operation of temporary construction keys.
   b. Replaceable Construction Cores.
      1) Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
         a) 3 construction control keys
         b) 12 construction change (day) keys.
      2) Owner or Owner’s Representative will replace temporary construction cores with permanent cores.

2. Permanent Keying:
   a. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
      1) Master Keying system as directed by the Owner.
   b. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
   c. Provide keys with the following features:
      1) Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
      2) Patent Protection: Keys and blanks protected by one or more utility patent(s).
      3) Geographically Exclusive: Where High Security or Security cylinders/cores are indicated, provide nationwide, geographically exclusive key system complying with the following restrictions.
   d. Identification:
      1) Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
      2) Identification stamping provisions must be approved by the Architect and Owner.

3) Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
4) Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
5) Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.

e. Quantity: Furnish in the following quantities.
1) Permanent Control Keys: 3.
2) Master Keys: 6.
3) Change (Day) Keys: 3 per cylinder/core that is keyed differently
4) Key Blanks: Quantity as determined in the keying meeting.

2.14 KEY CONTROL SYSTEM

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Telkee

2. Acceptable Manufacturers:
   a. HPC
   b. Lund

B. Requirements:

1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.
   a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
   b. Provide hinged-panel type cabinet for wall mounting.

2.15 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. LCN 4040XP series

2. Acceptable Manufacturers and Products:
   a. Corbin-Russwin DC8000 series
   b. Sargent 281 series

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.

3. Cylinder Body: 1-1/2-inch (38 mm) diameter piston with 5/8-inch (16 mm) diameter double heat-treated pinion journal. QR code with a direct link to maintenance instructions.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards. Provide snap-on cover clip, with plastic covers, that secures cover to spring tube.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck. Provide graphically labelled instructions on the closer body adjacent to each adjustment valve. Provide positive stop on reg valve that prevents reg screw from being backed out.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.
11. Closers shall be capable of being upgraded by adding modular mechanical or electronic components in the field.

2.16 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Falcon SC70A series

2. Acceptable Manufacturers and Products:
   a. LCN 4050 series
   b. Norton 7500 series

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with aluminum cylinder.
3. Closer Body: 1-1/2-inch (38 mm) diameter with 5/8-inch (16 mm) diameter heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
7. Pressure Relief Valve (PRV) Technology: Not permitted.
8. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.17 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Trimco
   b. Rockwood

B. Requirements:

1. Provide push plates, push bars, pull plates, pulls, and hands-free reversible door pulls with diameter and length as scheduled.

2.18 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Trimco
   b. Rockwood

B. Requirements:

1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes plates 2 inches (51 mm) less width of door on single doors, pairs of doors with a mullion, and doors with edge guards. Size plates 1 inch (25 mm) less width of door on pairs without a mullion or edge guards.
3. At fire rated doors, provide protection plates over 16 inches high with UL label.

2.19 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers:
   a. Glynn-Johnson

2. Acceptable Manufacturers:
   a. Rixson
   b. ABH

B. Requirements:

1. Provide overhead stop at any door where conditions do not allow for a wall stop or floor stop presents tripping hazard.

2.20 DOOR STOPS AND HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Trimco
   b. Rockwood

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide concave type where lockset has a push button of thumbturn.
2. Where a wall stop cannot be used, provide universal floor stops.
3. Where wall or floor stop cannot be used, provide overhead stop.
4. Provide roller bumper where doors open into each other and overhead stop cannot be used.

2.21 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Scheduled Manufacturer:

1. Zero International

B. Acceptable Manufacturers:

1. Pemko
2. Legacy

C. Seals and Gasketing: Provide continuous gasketing on exterior openings, to the head and jambs, forming a continuous seal between the door and the frame. Provide smoke, light, or sound gasketing on interior doors where indicated.

1. Provide self-tapping fasteners for aluminum extruded gasketing being applied to hollow metal frames.
   a. Provide non-corrosive fasteners for all exterior applications.
   b. Provide security fasteners where indicated.

2. Provide neoprene, EPDM, silicone, or nylon brush inserts as specified in hardware sets. Provide non brush inserts of solid or sponge cell, as specified in hardware sets. Vinyl inserts are not allowed except where specified in hardware sets.

D. Smoke Labeled Gasketing: At all smoke labeled openings, provide smoke listed perimeter gasketing assemblies complying with NFPA 105 listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for smoke control ratings indicated based on testing according to UL 1784.

E. Fire Listed Gasketing: Assemblies complying with NFPA 80 that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction for fire ratings indicated based on testing according to UL-10C.

1. Where frame-applied intumescent seals are required by the manufacturer, provide gaskets that comply with UL10C Standard for Positive Pressure Fire Tests of Door Assemblies and UBC 7-2, Fire Tests of Door Assemblies.

F. Sound-Rated Gasketing: Provide acoustic gasketing to meet Sound Transmission Class (STC) rating required.

G. Meeting-Stile Gasketing: Provide meeting-stile gasketing that fastens to the meeting stiles forming a continuous seal when doors are closed.

H. Door Sweeps or Shoes: Apply to the bottom of the door to close the gap between the door bottom and finished floor or saddle threshold.

1. Provide solid neoprene, EPDM, silicone, or nylon brush type of seal as specified in hardware sets. Vinyl inserts are not allowed except where specified in hardware sets.

I. Automatic Door Bottoms:

1. Provide closed cell sponge, bulb neoprene. or EPDM type of seal as specified in hardware sets.
2. Door bottom to be mortised, semi mortised, or surface mount as with a minimum thickness as specified in hardware sets.

J. Rain Drips:

1. Provide overhead rain drips for out-swinging hollow metal doors that are not covered against 45 degree blowing rain. Aluminum extrusion to be a minimum of .088 inches thick and extend 2.50 inches from the face of the frame, in anodized finish to match door.
2. Door sweeps or shoes with integral rain drip must meet ADA requirements

K. Thresholds: Provide threshold units not less than 4 inches wide, formed to accommodate change in floor elevation where indicated, and fabricated to accommodate door hardware and fit door frames.

1. Threshold extrusion to be a minimum thickness as specified in hardware sets.

2.22 DOOR POSITION SWITCHES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Schlage

2. Acceptable Manufacturers:
   a. GE-Interlogix
   b. Sargent

B. Requirements:

1. Provide recessed or surface mounted type door position switches as specified.
2. Coordinate door and frame preparations with door and frame suppliers. If switches are being used with magnetic locking device, provide minimum of 4 inches (102 mm) between switch and magnetic locking device.

2.23 FINISHES

A. FINISH: BHMA 626/652 (US26D); EXCEPT:

1. Hinges at Exterior Doors: BHMA 630 (US32D)
2. Aluminum Geared Continuous Hinges: BHMA 628 (US28)
3. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
4. Protection Plates: BHMA 630 (US32D)
5. Overhead Stops and Holders: BHMA 630 (US32D)
6. Door Closers: Powder Coat to Match
7. Wall Stops: BHMA 630 (US32D)
8. Latch Protectors: BHMA 630 (US32D)
9. Weatherstripping: Clear Anodized Aluminum
10. Thresholds: Mill Finish Aluminum

PART 3 - EXECUTION

3.01 EXAMINATION

A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
4. Installation Guide for Doors and Hardware: DHI TDH-007-20

B. Install door hardware in accordance with NFPA 80, NFPA 101 and provide post-install inspection, testing as specified in section 1.03.E unless otherwise required to comply with governing regulations.

C. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

D. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

E. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

F. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

G. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

H. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.

I. Lock Cylinders:

1. Install construction cores to secure building and areas during construction period.
2. Replace construction cores with permanent cores as indicated in keying section.
3. Furnish permanent cores to Owner for installation.

J. Wiring: Coordinate with Division 26, ELECTRICAL and Division 28 ELECTRONIC SAFETY AND SECURITY sections for:

1. Conduit, junction boxes and wire pulls.
2. Connections to and from power supplies to electrified hardware.
3. Connections to fire/smoke alarm system and smoke evacuation system.
4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
5. Connections to panel interface modules, controllers, and gateways.
6. Testing and labeling wires with Architect's opening number.

K. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

L. Continuous Hinges: Re-locate the door and frame fire rating labels where they will remain visible so that the hinge does not cover the label once installed.

M. Door Closers & Auto Operators: Mount closers/operators on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers/operators so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.

N. Overhead Stops/Holders: Mount overhead stops/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

O. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.

P. Thresholds:

1. Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
2. Aluminum thresholds to be cut-in, and scribed around mullions, frame members, and stops. Do not butt to thresholds. Provide a continuous surface across full width of opening from jamb to jamb.
3. Where aluminum panic-type (rabbeted) thresholds with neoprene inserts are specified, undercut doors as required to properly mate with seal in threshold.

Q. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

R. Perimeter Gasketing:

1. Apply to head and jamb, forming seal between door and frame.
2. Install gasketing in a manner eliminating need to cut any seal to install surface mounted hardware. Install compatible mounting bracket for surface mounted hardware unless minimum 1/4 inch thick solid aluminum seals are provided for mounting of surface applied hardware.

S. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

T. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

3.03 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
2. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.04 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items per manufacturer's instructions to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.05 DOOR HARDWARE SCHEDULE

A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application.

C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.

D. Hardware Sets:

Hardware Group No. 01

For use on Door #(s):
125.2

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW NRP		IVE
1	EA	STOREROOM LOCK	TM581P6 DAN		FAL
1	EA	ELECTRIC STRIKE	6211 FSE 12/16/24/28 VAC/VDC		VON
1	EA	LOCK GUARD	LG14		IVE
1	EA	SURFACE CLOSER	SC71A SS		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	SET	GASKETING	429AA-S		ZER
1	EA	DOOR SWEEP	39A		ZER
1	EA	THRESHOLD	65A-223		ZER
1	EA	CARD READER	BY ACCESS CONTROL PROVIDER		SCE
1	EA	DOOR CONTACT	679-05		SCE
1	EA	POWER SUPPLY	BY ACCESS CONTROL PROVIDER		SCE

Hardware Group No. 02

For use on Door #(s):
129

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	MFR
3	EA	HINGE	5BB1HW HT SEC	IVE
1	EA	CLASSROOM LOCK	TM561P6 DAN	FAL
1	EA	OH STOP	100S	GLY
1	EA	ARMOR PLATE	8400 34" X 2" LDW B-CS TKTX	IVE
3	EA	SILENCER	SR64	IVE
1	EA	VIEWER	698/U698 AS REQ'D	IVE

NOTE: VIEWER MOUNTED TO SEE INTO HOLDING AREA

Hardware Group No. 03

For use on Door #(s):

101 102.2 109 125.1 126.2 130.1

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	STOREROOM LOCK	TM581P6 DAN		FAL
1	EA	ELECTRIC STRIKE	6211 FSE 12/16/24/28 VAC/VDC		VON
1	EA	SURFACE CLOSER	SC71A RW/PA		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	WALL STOP	WS404		IVE
1	EA	GASKETING	188FSBK PSA		ZER
1	EA	CARD READER	BY ACCESS CONTROL PROVIDER		SCE
1	EA	DOOR CONTACT	679-05		SCE
1	EA	POWER SUPPLY	BY ACCESS CONTROL PROVIDER		SCE

NOTE: USE FLOOR STOP FS439 IN LIEU OF WALL STOP AT OPENING 101

Hardware Group No. 04

For use on Door #(s):

108

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	STOREROOM LOCK	TM581P6 DAN		FAL
1	EA	ELECTRIC STRIKE	6211 FSE 12/16/24/28 VAC/VDC		VON
1	EA	OH STOP	90S		GLY
1	EA	SURFACE CLOSER	SC71A RW/PA (MOUNTED PULL SIDE)		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	WALL STOP	WS404		IVE
1	EA	GASKETING	188FSBK PSA		ZER
1	EA	CARD READER	BY ACCESS CONTROL PROVIDER		SCE
1	EA	DOOR CONTACT	679-05		SCE
1	EA	POWER SUPPLY	BY ACCESS CONTROL PROVIDER		SCE

Hardware Group No. 05

For use on Door #(s):
103.3 128

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	INSTITUTION LOCK	ND82P6D RHO		SCH
1	EA	ELECTRIC STRIKE	6211 FSE 12/16/24/28 VAC/VDC		VON
1	EA	SURFACE CLOSER	SC71A RW/PA		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	WALL STOP	WS404		IVE
1	EA	GASKETING	188FSBK PSA		ZER
2	EA	CARD READER	BY ACCESS CONTROL PROVIDER		SCE
1	EA	DOOR CONTACT	679-05		SCE
1	EA	POWER SUPPLY	BY ACCESS CONTROL PROVIDER		SCE

Hardware Group No. 06

For use on Door #(s):
169.1

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
1	EA	CONT. HINGE	112XY		IVE
1	EA	DUMMY PUSH BAR	250DT		FAL
1	EA	90 DEG OFFSET PULL	8190EZHD 10" (MTG TYPE AS REQ'D)		IVE
1	EA	SURF. AUTO OPERATOR	4642 120 VAC		LCN
1	EA	ACTUATOR, TOUCH	8310-852T/8310-818T AS REQ'D		LCN
1	EA	FLOOR STOP	FS439		IVE

Hardware Group No. 07

For use on Door #(s):
161.1

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
1	EA	CONT. HINGE	112XY		IVE
1	EA	DUMMY PUSH BAR	250DT		FAL
1	EA	90 DEG OFFSET PULL	8190EZHD 10" (MTG TYPE AS REQ'D)		IVE
1	EA	SURF. AUTO OPERATOR	4642 120 VAC		LCN
1	EA	ACTUATOR, TOUCH	8310-852T/8310-818T AS REQ'D		LCN
1	EA	GASKETING	188FSBK PSA		ZER

Hardware Group No. 08

For use on Door #(s):
169.2

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
1	EA	CONT. HINGE	112XY EPT		IVE
1	EA	POWER TRANSFER	EPT10		VON
1	EA	ELEC PANIC HARDWARE	LX-RX-QEL-35A-NL-OP-388 24 VDC		VON
1	EA	CYLINDER	AS REQ'D		FAL
1	EA	DELAYED EGRESS MAG	M490DEP 12/24 VDC		SCE
1	EA	90 DEG OFFSET PULL	8190EZHD 10" (MTG TYPE AS REQ'D)		IVE
1	EA	SURF. AUTO OPERATOR	4642 120 VAC		LCN
1	EA	ACTUATOR, TOUCH	8310-852T/8310-818T AS REQ'D		LCN
1	EA	DUAL VESTIBULE ACTUATOR	8310-855 (MOUNTED IN VESTIBULE TO CONTROL BOTH DOORS)		LCN
1	EA	RAIN DRIP	142AA		ZER
1	EA	WEATHERSTRIPPING	BY DOOR AND FRAME MANUFACTURER		
1	EA	DOOR SWEEP	39A		ZER
1	EA	THRESHOLD	65A-223		ZER
2	EA	CARD READER	BY ACCESS CONTROL PROVIDER		SCE
1	EA	POWER SUPPLY	BY ACCESS CONTROL PROVIDER		SCE

DOOR NORMALLY CLOSED AND LOCKED. ENTRY BY PRESENTATION OF VALID CREDENTIAL. EGRESS BY PRESENTATION OF VALID CREDENTIAL. PRESENTATION OF VALID CREDENTIAL ON EITHER SIDE ALLOWS LATCHBOLT TO RETRACT, MAGNETIC LOCK TO RELEASE, AND ACTUATOR TO BECOME ACTIVE AND CAPABLE OF CYCLING THE DOOR AFTER PRESSING. WITHOUT VALID CREDENTIAL. PRESSING ON THE DOOR/PUSHPAD TRIGGERS A LOCAL ALARM AND AN IRREVOCABLE 15 SECOND COUNTDOWN (UP TO 30 SECONDS WITH THE APPROVAL OF AHJ) AT THE END OF 15 SECONDS THE MAG LOCK WILL RELEASE AND EXIT DEVICE WILL PROVIDE FREE EGRESS UNTIL DELAYED EGRESS DEVICE IS RESET.

Hardware Group No. 09

For use on Door #(s):
161.2

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
1	EA	CONT. HINGE	112XY EPT		IVE
1	EA	POWER TRANSFER	EPT10	✓	VON
1	EA	ELEC PANIC HARDWARE	LX-RX-QEL-35A-NL-OP-388 24 VDC	✓	VON
1	EA	CYLINDER	AS REQ'D		FAL
1	EA	DELAYED EGRESS MAG	M490DEP 12/24 VDC	✓	SCE
1	EA	90 DEG OFFSET PULL	8190EZHD 10" (MTG TYPE AS REQ'D)		IVE
1	EA	SURF. AUTO OPERATOR	4642 120 VAC	✓	LCN
1	EA	ACTUATOR, TOUCH	8310-852T/8310-818T AS REQ'D	✓	LCN
1	EA	DUAL VESTIBULE ACTUATOR	8310-855 (MOUNTED IN VESTIBULE TO CONTROL BOTH DOORS)	✓	LCN
1	EA	RAIN DRIP	142AA		ZER
1	SET	GASKETING	429AA-S		ZER
1	EA	DOOR SWEEP	39A		ZER
1	EA	THRESHOLD	65A-223		ZER
2	EA	CARD READER	BY ACCESS CONTROL PROVIDER	✓	SCE
1	EA	POWER SUPPLY	BY ACCESS CONTROL PROVIDER	✓	SCE

DOOR NORMALLY CLOSED AND LOCKED. ENTRY BY PRESENTATION OF VALID CREDENTIAL. EGRESS BY PRESENTATION OF VALID CREDENTIAL. PRESENTATION OF VALID CREDENTIAL ON EITHER SIDE ALLOWS LATCHBOLT TO RETRACT, MAGNETIC LOCK TO RELEASE, AND ACTUATOR TO BECOME ACTIVE AND CAPABLE OF CYCLING THE DOOR AFTER PRESSING. WITHOUT VALID CREDENTIAL. PRESSING ON THE DOOR/PUSHPAD TRIGGERS A LOCAL ALARM AND AN IRREVOCABLE 15 SECOND COUNTDOWN (UP TO 30 SECONDS WITH THE APPROVAL OF AHJ) AT THE END OF 15 SECONDS THE MAG LOCK WILL RELEASE AND EXIT DEVICE WILL PROVIDE FREE EGRESS UNTIL DELAYED EGRESS DEVICE IS RESET.

Hardware Group No. 10

For use on Door #(s):
124.2

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER			MFR
1	EA	CONT. HINGE	112XY			IVE
1	EA	PANIC HARDWARE	35A-EO			VON
1	EA	SURFACE CLOSER	SC71A SS			FAL
1	EA	MOUNTING PLATE	SC70A-18			FAL
1	EA	CUSH SHOE SUPPORT	SC70A-30			FAL
1	EA	BLADE STOP SPACER	SC70-61			FAL
1	EA	RAIN DRIP	142AA			ZER
1	EA	WEATHERSTRIPPING	BY DOOR AND FRAME MANUFACTURER			
1	EA	DOOR SWEEP	39A			ZER
1	EA	THRESHOLD	65A-223			ZER
1	EA	DOOR CONTACT	7764			SCE

Hardware Group No. 11

For use on Door #(s):
103.2

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER			MFR
1	EA	CONT. HINGE	112XY			IVE
1	EA	CLASSROOM LOCK	TM561P6 DAN			FAL
1	EA	ELECTRIC STRIKE	6211AL FSE 12/16/24/28 VAC/VDC			VON
1	EA	LOCK GUARD	LG11			IVE
1	EA	SURF. AUTO OPERATOR	4642 120 VAC			LCN
2	EA	ACTUATOR, TOUCH	8310-852T/8310-818T AS REQ'D			LCN
1	EA	RAIN DRIP	142AA			ZER
1	EA	WEATHERSTRIPPING	BY DOOR AND FRAME MANUFACTURER			
1	EA	DOOR SWEEP	39A			ZER
1	EA	THRESHOLD	65A-223			ZER
1	EA	KEYPAD READER	BY ACCESS CONTROL PROVIDER			
1	EA	DOOR CONTACT	7764			SCE
1	EA	POWER SUPPLY	BY ACCESS CONTROL PROVIDER			SCE

Hardware Group No. 12

For use on Door #(s):
100

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
1	EA	CONT. HINGE	112XY		IVE
1	EA	DEADBOLT	MS1850S X 4089		ADA
1	EA	CYLINDER	AS REQ'D		FAL
1	EA	PUSH/PULL BAR	9190EZHD-12" (MTG TYPE AS REQ'D)		IVE
1	EA	SURF. AUTO OPERATOR	4642 120 VAC		LCN
2	EA	ACTUATOR, TOUCH	8310-852T/8310-818T AS REQ'D		LCN
1	EA	RAIN DRIP	142AA		ZER
1	EA	WEATHERSTRIPPING	BY DOOR AND FRAME MANUFACTURER		
1	EA	DOOR SWEEP	39A		ZER
1	EA	THRESHOLD	65A-223		ZER

Hardware Group No. 14

For use on Door #(s):

140	141	142	143	146	147
148	150	151	152	153	154
155	156	157	162	163	164
165	166				

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	PASSAGE LATCH	TM101 DAN		FAL
1	EA	SURFACE CLOSER	SC71A RW/PA		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	MAGNET	SEM7000 SERIES AS REQ'D		LCN
1	EA	GASKETING	188FSBK PSA		ZER

Hardware Group No. 15

For use on Door #(s):
104 106 107 119 127

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	CORRIDOR LOCK	TM571P6 DAN		FAL
1	EA	SURFACE CLOSER	SC71A RW/PA		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	WALL STOP	WS404		IVE
3	EA	SILENCER	SR64		IVE

LATCH BOLT OPERATED BY LEVERS/KNOBS EXCEPT
WHEN LOCKED BY PUSH BUTTON FROM INSIDE.
KEY IN OUTSIDE LEVER/KNOB LOCKS OR UNLOCKS
LEVER/KNOB AND RELEASES BUTTON.
CLOSING DOOR RELEASES PUSH BUTTON.
INSIDE ALWAYS FREE FOR IMMEDIATE EGRESS.

Hardware Group No. 16

For use on Door #(s):
149

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	CORRIDOR LOCK	TM571P6 DAN		FAL
1	EA	SURFACE CLOSER	SC71A SS		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
3	EA	SILENCER	SR64		IVE

LATCH BOLT OPERATED BY LEVERS/KNOBS EXCEPT
WHEN LOCKED BY PUSH BUTTON FROM INSIDE.
KEY IN OUTSIDE LEVER/KNOB LOCKS OR UNLOCKS
LEVER/KNOB AND RELEASES BUTTON.
CLOSING DOOR RELEASES PUSH BUTTON.
INSIDE ALWAYS FREE FOR IMMEDIATE EGRESS.

Hardware Group No. 17

For use on Door #(s):
102.1 110 111 112 113 114
115 117

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	ENTRANCE LOCK	TM511P6 DAN		FAL
1	EA	WALL STOP	WS404		IVE
3	EA	SILENCER	SR64		IVE

Hardware Group No. 18

For use on Door #(s):
136

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	PASSAGE LATCH	TM101 DAN		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	WALL STOP/HOLDER	FS495		IVE
3	EA	SILENCER	SR64		IVE

Hardware Group No. 19

For use on Door #(s):
103.1 134

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	CLASSROOM LOCK	TM561P6 DAN		FAL
1	EA	SURFACE CLOSER	SC71A RW/PA		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	WALL STOP	WS404		IVE
3	EA	SILENCER	SR64		IVE

Hardware Group No. 20

For use on Door #(s):
120 121 122 124.1

Provide each DA door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
1	EA	PIVOT SET	7253 SET		IVE
1	EA	CLASSROOM LOCK	TM561P6 DAN		FAL
1	EA	RESCUE STRIKE	455 5-3/4		HAG
2	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	WALL STOP	WS404		IVE
1	EA	MEETING STILE	8136 6" (152MM) PSA		ZER
1	EA	ASTRAGAL	398V		ZER
3	EA	SILENCER	SR64		IVE

Hardware Group No. 21

For use on Door #(s):
130.2

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	CLASSROOM LOCK	TM561P6 DAN		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	WALL STOP	WS404		IVE
3	EA	SILENCER	SR64		IVE

Hardware Group No. 22

For use on Door #(s):
132

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	STOREROOM LOCK	TM581P6 DAN		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	WALL STOP	WS404		IVE
3	EA	SILENCER	SR64		IVE

Hardware Group No. 23

For use on Door #(s):
105

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	STOREROOM LOCK	TM581P6 DAN		FAL
1	EA	SURFACE CLOSER	SC71A RW/PA		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	WALL STOP	WS404		IVE
3	EA	SILENCER	SR64		IVE

Hardware Group No. 24

For use on Door #(s):
139.1

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW		IVE
1	EA	STOREROOM LOCK	TM581P6 DAN		FAL
1	EA	SURFACE CLOSER	SC71A RW/PA		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	WALL STOP	WS404		IVE
1	EA	GASKETING	188FSBK PSA		ZER

Hardware Group No. 24A

For use on Door #(s):
173.1

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
3	EA	HINGE	5BB1HW NRP		IVE
1	EA	STOREROOM LOCK	TM581P6 DAN		FAL
1	EA	LOCK GUARD	LG10		IVE
1	EA	SURFACE CLOSER	SC71A SS		FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		IVE
1	EA	RAIN DRIP	142AA		ZER
1	SET	GASKETING	429AA-S		ZER
1	EA	DOOR SWEEP	39A		ZER
1	EA	THRESHOLD	65A-223		ZER

Hardware Group No. 25

For use on Door #(s):
133 144 158

Provide each CO door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	MFR
1	EA	NOTE	NO HARDWARE REQUIRED	

Hardware Group No. 26

For use on Door #(s):
125.3 131 139.2 173.2 173.3

Provide each RU door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	NOTE	ALL HARDWARE BY OVERHEAD DOOR MANUFACTURER	BYO

Hardware Group No. 27

For use on Door #(s):
123.1 123.2

Provide each FLD door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	MFR
1	EA	CYLINDER	AS REQ'D	FAL
	EA	NOTE	REMAINDER OF HARDWARE BY DOOR SUPPLIER	

Hardware Group No. 28

For use on Door #(s):
126.1

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER			MFR
1	EA	CONT. HINGE	112XY EPT			IVE
1	EA	POWER TRANSFER	EPT10			VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-ESL-WS-T-9957-L-KC-17-SNB LENGTH & HEIGHT AS REQ			VON
1	EA	LATCH GUARD	WS-LGO LENGTH AS REQ			VON
1	EA	RIM CYLINDER	20-057 ICX W/KEYED CONST. CORE (FOR L-KC)			SCH
1	EA	MORTISE CYLINDER	20-061 ICX W/KEYED CONST. CORE (FOR ESL)			SCH
2	EA	FSIC PERMANENT CORE	23-030			SCH
1	EA	SURFACE CLOSER	4040XP SCUSH MC TBWMS X MTG BRKT, SPCR & PLATE AS REQ			LCN
1	EA	RAIN DRIP	142AA DW + 4" (OMIT @ COVERED OPENINGS)			ZER
1	SET	GASKETING	328AA H & J			ZER
1	EA	DOOR SWEEP	8198AA			ZER
1	EA	THRESHOLD	656A (COORDINATE WITH SILL DETAIL)			ZER
1	EA	CREDENTIAL READER	AS SPECIFIED IN DIVISION 28			UNK
1	EA	DOOR CONTACT	679-05			SCE
1	EA	POWER SUPPLY	PS902 900-4R 120/240 VAC			VON

-FOR USE WITH STEELCRAFT PALADIN DOOR ASSEMBLY.
-MEETS ICC 500-2020 AND FEMA 320/361.
-MAXIMUM DOOR SIZE 4'0 X 8'0 (SINGLE) AND 8'0 X 8'0 (PAIR).
-IF ANOTHER DOOR MFR. IS USED CONSULT WITH THEM FOR APPROVED HARDWARE, DOORS AND HARDWARE ARE SOLD AS A COMPLETE TESTED ASSEMBLY.
-GC TO PROVIDE SIGNAGE THAT MEETS ICC 500-2020 REQUIREMENTS, AS NEEDED.

-INGRESS BY CREDENTIAL READER OR KEY OVERRIDE.
-CREDENTIAL READER IS DISABLED WHEN ESL IS SET TO "LOCKED" STATE. EMERGENCY KEY OVERRIDE BY L-KC (KEY CAPTURE).
-FREE EGRESS BY THE PUSH PAD.
-COORDINATE POWER SUPPLY WITH SECURITY CONTRACTOR PRIOR TO SUBMITTALS.
-OMIT POWER SUPPLY WHERE PROVIDED BY SECURITY.

Hardware Group No. 29

For use on Door #(s):
116

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		MFR
6	EA	HINGE	5BB1HW		IVE
1	EA	MANUAL FLUSH BOLT	FB358/FB458		IVE
1	EA	STOREROOM LOCK	TM581P6 DAN		FAL
1	EA	SURFACE CLOSER	SC71A RW/PA		FAL
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS		IVE
2	EA	WALL STOP	WS404		IVE
2	EA	SILENCER	SR64		IVE

END OF SECTION

SECTION 10 14 13
EXTERIOR SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Building identification signage:
   1. Dimensional letters.
   2. Lettering and logo at monument sign.

B. Traffic signs.

1.02 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.03 SUBMITTALS

A. Product Data: Submit product data for specified products. Include material details for each sign specified.

B. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including dimensions, anchorage, and accessories.

C. Samples: Submit supplier’s standard color chart for selection purposes and selected colors for verification purposes.

D. Installation: Submit supplier’s installation instructions.

E. Closeout Submittals:
   1. Submit operation and maintenance data for installed products, including precautions against harmful cleaning materials and methods.
   2. Submit warranty documents specified herein.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with a minimum of three years of experience.

B. Installer Qualifications: Worker/s trained and approved by the manufacturer.

C. Source Limitations for Signs: Obtain each sign type indicated from one source from a single manufacturer.

D. Signage required to be accessible to people with disabilities must comply with requirements in ADA-ABA Accessibility Guidelines and with requirements of authorities having jurisdiction, whichever are more stringent. Verify local requirements and insert additional requirements below.

E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for the intended use.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

B. Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Handle products following the manufacturer's instructions.

D. Package signs as required to prevent damage before installation.

1.06 WARRANTY

A. Manufacturer Warranty: The manufacturer shall warrant the installation to be free of defects in material and workmanship for a period of three (3) years from the Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Products from ASI Signage Innovation are specified to establish a standard of quality for design, function, materials, and appearance.

B. Products of other manufacturers with equivalent products to the specified manufacturer will be considered in accordance with the “or equal” provision specified in Division 01 “Product Requirements”.
   1. Product Substitutions: Comply with the requirements specified in Division 01 “Substitution Procedures”.

2.02 FABRICATED METAL CHANNEL LETTERS, ILLUMINATED

A. Basis-of-Design Product: ASI; Series LF - Light Weight Fabricated Metal Dimensional Letters, Face-Lit.
   1. Materials:
      a. Acrylic Face with Trim Cap: Sign grade acrylic, 3/16-inch (0.20 inches) thick
         1) Sign grade acrylic, 3/16-inch (0.20 inches) thick
            (a) Color to be selected by Architect from manufacturer's standard colors.
         2) Trim Cap: 3/4-inches
      b. Aluminum returns and backs in baked enamel finish.
         1) Thicknesses:
            (a) Returns: 0.063 inches (1.6 mm)
            (b) Backs: 0.040 inches (1.02 mm)
      c. Finish: Baked enamel finish:
         1) High reflective white interior
         2) Exterior Color: To be selected by Architect from the manufacturer's standard colors.

B. Signage Type:
   1. Location:
   2. Lettering Height: As indicated on Drawings
   3. Letter Depth: As indicated on Drawings
   4. Letter Style: From manufacturer's standard letter chart.
      a. Text: INSERT TEXT (All caps)
   5. Lighting Package: Fabricated letters lit with 12-volt DC LEDs.

C. Mounting Method: Flush mounting, Concealed studs:
   1. Provide L-brackets with threaded stud boss secured with high-resistance epoxy to letter return. Stud boss to receive threaded mounting studs.
   2. Stud size and type shall be as required by the manufacturer for application and design intent.
   3. A mounting template designating stud locations shall be provided.

D. Fabrication:
   1. Cutting: Computer-guided lasers cut face and back letters.
   2. Letter returns are cut to size based on the letter depth, bent to the contour of the laser cut faces to produce a hollow-backed letter with 90º angle edges.
   3. Inside joints are MIG welded with 1”-1.5” intervals.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION

A. Install products following supplier’s instructions.

B. Install products in locations indicated using mounting methods recommended by sign manufacturer and free from distortion, warp, or defect adversely affecting appearance.

C. Install products level, plumb, and at heights indicated.

D. Install signs within the following tolerances and in accordance with the manufacturer's recommendations:
   1. Exterior Signs: Within 1 inch vertically and horizontally of the intended location.

3.03 CLEANING, PROTECTION, AND REPAIR

A. Remove temporary coverings and protection to adjacent work areas. Clean installed products following manufacturer's instructions before Owner's acceptance.

END OF SECTION 10 14 13

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SECTION 10 73 16.13
METAL CANOPIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Attached metal canopies.

1.02 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Concrete footings.

1.03 REFERENCE STANDARDS

A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

C. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.

D. ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel; 2025.

1.04 SUBMITTALS

A. See Section 01 31 00 - Project Management and Coordination for submittal procedures.

B. Product Data: Submit product data sheets, including material descriptions and finishes, and preparation instructions and recommendations.

C. Shop Drawings: Prior to commencement of fabrication, submit detailed shop drawings, showing profiles, sections of components, finishes, and fastening details.

D. Design Data: Submit comprehensive structural analysis of design for the specified loads. Stamp and sign calculations by professional engineer.

1.05 QUALITY ASSURANCE

A. Designer Qualifications: Perform design under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in Missouri.

B. Manufacturer Qualifications: Company specializing in the manufacture of products similar to those required for this project.
   1. Not less than three years of documented experience.

1.06 WARRANTY

A. See Section 013300 for additional warranty requirements.

B. Metal Canopies: Correct defective work within a two year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Canopies:
   1. Mapes Canopies; Super Lumideck: www.mapescanopies.com
   2. Archetype Canopies
   1. Substitutions: See section 003625.

2.02 METAL CANOPIES

A. Shop Fabricated Steel Canopy

B. Configuration: Layout and dimensions, column layout, canopy clearance, fascia profile, and roof covering design as indicated on drawings.
   1. Installation: Face-mounted to building structure.
   2. Drainage Concept: Water collected in decking conducted into perimeter gutters and discharged through downspouts.

C. Performance Requirements:
   1. Design and fabricate metal canopy system to resist wind, snow, live, and seismic loads without failure, damage, or permanent deflection in accordance with ASCE 7:
      a. Loads: As indicated on drawings.

2.03 COMPONENTS

A. Structural Steel Framing:
   1. Beams: Wide flange, ASTM A572/A572M Grade 50.
   2. Other Structural Steel Members: ASTM A36/A36M.

B. Covering:

C. Anchor Bolts: ASTM A307 or ASTM A572/A572M, formed with bent shank, assembled with template for casting into concrete.
   1. Minimum exposed thread of 7 inches above footing and 23 inch minimum embedment.
   2. Provide nuts and washers as required for column leveling and plumbing.

D. Concrete Footings: Refer to Section 03 30 00 for additional requirements.

2.04 FINISHES

A. Structural Steel Framing:
   1. 2-Coat Kynar finish in color as shown on drawings..

PART 3 EXECUTION

3.01 INSTALLATION - FRAMING

A. Provide for erection and wind loads. Provide temporary bracing to maintain structure plumb and in alignment until completion of erection and installation.

B. Set column base plates with non-shrink grout to achieve full plate bearing.

C. Fasten columns to anchor bolts.

D. Do not field cut or alter structural members without approval.

E. After erection, prime welds, abrasions, and surfaces not shop primed.

3.02 INSTALLATION - CANOPY COVERING

A. Install in accordance with manufacturer's instructions.

B. Fasten metal decking to metal support members, aligned level and plumb.

C. Install fascia panels, trim, and flashing.

D. Separate dissimilar metals using concealed bituminous paint.

E. Touch-up damaged finish coating using material provided by manufacturer to match original coating.

3.03 CLEANING

A. Clean surfaces of dust and debris; follow manufacturer's cleaning instructions for the finish used.

3.04 PROTECTION

A. Protect canopy after installation to prevent damage due to other work until Date of Substantial Completion.

END OF SECTION 10 73 16.13

SECTION 270010 - SUPPLEMENTAL REQUIREMENTS FOR COMMUNICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Supplemental requirements generally applicable to the Work specified in Division 27.

1.2 REFERENCES

A. Abbreviations and Acronyms for Communications:

1. LAN: Local area network.
2. PoE: Power over Ethernet.
3. TCP/IP: Transmission control protocol/Internet protocol.

1.3 PREINSTALLATION MEETINGS

A. Communications Preconstruction Conference: Schedule conference with Architect and Owner not later than **10** days after notice to proceed. Agenda topics include, but are not limited to, the following:

1. Installation schedule for communications systems.
2. Value analysis proposals and requests for substitution of communications equipment.
3. Utility services work coordination and monitoring service requests.
4. Commissioning activities.

1.4 INFORMATIONAL SUBMITTALS

A. Installation Schedule for Communications Systems: At preconstruction meeting, and periodically thereafter as dates change, provide schedule for installation of communications Work to Owner and Architect including, but not limited to, milestone dates for the following activities:

1. Submission of action submittals specified in Division 27.
2. Preinstallation meetings specified in Division 27.
3. Telephone and internet service inspection and activation.
4. Closing of walls and ceilings containing communications Work.
5. System startup, testing, and commissioning activities for communications equipment.

B. Qualification Statements:

1. For communications cable Installer.
2. For communications testing agency and on-site communications testing supervisor.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data:

1. Include the following information:

a. Manufacturer's operating specifications.
b. User's guides for software and hardware.
c. Schedule of maintenance material items recommended to be stored at Project site.
d. Detailed instructions covering operation under both normal and abnormal conditions.

1.6 QUALIFICATIONS

A. Communications Design Professional: Design professional possessing active qualifications and the following:

1. Expertise in design of communications infrastructure and distribution equipment.
2. BICSI Registered Communications Distribution Designer (RCDD) certification.

B. Communications Cable Installer: Entity possessing active qualifications specified in Section 014000 "Quality Requirements" and the following:

1. Training and manufacturer certification to install, splice, and terminate communications cabling.
2. Installation Supervisor: BICSI Technician (TECH) certification.

C. Communications Testing Agency: Entity possessing active credentials from a qualified electrical testing laboratory recognized by authorities having jurisdiction.

1. On-site communications testing supervisor must have BICSI Technician (TECH)certification and documented training, and be experienced with testing communications equipment in accordance with BICSI testing standards.

PART 2 - PRODUCTS

2.1 SUBSTITUTION LIMITATIONS FOR COMMUNICATIONS EQUIPMENT

A. Substitution requests for communications equipment will be entertained under the following conditions:

1. Substitution requests may be submitted for consideration prior to the Communications Preconstruction Conference if accompanied by value analysis data indicating that substitution will comply with Project performance requirements while significantly increasing value for Owner throughout life of facility.
2. Contractor is responsible for sequencing and scheduling equipment procurement. After the Communications Preconstruction Conference, insufficient lead time for equipment delivery will not be considered a valid reason for substitution.

PART 3 - EXECUTION

3.1 INSTALLATION OF COMMUNICATIONS WORK

A. Unless more stringent requirements are specified in the Contract Documents or manufacturers' instructions, comply with NFPA 70, NECA NEIS 1, and BICSI N1 for installation of Work specified in Division 27. Consult Architect for resolution of conflicting requirements.

3.2 FIELD QUALITY CONTROL

A. Administrant for Communications Tests and Inspections:

1. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections.

END OF SECTION 270010

SECTION 270526 – GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Selection and installation of communications busbars.
2. Selection and installation of communications bonding conductors.

1.2 DEFINITIONS

A. PBB: Primary bonding busbar, located in main distribution frame room, ideally near electrical service entrance.

B. RBB: Rack bonding busbar, located in equipment cabinets and racks.

C. TBC: Telecommunications bonding conductor, for connecting PBB to intersystem bonding termination device or busbar at electrical service entrance.

D. UBC: Unit bonding conductor, for connecting individual communications equipment to RBBs or SBBs.

1.3 INFORMATIONAL SUBMITTALS

A. Manufacturers' Published Instructions: Record copy of official installation and testing instructions issued to Installer by manufacturer for the following:

1. Installing wire connector on conductor.
2. Recommended torque values.

1.4 CLOSEOUT SUBMITTALS

A. Record Documentation: Project record documents must include locations of PBB, and routing of TBC and UBC.

PART 2 - EXECUTION

2.1 EXAMINATION

A. Examine facility's grounding electrode system and equipment grounding for compliance with requirements for maximum ground-resistance level and other conditions affecting performance of grounding and bonding of electrical system.

B. Inspect test results of grounding system measured at point of TBC connection.

C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

D. Proceed with connection of TBC only after unsatisfactory conditions have been corrected.

2.2 SELECTION OF COMMUNICATIONS BUSBARS

A. Unless otherwise indicated in this Section or on Drawings, provide products specified in Section 260526 "Grounding and Bonding for Electrical Systems."

B. PBB:

1. Dimensions: 1/4 inch thick by 4 inch high.
2. Stand-Off Distance: 2 inch.

2.3 SELECTION OF COMMUNICATIONS BONDING CONDUCTORS

A. Unless otherwise indicated in this Section or on Drawings, provide products specified in Section 260526 "Grounding and Bonding for Electrical Systems."

B. Communications Busbar Connections:

1. TBC: Not smaller than 1/0 AWG.
2. UBC: Not smaller than 6 AWG unless otherwise indicated on Drawings. Provide bolted connectors.
3. Bonding Conductors to Structural Steel: Not smaller than 6 AWG unless otherwise indicated on Drawings. Provide bolted clamp connectors.

C. Cable Tray Connections:

1. Cable Tray Equipment Grounding Conductor: 6 AWG.

2.4 INSTALLATION OF BONDING FOR COMMUNICATIONS

A. Comply with manufacturer's published instructions.

B. Reference Standards:

1. Bonding of Communications: Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with BICSI N3.
2. Consult Architect for resolution of conflicting requirements.

C. Special Techniques:

1. Busbars:
   a. Indicate locations of grounding busbars on Drawings. Install busbars horizontally, on insulated spacers 12 inch above finished floor unless otherwise indicated.
2. Conductors:
   a. Stacking of conductors under a single bolt is not permitted when connecting to busbars.
   b. Assemble wire connector to conductor, complying with manufacturer's published instructions and as follows:
      1) Use crimping tool and die specific to connector.
      2) Pretwist conductor.
      3) Apply antioxidant compound to bolted and compression connections.
   c. Install in straightest and shortest route between origination and termination point, and no longer than required. Bend radius must not be smaller than 10 times diameter of conductor. No single bend may exceed 90 degrees.
   d. Install without splices.
   e. Support conductors at not more than 36 inch intervals.

3. Structural Steel: Where structural steel of steel frame building is readily accessible within room or space, bond each PBB to vertical steel of building frame.

4. Communications Enclosures: Bond metallic enclosures of telecommunications equipment with UBCs to nearest PBB.

5. Equipment Racks: Bond metallic components of enclosures to RBB using UBCs. Provide top-mounted RBB if not provided by enclosure or rack manufacturer. Bond RBB to SBB with TEBC. Power connection must comply with NFPA 70; equipment grounding conductor in power cord of cord- and plug-connected equipment must be considered supplemental to bonding requirements in this Section.

6. Shielded Cable: Bond shield of shielded cable to SBB in communications rooms and spaces. Comply with TIA-568.1 and TIA-568.2 when grounding shielded balanced twisted-pair cables.

7. Primary Protector: Bond to PBB with insulated bonding conductor.

8. Cable Trays: Provide continuous electrical path by installing bonding clips and jumpers. Bond each end to nearest SBB.

9. Ladder Racks: Provide continuous electrical path by installing bonding clips and jumpers. Bond each end to nearest SBB.

2.5 IDENTIFICATION

A. Comply with Section 270553 "Identification for Communications Systems."

B. Labels must be preprinted or computer-printed type.

2.6 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with calibrated torque wrench according to manufacturer's published instructions.

2. Test bonding connections of system using AC earth ground-resistance tester, taking two-point bonding measurements in each telecommunications equipment room containing PBB or SBB, using process recommended by BICSI N1. Conduct tests with facility in operation.
   a. Measure resistance between PBB and electrical service intersystem termination point. Maximum acceptable value is 100 mΩ.
      1) If measured resistance from electrical service equipment to ground exceeds 5 Ω, notify Architect and include recommendations to reduce resistance to ground.
   b. Measure resistance between SBBs and PBB. Maximum acceptable value is 100 mΩ.

B. Nonconforming Work:

1. Communications bonding will be considered defective if it does not pass tests and inspections.

2. Remove and replace defective units and retest.

C. Collect, assemble, and submit test and inspection reports.

END OF SECTION 270526

SECTION 270528 - PATHWAYS FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal conduits and fittings.
2. Nonmetallic conduits and fittings.
3. Hooks.
4. Boxes, enclosures, and cabinets.
5. Polymer-concrete handholes and boxes for exterior underground cabling.

1.2 ACTION SUBMITTALS

A. Product data for each type of product.

PART 2 - PRODUCTS

2.1 METAL CONDUITS AND FITTINGS

A. Description: Metal raceway of circular cross section with manufacturer-fabricated fittings.

B. General Requirements for Metal Conduits and Fittings:

1. Listed and labeled as defined in NFPA 70, by a nationally recognized testing laboratory, and marked for intended location and application.
2. Comply with TIA-569-D.

C. GRC: Comply with ANSI C80.1 and UL 6.

D. EMT: Comply with ANSI C80.3 and UL 797.

E. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.

1. Fittings for EMT:
   a. Material: Steel.
   b. Type: compression.
2. Expansion Fittings: PVC or steel to match conduit type, complying with UL-467, rated for environmental conditions where installed, and including flexible external bonding jumper.

2.2 NONMETALLIC CONDUITS AND FITTINGS

A. Description: Nonmetallic raceway of circular section with manufacturer-fabricated fittings.

B. General Requirements for Nonmetallic Conduits and Fittings:

1. Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.
2. Comply with TIA-569-D.

C. RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.

2.3 HOOKS

A. Description: Prefabricated sheet metal cable supports for telecommunications cable.

B. Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.

C. Comply with TIA-569-D.

D. Galvanized steel.

E. J shape.

2.4 BOXES, ENCLOSURES, AND CABINETS

A. Description: Enclosures for communications.

B. General Requirements for Boxes, Enclosures, and Cabinets:

1. Comply with TIA-569-D.
2. Boxes, enclosures, and cabinets installed in wet locations shall be listed and labeled as defined in NFPA 70, by an NRTL, and marked for use in wet locations.
3. Box extensions used to accommodate new building finishes shall be of same material as recessed box.

C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.

D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, aluminum, Type FD, with gasketed cover.

E. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

2.5 POLYMER-CONCRETE HANDHOLES

A. Description: Molded of sand and aggregate; bound together with polymer resin; and reinforced with steel, fiberglass, or a combination of the two.

B. General Requirements for Polymer Concrete Handholes:

1. Boxes and handholes for use in underground systems shall be listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.
2. Boxes installed in wet areas shall be listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.
3. Comply with TIA-569-D.

C. Configuration: Designed for flush burial with integral closed bottom unless otherwise indicated.

D. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location.

1. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
2. Cover Legend: Molded lettering, "COMMUNICATIONS".

PART 3 - EXECUTION

3.1 PATHWAY APPLICATION

A. Minimum Pathway Size: 1-inch trade size for copper cables.

B. Pathway Fittings: Compatible with pathways and suitable for use and location.

C. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.

3.2 INSTALLATION

A. Comply with the following standards for installation requirements except where requirements on Drawings or in this Section are stricter:

1. NECA 1.
2. NECA/BICSI 568.
3. TIA-569-D.
4. NECA 101
5. NECA 105.

B. Comply with NFPA 70 limitations for types of pathways allowed in specific occupancies and number of floors.

C. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping materials and installation for penetrations through fire-rated walls, ceilings, and assemblies.

D. Comply with requirements in Section 270529 "Hangers and Supports for Communications Systems" for hangers and supports.

E. Comply with requirements in Section 270544 "Sleeves and Sleeve Seals for Communications Pathways and Cabling" for sleeves and sleeve seals for communications.

F. Keep pathways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal pathway runs above water and steam piping.

G. Complete pathway installation before starting conductor installation.

H. Install no more than the equivalent of two 90-degree bends in any pathway run. Support within 12 inches of changes in direction. Utilize long radius ells for all optical-fiber cables.

I. Support conduit within 12 inches of enclosures to which attached.

J. Stub-ups to Above Recessed Ceilings:

1. Use EMT for pathways.
2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.

K. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of pathway and fittings before making up joints. Follow compound manufacturer's written instructions.

L. Coat field-cut threads on PVC-coated pathway with a corrosion-preventing conductive compound prior to assembly.

M. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure, to assure a continuous ground path.

N. Cut conduit perpendicular to the length. For conduits of 2-inch trade size and larger, use roll cutter or a guide to ensure cut is straight and perpendicular to the length.

O. Install pull wires in empty pathways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Secure pull wire, so it cannot fall into conduit. Cap pathways designated as spare alongside pathways in use.

P. Install devices to seal pathway interiors at accessible locations. Locate seals, so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all pathways at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where an underground service pathway enters a building or structure.
3. Where otherwise required by NFPA 70.

Q. Comply with manufacturer's written instructions for solvent welding PVC conduit and fittings.

R. Hooks:

1. Size to allow a minimum of 25 percent future capacity without exceeding design capacity limits.
2. Shall be supported by dedicated support wires. Do not use ceiling grid support wire or support rods.
3. Hook spacing shall allow no more than 6 inches of slack. The lowest point of the cables shall be no less than 6 inches adjacent to ceilings, mechanical ductwork and fittings, luminaires, power conduits, power and telecommunications outlets, and other electrical and communications equipment.
4. Space hooks no more than 5 feet o.c.
5. Provide a hook at each change in direction.

S. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surface to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box.

T. Horizontally separate boxes mounted on opposite sides of walls, so they are not in the same vertical channel.

U. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

3.3 INSTALLATION OF UNDERGROUND CONDUIT

A. Direct-Buried Conduit:

1. Excavate trench bottom to provide firm and uniform support for conduit. Install backfill.
2. After installing conduit, backfill and compact.
3. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through floor unless otherwise indicated. Install manufactured rigid steel

conduit elbows for stub-ups at poles and equipment and at building entrances through floor.

4. Underground Warning Tape: Comply with requirements in Section 270553 "Identification for Communications Systems."

3.4 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.

B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.

C. Field cut openings for conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR COMMUNICATIONS PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 270544 "Sleeves and Sleeve Seals for Communications Pathways and Cabling."

3.6 FIRESTOPPING

A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.7 PROTECTION

A. Protect coatings, finishes, and cabinets from damage or deterioration.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.

2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 270528

SECTION 270529 - HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Steel slotted support systems for communication raceways.
2. Conduit and cable support devices.
3. Mounting, anchoring, and attachment components, including powder-actuated fasteners, mechanical expansion anchors, concrete inserts, clamps, through bolts, toggle bolts, and hanger rods.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Preformed steel channels and angles, with minimum 13/32-inch-diameter holes at a maximum of 8 inches o.c. in at least one surface.

1. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
2. Material for Channel, Fittings, and Accessories: Galvanized steel.
3. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
4. Channel Dimensions: Selected for applicable load criteria.

B. Conduit and Cable Support Devices: Steel clamps, hangers, and associated fittings, designed for types and sizes of raceway or cable to be supported.

C. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
2. Mechanical-Expansion Anchors: Insert-wedge-type [zinc-coated steel] [stainless steel] for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
3. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM F3125/F3125M,Grade A325.
6. Toggle Bolts: All-steel springhead type.
7. Hanger Rods: Threaded steel.

PART 3 - EXECUTION

3.1 APPLICATION

A. Comply with the following standards for application and installation requirements of hangers and supports, except where requirements on Drawings or in this Section are stricter:

1. NECA 1.
2. NECA/BICSI 568.
3. TIA-569-C.
4. NECA 101.
5. NECA 105.

B. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping materials and installation for penetrations through fire-rated walls, ceilings, and assemblies.

C. Comply with requirements for pathways specified in Section 270528 "Pathways for Communications Systems."

D. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMTs, IMCs, and RMCs as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.

E. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

F. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten communications items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To New Concrete: Bolt to concrete inserts.
2. To Masonry: Use approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
3. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts.
4. To Light Steel: Sheet metal screws.

G. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

END OF SECTION 270529

SECTION 270536 - CABLE TRAYS FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Ladder cable tray.
2. Cable tray accessories.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For each type of cable tray.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR CABLE TRAYS

A. Cable Trays and Accessories: Identified as defined in NFPA 70 and marked for intended location, application, and grounding.

B. Sizes and Configurations: See the Cable Tray Schedule on Drawings for specific requirements for types, materials, sizes, and configurations.

2.2 LADDER CABLE TRAY

A. Manufacturer: Subject to compliance from one of the following:

1. Eaton B-Line
2. Legrand Cablofil
3. Thomas & Betts ABB
4. Chatsworth Products (CPI)

B. Description:

1. Configuration: Two longitudinal side rails with transverse rungs swaged or welded to side rails, complying with NEMA VE 1.
2. Width: 24 inches unless otherwise indicated on Drawings.
3. Minimum Usable Load Depth: 4 inches.
4. Rung Spacing: 6 inches o.c.
5. Radius-Fitting Rung Spacing: 9 inches at center of tray's width.
6. Minimum Cable-Bearing Surface for Rungs: 7/8-inch width with radius edges.
7. No portion of the rungs shall protrude below the bottom plane of side rails.

C. Materials and Finishes:

1. Steel:
   a. Straight Section and Fitting Side Rails and Rungs: Steel complies with the minimum mechanical properties of ASTM A1011/A1011M, SS, Grade 33.
   b. Steel Tray Splice Plates: ASTM A1011/A1011M, HSLAS, Grade 50, Class 1.

c. Fasteners: Steel complies with the minimum mechanical properties of ASTM A510/A510M, Grade 1008.
d. Finish: Hot-dip galvanized after fabrication, complying with ASTM A123/A123M, Class B2.
    1) Hardware: Galvanized, ASTM B633.
e. Finish: Hot-dip galvanized after fabrication, complying with ASTM A653/A653M, G90.

2.3 CABLE TRAY ACCESSORIES

A. Fittings: Tees, crosses, risers, elbows, and other fittings as indicated, of same materials and finishes as cable tray.

B. Barrier Strips: Same materials and finishes as for cable tray.

C. Cable tray supports and connectors, including bonding jumpers, as recommended by cable tray manufacturer.

PART 3 - EXECUTION

3.1 CABLE TRAY INSTALLATION

A. Install cable trays according to NEMA VE 2.

B. Install cable trays as a complete system, including fasteners, hold-down clips, support systems, barrier strips, adjustable horizontal and vertical splice plates, elbows, reducers, tees, crosses, cable dropouts, adapters, covers, and bonding.

C. Fasten cable tray supports to building structure.

D. Make connections to equipment with flanged fittings fastened to cable trays and to equipment. Support cable trays independent of fittings. Do not carry weight of cable trays on equipment enclosure.

E. Seal penetrations through fire and smoke barriers. Comply with requirements in Section 078413 "Penetration Firestopping."

3.2 CABLE TRAY GROUNDING

A. Ground cable trays according to NFPA 70 unless additional grounding is specified. Comply with requirements in Section 270526 "Grounding and Bonding for Communications Systems."

B. Cable trays with shall be bonded together with splice plates listed for grounding purposes or with listed bonding jumpers.

C. Bond cable trays to power source for cables contained within with bonding conductors sized according to NFPA 70, Article 250.122, "Size of Equipment Grounding Conductors."

3.3 CABLE INSTALLATION

A. Install cables only when each cable tray run has been completed and inspected.

B. Fasten cables on horizontal runs with cable clamps or cable ties according to NEMA VE 2. Tighten clamps only enough to secure the cable, without indenting the cable jacket.

C. Fasten cables on vertical runs to cable trays every 18 inches.

3.4 CONNECTIONS

A. Connect raceways to cable trays according to requirements in NEMA VE 2 and NEMA FG 1.

3.5 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. After installing cable trays and after electrical circuitry has been energized, survey for compliance with requirements.
2. Visually inspect cable insulation for damage. Correct sharp corners, protuberances in cable trays, vibrations, and thermal expansion and contraction conditions, which may cause or have caused damage.
3. Verify that the number, size, and voltage of cables in cable trays do not exceed that permitted by NFPA 70. Verify that communications or data-processing circuits are separated from power circuits by barriers or are installed in separate cable trays.
4. Verify that there are no intruding items such as pipes, hangers, or other equipment in the cable tray.
5. Remove dust deposits, industrial process materials, trash of any description, and any blockage of tray ventilation.
6. Visually inspect each cable tray joint and each ground connection for mechanical continuity. Check bolted connections between sections for corrosion. Clean and retorque in suspect areas.
7. Check for missing, incorrect, or damaged bolts, bolt heads, or nuts. When found, replace with specified hardware.
8. Perform visual and mechanical checks for adequacy of cable tray grounding; verify that all takeoff raceways are bonded to cable trays. Test entire cable tray system for continuity. Maximum allowable resistance is 1 ohm.

B. Prepare test and inspection reports.

3.6 PROTECTION

A. Protect installed cable trays and cables.

END OF SECTION 270536

SECTION 270544 - SLEEVES AND SLEEVE SEALS FOR COMMUNICATIONS PATHWAYS AND CABLING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Round sleeves.
2. Sleeve seal systems.

1.2 ROUND SLEEVES

A. Wall Sleeves, Steel:

1. Description: ASTM A53/A53M, Type E, Grade B, Schedule 40, zinc coated, plain ends and integral waterstop.

B. Pipe Sleeves, PVC:

1. Description: ASTM D1785, Schedule 40.

1.3 SLEEVE SEAL SYSTEMS

A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and pathway or cable or between pathway and cable.

1. Sealing Elements: EPDM rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.

PART 2 - EXECUTION

2.1 INSTALLATION OF SLEEVES FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS

A. Comply with NECA 1.

B. Sleeves for Conduits Penetrating Above-Grade, Non-Fire-Rated, Concrete and Masonry-Unit Floors and Walls:

1. Interior Penetrations of Non-Fire-Rated Walls and Floors:
   a. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall or floor so no voids remain. Tool exposed surfaces smooth; protect material while curing.
   b. Seal annular space between sleeve and pathway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Section 079200 "Joint Sealants."
2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
3. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and pathway or cable, unless sleeve seal system is to be installed.

4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.

C. Sleeves for Conduits Penetrating Non-Fire-Rated Wall Assemblies:

1. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.

2. Seal space outside of sleeves with approved joint compound for wall assemblies.

D. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seal systems. Size sleeves to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.

E. Underground, Exterior-Wall and Floor Penetrations:

1. Install steel pipe sleeves with integral waterstops. Size sleeves to allow for 1-inch annular clear space between pathway or cable and sleeve for installing sleeve seal system. Install sleeve during construction of floor or wall.

2.2 INSTALLATION OF SLEEVE SEAL SYSTEMS

A. Install sleeve seal systems in sleeves in exterior concrete walls and slabs-on-grade at pathway entries into building.

B. Install type and number of sealing elements recommended by manufacturer for pathway or cable material and size. Position pathway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pathway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

END OF SECTION 270544

SECTION 270553 - IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Underground-line warning tape.
2. Bands and tubes.
3. Cable ties.
4. Miscellaneous identification products.
5. Labels.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Identification Schedule:

1. Outlets: Scaled drawings indicating location and proposed designation.
2. Racks: Scaled drawings indicating location and proposed designation.
3. Patch Panels: Enlarged scaled drawings showing rack row, number, and proposed designations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with NFPA 70 and TIA 606-B.

B. Comply with ANSI Z535.4 for safety signs and labels.

C. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

2.2 COLOR AND LEGEND REQUIREMENTS

A. Equipment Identification Labels:

1. Black letters on a white field.

2.3 LABELS

A. Self-Adhesive Wraparound Labels: Preprinted, 3-mil-thick, polyester flexible labels with acrylic pressure-sensitive adhesive.

1. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating protective shields over the legend. Labels sized such that the clear shield overlaps the entire printed legend.

2.4 CABLE TIES

A. General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.

1. Minimum Width: 3/16 inch.
2. Temperature Range: Minus 40 to plus 185 deg F.
3. Color: Black, except where used for color-coding.

B. Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, and self-locking.

1. Minimum Width: 3/16 inch.
2. UL 94 Flame Rating: 94V-0.
3. Temperature Range: Minus 50 to plus 284 deg F.
4. Color: Black.

2.5 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.

B. Verify identity of each item before installing identification products.

C. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.

D. Apply identification devices to surfaces that require finish after completing finish work.

E. Install signs with approved legend to facilitate proper identification, operation, and maintenance of communications systems and connected items.

F. Self-Adhesive Labels:

1. On each item, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on 1-1/2-inch-high label; where two lines of text are required, use labels 2 inches high.

G. Cable Ties: General purpose, except as listed below:

1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.

3.2 IDENTIFICATION SCHEDULE

A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.

B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations with high visibility. Identify by system and circuit designation.

C. Accessible Fittings for Raceways and Cables within Buildings: Identify covers of each junction and pull box with self-adhesive labels containing wiring system legend.

1. System legends shall be as follows:
   a. Telecommunications.

D. Faceplates: Label individual faceplates with self-adhesive labels. Place label at top of faceplate. Each faceplate shall be labeled with its individual, sequential designation, composed of the following, in the order listed:

1. Patch Panel number.
2. Dash.
3. Port number.

E. Equipment Room Labeling:

1. Patch Panels: Label individual rows in each rack, starting at top and working down, with self-adhesive labels.

F. Horizontal Cables: Label each cable with a self-adhesive wraparound label indicating the following, in the order listed:

1. Patch Panel number.
2. Dash.
3. Port number.

END OF SECTION 270553

SECTION 271116 - COMMUNICATIONS RACKS, FRAMES, AND ENCLOSURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. 19-inch equipment racks.
2. Power strips.
3. Grounding.
4. Labeling.

1.2 DEFINITIONS

A. Service Provider: The operator of a telecommunications transmission service delivered through access provider facilities.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For communications racks, frames, and enclosures. Include plans, elevations, sections, details, and attachments to other work.

1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
2. Equipment Racks and Cabinets: Include workspace requirements and access for cable connections.
3. Grounding: Indicate location of TGB and its mounting detail showing standoff insulators and wall-mounting brackets.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Cabling installer must have personnel certified by BICSI on staff.

1. Layout Responsibility: Preparation of Shop Drawings shall be under direct supervision of RCDD Technician.
2. Installation Supervision: Installation shall be under direct supervision of Technician, who shall be present at all times when Work of this Section is performed at Project site.
3. Field Inspector: Currently registered by BICSI as RCDD Technician to perform on-site inspection.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. UL listed.

2.2 19-INCH EQUIPMENT RACKS

A. Description: Two-post racks with threaded rails designed for mounting telecommunications equipment. Width is compatible with EIA/ECIA 310-E, 19-inch equipment mounting with an opening of 17.72-inches between rails.

B. Manufacturer: Subject to compliance from one of the following:

1. Chatsworth Products (CPI)
2. APC (Schneider Electric)
3. CommScope
4. Belden
5. Panduit

C. General Requirements:

1. Frames: Modular units designed for telecommunications terminal support and coordinated with dimensions of units to be supported.
2. Material: Extruded steel.
3. Finish: Manufacturer's standard, baked-polyester powder coat.
4. Color: Black.

D. Floor-Mounted Racks:

1. Overall Height: 84 inches.
2. Overall Depth: 23 inches.
3. Upright Depth: 6 inches.
4. Two-Post Load Rating: 400 lb.
5. Vertical and horizontal cable management channels, top and bottom cable troughs, grounding lug, and a power strip.
6. Base shall have a minimum of four mounting holes for permanent attachment to floor.
7. Top shall have provisions for attaching to cable tray or ceiling.
8. Self-leveling.

E. Cable Management:

1. Metal, with integral wire retaining fingers.
2. Baked-polyester powder coat finish.
3. Vertical cable management panels shall have front and rear channels, with covers.

2.3 POWER STRIPS

A. Power Strips: Comply with UL 1363.

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Rack mounting, with integral flanges.
3. Housing: Metal.
4. Six, 20-A, 120-V ac, NEMA WD 6, Configuration 5-20R receptacles.

5. Front-facing receptacles.
6. LED indicator lights for power and protection status.
7. LED indicator lights for reverse polarity and open outlet ground.
8. Circuit Breaker and Thermal Fusing: Unit continues to supply power if protection is lost.
9. Rocker-type on-off switch, illuminated when in on position.
10. Surge Protection: UL 1449, Type 3.
    a. Maximum Surge Current, Line to Neutral: 27 kA.
    b. Protection modes shall be line to neutral, line to ground, and neutral to ground.

2.4 GROUNDING

A. Comply with requirements in Section 270526 "Grounding and Bonding for Communications Systems" for grounding conductors and connectors.

2.5 LABELING

A. Comply with TIA-606-B and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

B. Comply with BICSI TDMM for layout of communications equipment spaces.

C. Comply with BICSI ITSIMM for installation of communications equipment spaces.

D. Bundle, lace, and train conductors and cables to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.

E. Coordinate layout and installation of communications equipment in racks and room. Coordinate service entrance configuration with service provider.

1. Meet jointly with system providers, equipment suppliers, and Owner to exchange information and agree on details of equipment configurations and installation interfaces.
2. Record agreements reached in meetings and distribute them to other participants.
3. Adjust configurations and locations of distribution frames, cross-connects, and patch panels in equipment spaces to accommodate and optimize configuration and space requirements of telecommunications equipment.
4. Adjust configurations and locations of equipment with distribution frames, cross-connects, and patch panels of cabling systems of other communications, electronic safety and security, and related systems that share space in equipment room.

F. Coordinate location of power raceways and receptacles with locations of communications equipment requiring electrical power to operate.

3.2 GROUNDING

A. Comply with NECA/BICSI 607.

B. Install grounding according to BICSI ITSIMM, "Bonding, Grounding (Earthing) and Electrical Protection" Ch.

3.3 IDENTIFICATION

A. Coordinate system components, wiring, and cabling complying with TIA-606-B. Comply with requirements in Section 270553 "Identification for Electrical Systems."

END OF SECTION 271116

SECTION 271513 - COMMUNICATIONS COPPER HORIZONTAL CABLING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Category 6 twisted pair cable.
2. Twisted pair cable hardware, including plugs and jacks.
3. Cable management system.
4. Grounding provisions for twisted pair cable.

1.2 COPPER HORIZONTAL CABLING DESCRIPTION

A. Horizontal cabling system shall provide interconnections between Distributor A, Distributor B, or Distributor C, and the equipment outlet, otherwise known as "Cabling Subsystem 1," in the telecommunications cabling system structure. Cabling system consists of horizontal cables, intermediate and main cross-connects, mechanical terminations, and patch cords or jumpers used for horizontal-to-horizontal cross-connection.

B. The maximum allowable horizontal cable length is 295 feet. This maximum allowable length does not include an allowance for the length of 16 feet to the workstation equipment or in the horizontal cross-connect.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Reviewed and stamped by RCDD.

1. System Labeling Schedules:
   a. Electronic copy of labeling schedules, in software and format selected by Owner.
2. Cabling administration Drawings and printouts.
3. Wiring diagrams and installation details of telecommunications equipment, to show location and layout of telecommunications equipment.

C. Twisted pair cable testing plan.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For RCDD, installation supervisor, and field inspector.

B. Product Certificates: For each type of product.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.

1. Layout Responsibility: Preparation of Shop Drawings, cabling administration Drawings, and field testing program development by an RCDD.

2. Installation Supervision: Installation shall be under the direct supervision of Technician, who shall be present at all times when Work of this Section is performed at Project site.

3. Testing Supervisor: Currently certified by BICSI as an RCDD to supervise on-site testing.

1.7 COORDINATION

A. Coordinate layout and installation of telecommunications pathways and cabling with Owner's telecommunications and LAN equipment and service suppliers.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Horizontal cabling system shall comply with transmission standards in TIA-568-C.1, when tested according to test procedures of this standard.

B. Telecommunications Pathways and Spaces: Comply with TIA-569-D.

C. Grounding: Comply with TIA-607-B.

2.2 GENERAL CABLE CHARACTERISTICS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with the applicable standard and NFPA 70 for the following types:

1. Communications, Plenum Rated:
   a. Type CMP complying with UL 1685 or Type CMP in listed plenum communications raceway.

2.3 CATEGORY 6 TWISTED PAIR CABLE

A. Description: Four-pair, balanced-twisted pair cable, with internal spline, certified to meet transmission characteristics of Category 6 cable at frequencies up to 250 MHz.

B. Manufacturer: Subject to compliance from one of the following:

1. CommScope
2. Belden
3. Panduit
4. Siemon

C. Standard: Comply with NEMA WC 66/ICEA S-116-732 and TIA-568-C.2 for Category 6 cables.

D. Conductors: 100-ohm, 23 AWG solid copper.

E. Shielding/Screening: Unshielded twisted pairs (UTP).

F. Cable Rating: Plenum.

G. Jacket: Blue thermoplastic.

2.4 TWISTED PAIR CABLE HARDWARE

A. Description: Hardware designed to connect, splice, and terminate twisted pair copper communications cable.

B. Manufacturer: Subject to compliance from one of the following:

1. CommScope
2. Belden
3. Panduit
4. Siemon

C. General Requirements for Twisted Pair Cable Hardware:

1. Comply with the performance requirements of Category 6.
2. Comply with TIA-568-C.2, IDC type, with modules designed for punch-down caps or tools.
3. Cables shall be terminated with connecting hardware of same category or higher.

D. Source Limitations: Obtain twisted pair cable hardware from single source from single manufacturer.

E. Connecting Blocks:

1. 110-style IDC for Category 6.

F. Patch Panel: Modular panels housing numbered jack units with IDC-type connectors at each jack location for permanent termination of pair groups of installed cables.

1. Features:
   a. Universal T568A and T568B wiring labels.
   b. Labeling areas adjacent to conductors.
   c. 24 or 48 ports.
2. Construction: 16-gauge steel and mountable on 19-inch equipment racks.

G. Patch Cords: Factory-made, four-pair cables in 36-inch lengths; terminated with an eight-position modular plug at each end.

1. Patch cords shall have bend-relief-compliant boots and color-coded icons to ensure performance. Patch cords shall have latch guards to protect against snagging.
2. Patch cords shall have color-coded boots for circuit identification.

H. Plugs and Plug Assemblies:

1. Male; eight position; color-coded modular telecommunications connector designed for termination of a single four-pair, 100-ohm, unshielded or shielded twisted pair cable.
2. Standard: Comply with TIA-568-C.2.

I. Jacks and Jack Assemblies:

1. Female; eight position; modular; fixed telecommunications connector designed for termination of a single four-pair, 100-ohm, unshielded or shielded twisted pair cable.
2. Designed to snap-in to a patch panel or cover plate.
3. Standard: Comply with TIA-568-C.2.

J. Cover Plate:

1. Two port, vertical single gang cover plates designed to mount to single gang wall boxes.
2. Plastic Cover Plate: High-impact plastic. Coordinate color with Section 260533 "Raceway and Boxes for Electrical Systems."
3. Metal Cover Plate: Stainless steel, complying with requirements in Section 260533 "Raceway and Boxes for Electrical Systems."
4. For use with snap-in jacks accommodating any combination of twisted pair, optical fiber, and coaxial work area cords.
   a. Flush mounting jacks, positioning the cord at a 45-degree angle.

K. Legend:

1. Machine printed, in the field, using adhesive-tape label.
2. Snap-in, clear-label covers and machine-printed paper inserts.

PART 3 - EXECUTION

3.1 INSTALLATION OF TWISTED-PAIR HORIZONTAL CABLES

A. Comply with NECA 1 and NECA/BICSI 568.

B. Routing: Install cables in raceways and cable trays, except within consoles, cabinets, desks, and counters[and except in accessible ceiling spaces, attics, and gypsum board partitions where unenclosed wiring method may be used. Conceal raceway and cables, except in unfinished spaces.

1. Install plenum cable in environmental air spaces, including plenum ceilings.
2. Comply with requirements for raceways and boxes specified in Section 270528 "Pathways for Communications Systems."

C. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools. Install conductors parallel with or at right angles to sides and back of enclosure.

D. General Requirements for Cabling:

1. Comply with TIA-568-C.1.
2. Comply with BICSI's Information Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section.
3. Install 110-style IDC termination hardware unless otherwise indicated.
4. Do not untwist twisted pair cables more than 1/2 inch from the point of termination to maintain cable geometry.
5. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
6. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
7. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI information

Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section. Use lacing bars and distribution spools.

8. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation, and replace it with new cable.

9. In the communications equipment room, install a 10-foot- long service loop on each end of cable.

10. Pulling Cable: Comply with BICSI Information Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Pulling and Installing Cable" Section. Monitor cable pull tensions.

E. Group connecting hardware for cables into separate logical fields.

F. Separation from EMI Sources:

1. Comply with recommendations from BICSI's "Telecommunications Distribution Methods Manual" and TIA-569-D for separating unshielded copper communication cable from potential EMI sources, including electrical power lines and equipment.

3.2 FIRESTOPPING

A. Comply with requirements in Section 078413 "Penetration Firestopping."

3.3 GROUNDING

A. Comply with requirements in Section 270526 "Grounding and Bonding for Communications Systems" for grounding conductors and connectors.

B. Install grounding according to the "Grounding, Bonding, and Electrical Protection" chapter in BICSI's "Telecommunications Distribution Methods Manual."

C. Comply with TIA-607-B and NECA/BICSI-607.

D. Bond metallic equipment to the grounding bus bar, using not smaller than a No. 6 AWG equipment grounding conductor.

3.4 IDENTIFICATION

A. Identify system components, wiring, and cabling complying with TIA-606-B. Comply with requirements for identification specified in Section 270553 "Identification for Communications Systems."

3.5 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Visually inspect jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with TIA-568-C.1.

2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.

3. Test twisted pair cabling for DC loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination but not cross-connection.

B. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similarly to Table 10.1 in BICSI's "Telecommunications Distribution Methods Manual," or shall be transferred from the instrument to the computer, saved as text files, printed, and submitted.

C. Nonconforming Work:

1. End-to-end cabling will be considered defective if it does not pass tests and inspections.

2. Remove and replace cabling where test results indicate that they do not comply with specified requirements.

D. Collect, assemble, and submit test and inspection reports.

E. Manufacturer Services:

1. Engage factory-authorized service representative to support field tests and inspections.

END OF SECTION 271513

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CODE FOOTPRINT LEGEND

PARTITION TYPES

- 1 HR FIRE PARTITION
- 1 HR FIRE BARRIER
- 2 HR FIRE BARRIER

AREA DESIGNATIONS

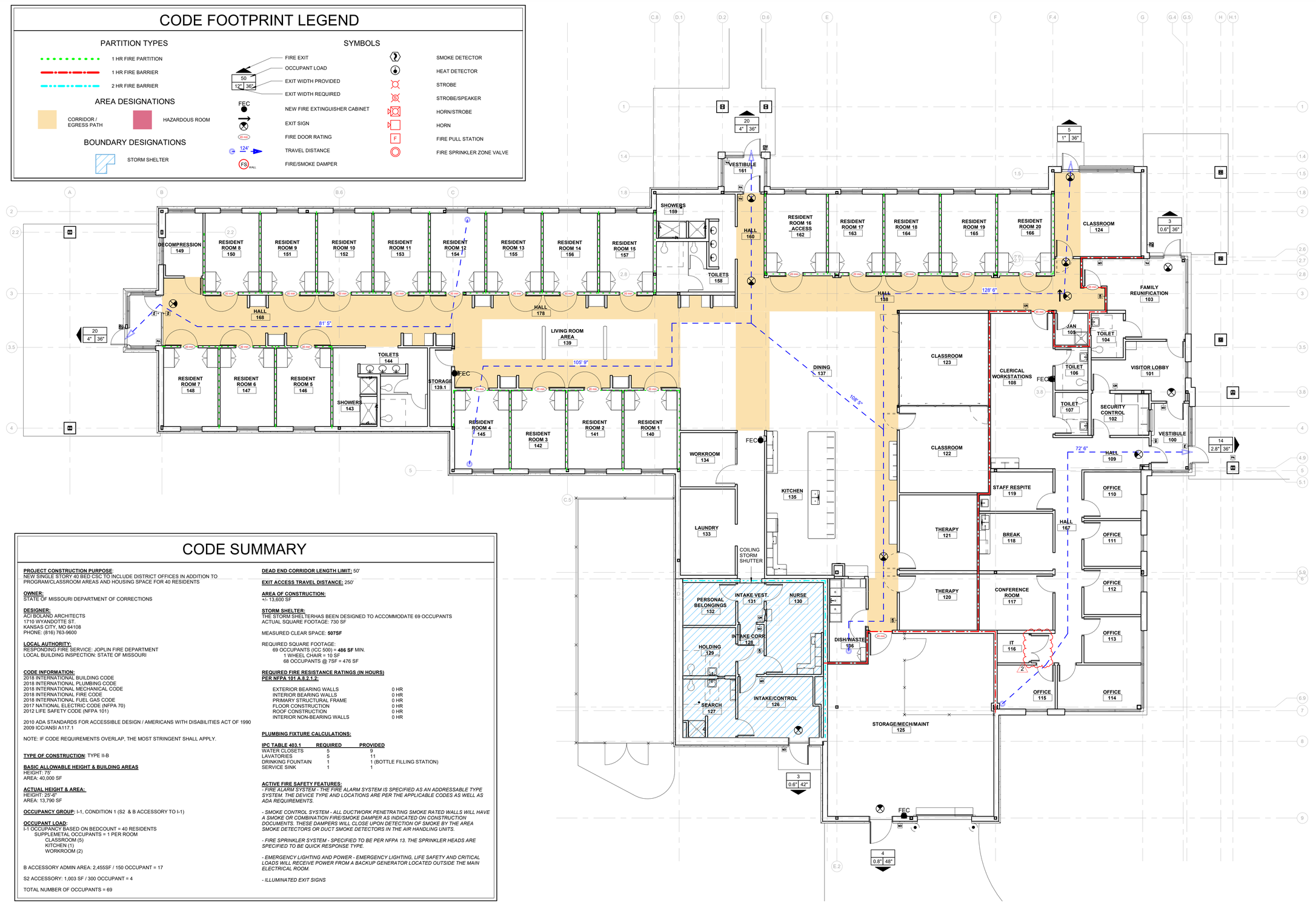
- CORRIDOR / EGRESS PATH
- HAZARDOUS ROOM

BOUNDARY DESIGNATIONS

- STORM SHELTER

SYMBOLS

- FIRE EXIT
- OCCUPANT LOAD
- EXIT WIDTH PROVIDED
- EXIT WIDTH REQUIRED
- NEW FIRE EXTINGUISHER CABINET
- EXIT SIGN
- FIRE DOOR RATING
- TRAVEL DISTANCE
- FIRE/SMOKE DAMPER
- SMOKE DETECTOR
- HEAT DETECTOR
- STROBE
- STROBE/SPEAKER
- HORN/STROBE
- HORN
- FIRE PULL STATION
- FIRE SPRINKLER ZONE VALVE



CODE SUMMARY

PROJECT CONSTRUCTION PURPOSE
NEW SINGLE STORY 40 BED CSC TO INCLUDE DISTRICT OFFICES IN ADDITION TO PROGRAM/CLASSROOM AREAS AND HOUSING SPACE FOR 40 RESIDENTS

OWNER:
STATE OF MISSOURI DEPARTMENT OF CORRECTIONS

DESIGNER:
ACI BOLAND ARCHITECTS
1710 WYANDOTTE ST.
KANSAS CITY, MO 64108
PHONE: (816) 763-9600

LOCAL AUTHORITY:
RESPONDING FIRE SERVICE: JOPLIN FIRE DEPARTMENT
LOCAL BUILDING INSPECTION: STATE OF MISSOURI

CODE INFORMATION:
2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL PLUMBING CODE
2018 INTERNATIONAL MECHANICAL CODE
2018 INTERNATIONAL FIRE CODE
2018 INTERNATIONAL FUEL GAS CODE
2017 NATIONAL ELECTRIC CODE (NFPA 70)
2012 LIFE SAFETY CODE (NFPA 101)

2010 ADA STANDARDS FOR ACCESSIBLE DESIGN / AMERICANS WITH DISABILITIES ACT OF 1990
2009 ICC/ANSI A117.1

NOTE: IF CODE REQUIREMENTS OVERLAP, THE MOST STRINGENT SHALL APPLY.

TYPE OF CONSTRUCTION: TYPE II-B

BASIC ALLOWABLE HEIGHT & BUILDING AREAS
HEIGHT: 75'
AREA: 40,000 SF

ACTUAL HEIGHT & AREA:
HEIGHT: 25'-6"
AREA: 13,790 SF

OCCUPANCY GROUP: I-1, CONDITION 1 (S2 & B ACCESSORY TO I-1)

OCCUPANT LOAD:
I-1 OCCUPANCY BASED ON BEDCOUNT = 40 RESIDENTS
SUPPLEMETAL OCCUPANTS = 1 PER ROOM
CLASSROOM (5)
KITCHEN (1)
WORKROOM (2)

B ACCESSORY ADMIN AREA: 2,455SF / 150 OCCUPANT = 17

S2 ACCESSORY: 1,003 SF / 300 OCCUPANT = 4

TOTAL NUMBER OF OCCUPANTS = 69

DEAD END CORRIDOR LENGTH LIMIT: 50'

EXIT ACCESS TRAVEL DISTANCE: 250'

AREA OF CONSTRUCTION:
+/- 13,600 SF

STORM SHELTER:
THE STORM SHELTERHAS BEEN DESIGNED TO ACCOMMODATE 69 OCCUPANTS
ACTUAL SQUARE FOOTAGE: 730 SF

MEASURED CLEAR SPACE: **507SF**

REQUIRED SQUARE FOOTAGE:
69 OCCUPANTS (ICC 500) = **486 SF** MIN.
1 WHEEL CHAIR = 10 SF
68 OCCUPANTS @ 7SF = 476 SF

REQUIRED FIRE RESISTANCE RATINGS (IN HOURS) PER NFPA 101 A.8.2.1.2:

EXTERIOR BEARING WALLS	0 HR
INTERIOR BEARING WALLS	0 HR
PRIMARY STRUCTURAL FRAME	0 HR
FLOOR CONSTRUCTION	0 HR
ROOF CONSTRUCTION	0 HR
INTERIOR NON-BEARING WALLS	0 HR

PLUMBING FIXTURE CALCULATIONS:

IPC TABLE 403.1	REQUIRED	PROVIDED
WATER CLOSETS	5	9
LAVATORIES	5	11
DRINKING FOUNTAIN	1	1 (BOTTLE FILLING STATION)
SERVICE SINK	1	1

ACTIVE FIRE SAFETY FEATURES:
- FIRE ALARM SYSTEM - THE FIRE ALARM SYSTEM IS SPECIFIED AS AN ADDRESSABLE TYPE SYSTEM. THE DEVICE TYPE AND LOCATIONS ARE PER THE APPLICABLE CODES AS WELL AS ADA REQUIREMENTS.

- SMOKE CONTROL SYSTEM - ALL DUCTWORK PENETRATING SMOKE RATED WALLS WILL HAVE A SMOKE OR COMBINATION FIRE/SMOKE DAMPER AS INDICATED ON CONSTRUCTION DOCUMENTS. THESE DAMPERS WILL CLOSE UPON DETECTION OF SMOKE BY THE AREA SMOKE DETECTORS OR DUCT SMOKE DETECTORS IN THE AIR HANDLING UNITS.

- FIRE SPRINKLER SYSTEM - SPECIFIED TO BE PER NFPA 13. THE SPRINKLER HEADS ARE SPECIFIED TO BE QUICK RESPONSE TYPE.

- EMERGENCY LIGHTING AND POWER - EMERGENCY LIGHTING, LIFE SAFETY AND CRITICAL LOADS WILL RECEIVE POWER FROM A BACKUP GENERATOR LOCATED OUTSIDE THE MAIN ELECTRICAL ROOM.

- ILLUMINATED EXIT SIGNS

A3 CODE FOOTPRINT PLAN
1/8" = 1'-0"

TRUE NORTH / PLAN NORTH

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STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

DOMINIC J. SPADAFORE
NUMBER A-2025003940
10/28/2026

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OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF Corrections

JOPLIN COMMUNITY SUPERVISION CENTER

2303 WEST 20TH STREET
JOPLIN, MO 64801

PROJECT # C2512-01
SITE # 7033
ASSET # 9327033001

Revision

Number	Revision Date	Revision Description
2	TBD	Addendum 2

CAD DWG FILE:
DRAWN BY: KNS
CHECKED BY: JS, DS
DESIGNED BY: ACI BOLAND

SHEET TITLE:
FIRST FLOOR CODE FOOTPRINT PLAN

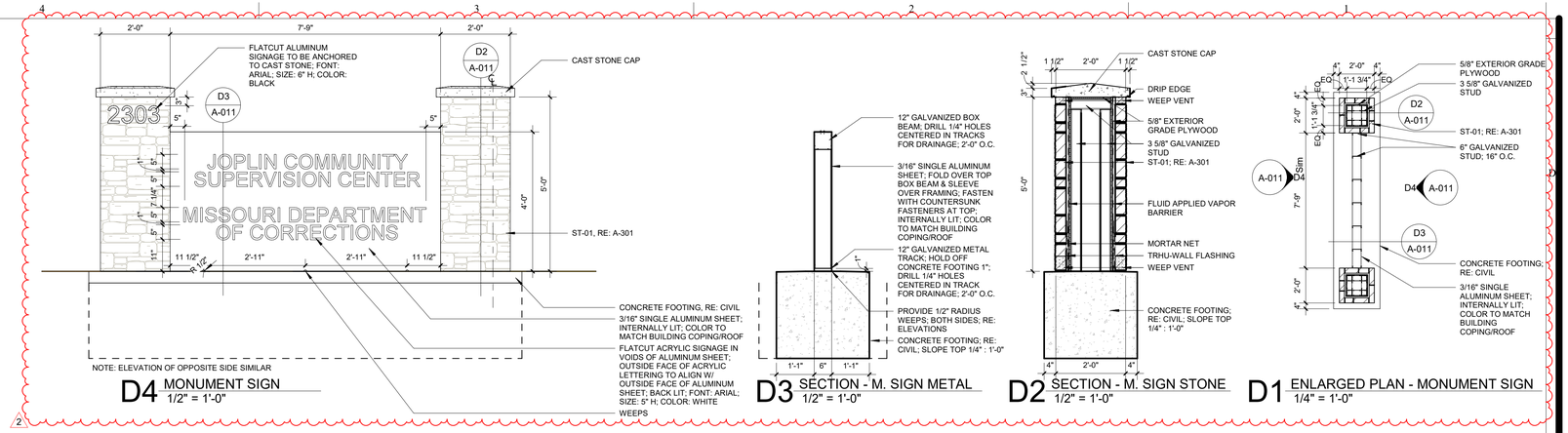
SHEET NUMBER:
G-101

September 30, 2026

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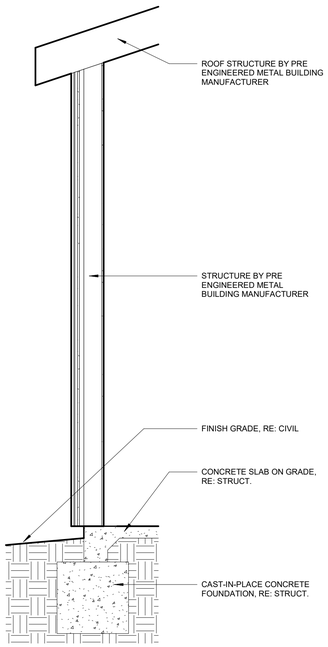


D4 MONUMENT SIGN
1/2" = 1'-0"

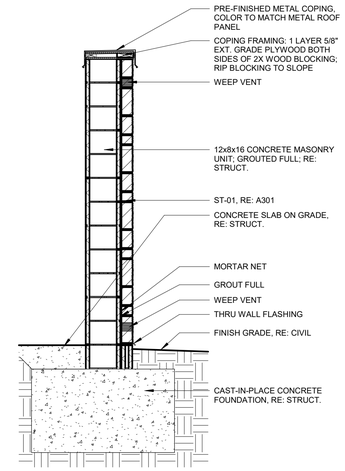
D3 SECTION - M. SIGN METAL
1/2" = 1'-0"

D2 SECTION - M. SIGN STONE
1/2" = 1'-0"

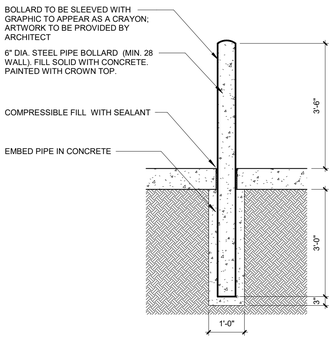
D1 ENLARGED PLAN - MONUMENT SIGN
1/4" = 1'-0"



C5 WALL SECTION - MAINTENANCE SHED
1/2" = 1'-0"

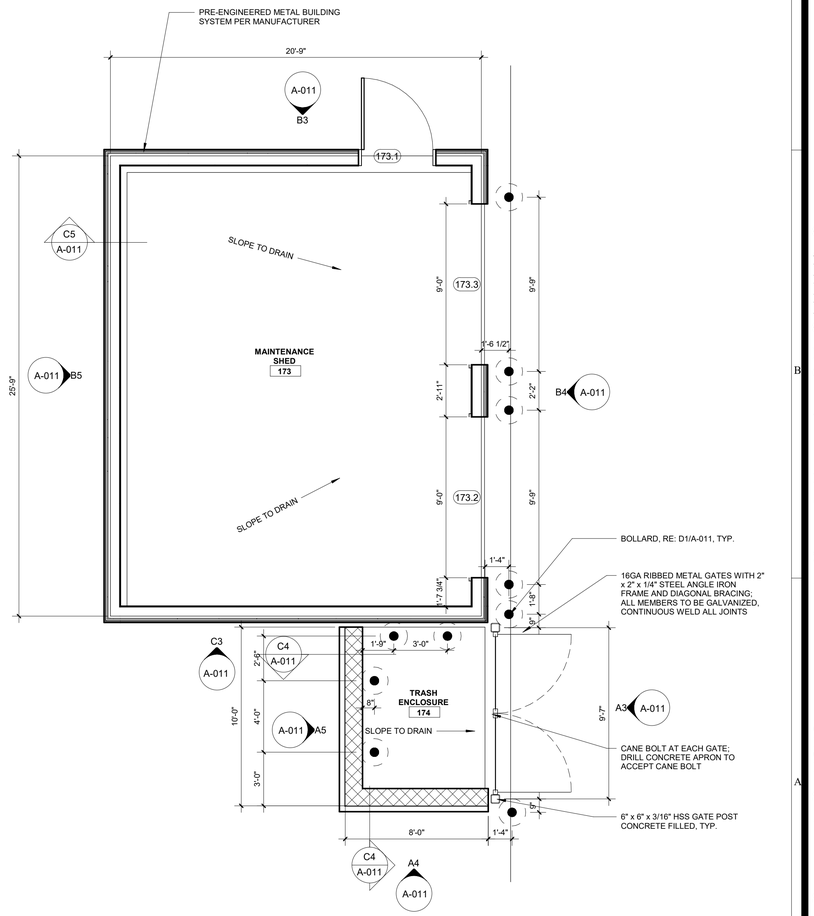


C4 WALL SECTION - TRASH ENCLOSURE
1/2" = 1'-0"

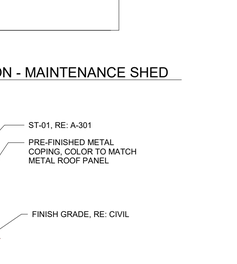


C2 SECTION DETAIL - PIPE BOLLARD
1/2" = 1'-0"

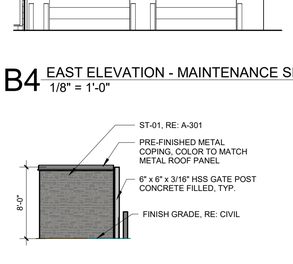
C3 SOUTH ELEVATION - MAINTENANCE SHED
1/8" = 1'-0"



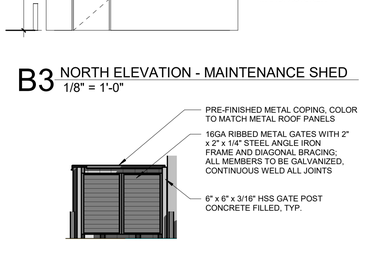
A2 ENLARGED PLAN - MAINTENANCE BUILDING & TRASH ENCLOSURE
1/4" = 1'-0"



B5 WEST ELEVATION - MAINTENANCE SHED
1/8" = 1'-0"



B4 EAST ELEVATION - MAINTENANCE SHED
1/8" = 1'-0"



B3 NORTH ELEVATION - MAINTENANCE SHED
1/8" = 1'-0"

A5 WEST ELEVATION - TRASH ENCLOSURE
1/8" = 1'-0"

A4 SOUTH ELEVATION - TRASH ENCLOSURE
1/8" = 1'-0"

A3 EAST ELEVATION - TRASH ENCLOSURE
1/8" = 1'-0"

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MIKE KEHOE, GOVERNOR

STATE OF MISSOURI
DOMINIC J. SPADAFORE
NUMBER A-2025003940
REGISTERED ARCHITECT
10/28/2026

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CHECKED BY: JS, DS
DESIGNED BY: ACI BOLAND

SHEET TITLE:
ARCHITECTURAL SITE PLAN DETAILS

SHEET NUMBER:
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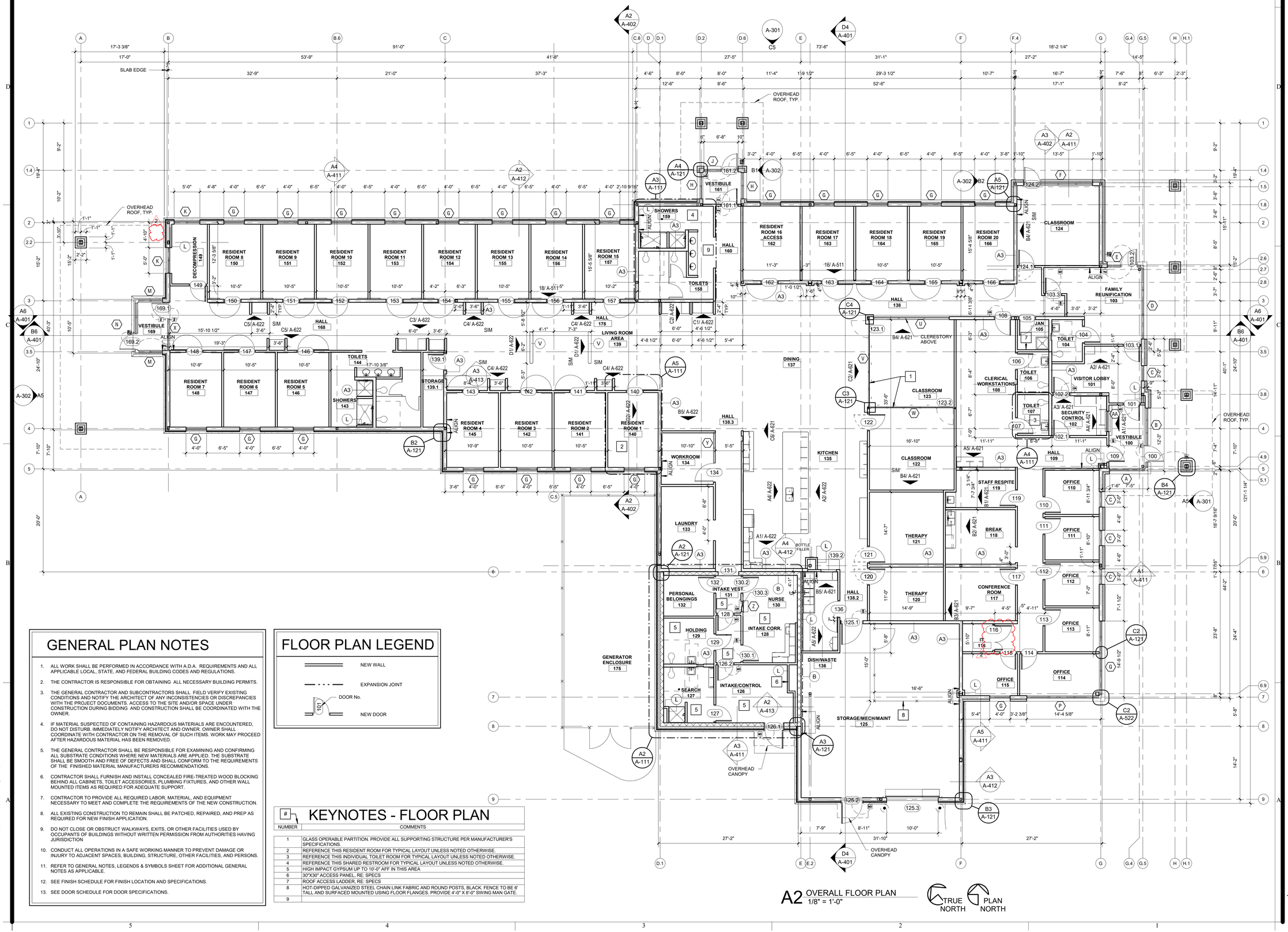
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GENERAL PLAN NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH A.D.A. REQUIREMENTS AND ALL APPLICABLE LOCAL, STATE, AND FEDERAL BUILDING CODES AND REGULATIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY BUILDING PERMITS.
3. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY THE ARCHITECT OF ANY INCONSISTENCIES OR DISCREPANCIES WITH THE PROJECT DOCUMENTS. ACCESS TO THE SITE AND/OR SPACE UNDER CONSTRUCTION DURING BIDDING AND CONSTRUCTION SHALL BE COORDINATED WITH THE OWNER.
4. IF MATERIAL SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB. IMMEDIATELY NOTIFY ARCHITECT AND OWNER. OWNER SHALL COORDINATE WITH CONTRACTOR ON THE REMOVAL OF SUCH ITEMS. WORK MAY PROCEED AFTER HAZARDOUS MATERIAL HAS BEEN REMOVED.
5. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING AND CONFIRMING ALL SUBSTRATE CONDITIONS WHERE NEW MATERIALS ARE APPLIED. THE SUBSTRATE SHALL BE SMOOTH AND FREE OF DEFECTS AND SHALL CONFORM TO THE REQUIREMENTS OF THE FINISHED MATERIAL MANUFACTURERS RECOMMENDATIONS.
6. CONTRACTOR SHALL FURNISH AND INSTALL CONCEALED FIRE-TREATED WOOD BLOCKING BEHIND ALL CABINETS, TOILET ACCESSORIES, PLUMBING FIXTURES, AND OTHER WALL MOUNTED ITEMS AS REQUIRED FOR ADEQUATE SUPPORT.
7. CONTRACTOR TO PROVIDE ALL REQUIRED LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO MEET AND COMPLETE THE REQUIREMENTS OF THE NEW CONSTRUCTION.
8. ALL EXISTING CONSTRUCTION TO REMAIN SHALL BE PATCHED, REPAIRED, AND PREP AS REQUIRED FOR NEW FINISH APPLICATION.
9. DO NOT CLOSE OR OBSTRUCT WALKWAYS, EXITS, OR OTHER FACILITIES USED BY OCCUPANTS OF BUILDINGS WITHOUT WRITTEN PERMISSION FROM AUTHORITIES HAVING JURISDICTION
10. CONDUCT ALL OPERATIONS IN A SAFE WORKING MANNER TO PREVENT DAMAGE OR INJURY TO ADJACENT SPACES, BUILDING, STRUCTURE, OTHER FACILITIES, AND PERSONS.
11. REFER TO GENERAL NOTES, LEGENDS & SYMBOLS SHEET FOR ADDITIONAL GENERAL NOTES AS APPLICABLE.
12. SEE FINISH SCHEDULE FOR FINISH LOCATION AND SPECIFICATIONS.
13. SEE DOOR SCHEDULE FOR DOOR SPECIFICATIONS.

FLOOR PLAN LEGEND

- NEW WALL
- EXPANSION JOINT
- DOOR No. (101) NEW DOOR

KEYNOTES - FLOOR PLAN

NUMBER	COMMENTS
1	GLASS OPERABLE PARTITION. PROVIDE ALL SUPPORTING STRUCTURE PER MANUFACTURER'S SPECIFICATIONS.
2	REFERENCE THIS RESIDENT ROOM FOR TYPICAL LAYOUT UNLESS NOTED OTHERWISE.
3	REFERENCE THIS INDIVIDUAL TOILET ROOM FOR TYPICAL LAYOUT UNLESS NOTED OTHERWISE.
4	REFERENCE THIS SHARED RESTROOM FOR TYPICAL LAYOUT UNLESS NOTED OTHERWISE.
5	HIGH IMPACT GYPSUM UP TO 10'-0" AFF IN THIS AREA
6	30"X30" ACCESS PANEL, RE: SPECS
7	ROOF ACCESS LADDER, RE: SPECS
8	HOT-DIPPED GALVANIZED STEEL CHAIN LINK FABRIC AND ROUND POSTS, BLACK. FENCE TO BE 6' TALL AND SURFACED MOUNTED USING FLOOR FLANGES. PROVIDE 4'-0" X 6'-0" SWING MAN GATE.
9	

A2 OVERALL FLOOR PLAN
1/8" = 1'-0"

TRUE NORTH PLAN NORTH

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CHECKED BY: JS, DS
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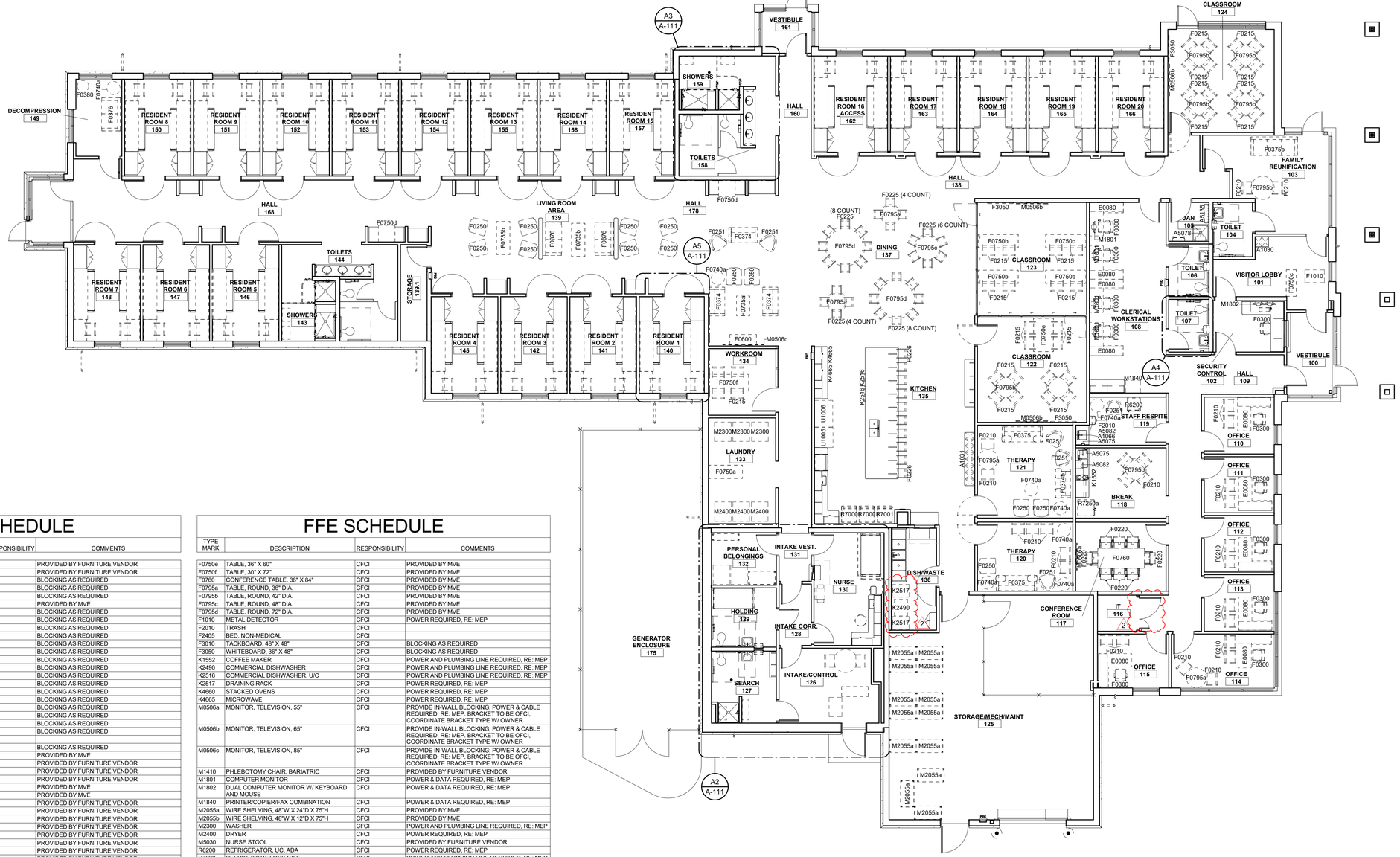
SHEET TITLE:
OVERALL FIRST FLOOR PLAN

SHEET NUMBER:
A-101

September 30, 2026

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FFE SCHEDULE

TYPE MARK	DESCRIPTION	RESPONSIBILITY	COMMENTS
A1030	LOCKER, 3 TIER, OVER/UNDER	CFCI	PROVIDED BY FURNITURE VENDOR
A1031	LOCKER, 5 TIER, OVER/UNDER	CFCI	PROVIDED BY FURNITURE VENDOR
A1066	MIRROR, FRAMELESS, 18" X 36" ADA	CFCI	BLOCKING AS REQUIRED
A1066a	MIRROR, FRAMELESS, 24" X 60"	CFCI	BLOCKING AS REQUIRED
A1066c	MIRROR, FRAMELESS, 36" X 96"	CFCI	BLOCKING AS REQUIRED
A5020	METAL BENCH, 36"W X 12"D X 18"H	CFCI	PROVIDED BY MVE
A5075	SOAP	CFCI	BLOCKING AS REQUIRED
A5078	CLEANING SOLUTION DISPENSING SYSTEM	CFCI	BLOCKING AS REQUIRED
A5080	PAPER TOWEL, SEMI-RECESSED	CFCI	BLOCKING AS REQUIRED
A5081	PAPER TOWEL, BEHAVIORAL HEALTH	CFCI	BLOCKING AS REQUIRED
A5082	PAPER TOWEL	CFCI	BLOCKING AS REQUIRED
A5090	SANITARY NAPKIN DISPOSAL	CFCI	BLOCKING AS REQUIRED
A5109a	GRAB BAR, HORIZONTAL, 36"	CFCI	BLOCKING AS REQUIRED
A5109b	GRAB BAR, HORIZONTAL, 42"	CFCI	BLOCKING AS REQUIRED
A5109c	GRAB BAR, VERTICAL, 18"	CFCI	BLOCKING AS REQUIRED
A5109d	ANTI-LIGATURE GRAB BAR, HORIZONTAL, 36"	CFCI	BLOCKING AS REQUIRED
A5109e	ANTI-LIGATURE GRAB BAR, HORIZONTAL, 42"	CFCI	BLOCKING AS REQUIRED
A5109f	ANTI-LIGATURE GRAB BAR, VERTICAL, 18"	CFCI	BLOCKING AS REQUIRED
A5109g	GRAB BAR, HORIZONTAL, 30"	CFCI	BLOCKING AS REQUIRED
A5109h	GRAB BAR, HORIZONTAL 42"	CFCI	BLOCKING AS REQUIRED
A5135	UTILITY SHELF	CFCI	BLOCKING AS REQUIRED
A5180a	CUBICLE CURTAIN TRACK	CFCI	BLOCKING AS REQUIRED
A5180b	CUBICLE CURTAIN	CFCI	
A5200	TOILET PAPER DISPENSER	CFCI	BLOCKING AS REQUIRED
E0080	L-SHAPED DESK, 60" X 60"	CFCI	PROVIDED BY MVE
F0210	SIDE CHAIR WITHOUT ARMS	CFCI	PROVIDED BY FURNITURE VENDOR
F0215	CLASSROOM CHAIR	CFCI	PROVIDED BY FURNITURE VENDOR
F0220	CHAIR, CONFERENCE	CFCI	PROVIDED BY FURNITURE VENDOR
F0225	DINING CHAIR	CFCI	PROVIDED BY MVE
F0226	DINING STOOL	CFCI	PROVIDED BY MVE
F0250	LOUNGE CHAIR	CFCI	PROVIDED BY FURNITURE VENDOR
F0251	LOUNGE CHAIR	CFCI	PROVIDED BY FURNITURE VENDOR
F0300	CHAIR, TASK, SWIVEL, W/ ARMS	CFCI	PROVIDED BY FURNITURE VENDOR
F0374	LOVESEAT	CFCI	PROVIDED BY FURNITURE VENDOR
F0374b	LOVESEAT W/ INTEGRATED TABLETOPS	CFCI	PROVIDED BY FURNITURE VENDOR
F0375	SOFA W/ INTEGRATED TABLETOPS	CFCI	PROVIDED BY FURNITURE VENDOR
F0375b	SOFA	CFCI	PROVIDED BY FURNITURE VENDOR
F0376	SMALL SOFA	CFCI	PROVIDED BY FURNITURE VENDOR
F0380	OTTOMAN, 21"	CFCI	PROVIDED BY FURNITURE VENDOR
F0600	CREDENZA, 48"W X 18"D X 30"H	CFCI	PROVIDED BY MVE
F0735a	COFFEE TABLE, 24" X 36"	CFCI	PROVIDED BY MVE
F0735b	COFFEE TABLE, 24" X 60"	CFCI	PROVIDED BY MVE
F0740a	END TABLE, ROUND, 24" DIA.	CFCI	PROVIDED BY MVE
F0750a	TABLE, 24" X 60"	CFCI	PROVIDED BY MVE
F0750b	TABLE, 24" X 72"	CFCI	PROVIDED BY MVE
F0750c	TABLE, 18" X 48"	CFCI	PROVIDED BY MVE
F0750d	TABLE, 30" X 30"	CFCI	PROVIDED BY MVE

FFE SCHEDULE

TYPE MARK	DESCRIPTION	RESPONSIBILITY	COMMENTS
F0750e	TABLE, 36" X 60"	CFCI	PROVIDED BY MVE
F0750f	TABLE, 30" X 72"	CFCI	PROVIDED BY MVE
F0760	CONFERENCE TABLE, 36" X 84"	CFCI	PROVIDED BY MVE
F0795a	TABLE, ROUND, 36" DIA.	CFCI	PROVIDED BY MVE
F0795b	TABLE, ROUND, 42" DIA.	CFCI	PROVIDED BY MVE
F0795c	TABLE, ROUND, 48" DIA.	CFCI	PROVIDED BY MVE
F0795d	TABLE, ROUND, 72" DIA.	CFCI	PROVIDED BY MVE
F1010	METAL DETECTOR	CFCI	POWER REQUIRED, RE: MEP
F2010	TRASH	CFCI	
F2405	BED, NON-MEDICAL	CFCI	
F3010	TACKBOARD, 48" X 48"	CFCI	BLOCKING AS REQUIRED
F3050	WHITEBOARD, 36" X 48"	CFCI	BLOCKING AS REQUIRED
K1552	COFFEE MAKER	CFCI	POWER AND PLUMBING LINE REQUIRED, RE: MEP
K2490	COMMERCIAL DISHWASHER	CFCI	POWER AND PLUMBING LINE REQUIRED, RE: MEP
K2516	COMMERCIAL DISHWASHER, U/C	CFCI	POWER AND PLUMBING LINE REQUIRED, RE: MEP
K2517	DRAINING RACK	CFCI	POWER REQUIRED, RE: MEP
K4660	STACKED OVENS	CFCI	POWER REQUIRED, RE: MEP
K4665	MICROWAVE	CFCI	POWER REQUIRED, RE: MEP
M0506a	MONITOR, TELEVISION, 55"	CFCI	PROVIDE IN-WALL BLOCKING; POWER & CABLE REQUIRED, RE: MEP. BRACKET TO BE OFCI, COORDINATE BRACKET TYPE W/ OWNER
M0506b	MONITOR, TELEVISION, 65"	CFCI	PROVIDE IN-WALL BLOCKING; POWER & CABLE REQUIRED, RE: MEP. BRACKET TO BE OFCI, COORDINATE BRACKET TYPE W/ OWNER
M0506c	MONITOR, TELEVISION, 85"	CFCI	PROVIDE IN-WALL BLOCKING; POWER & CABLE REQUIRED, RE: MEP. BRACKET TO BE OFCI, COORDINATE BRACKET TYPE W/ OWNER
M1410	PHLEBOTOMY CHAIR, BARIATRIC	CFCI	PROVIDED BY FURNITURE VENDOR
M1801	COMPUTER MONITOR	CFCI	POWER & DATA REQUIRED, RE: MEP
M1802	DUAL COMPUTER MONITOR W/ KEYBOARD AND MOUSE	CFCI	POWER & DATA REQUIRED, RE: MEP
M1840	PRINTER/COPIER/FAX COMBINATION	CFCI	POWER & DATA REQUIRED, RE: MEP
M2055a	WIRE SHELVING, 48"W X 24"D X 75"H	CFCI	PROVIDED BY MVE
M2055b	WIRE SHELVING, 48"W X 12"D X 75"H	CFCI	PROVIDED BY MVE
M2300	WASHER	CFCI	POWER AND PLUMBING LINE REQUIRED, RE: MEP
M2400	DRYER	CFCI	POWER REQUIRED, RE: MEP
M5030	NURSE STOOL	CFCI	PROVIDED BY FURNITURE VENDOR
R6200	REFRIGERATOR, UC, ADA	CFCI	POWER REQUIRED, RE: MEP
R7000	REFRIG. 30" W, LOCKABLE	CFCI	POWER AND PLUMBING LINE REQUIRED, RE: MEP
R7001	FREEZER, 36" W, LOCKABLE	CFCI	POWER AND PLUMBING LINE REQUIRED, RE: MEP
R7250a	REFRIG. 30" W	CFCI	POWER AND PLUMBING LINE REQUIRED, RE: MEP
U1001	RESIDENT ROOM CUSTOM MILLWORK	CFCI	BLOCKING AS REQUIRED; PROVIDED BY MVE
U1005	6 BURNER RANGE, 36"W	CFCI	POWER REQUIRED, RE: MEP
U1006	48" GRIDDLE W/ SS STAND	CFCI	POWER REQUIRED, RE: MEP
U1008	HOOD	CFCI	POWER REQUIRED, RE: MEP
U1009	TEAK CHAIR, 24"W X 14"D X 30"H	CFCI	PROVIDED BY MVE

A2 OVERALL FLOOR FURNITURE PLAN
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TRUE NORTH
PLAN NORTH

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SHEET TITLE:
OVERALL FIRST FLOOR FFE PLAN

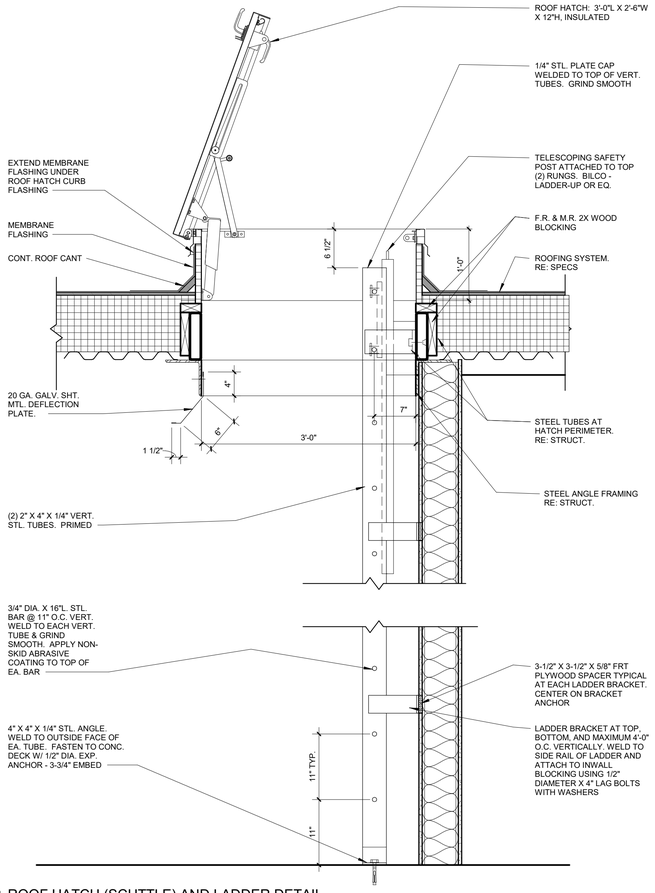
SHEET NUMBER:
A-102

September 30, 2026

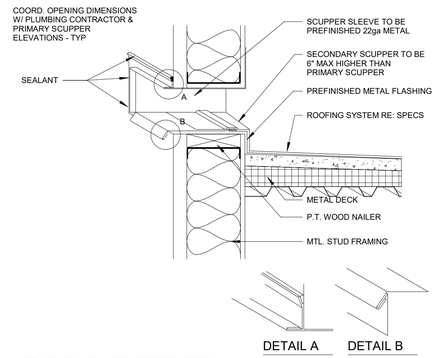
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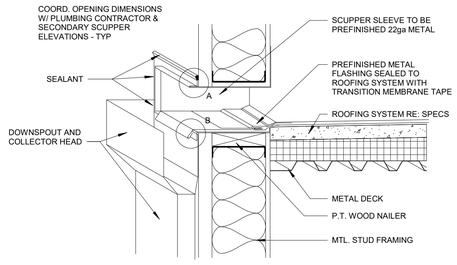
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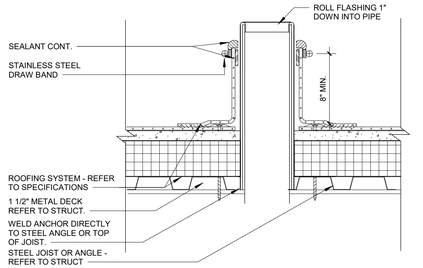
C5 ROOF HATCH (SCUTTLE) AND LADDER DETAIL
1" = 1'-0"



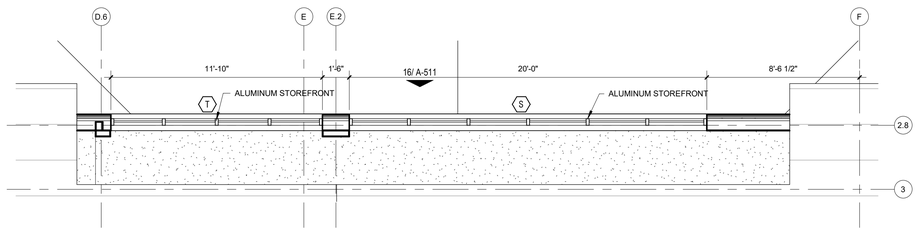
D3 SECONDARY SCUPPER DETAIL
1 1/2" = 1'-0"



C3 PRIMARY SCUPPER DETAIL
1 1/2" = 1'-0"

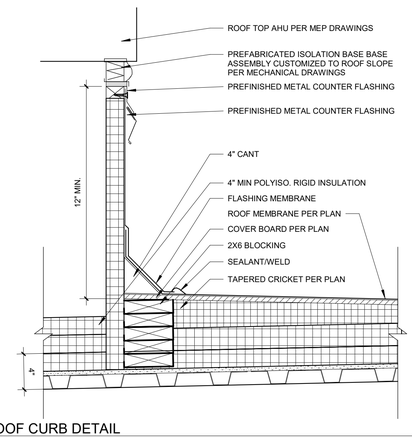


C2 VENT FLASHING DETAIL
1 1/2" = 1'-0"

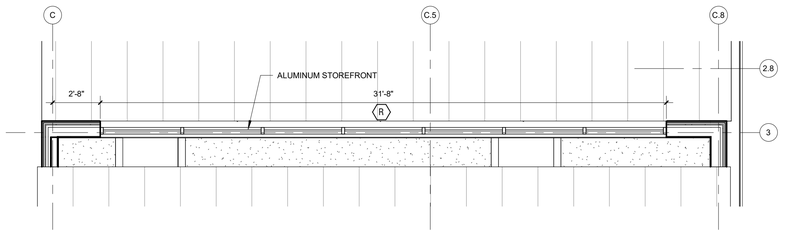


B4 ENLARGED PLAN - DINING CLERESTORY
1/4" = 1'-0"

A2 ENLARGED PLAN - PERGOLA
1/4" = 1'-0"



A5 ROOF CURB DETAIL
1 1/2" = 1'-0"



A4 ENLARGED PLAN - RESIDENT CLERESTORY
1/4" = 1'-0"

STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

DOMINIC J. SPADAFORE
NUMBER A-2025003940
10/28/2026

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OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF Corrections

JOPLIN COMMUNITY SUPERVISION CENTER

2303 WEST 20TH STREET
JOPLIN, MO 64801

PROJECT # C2512-01
SITE # 7033
ASSET # 9327033001

Revision

Number	Revision Date	Revision Description
2	TBD	Addendum 2

CAD DWG FILE:
DRAWN BY: KNS
CHECKED BY: JS, DS
DESIGNED BY: ACI BOLAND

SHEET TITLE:
ENLARGED ROOF PLANS AND DETAILS

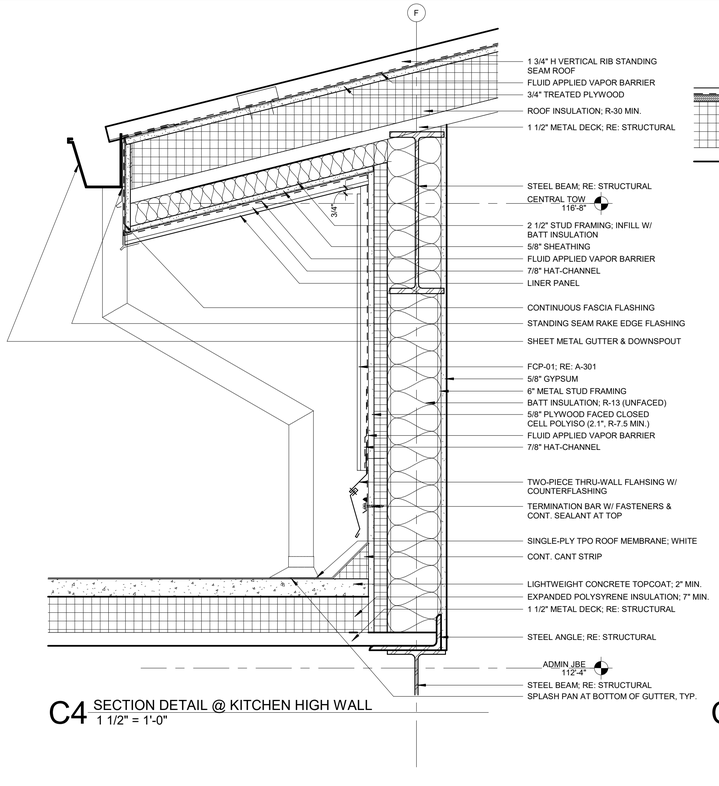
SHEET NUMBER:
A-211

September 30, 2026

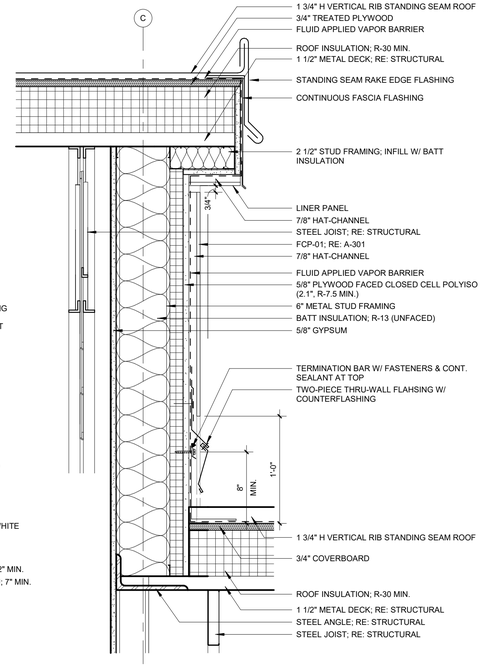
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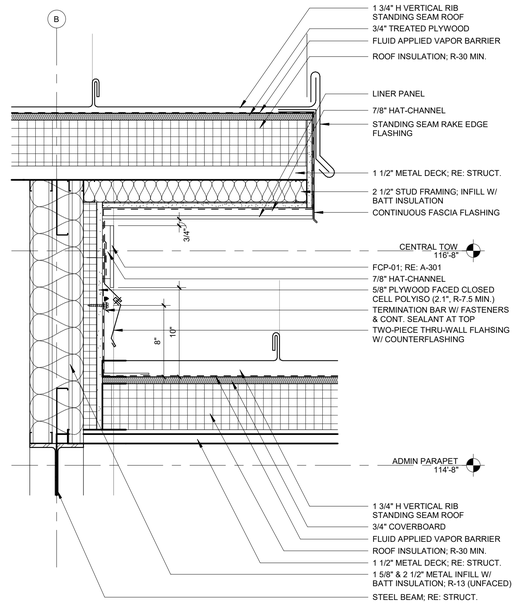
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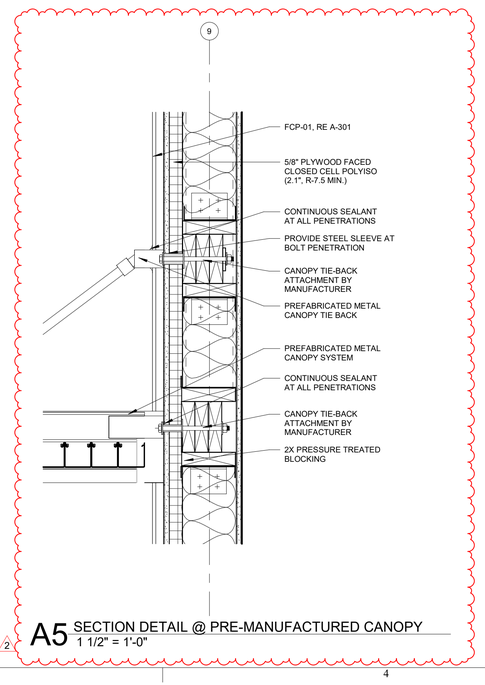
C4 SECTION DETAIL @ KITCHEN HIGH WALL
1 1/2" = 1'-0"



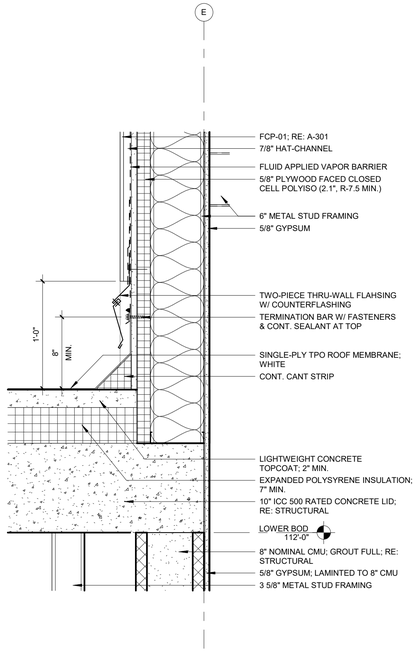
C2 SECTION DETAIL @ RESDIENT CLERESTORY
1 1/2" = 1'-0"



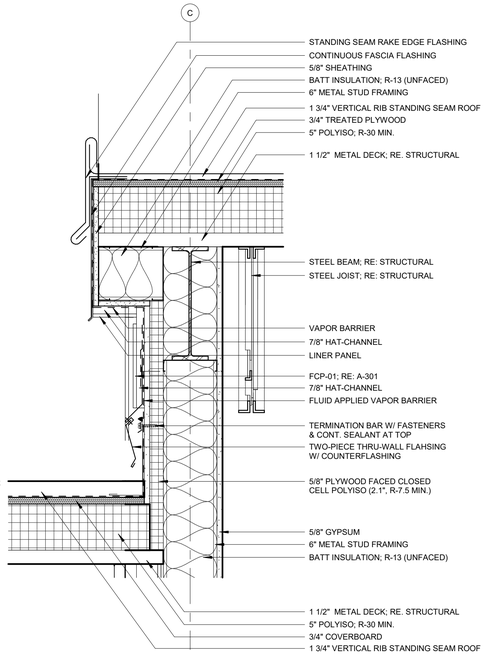
C1 SECTION DETAIL @ PORCH ROOF STEP
1 1/2" = 1'-0"



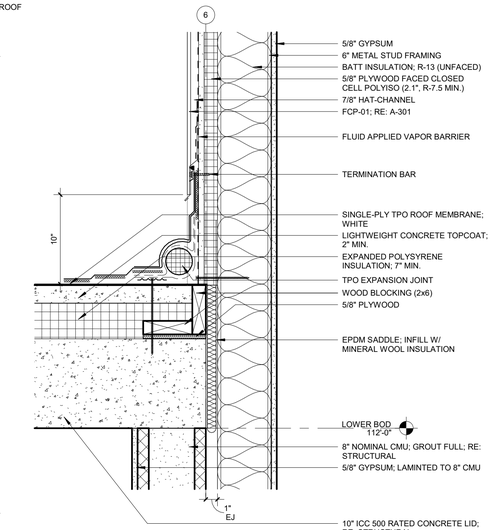
A5 SECTION DETAIL @ PRE-MANUFACTURED CANOPY
1 1/2" = 1'-0"



A3 SECTION DETIAL @ WALL TRANSITION
1 1/2" = 1'-0"



A2 SECTION DETAIL @ LOW ROOF OVERHANG
1 1/2" = 1'-0"



A1 SECTION DETAIL @ TPO EXPANSION JOINT
1 1/2" = 1'-0"

STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

PRELIMINARY

I, DOMINIC J. SPADAFORE, NUMBER A-2025003940, hereby certify that I am duly licensed by the State of Missouri.
10/28/2026

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PROJECT #	C2512-01
SITE #	7033
ASSET #	9327033001

Revision

Number	Revision Date	Revision Description
2	TBD	Addendum 2

CAD DWG FILE:
DRAWN BY: Author
CHECKED BY: Checker
DESIGNED BY: Designer

SHEET TITLE:
SECTION DETAILS

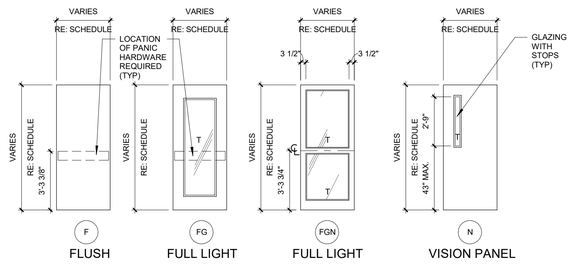
SHEET NUMBER:
A-422

September 30, 2026

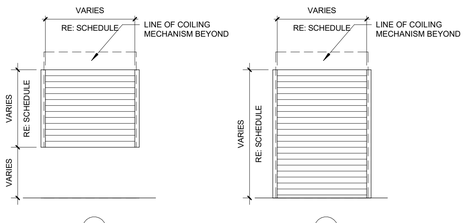
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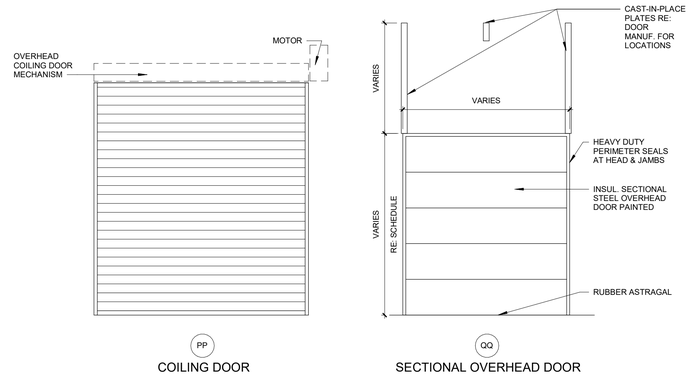
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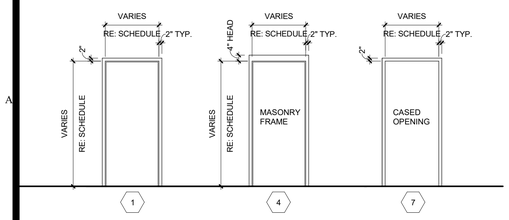
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DOOR ELEVATIONS:







FRAME ELEVATIONS:

DOOR AND HARDWARE NOTES

1. DOOR OPENING DEVICES SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF THE WRIST. DOOR KNOBS ARE PROHIBITED.
2. ALL MEANS OF EGRESS DOORS SHALL BE READILY OPENABLE FROM THE SIDE FROM WHICH EGRESS IS TO BE MADE WITHOUT THE USE OF SPECIAL TOOLS, A KEY, SPECIAL KNOWLEDGE OR EFFORT. DOUBLE KEYED DEAD BOLTS ARE PROHIBITED.
3. PROVIDE HARDWARE INCLUDING, BUT NOT LIMITED TO THAT SHOWN IN THE HARDWARE GROUPS FOR THE NORMAL OPERATION AND USE OF EACH DOOR, MAKE RECOMMENDATIONS FOR ADDITIONAL ITEMS IN HARDWARE SUBMITTAL AS REQUIRED.
4. ALL HARDWARE SHALL BE IN COMPLIANCE WITH ADA GUIDELINES AND NATIONAL BUILDERS HARDWARE ASSOCIATION STANDARDS.
5. HARDWARE TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. HARDWARE: FINISH TO BE BUILDING STANDARD UNLESS NOTED OTHERWISE. COORIDNATE AND VERIFY WITH HOSPITAL FACILITIES REPRESENTATIVE ON ALL HARDWARE PRIOR TO ORDERING.

   CONTRACTOR TO SUBMIT DOOR AND HARDWARE SHOP DRAWINGS TO OWNER FOR REVIEW PRIOR TO WORK BEING PERFORMED. FAILURE TO SUBMIT DRAWINGS RESULTS IN THE CONTRACTOR ASSUMING ALL RESPONSIBILITY AT THEIR OWN EXPENSE.

DOOR & FRAME MAT'L LEGEND	
ALUM	ALUMINUM
HM	HOLLOW METAL
WD	PLASTIC LAMINATE FINISH SOLID CORE WOOD

GLAZING LEGEND	
IGU-1	LOW-E COATED INSULATING GLASS UNIT
GL-1	SAFETY GLAZING (TEMPERED)

DOOR SCHEDULE

DOOR #	ROOM NAME	DOOR INFORMATION						FRAME INFORMATION					DOOR HARDWARE ACCESS CONTROL				OPENING DETAIL		REMARKS	REV #
		WIDTH	HEIGHT	NO. OF LEAVES	UNEQUAL LEAF WIDTH	ELEV.	MATL.	ELEV.	MATL.	GLAZING	LABEL (MIN)	HARDWARE SET	CARD READER	CARD READER W/ AUTO OPERATOR	POWER ACTUATOR	WAVE ACTUATOR	HEAD	JAMB		
100	VESTIBULE	7'-0"	3'-0"	1		FG	ALUM	--	ALUM	IGU-1	--	12			●		--	A2/A-522		
101	VESTIBULE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	03	●				A1/A-521	A2/A-521		
102.1	SECURITY CONTROL	3'-0"	7'-0"	1		F	WD	1	HM	--	--	17					A1/A-521	A2/A-521		
102.2	SECURITY CONTROL	3'-0"	7'-0"	1		F	WD	1	HM	--	--	03	●				A1/A-521	A2/A-521		
103.1	FAMILY REUNIFICATION	3'-0"	7'-0"	1		F	WD	1	HM	--	--	19					A1/A-521	A2/A-521		
103.2	FAMILY REUNIFICATION	3'-0"	7'-0"	1		FG	ALUM	--	ALUM	IGU-1	--	11		●			--	A2/A-522		
103.3	FAMILY REUNIFICATION	3'-0"	7'-0"	1		F	WD	1	HM	--	45 min	05	●				A1/A-521	A2/A-521		
104	TOILET	3'-0"	7'-0"	1		F	WD	1	HM	--	--	15					A1/A-521	A2/A-521		
105	JAN	3'-0"	7'-0"	1		F	WD	1	HM	--	--	23					A1/A-521	A2/A-521		
106	TOILET	3'-0"	7'-0"	1		F	WD	1	HM	--	--	15					A1/A-521	A2/A-521		
107	TOILET	3'-0"	7'-0"	1		F	WD	1	HM	--	--	15					A1/A-521	A2/A-521		
108	HALL	3'-0"	7'-0"	1		F	WD	1	HM	--	45 min	04	●				A1/A-521	A2/A-521		
109	VESTIBULE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	03	●				A1/A-521	A2/A-521		
110	OFFICE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	17					A1/A-521	A2/A-521		
111	OFFICE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	17					A1/A-521	A2/A-521		
112	OFFICE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	17					A1/A-521	A2/A-521		
113	OFFICE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	17					A1/A-521	A2/A-521		
114	OFFICE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	17					A1/A-521	A2/A-521		
115	OFFICE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	17					A1/A-521	A2/A-521		
116	IT	3'-3"	7'-0"	2	1'-6"	F / F	WD	2	HM	--	--	29					A1/A-521	A2/A-521		2
117	CONFERENCE ROOM	3'-0"	7'-0"	1		F	WD	1	HM	--	--	17					A1/A-521	A2/A-521		
119	STAFF RESPITE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	15					A1/A-521	A2/A-521		
120	HALL	3'-0"	7'-0"	1		F	WD	--	HM	--	--	20					A1/A-521	A2/A-521		
121	THERAPY	3'-0"	7'-0"	1		F	WD	--	HM	--	--	20					A1/A-521	A2/A-521		
122	HALL	3'-0"	7'-0"	1		F	WD	--	HM	--	--	20					A1/A-521	A2/A-521		
123.1	CLASSROOM											27					C2/A-521	C3 & C4/A-121	GLASS WALL SYSTEM, RE: SPECS	
123.2	CLASSROOM											27					C2/A-521	C3 & C4/A-121	GLASS WALL SYSTEM, RE: SPECS	
124.1	HALL	3'-0"	7'-0"	1		F	WD	--	HM	--	--	20					A1/A-521	A2/A-521		
124.2	CLASSROOM	7'-0"	3'-0"	1		FG	ALUM	--	ALUM	IGU-1	--	10					--	A2/A-522		
125.1	STORAGE/MECH/MAINT	4'-0"	7'-0"	1		F	WD	1	HM	--	45 min	03	●				A1/A-521	A2/A-521		
125.2	STORAGE/MECH/MAINT	4'-0"	7'-0"	1		F	HM	1	HM	--	--	01	●				--	--		
125.3	STORAGE/MECH/MAINT	10'-0"	10'-0"			PP					--	26					--	--		
126.1	INTAKE/CONTROL	3'-6"	7'-0"	1		F	HM	4	HM	--	--	28	●				AD5/A-522	A5 & B5/A-522		
126.2	INTAKE/CONTROL	3'-0"	7'-0"	1		F	WD	1	HM	--	--	03	●				A1/A-521	A2/A-521		
127	INTAKE/CONTROL	3'-0"	7'-0"	1		F	WD	1	HM	--	--	15					A1/A-521	A2/A-521		
128	INTAKE CORR.	3'-0"	7'-0"	1		F	WD	1	HM	--	--	05	●				A1/A-521	A2/A-521		
129	INTAKE CORR.	3'-0"	7'-0"	1		N	WD	1	HM	GL-1	--	02					A1/A-521	A2/A-521		
130.1	NURSE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	03	●				A1/A-521	A2/A-521		
130.2	NURSE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	21					A1/A-521	A2/A-521		
130.3	INTAKE VEST.	2'-0"	3'-0"			MM											--	--	COILING SHUTTER, RE: SPECS	
131	INTAKE VEST.	4'-0"	9'-0"			NN						26					A5/A-521	A3/A-521	STORM SHUTTER, RE: SPECS	
132	PERSONAL BELONGINGS	3'-0"	7'-0"	1		F	WD	1	HM	--	--	22					A1/A-521	A2/A-521		
134	WORKROOM	3'-0"	7'-0"	1		FG	ALUM	--	ALUM	GL-1	--	19 2					--	A2/A-522		2
136	DISH/WASTE	3'-0"	7'-0"	1		F	WD	1	HM		--	18					A1/A-521	A2/A-521		
139.1	STORAGE	3'-0"	7'-0"	1		F	WD	1	HM	--	--	24					A1/A-521	A2/A-521		
139.2	KITCHEN	3'-0"	3'-0"			MM						26					--	--	COILING SHUTTER, RE: SPECS	
140	RESIDENT ROOM 1	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
141	RESIDENT ROOM 2	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
142	RESIDENT ROOM 3	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
143	RESIDENT ROOM 4	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
146	RESIDENT ROOM 5	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
147	RESIDENT ROOM 6	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
148	RESIDENT ROOM 7	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
149	DECOMPRESSION	3'-0"	7'-0"	1		N	WD	1	HM	GL-1	--	16					A1/A-521	A2/A-521		
150	RESIDENT ROOM 8	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
151	RESIDENT ROOM 9	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
152	RESIDENT ROOM 10	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
153	RESIDENT ROOM 11	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
154	RESIDENT ROOM 12	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
155	RESIDENT ROOM 13	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
156	RESIDENT ROOM 14	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
157	RESIDENT ROOM 15	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
161.1	VESTIBULE	3'-0"	7'-0"	1		FGN	WD	1	HM	GL-1	--	07				●	A1/A-521	A2/A-521		
161.2	VESTIBULE	3'-0"	7'-0"	1		FG	ALUM	--	ALUM	IGU-1	--	09		●			--	A2/A-522		
162	RESIDENT ROOM 16 _ACCESS	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
163	RESIDENT ROOM 17	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
164	RESIDENT ROOM 18	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
165	RESIDENT ROOM 19	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
166	RESIDENT ROOM 20	3'-0"	7'-0"	1		F	WD	1	HM	--	20 min	14					A1/A-521	A2/A-521		
169.1	VESTIBULE	3'-0"	7'-0"	1		FG	ALUM	--	ALUM	GL-1	--	06				●	--	A2/A-522		
169.2	VESTIBULE	3'-0"	7'-0"	1		FG	ALUM	--	ALUM	IGU-1	--	08		●			--	A2/A-522		
173.1	MAINTENANCE SHED	4'-0"	7'-0"	1		F	WD	1	HM	--	--	24A					--	--		
173.2	MAINTENANCE SHED	9'-0"	9'-0"	--		QQ	ALUM	--	--	--	--	26					--	--		
173.3	MAINTENANCE SHED	9'-0"	9'-0"	--		QQ	ALUM	--	--	--	--	26					--	--		
176																	--	--	ROOF HATCH, RE:SPECS	

STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

STATE OF MISSOURI
DOMINIC J. SPADAFORE
NUMBER A-2025003948
10/28/2026

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OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF Corrections

JOPLIN COMMUNITY SUPERVISION CENTER

2303 WEST 20TH STREET
JOPLIN, MO 64801

PROJECT # C2512-01
SITE # 7033
ASSET # 9327033001

Revision

Number	Revision Date	Revision Description
2	TBD	Addendum 2

CAD DWG FILE:
DRAWN BY: KNS
CHECKED BY: JS, DS
DESIGNED BY: ACI BOLAND

SHEET TITLE:
DOOR SCHEDULE & DOOR/FRAME TYPES

SHEET NUMBER:
A-501

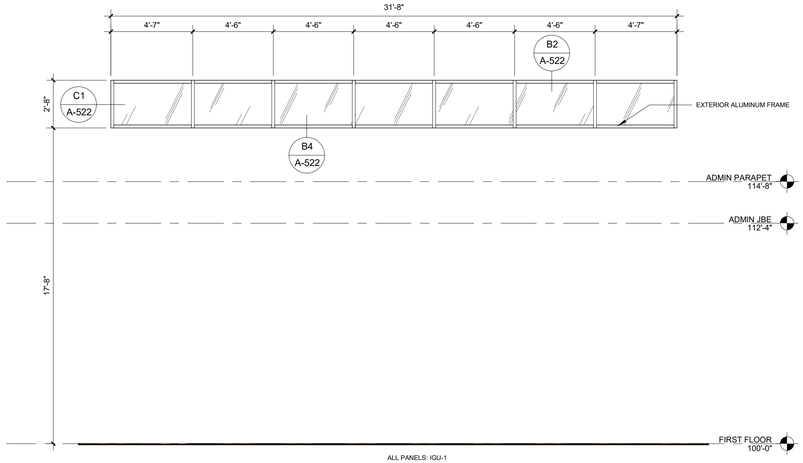
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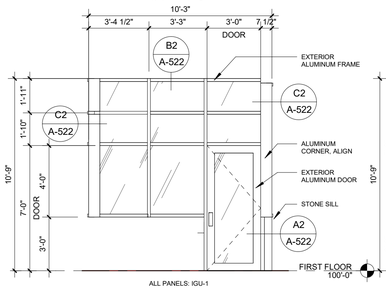
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GLAZING LEGEND	
IGU-1	LOW-E COATED INSULATING GLASS UNIT
GL-1	SAFETY GLAZING (TEMPERED)



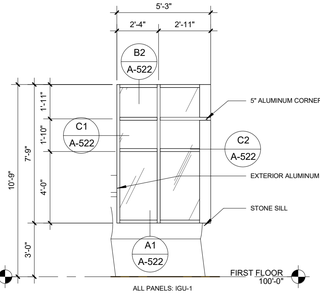
ALL PANELS: IGU-1

18 WINDOW ELEVATION - R
1/4" = 1'-0"



ALL PANELS: IGU-1

13 WINDOW ELEVATION - N
1/4" = 1'-0"

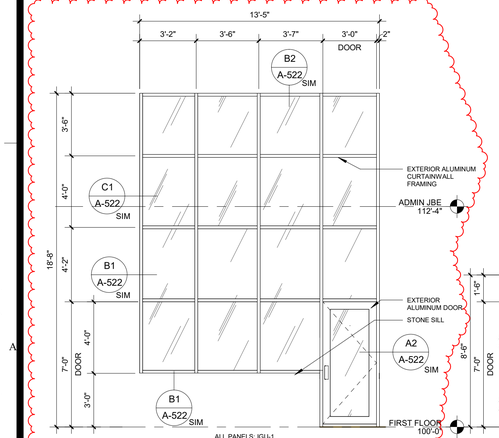


ALL PANELS: IGU-1

12 WINDOW ELEVATION - M
1/4" = 1'-0"

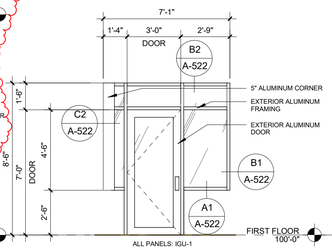
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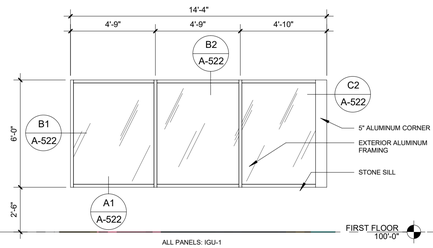
ALL PANELS: IGU-1

6 WINDOW ELEVATION - F
1/4" = 1'-0"



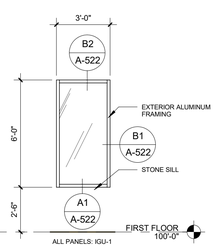
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5 WINDOW ELEVATION - E
1/4" = 1'-0"



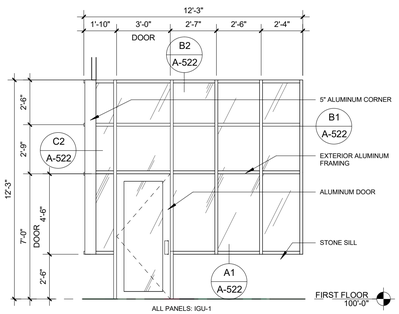
ALL PANELS: IGU-1

4 WINDOW ELEVATION - D
1/4" = 1'-0"



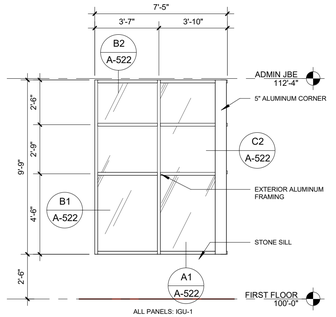
ALL PANELS: IGU-1

3 WINDOW ELEVATION - C
1/4" = 1'-0"



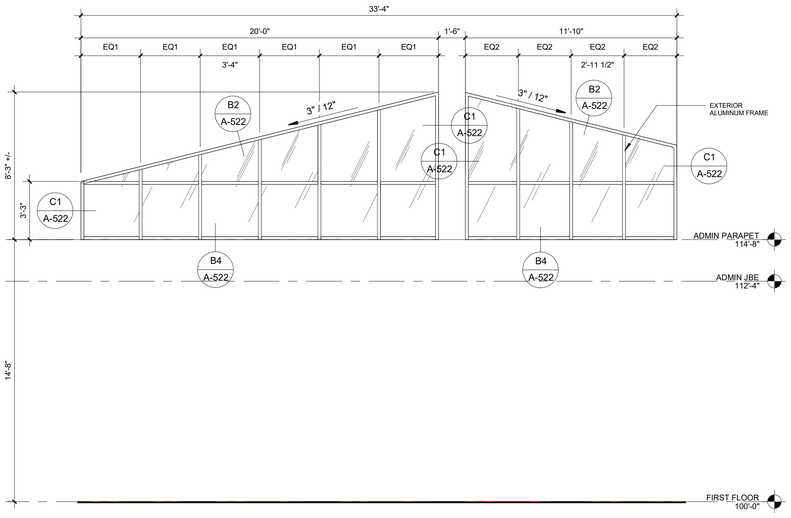
ALL PANELS: IGU-1

2 WINDOW ELEVATION - B
1/4" = 1'-0"



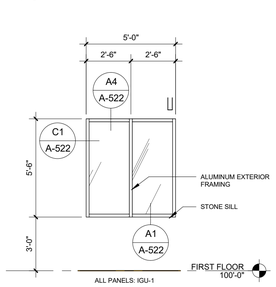
ALL PANELS: IGU-1

1 WINDOW ELEVATION - A
1/4" = 1'-0"



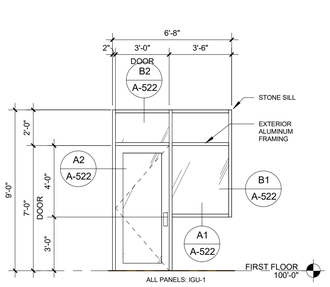
ALL PANELS: IGU-1

16 WINDOW ELEVATION - S / T
1/4" = 1'-0"



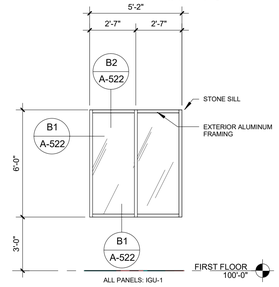
ALL PANELS: IGU-1

10 WINDOW ELEVATION - K
1/4" = 1'-0"



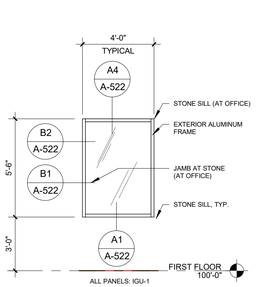
ALL PANELS: IGU-1

9 WINDOW ELEVATION - J
1/4" = 1'-0"



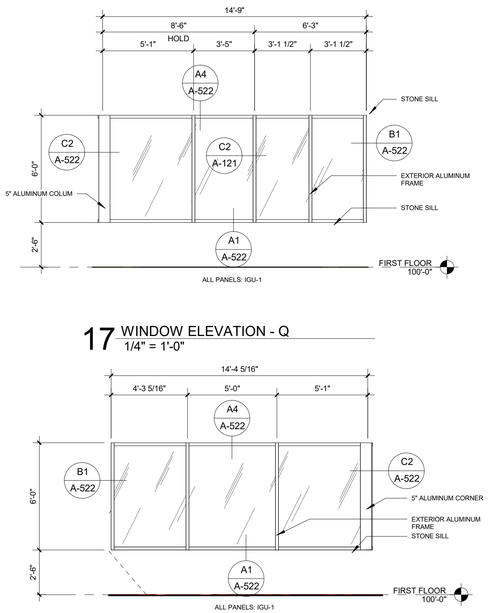
ALL PANELS: IGU-1

8 WINDOW ELEVATION - H
1/4" = 1'-0"



ALL PANELS: IGU-1

7 WINDOW ELEVATION - G
1/4" = 1'-0"



ALL PANELS: IGU-1

17 WINDOW ELEVATION - Q
1/4" = 1'-0"

ALL PANELS: IGU-1

14 WINDOW ELEVATION - P
1/4" = 1'-0"

STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

DOMINIC J. SPADAFORE
NUMBER A-2025003940
10/28/2026

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JOPLIN COMMUNITY SUPERVISION CENTER

2303 WEST 20TH STREET
JOPLIN, MO 64801

PROJECT # C2512-01
SITE # 7033
ASSET # 9327033001

Revision

Number	Revision Date	Revision Description
2	TBD	Addendum 2

CAD DWG FILE:
DRAWN BY:
CHECKED BY: JS, DS
DESIGNED BY: ACI BOLAND

SHEET TITLE:
GLAZING ELEVATIONS

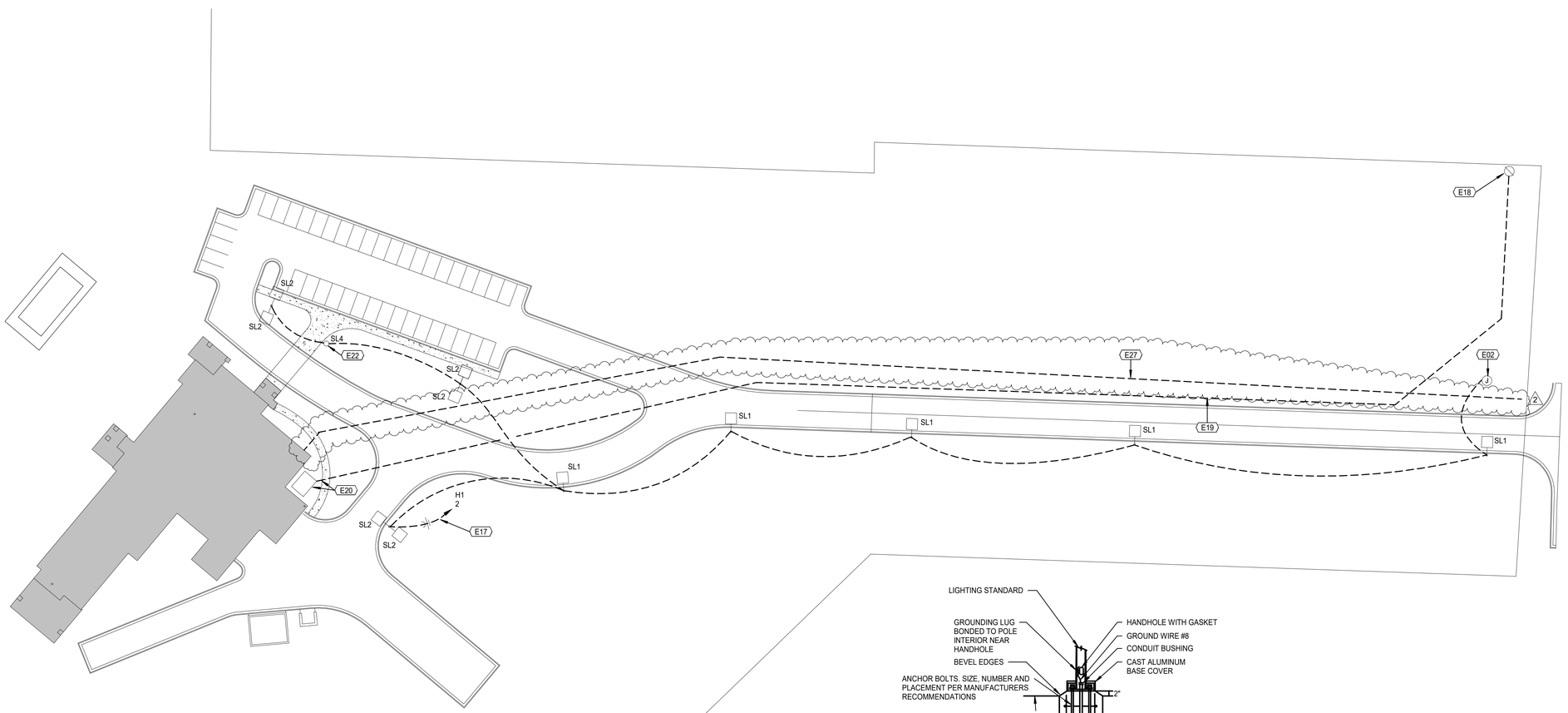
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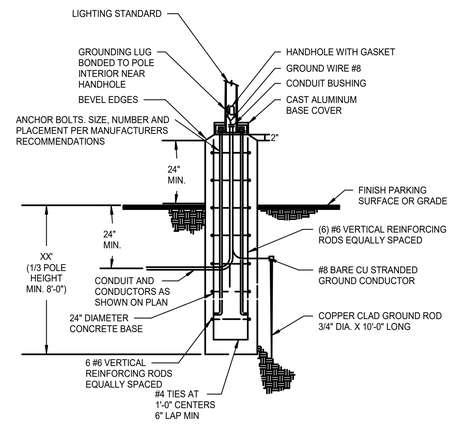
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SITE PLAN - ELECTRICAL
SCALE: 1" = 40'-0"

FLOOR PLAN NOTES

E02	MAKE 277V POWER CONNECTION TO INTERNALLY LIT MONUMENT SIGN. COORDINATE EXACT LOCATION WITH CIVIL DRAWINGS.
E17	ROUTE CIRCUIT THROUGH 3-POLE EXTERIOR LIGHTING CONTACTOR IN A NEMA 1 ENCLOSURE. INSTALL LIGHTING CONTACTOR ADJACENT TO PANEL H1. PROVIDE A PHOTOCELL TO CONTROL CONTACTOR AND EXTERIOR LIGHTING CIRCUITS.
E18	UTILITY COMPANY POWER POLE WITH DIP TO UNDERGROUND PRIMARY FEEDER.
E19	PROVIDE EMPTY 4" CONDUIT FOR UTILITY PRIMARY FEEDER. COORDINATE ROUTING, JUNCTION/PULL BOXES AND CONDUIT SPECIFICATIONS WITH UTILITY COMPANY.
E20	PAD MOUNTED UTILITY TRANSFORMER WITH UTILITY METER. PROVIDE PAD PER UTILITY COMPANY STANDARDS. REFERENCE ONE-LINE DIAGRAM FOR SECONDARY SERVICE FEEDER.
E22	360 DEGREE UPLIGHT MOUNTED ON FLAG POLE. REFERENCE MANUFACTURER INSTALL ~~GUIDE FOR MOUNTING HEIGHT BASED ON FLAG POLE HEIGHT.~~
2 E27	ROUTE 4" EMPTY CONDUIT WITH PULL TAPE FROM IT ROOM SOUTH TO WEST 20TH STREET. PROVIDE INGRADE QUAZITE BOX INSTALLED FLUSH WITH GRADE FOR EVERY 250' OF CONDUIT LENGTH. TERMINATE AT QUAZITE BOX AT PROPERTY LINE. MAINTAIN 10' SEPARATION FROM ELECTRICAL PRIMARY FEEDER.



*POLE BASE SHALL BE CALCULATED USING THE FOLLOWING CRITERIA:

WWD LOADING
80MPH (104 GUST)

TOTAL EPA OF LUMINARIES
+ TOTAL EPA OF BRACKETS
= TOTAL EPA OF LUMINAIRES/BRACKETS

SELECT POLE BASED ON MAXIMUM EPA LISTED IN MANUFACTURERS CATALOG.

IN ANY CASE MIN. POLE BASE DEPTH SHALL BE 98". FINAL DEPTH OF POLE BASE SHALL BE VERIFIED WITH STRUCTURAL ENGINEER PRIOR TO PLACEMENT.

LIGHTING POLE BASE DETAIL
NOT TO SCALE

Call BEFORE you DIG
TOLL FREE
1-800-DIG-RITE
(344-7483)

MISSOURI ONE-CALL SYSTEM, INC.

UTILITY WARNING:
The existence and location of any underground utility pipes, lines or structures shown on these drawings are obtained by a search of the available records. The contractor is required to take due precautionary measures to protect the utility lines shown, and all other lines not of record or not shown on these drawings by verification of their location in the field prior to the initiation of the actual portion of their work.

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STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

STATE OF MISSOURI
GREGORY J. FENDLER
NUMBER PE-2006037230
PROFESSIONAL ENGINEER
10.28.2026

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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF Corrections

JOPLIN COMMUNITY SUPERVISION CENTER

2303 WEST 20TH STREET
JOPLIN, MO 64801

PROJECT # C2512-01
SITE # 7033
ASSET # 9327033001

Revision

Number	Revision Date	Revision Description
2	10/28/2026	Addendum 2

ISSUE DATE: September 30, 2026

CAD DWG FILE:
DRAWN BY: MDA
CHECKED BY: GJF
DESIGNED BY: MDA

SHEET TITLE:
SITE PLAN - ELECTRICAL

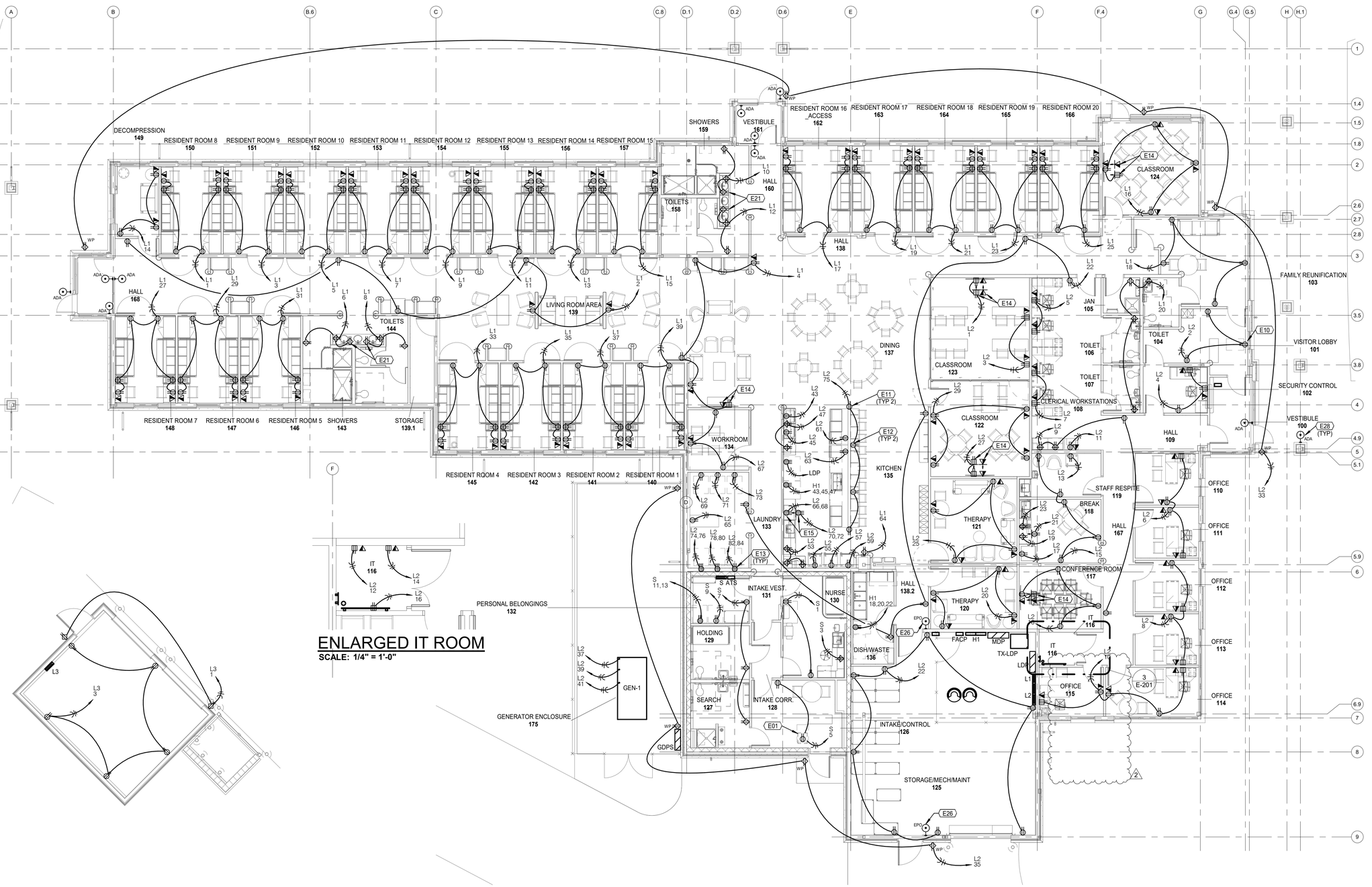
SHEET NUMBER:
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ENLARGED IT ROOM
SCALE: 1/4" = 1'-0"

MAINTENANCE SHED - POWER
SCALE: 1/8" = 1'-0"

FIRST FLOOR - POWER
SCALE: 1/8" = 1'-0"

FLOOR PLAN NOTES

E01	CEILING MOUNTED RECEPTACLE FOR METAL DETECTOR. VERIFY INSTALL REQUIREMENTS WITH ARCHITECT.
E10	COORDINATE EXACT LOCATION OF ROUGH-IN WITH METAL DETECTOR.
E11	INSTALL DEVICE IN END OF ISLAND IN HORIZONTAL ORIENTATION 6" BELOW COUNTER.
E12	INSTALL DEVICE IN HORIZONTAL ORIENATION 6" BELOW COUNTER IN KNEE WALL.
E13	PROVIDE A 30A/208V RECEPTACLE TO MATCH DRYER PLUG TYPE.
E14	COORDINATE ROUGH-IN FOR DISPLAY WITH AV VENDOR.
E15	PROVIDE A 50A/208V RECEPTACLE TO MATCH OVEN PLUG TYPE.
E21	RECEPTACLE FOR HARDWIRED LAVATORY FAUCETS. INSTALL RECEPTACLE HIGH UNDER COUNTERTOP. COORDINATE ELEVATION WITH ARCHITECT.
E26	EMERGENCY POWER OFF SWITCH TO SHUT OFF POWER TO BOTH BOILERS SIMULTANEOUSLY. INTERCONNECT WITH SHUNT TRIP DEVICES IN PANELBOARD.
E28	ADA MOTORIZED DOOR BUTTON. COORDINATE EXACT LOCATION AND CONDUIT ROUTING WITH ARCHITECTURAL DRAWINGS.

STATE OF MISSOURI
MIKE KEHOE, GOVERNOR

STATE OF MISSOURI
GREGORY J. FENDLER
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10.28.2026

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PROJECT # C2512-01
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Revision

Number	Revision Date	Revision Description
1	10/12/2026	Addendum 1
2	10/28/2026	Addendum 2

ISSUE DATE: September 30, 2026

CAD DWG FILE:
DRAWN BY: MDA
CHECKED BY: GJF
DESIGNED BY: MDA

SHEET TITLE:
FIRST FLOOR - POWER

SHEET NUMBER:
E-201

September 30, 2026

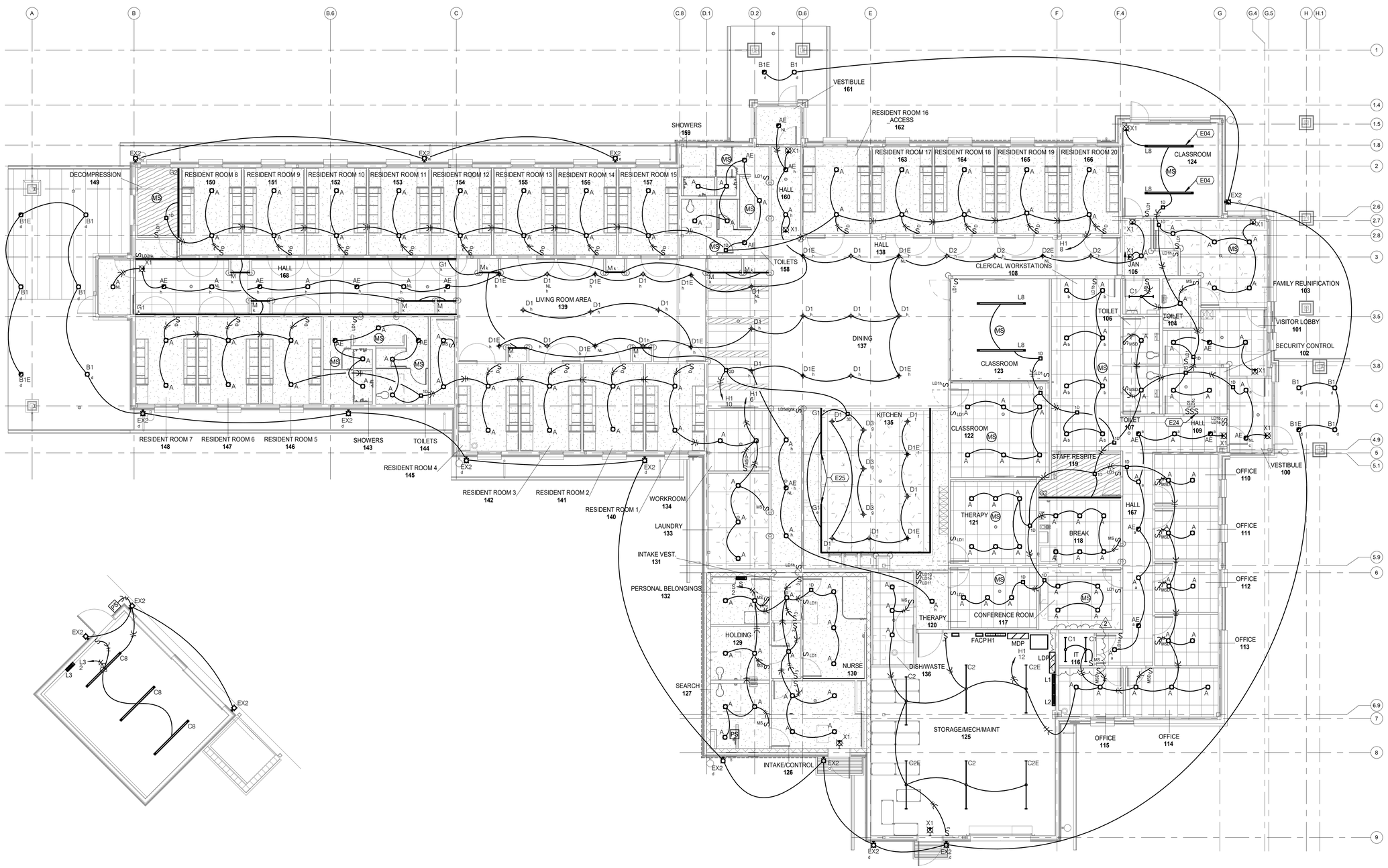
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MAINTENANCE SHED - LIGHTING
SCALE: 1/8" = 1'-0"

FIRST FLOOR - LIGHTING
SCALE: 1/8" = 1'-0"

FLOOR PLAN NOTES

E04 INSTALL LIGHTS PARALLEL TO STRUCTURE ABOVE.

E24 OVERRIDE SWITCH FOR PHOTOCELL CONTROLLED SITE LIGHTING. RE: MEP ROOF PLAN FOR PHOTOCELL LOCATION.

E25 COVE LIGHT TO END WITH CEILING SOFFIT AT KITCHEN HOOD AND RESUME AT THE OTHER SIDE. REFER TO ARCHITECTURAL PLANS FOR EXACT DETAILS.

STATE OF MISSOURI
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GOVERNOR

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GREGORY J. FENDLER
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JOPLIN, MO 64801

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2	10/28/2026	Addendum 2

ISSUE DATE: September 30, 2026

CAD DWG FILE:
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CHECKED BY: GJF
DESIGNED BY: MDA

SHEET TITLE:
FIRST FLOOR - LIGHTING

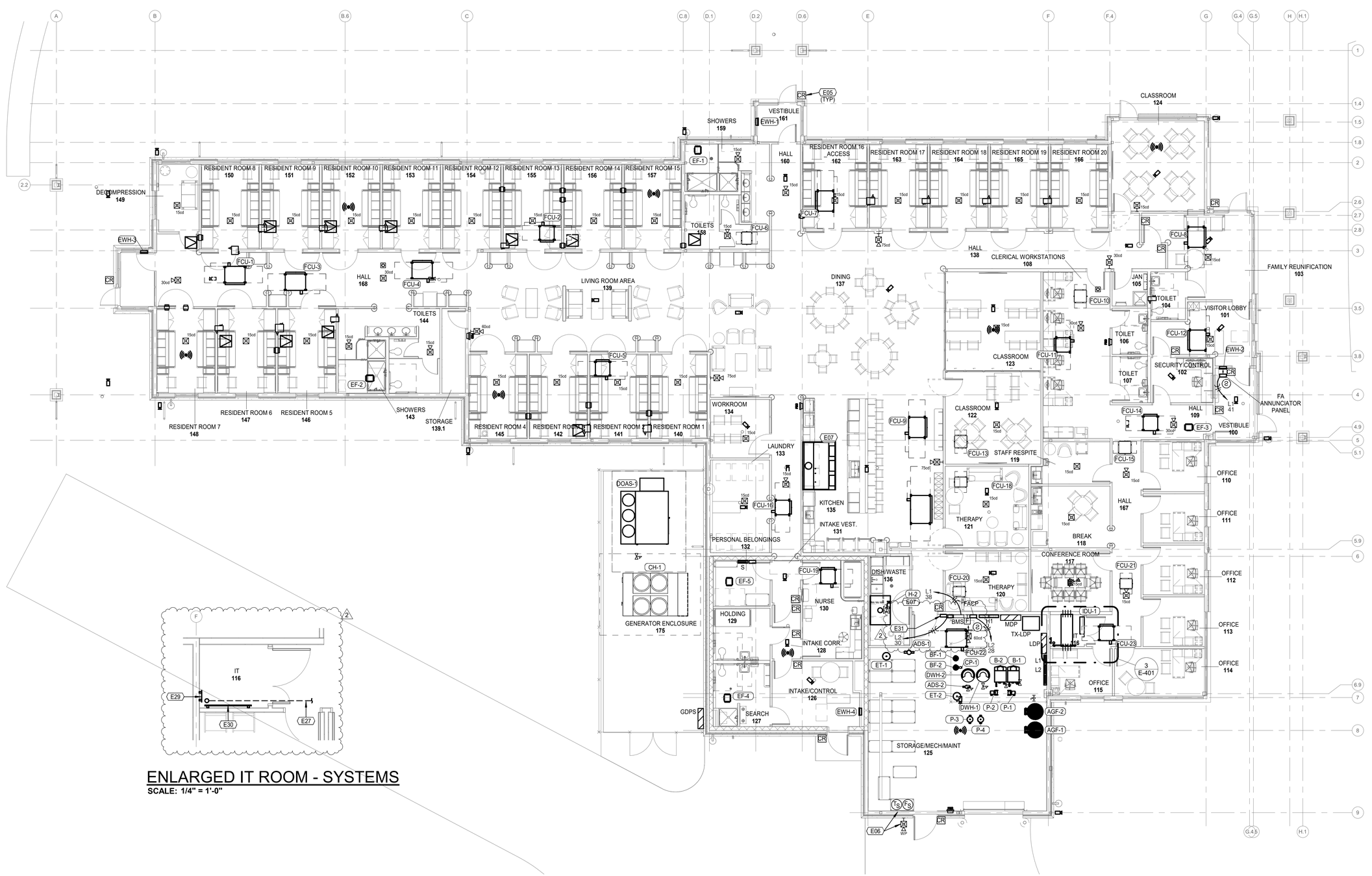
SHEET NUMBER:
E-301

September 30, 2026

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ENLARGED IT ROOM - SYSTEMS

SCALE: 1/4" = 1'-0"

FIRST FLOOR - SYSTEMS

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

FLOOR PLAN NOTES

- E05 COORDINATE ROUGH-IN FOR CARD READER WITH DOOR HARDWARE SCHEDULE.
- E06 COORDINATE TAMPER AND FLOW SWITCHES AND ALARM NOTIFICATION DEVICE ABOVE SIAMESE CONNECTION WITH FIRE SPRINKLER CONTRACTOR.
- E07 MAKE 120 VOLT POWER CONNECTION TO HOOD. INTERLOCK HOOD CONTROLS WITH MAKE-UP AIR UNIT, EXHAUST EQUIPMENT AND ANSUL SYSTEM. INTEGRATE ANSUL SYSTEM INTO FIRE ALARM SYSTEM.
- E27 ROUTE 4" EMPTY CONDUIT WITH PULL TAPE FROM IT ROOM SOUTH TO WEST 20TH STREET PROVIDE INGRADE QUAZITE BOX INSTALLED FLUSH WITH GRADE FOR EVERY 250' OF CONDUIT LENGTH. TERMINATE AT QUAZITE BOX AT PROPERTY LINE. MAINTAIN 10' SEPARATION FROM ELECTRICAL PRIMARY FEEDER.
- E29 GROUND BAR. REFERENCE DETAILS.
- E30 4X8 SHEET OF PLYWOOD PAINTED TO MATCH WALL WITH FIRE RETARDANT PAINT.
- E31 ACCESS CONTROL / SECURITY PANEL.

GENERAL NOTES - SYSTEMS

A. REFERENCE MEP SHEETS, CONNECTION SCHEDULES AND PANEL SCHEDULES FOR POWER REQUIREMENTS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT.

B. CONTACT POTTER ELECTRIC SIGNAL FOR FIRE ALARM SYSTEM. CONTRACTOR SHALL INCLUDE ALL REQUIRED ROUGH-IN, CABLING AND EQUIPMENT FOR A COMPLETE SYSTEM.

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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF Corrections

JOPLIN COMMUNITY SUPERVISION CENTER

2303 WEST 20TH STREET
JOPLIN, MO 64801

PROJECT # C2512-01
SITE # 7033
ASSET # 9327033001

Revision

Number	Revision Date	Revision Description
1	10/12/2026	Addendum 1
2	10/28/2026	Addendum 2

ISSUE DATE: September 30, 2026

CAD DWG FILE:
DRAWN BY: MDA
CHECKED BY: GJF
DESIGNED BY: MDA

SHEET TITLE:
FIRST FLOOR - SYSTEMS

SHEET NUMBER:
E-401

September 30, 2026

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10/28/2026 9:31:43 AM

PANELBOARD MDP

BUS AMPS: 600A | SCCR: PER STUDY | FULLY RATED | TYPE: DISTRIBUTION PANELBOARD
MAIN SIZE / TYPE: MLO | NEMA TYPE: 1 | MANUFACTURER:
VOLTS/PHASE: 480Y/277V, 3PH, 4W | MOUNTING: SURFACE | MFG MODEL:
SECTION: 1 | LOCATION: STOR/MECH 125 | OPTIONS: INTEGRAL SPD, SER

CKT #	CIRCUIT DECRIPTION	CB AMPS	P	LOAD VA	A VA	B VA	C VA	LOAD VA	P	CB AMPS	CIRCUIT DECRIPTION	CKT #
1				24,094	24,094			0				2
3	PANEL 'H1'	OL	3	24,060		24,060		0	3	OL	SPD	4
5				22,731			22,731	0				6
7				48,739	60,475			11,736				8
9	PANEL 'LDP' VIA 'TX-LDP'	OL	3	52,770		64,506		11,736	3	OL	DOAS-1	10
11				41,721			53,457	11,736				12
13				0	26,158			26,158				14
15	SPARE	OL	3	0		26,158		26,158	3	OL	CH-1	16
17				0			26,158	26,158				18
19				0	0			0				20
21	SPACE ONLY	OL	3	0		0		0	3	OL	SPACE ONLY	22
23				0			0	0				24
25				0	0			0				26
27	SPACE ONLY	OL	3	0		0		0	3	OL	SPACE ONLY	28
29				0			0	0				30
	PER PHASE CONNECTED - VA			110,727	114,724	102,346		TOTAL CONNECTED - VA				327,797
	PER PHASE CONNECTED - AMPS			400	414	369		TOTAL CONNECTED - AMPS				394
								TOTAL DEMAND - VA				273,690
								NEC TOTAL DEMAND - AMPS				329

NOTES:
OL = REFER TO ONE-LINE DIAGRAM

*REFER TO THE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING BRANCH CIRCUITS OF 100A OR LESS

BRANCH CIRCUIT PANELBOARD H1

BUS AMPS: 250A | SCCR: PER STUDY | FULLY RATED | TYPE: BRANCH CIRCUIT PANELBOARD
MAIN SIZE / TYPE: MLO | NEMA TYPE: 1 | MANUFACTURER:
VOLTS/PHASE: 480Y/277V, 3PH, 4W | MOUNTING: SURFACE | MFG MODEL:
SECTION: 1 | LOCATION: STOR/MECH 125 | OPTIONS: INTEGRAL SPD

CKT #	CIRCUIT DECRIPTION	CB AMPS	P	LOAD VA	A VA	B VA	C VA	LOAD VA	P	CB AMPS	CIRCUIT DECRIPTION	CKT #
1	FCU-1, FCU-3	15	1	2,105	3,857			1,752	1	20	LTG; EXTERIOR POLE LIGHTING	2
3	FCU-2, FCU-5	15	1	2,105		3,105		1,000	1	20	LTG; MONUMENT SIGNAGE	4
5	FCU-4	15	1	1,607			2,607	1,000	1	20	LTG; EAST RESIDENT ROOMS	6
7	FCU-6, FCU-7	15	1	1,496	2,496			1,000	1	20	LTG; WEST RESIDENT ROOMS	8
9	FCU-8	15	1	1,607		2,607		1,000	1	20	LTG; COMMON AREAS	10
11	FCU-9, FCU-16	15	1	2,105			3,105	1,000	1	20	LTG; ADMIN, CLASSROOMS	12
13	FCU-10, FCU-11	15	1	1,496	2,496			1,000	1	20	LTG; EXTERIOR WALL FIXTURES	14
15	FCU-12, FCU-14	15	1	2,105		2,105		0	1	20	SPARE	16
17	FCU-13, FCU-15, FCU-18	15	1	1,330			7,842	6,512				18
19	FCU-19	15	1	1,052	7,564			6,512	3	30	DISHWASHING MACHINE	20
21	FCU-20, FCU-22	15	1	2,050		8,562		6,512				22
23	FCU-21, FCU-23	15	1	1,496			2,437	941				24
25				1,191	2,132			941	3	15	P-3	26
27	FCU-17	15	3	1,191		2,132		941				28
29				1,191			2,132	941				30
31				360	1,301			941	3	15	P-4	32
33	MAU-1	15	3	360		1,301		941				34
35				360			4,360	4,000	1	20	EWH-1	36
37				582	4,582			4,000	1	20	EWH-2	38
39	KEF-1	15	3	582		4,582		4,000	1	20	EWH-3	40
41				582			582	0	1	20	SPARE	42
SECTION: 2												
43				5,666	5,666			0	1	20	SPARE	44
45	ELECTRIC RANGE	25	3	5,666		5,666		0	1	20	SPARE	46
47				5,666			5,666	0	1	20	SPARE	48
49				0	0			0	1	20	SPARE	50
51	SPARE	20	3	0		0		0	1	20	SPARE	52
53				0			0	0	1	20	SPARE	54
55	SPARE	20	1	0	0			0	1	20	SPARE	56
57	SPARE	20	1	0		0		0	1	20	SPARE	58
59	SPARE	20	1	0			0	0	1	20	SPARE	60
61	SPARE	20	1	0	0			0	1	20	SPARE	62
63	SPARE	20	1	0		0		0	1	20	SPARE	64
65	SPARE	20	1	0			0	0	1	20	SPARE	66
67	SPARE	20	1	0	0			0	1	20	SPARE	68
69	SPARE	20	1	0		0		0	1	20	SPARE	70
71	SPARE	20	1	0			0	0	1	20	SPARE	72
73	SPARE	20	1	0	0			0	1	20	SPARE	74
75	SPARE	20	1	0		0		0	1	20	SPARE	76
77	SPARE	20	1	0			0	0	1	20	SPARE	78
79	SPARE	20	1	0	0			0	1	20	SPARE	80
81	SPARE	20	1	0		0		0	1	20	SPARE	82
83	SPARE	20	1	0			0	0	1	20	SPARE	84
	PER PHASE CONNECTED - VA			30,094	30,060	28,731		TOTAL CONNECTED - VA				88,885
	PER PHASE CONNECTED - AMPS			109	109	104		TOTAL CONNECTED - AMPS				107
								TOTAL DEMAND - VA				71,323
								NEC TOTAL DEMAND - AMPS				86

NOTES:

*REFER TO THE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING BRANCH CIRCUITS OF 100A OR LESS

BRANCH CIRCUIT PANELBOARD S

BUS AMPS: 100A | SCCR: PER STUDY | FULLY RATED | TYPE: BRANCH CIRCUIT PANELBOARD
MAIN SIZE / TYPE: 50A MCB | NEMA TYPE: 1 | MANUFACTURER:
VOLTS/PHASE: 208Y/120V, 3PH, 4W | MOUNTING: SURFACE | MFG MODEL:
SECTION: 1 | LOCATION: STORM SHELTER | OPTIONS:

CKT #	CIRCUIT DECRIPTION	CB AMPS	P	LOAD VA	A VA	B VA	C VA	LOAD VA	P	CB AMPS	CIRCUIT DECRIPTION	CKT #
1	REC; NURSE	20	1	360	630			270	1	20	LTG; SHELTER LIGHTS	2
3	REC; NURSE COUNTER	20	1	180		400		220	1	15	EF-4	4
5	REC; INTAKE	20	1	360			580	220	1	15	EF-5	6
7	REC; SEARCH, HOLDING, PER BEL.	20	1	540	2,540			2,000	2	25	EWH-4	8
9	REC; WASHER	20	1	1,200		3,200		2,000				10
11	REC; DRYER	30	2	2,375			2,375	0	1	20	SPARE	12
13				2,375	2,375			0	1	20	SPARE	14
15	SPARE	20	1	0		0		0	1	20	SPARE	16
17	SPARE	20	1	0			0	0	1	20	SPARE	18
	PER PHASE CONNECTED - VA			5,545	3,600	2,955		TOTAL CONNECTED - VA				12,100
	PER PHASE CONNECTED - AMPS			46	30	25		TOTAL CONNECTED - AMPS				34
								TOTAL DEMAND - VA				14,355
								NEC TOTAL DEMAND - AMPS				40

NOTES:

*REFER TO THE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING BRANCH CIRCUITS OF 100A OR LESS

BRANCH CIRCUIT PANELBOARD L3

BUS AMPS: 100A | SCCR: PER STUDY | FULLY RATED | TYPE: BRANCH CIRCUIT PANELBOARD
MAIN SIZE / TYPE: 60A MCB | NEMA TYPE: 1 | MANUFACTURER:
VOLTS/PHASE: 208Y/120V, 3PH, 4W | MOUNTING: SURFACE | MFG MODEL:
SECTION: 1 | LOCATION: MAINT SHED | OPTIONS:

CKT #	CIRCUIT DECRIPTION	CB AMPS	P	LOAD VA	A VA	B VA	C VA	LOAD VA	P	CB AMPS	CIRCUIT DECRIPTION	CKT #
1	REC; MAINT SHED EXTERIOR RCPTS	20	1	360	1,360			1,000	1	20	LTG; MAINT SHED LIGHTING	2
3	REC; MAINT SHED INTERIOR RCPTS.	20	1	900		900		0	1	20	SPARE	4
5	SPARE	20	1	0			0	0	1	20	SPARE	6
7	SPARE	20	1	0	0			0	1	20	SPARE	8
9	SPARE	20	1	0		0		0	1	20	SPARE	10
11	SPARE	20	1	0			0	0	1	20	SPARE	12
13	SPARE	20	1	0	0			0	1	20	SPARE	14
15	SPARE	20	1	0		0		0	1	20	SPARE	16
17	SPARE	20	1	0			0	0	1	20	SPARE	18
	PER PHASE CONNECTED - VA			1,360	900	0		TOTAL CONNECTED - VA				2,260
	PER PHASE CONNECTED - AMPS			11	8	0		TOTAL CONNECTED - AMPS				6
								TOTAL DEMAND - VA				2,510
								NEC TOTAL DEMAND - AMPS				7

NOTES:

*REFER TO THE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING BRANCH CIRCUITS OF 100A OR LESS

DISTRIBUTION PANELBOARD LDP

BUS AMPS: 400A | SCCR: PER STUDY | FULLY RATED | TYPE: DISTRIBUTION PANELBOARD
MAIN SIZE / TYPE: 400A | NEMA TYPE: 1 | MANUFACTURER:
VOLTS/PHASE: 208Y/120V, 3PH, 4W | MOUNTING: SURFACE | MFG MODEL:
SECTION: 1 | LOCATION: STOR/MECH 125 | OPTIONS: INTEGRAL SPD

CKT #	CIRCUIT DECRIPTION	CB AMPS	P	LOAD VA	A VA	B VA	C VA	LOAD VA	P	CB AMPS	CIRCUIT DECRIPTION	CKT #
1				11,760	13,120			1,360				2
3	PANEL 'L1'	OL	3	12,980		13,880		900	3	OL	PANEL 'L3'	4
5				10,470			10,470	0				6
7				21,374	26,919			5,545				8
9	PANEL 'L2'	OL	3	28,126		31,726		3,600	3	OL	ATS (PANEL 'S')	10
11				29,832			32,787	2,955				12
13				0	8,700			8,700	2	OL	KITCHEN GRIDDLE	14
15	SPACE	OL	3	0		8,700		8,700				16
17				0			0	0	1	OL	SPACE ONLY	18
19				0	0			0				20
21	SPACE	OL	3	0		0		0	3	OL	SPACE	22
23				0			0	0				24
	PER PHASE CONNECTED - VA			48,739	54,306	43,257		TOTAL CONNECTED - VA				146,302
	PER PHASE CONNECTED - AMPS			406	453	360		TOTAL CONNECTED - AMPS				406
								TOTAL DEMAND - VA				100,300
								NEC TOTAL DEMAND - AMPS				278

NOTES:
OL = REFER TO ONE-LINE DIAGRAM

*REFER TO THE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING BRANCH CIRCUITS OF 100A OR LESS

BRANCH CIRCUIT PANELBOARD L1

BUS AMPS: 225A | SCCR: PER STUDY | FULLY RATED | TYPE: BRANCH CIRCUIT PANELBOARD
MAIN SIZE / TYPE: MLO | NEMA TYPE: 1 | MANUFACTURER:
VOLTS/PHASE: 208Y/120V, 3PH, 4W | MOUNTING: SURFACE | MFG MODEL:
SECTION: 1 | LOCATION: STOR/MECH 125 | OPTIONS:

CKT #	CIRCUIT DECRIPTION	CB AMPS	P	LOAD VA	A VA	B VA	C VA	LOAD VA	P	CB AMPS	CIRCUIT DECRIPTION	CKT #	
1	REC; RESIDENT ROOM 8	20	1	1,080	2,160			1,080	1	20	REC; HALL 168, LVN RM 139	2	
3	REC; RESIDENT ROOM 9	20	1	1,080		2,160		1,080	1	20	REC; DINING 137	4	
5	REC; RESIDENT ROOM 10	20	1	1,080			1,440	360	1	20	REC; TOILETS 144	6	
7	REC; RESIDENT ROOM 11	20	1	1,080	1,440			360	1	20	REC; TOILETS 144	8	
9	REC; RESIDENT ROOM 12	20	1	1,080		1,440		360	1	20	REC; TOILETS 158	10	
11	REC; RESIDENT ROOM 13	20	1	1,080			1,440	360	1	20	REC; TOILETS 158	12	
13	REC; RESIDENT ROOM 14	20	1	1,080	1,620			540	1	20	REC; DECOMPRESSION	14	
15	REC; RESIDENT ROOM 15	20	1	1,080		2,160		1,080	1	20	REC; CLASSROOM 124	16	
17	REC; RESIDENT ROOM 16	20	1	1,080			1,800	720	1	20	REC; FAMILY REUNIFICATION	18	
19	REC; RESIDENT ROOM 17	20	1	1,080	1,800			720	1	20	REC; TOILETS, JAN CLST	20	
21	REC; RESIDENT ROOM 18	20	1	1,080		1,980		900	1	20	REC; DINING 137	22	
23	REC; RESIDENT ROOM 19	20	1	1,080			1,580	500	1	20	FACP	24	FA
25	REC; RESIDENT ROOM 20	20	1	1,080	1,580			500	1	20	FAAP	26	FA
27	REC; RESIDENT ROOM 7	20	1	1,080		1,080		0	1	20	SPARE	28	
29	REC; RESIDENT ROOM 6	20	1	1,080			1,130	50	1	20	CP-1	30	
31	REC; RESIDENT ROOM 5	20	1	1,080	1,580			500	1	20	DWH-1	32	
33	REC; RESIDENT ROOM 4	20	1	1,080		1,580		500	1	20	DWH-2	34	
35	REC; RESIDENT ROOM 3	20	1	1,080			1,580	500	1	20	HOOD CONTROL PANEL	36	
37	REC; RESIDENT ROOM 2	20	1	1,080	1,580			500	1	20	BMS CONTROL PANEL	38	
39	REC; RESIDENT ROOM 1	20	1	1,080		2,580		1,500	1	20	MISC; CHILLER BUFF TNK HEATER	40	
41	SPARE	20	1	0			1,500	1,500	1	20	MISC; CHILLER EVAP HEATER	42	
43	SPARE	20	1	0	0			0	1	20	SPARE	44	
45	SPARE	20	1	0		0		0	1	20	SPARE	46	
47	SPARE	20	1	0			0	0	1	20	SPARE	48	
49	SPARE	20	1	0	0			0	1	20	SPARE	50	
51	SPARE	20	1	0		0		0	1	20	SPARE	52	
53	SPARE	20	1	0			0	0	1	20	SPARE	54	
55	SPARE	20	1	0	0			0	1	20	SPARE	56	
57	SPARE	20	1	0		0		0	1	20	SPARE	58	
59	SPARE	20	1	0			0	0	1	20	SPARE	60	
	PER PHASE CONNECTED - VA			11,760	12,980	10,470		TOTAL CONNECTED - VA				35,210	
	PER PHASE CONNECTED - AMPS			98	108	87		TOTAL CONNECTED - AMPS				98	
								TOTAL DEMAND - VA				26,630	
								NEC TOTAL DEMAND - AMPS				74	

NOTES:

*REFER TO THE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING BRANCH CIRCUITS OF 100A OR LESS

BRANCH CIRCUIT PANELBOARD L2

BUS AMPS: 225A | SCCR: PER STUDY | FULLY RATED | TYPE: BRANCH CIRCUIT PANELBOARD
MAIN SIZE / TYPE: MLO | NEMA TYPE: 1 | MANUFACTURER:
VOLTS/PHASE: 208Y/120V, 3PH, 4W | MOUNTING: SURFACE | MFG MODEL:
SECTION: 1 | LOCATION: STORMECH 125 | OPTIONS:

CKT #	CIRCUIT DECRIPTION	CB AMPS	P	LOAD VA	A VA	B VA	C VA	LOAD VA	P	CB AMPS	CIRCUIT DECRIPTION	CKT #	
1	REC; CLASSROOM 123	20	1	720	1,580			860	1	20	REC; VISITOR LOBBY	2	
3	REC; CLASSROOM 123	20	1	720		1,260		540	1	20	REC; SECURITY CONTROL	4	
5	REC; WORKSTATIONS	20	1	720			1,800	1,080	1	20	REC; OFFICE 110 111	6	
7	REC; WORKSTATIONS	20	1	720	1,800			1,080	1	20	REC; OFFICE 112 113	8	
9	REC; WORKSTATION COUNTER	20	1	720		1,800		1,080	1	20	REC; OFFICE 114 115	10	
11	MISC; WORKSTATION PRINTER	20	1	1,200			1,560	360	1	20	REC; IT ROOM	12	
13	REF; STAFF RESPITE FRIDGE	20	1	1,000	1,360			360	1	20	REC; IT ROOM	14	
15	REC; STAFF RESPITE / BRK RM	20	1	900		1,080		180	1	20	REC; IT ROOM	16	
GF 17	REF; BREAKROOM FRIDGE	20	1	1,000			2,080	1,080	1	20	REC; CONFERENCE ROOM 117	18	
19	REC; BREAKROOM COUNTER	20	1	180	900			720	1	20	REC; THERAPY	20	
21	MISC; BREAKROOM MICROWAVE	20	1	1,200		2,640		1,440	1	20	REC; STORAGE MAINT.	22	
GF 23	MISC; BREAKROOM COFFEE	20	1	1,200			1,250	50	1	15	H-1 CONTROL PANEL	24	
25	REC; THERAPY	20	1	720	770			50	1	15	H-2 CONTROL PANEL	26	
27	REC; CLASSROOM 122	20	1	720		770		50	1	20	FIRE ALARM CONTROL PANEL	28	FA
29	REC; CLASSROOM 122	20	1	720			770	50	1	20	SECURITY CONTROL PANEL	30	
31	REC; ROOFTOP GFI	20	1	360	360			0	1	20	SPARE	32	
33	REC; EXTERIOR RECEPTACLES	20	1	900		2,076		1,176	1	20	P-1	34	
35	REC; EXTERIOR RECEPTACLES	20	1	720			1,896	1,176	1	20	P-2	36	
37	MISC; GENSET BATT CHARGER	20	1	500	764			264	1	15	EF-1	38	
39	MISC; GENSET BATT WARMER	20	1	1,200		1,464		264	1	15	EF-2	40	
41	MISC; GENSET ACCESSORIES	20	1	50			314	264	1	15	EF-3	42	
SECTION: 2													
GF 43	REC; KITCHEN MICROWAVE	20	1	1,200	1,250			50	1	15	DWH-1	44	
GF 45	REC; KITCHEN MICROWAVE	20	1	1,200		1,250		50	1	15	DWH-2	46	
47	REC; COUNTERTOP RCPTS	20	1	360			1,056	696	1	15	CP-1	48	
GF 49	SPARE	20	1	0	50			50	1	15	KEF-1	50	
GF 51	SPARE	20	1	0		1,080		1,080	1	15	AGF-1	52	
53	REC; COUNTERTOP RCPTS	20	1	540			1,620	1,080	1	15	AGF-2	54	
GF 55	REC; KITCHEN FRIDGE	20	1	1,000	1,050			50	1	15	B-1	56	ST
GF 57	REC; KITCHEN FRIDGE	20	1	1,000		1,000		0	-	-	SHUNT TRIP SPACE	58	
GF 59	REC; KITCHEN FRIDGE	20	1	1,000			1,050	50	1	15	B-2	60	ST
GF 61	REC; KITCHEN DISHWASHER	20	1	1,000	1,000			0	-	-	SHUNT TRIP SPACE	62	
GF 63	REC; KITCHEN DISHWASHER	20	1	1,000		1,500		500	1	20	REC; BOTTLE FILLER	64	
65	REC; IRON	20	1	1,000			5,000	4,000	2	50	KITCHEN OVEN	66	
67	REC; WORKROOM 134	20	1	540	4,540			4,000				68	
69	REC; LAUNDRY 133 WASHER	20	1	1,200		5,200		4,000	2	50	KITCHEN OVEN	70	
71	REC; LAUNDRY 133 WASHER	20	1	1,200			5,200	4,000				72	
73	REC; LAUNDRY 133 WASHER	20	1	1,200	3,575			2,375	2	30	REC; LAUNDRY 133 DRYER	74	
75	REC; KITCHEN ISLAND	20	1	720		3,095		2,375				76	
77	KITCHEN GRIDDLE	20	2	0			2,375	2,375	2	30	REC; LAUNDRY 133 DRYER	78	
79				0	2,375			2,375				80	
81	IDU / ODU-1	20	2	1,536		3,911		2,375	2	30	REC; LAUNDRY 133 DRYER	82	
83				1,536			3,911	2,375				84	
	PER PHASE CONNECTED - VA			21,374	28,126	29,882		TOTAL CONNECTED - VA				79,382	
	PER PHASE CONNECTED - AMPS			178	234	249		TOTAL CONNECTED - AMPS				220	
								TOTAL DEMAND - VA				49,477	
								NEC TOTAL DEMAND - AMPS				137	

NOTES:

*REFER TO THE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING BRANCH CIRCUITS OF 100A OR LESS

PANELBOARD SCHEDULE ABBREVIATIONS

200N	200 PERCENT NEUTRAL
AFI	COMBINATION ARC FAULT CIRCUIT INTERRUPTER
APM	ADVANCED POWER METER
CB	CIRCUIT BREAKER
C#	CONTROL CIRCUIT WITH CONTACTOR #
CKT	CIRCUIT
DF	DUAL FUNCTION GFCI AND AFI
E	EXISTING CIRCUIT BREAKER
EM	EMERGENCY CIRCUIT - RED HANDLE LOCK ON
ER	ENERGY REDUCTION MAINTENANCE SETTING SWITCH
ET	ENERGY TRIP CIRCUIT BREAKER
FA	FIRE ALARM CIRCUIT - RED HANDLE LOCK ON
FTL	FEED THROUGH LUGS
GF	GROUND FAULT CIRCUIT INTERRUPTER (4-6mA)
GFP	GROUND FAULT PROTECTION
GFPE	GROUND FAULT PROTECTION OF EQUIPMENT (30mA)
HL	HANDLE LOCK ON / OFF
HT	HANDLE TIE
IG	ISOLATED GROUND
KK	KIRK KEY OPERATION
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUG ONLY
N	NEW CIRCUIT BREAKER
NE	NEW LOAD CONNECTED TO EXISTING CIRCUIT BREAKER
P	POLES
PFR	PHASE FAILURE RELAY
PH	PHASE
PM	POWER METER
PQM	POWER QUALITY METER
RE:	REFERENCE
RPM	CONTROL CIRCUIT WITH RELAY PANEL #
SC	SELECTIVE COORDINATION REQUIRED
SCCR	SHORT CIRCUIT CURRENT RATING
SER	SERVICE ENTRANCE RATED
SFB	SUB-FEED BREAKER
SB	SPARE BREAKER AFTER DEMOLITION
SPD	SURGE PROTECTIVE DEVICE
ST	SHUNT TRIP
SV	SEPARATE VERTICAL SECTION
TM	THERMAL MANAGEMENT
UV	UNDER VOLTAGE TRIP
VA	VOLT-AMPS
W	WIRE
W/	WITH

STATE OF MISSOURI
MIKE KEHOE,
GOVERNOR

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GREGORY J. FENDLER
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DEPARTMENT OF Corrections

JOPLIN COMMUNITY SUPERVISION CENTER

2303 WEST 20TH STREET
JOPLIN, MO 64801

PROJECT # C2512-01
SITE # 7033
ASSET # 9327033001

Revision

Number	Revision Date	Revision Description
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ELECTRICAL SCHEDULES

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September 30, 2026

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LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	LIGHT SOURCE NOMINAL LUMENS CCT CRI	WATTS VOLTS	DIMMING PROTOCOL	VA	MOUNTING	DESCRIPTION	SPECIFIC NOTES
A	FAIL SAFE FLD4CX-15-D010-FEU4C-1020-90-30--F4LCXV-M-2-MW EQUAL: LIFESHIELD LTR , WILLIAMS V4DR , NEWSTAR HIGH ABUSE	INTEGRAL LED 1500 LUMENS 3000 K 80 CRI	16.6 UNV	1% 0-10V	18	RECESSED CEILING	LED VANDAL RESISTANT 4" DOWNLIGHT. TORX T10 SCREWS FOR VANDAL AND TAMPER RESISTANT INSTALLATION. NON-REMOVABLE UPPER LENS. WHITE FLANGE AND REFLECTOR FINISH.	
B1	PORTFOLIO LDA6A-15-90-35-D010-[EMBOD]-LAR35FL-6LAL1-H EQUAL: PRESCOLITE LFR, WILLIAMS 6AR, GOTHAM IVO	INTEGRAL LED 1500 LUMENS 3500 K 90 CRI	21 UNV	1% 0-10V	23	RECESSED CEILING	LED ADJUSTABLE 6" DOWNLIGHT. SPUN ALUMINUM HOUSING AND LENS TO PROVIDE WET LOCATION LISTING. 362 DEGREE ROTATION WITH 45 DEGREE ELEVATION ADJUSTMENT.	
C1 C1E	METALUX 4SNX-SL3-SLW-UNV-CC83-CD-1-[EL10W]-PAF EQUAL: COLUMBIA MPS , WILLIAMS FS, LITHONIA CSS	INTEGRAL LED 3959 LUMENS 3500 K 80 CRI	33.5 UNV	10% 0-10V	37	SUSPENDED CEILING	LED LINEAR STRIP LIGHT WITH SQUARE DIFFUSER. SELECTABLE CCT AND LUMEN OUTPUT.	
C2 C2E	METALUX 8TSNX-SL3-SLW-UNV-CC83-CD-1-[EL10W]-PAF EQUAL: COLUMBIA MPS , WILLIAMS FS, LITHONIA CSS	INTEGRAL LED 7724 LUMENS 3500 K 80 CRI	66.9 UNV	10% 0-10V	74	SUSPENDED CEILING	SIMILAR TO 'C1' BUT IN 8' LENGTH	
D1 D1E	HALO COMMERCIAL HCC6S-30-D010-XX-HM6C-3040-835-61-MD-H EQUAL: PRESCOLITE LTC , HELIOS 6" ROUND , GOTHAM IVO	INTEGRAL LED 3000 LUMENS 3500 K 80 CRI	28.6 UNV	1% 0-10V	32	SURFACE CEILING	6" LED SURFACE MOUNTED CYLINDER WITH SPUN ALUMINUM HOUSING. SELF FLANGED ALUMINUM REFLECTOR WITH INTEGRAL LENS.	
D2	HALO COMMERCIAL HCC6S-15-D010-XX-HM6C-0525-835-61-MD-H EQUAL: PRESCOLITE LTC , HELIOS 6" ROUND	INTEGRAL LED 1500 LUMENS 3500 K 80 CRI	14.5 UNV	1% 0-10V	16	SURFACE CEILING	SIMILAR TO 'D1' BUT LOWER LUMEN OUTPUT	
D3	HALO COMMERCIAL HCC6S-20-D010-XX-HM6C-0525-835-61-MD-H EQUAL: PRESCOLITE LTC , HELIOS 6" ROUND	INTEGRAL LED 2000 LUMENS 3500 K 80 CRI	14.5 UNV	1% 0-10V	16	SUSPENDED CEILING	SIMILAR TO 'D1' BUT LOWER LUMEN OUTPUT AND SUSPENED FROM STRUCTURE.	3
EX1	LUMARK CYL-2D-30W-PC-XX EQUAL: ILP UNIFY , LITHONIA WMCL4/6 , G LIGHTING CYLINDER	INTEGRAL LED 1631 LUMENS 4000 K 80 CRI	15 UNV	10% 0-10V	17	WALL	EXTERIOR LED WALL SCONCE WITH OPTIONAL UP/DOWN OPTICS. DIE CAST ALUMINUM HOUSING WITH LENS AND GLASS COVER.	
EX2	MCGRAW EDISON GKO-PB-2-C-740-U-T4W-XX-PBHSS EQUAL: ILP VIEWPOINT , GARDCO GEOFORM , LITHONIA WDGE2	INTEGRAL LED 8724 LUMENS 4000 K 70 CRI	57 UNV	10% 0-10V	63	WALL	EXTERIOR LED WALL PACK WITH TYPE 4 WIDE DISTRIBUTION. DIE CAST ALUMINUM HOUSING. HOUSE SIDE SHIELD TO PREVENT GLARE BACK INTO RESIDENT ROOMS.	
G1	NULITE PF2-D-FCL-3-09-L-35-UNV-D-1-1-WH-XX EQUAL: LITECONTROL 2L , LUX LUMINAIRE EOS 2.0 , ALW LIGHTPLANE+ 2R	INTEGRAL LED 900 LUMENS PER FOOT 3500 K 80 CRI	8.2 / FT UNV	1% 0-10V	9 / FT	CEILING PERIMETER	LED PERIMETER COVE LIGHT WITH EXTRUDED ALUMINUM FLANGE AND COLD ROLLED STEEL CHANNEL. THREE INCH RECESS. WHITE FINISH.	
G2	NULITE RZ4-07-L-35-UNV-D-1-1-N-F-XX EQUAL: LITECONTROL 4L , LEDALITE TRUGROOVE , ALW LIGHTPLANE+ 4R	INTEGRAL LED 700 LUMENS PER FOOT 3500 K 80 CRI	7.6 / FT UNV	1% 0-10V	8 / FT	CEILING PERIMETER	LED NARROW OPTIC PERIMETER WALL GRAZER. FLANGED WALL BACK BOX WITH OPTION TO SHIP BOX SEPARATE OF FIXTURE. COLD ROLLED STEEL PAINTED AFTER FABRICATION	
L#	NULITE RP24-B-ST-F-MW-XX-XX-L-35-UNV-D-1-1-WH-SR-W-048-XX EQUAL: LITECONTROL 2L , LEDALITE TRUGROOVE , ALW LIGHTPLANE+ 2	INTEGRAL LED #### LUMENS 3500 K 80 CRI		1% 0-10V	0	SUSPENDED STRUCTURE	LED 2" LINEAR LIGHT WITH DIRECT AND INDIRECT DISTRIBUTION.	
M	NULITE RF1-D-FF-03-L-35-UNV-D-1-1-XX-XX EQUAL: LITECONTROL 2L , LUX LUMINAIRE EOS 2.0 , ALW LIHTPLANE+ 1R	INTEGRAL LED 300 LUMENS PER FOOT 3500 K 80 CRI	2.2 / FT UNV	1% 0-10V	2.4 / FT	RECESSED	LED 1" RECESSED LINEAR LIGHT. ONE PIECE EXTRUDED ALUMINUM HOUSING	1
SL1	LUMARK PRV-CC40-D-UNV-T2-BZ EQUAL: BEACON VIPER , MIRADA MEDIUM , LITHONIA D-SERIES	INTEGRAL LED 17,172 LUMENS 4000 K 70 CRI	131 UNV	10% 0-10V	146	SITE POLE	EXTERIOR SITE LIGHTING WITH TYPE 2 DISTRIBUTION. SINGLE PIECE DIE-CAST ALUMINUM HOUSING WITH TETHERED DOOR.	
SL2	LUMARK PRV-CC40-D-UNV-T3-BZ EQUAL: BEACON VIPER , MIRADA MEDIUM , LITHONIA D-SERIES	INTEGRAL LED 17,144 LUMENS 4000 K 70 CRI	131 UNV	10% 0-10V	146	SITE POLE	SIMILAR TO 'SL1' BUT WITH TYPE 3 DISTIBUTION	
SL3	LUMARK PRV-CC40-D-UNV-T4-BZ EQUAL: BEACON VIPER , MIRADA MEDIUM , LITHONIA D-SERIES	INTEGRAL LED 17,087 LUMENS 4000 K 70 CRI	131 UNV	10% 0-10V	146	SITE POLE	SIMILAR TO 'SL1' BUT WITH TYPE 4 DISTIBUTION	
SL4	POLELED EXTENDED FLAGPOLE LIGHT EQUAL: KIRLIN LATITUDES SERIES (QTY 3)	INTEGRAL LED 17,087 LUMENS 4000 K 70 CRI	3250 UNV	10% 0-10V	3611	FLAG POLE	FLAG POLE MOUNTED UPLIGHT FOR FLAG ILLUMINATION.	2
X1	MULE U-MD-U-BAB EQUAL: DUAL LITE SE , CHLORIDE 55 SERIES , EVENLITE SENTRY SEN	INTEGRAL LED	1.2 UNV	- -	1.3	RE: PLANS	LED UNIVERSAL EXIT SIGN WITH RED/GREEN SWITCH, UNIVERSAL MOUNTING. BRUSHED ALUMINUM HOUSING WITH BLACK AND BRUSHED FINISH.	
X2	MULE U-MD-U-BAB EQUAL: DUAL LITE SE , CHLORIDE 55 SERIES , EVENLITE SENTRY SEN	INTEGRAL LED	1.2 UNV	- -	1.3	RE: PLANS	SIMILAR TO 'X1' BUT USED IN DUAL FACE APPLICATION.	

SPECIFIC NOTES:
1. COORDINATE LENGTH OF FIXTURE WITH ARCHITECTURAL PLANS.
2. REFER TO LANDSCAPE DRAWINGS FOR ADDITIONAL INFORMATION REGARDING FLAG POLE SPECIFICATIONS.
3. REFER TO ARCHITECTURAL DRAWINGS FOR SUSPENSION LENGTH.

GENERAL NOTE:
- G1. THE MANUFACTURER IN THE COLUMN LISTED FIRST IS THE BASIS OF DESIGN. SUBSEQUENT MANUFACTURER'S/MODEL SERIES LISTED ARE CONSIDERED APPROVED EQUIVALENT, SUBJECT TO COMPLIANCE WITH THE SPECIFIED REQUIREMENTS.
- G2. REFER TO THE SUBSTITUION NOTES BELOW FOR THE PROCESS TO BECOME AN APPROVED EQUIVALENT.
- G3. VERIFY CEILING TYPE PRIOR TO ORDERING LIGHT FIXTURES, AND PROVIDE TRIM KITS, ADAPTER KITS, MOUNTING HARDWARE, ETC AS REQUIRED FOR THE TYPE OF CEILING APPLICATION.
- G4. COORDINATE DIMMING DRIVERS WITH DIMMING SWITCHES/SYSTEMS AND PROVIDE REQUIRED CONTROL WIRING.
- G5. PROVIDE UNSWITCHED HOT CONDUCTOR TO LIGHT FIXTURES AND EXIT SIGNS WITH EMERGENCY BATTERY BACK UP POWER.
- G6. CONFIRM FINAL LIGHT FIXTURE FINISHES WITH THE ARCHITECT PRIOR TO ORDERING.

SUBSTITUTION NOTES:
THE LIGHTING DESIGN FOR THIS PROJECT IS BASED UPON THE MANUFACTURER SPECIFIED. IF A PROPOSED SUBSTITUTION IS DESIRED BY THE CONTRACTOR, A SUBSTITUTION REQUEST SUBMITTAL MUST BE PROVIDED AS FOLLOWS:
- S1. SUBSTITUTION REQUEST FOR PROPOSED EQUIVALENTS MUST BE RECEIVED BY THE ENGINEER IN WRITING AT LEAST 10 DAYS PRIOR TO BID. FAILURE TO SUBMIT CONSTITUTES A GUARANTEE TO SUPPLY THE SPECIFIED LIGHT FIXTURE OR LISTED EQUIVALENT.
- S2. INFORMATION IS TO BE SUPPLIED COMPARING PHOTOMETRY, (WITH FLOOR PLANS INDICATING POINT BY POINT CALCULATIONS) DIMENSIONS, MATERIAL COMPOSITION, FINISH, VISUAL APPEARANCE AS WELL AS THE "CONTRACTOR NET" PRICING.
- S3. LUMENS INDICATED ARE NOMINAL BASED ON THE BASIS OF DESIGN LIGHT FIXTURE. IT IS THE RESPONSIBILITY OF THE LIGHTING REPRESENTATIVE TO REVIEW THE DELVIERED LUMENS OF THE BASIS OF DESIGN AND TO MEET OR EXCEED THAT VALUE.
- S4. SAMPLES ARE TO BE PROVIDED UPON REQUEST.
- S5. IF THE ENGINEER DEEMS THE PROPOSED SUBSTITION ACCEPTABLE, IT WILL BE INCLUDED IN THE BID DOCUMENT OR AN ADDENDUM WILL BE ISSUED THAT INCLUDES THE LIGHT FIXTURE IN THE SCHEDULE AS AN APPROVED EQUIVALENT. IF THE PROPOSED SUBSTITUTION IS NOT DEEMED ACCEPTABLE, IT WILL NOT BE INLCUDED IN THE ADDENDUM, THEREFORE IT IS NOT ACCEPTABLE TO INCLUDE IN THE BID.
- S7. PACKAGING OF LIGHT FIXTURES WILL NOT BE CONSIDERED OR APPROVED.
- S8. MANUFACTURER'S REPRESENTATIVE AGENTS SHALL BE ALLOWED TO OFFER MINI-LOT PRICING FOR SPECIFIED LIGHTING FIXTURES.
- S9. LIGHTING CONTROLS PRICING SHALL BE COMPLETELY SEPARATE OF ANY LIGHT FIXTURE PRICING. ANY LIGHTING CONTROLS PRICING THAT IS SUBMITTED WITH LIGHT FIXTURE PRICING (UNIT OR MINI-LOT) WILL BE IMMEDIATELY REJECTED IN ITS ENTIRETY.

POST BID ALTERNATES:
- P1. GREAT CARE, TIME AND EXPENSE HAVE BEEN USED TO PROVIDE OUR CLIENT WITH THE LIGHTING AND CONTROLS SYSTEM. THEREFORE, FOR EACH AND EVERY TYPE OF LIGHT FIXTURE OR CONTROL SYSTEM OFFERED AS AN UNSOLICITED ALTERNATE, A $500.00 FEE WILL BE CHARGED TO THE CONTRACTOR FOR REVIEW OF THE PROPOSED ALTERNATE. THIS CHARGE IS IN NO WAY A GUARANTEE OF APPROVAL, BUT IS SOLELY TO COMPENSATE THE ENGINEER FOR TIME SPENT VALIDATING EQUALITY AND COMPATIBILITY WITH THE PROJECT REQUIREMENTS. THIS REIMBURSEMENT FEE MUST BE RECEIVED BY THE ENGINEER PRIOR TO ANY REVIEW COMMENCING.
- P2. SAMPLES ARE TO BE PROVIDED UPON REQUEST.

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L|F+a Project No. 26.8027.00

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GOVERNOR

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NUMBER PE-2006037230
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JOPLIN COMMUNITY SUPERVISION CENTER

2303 WEST 20TH STREET
JOPLIN, MO 64801

PROJECT # C2512-01
SITE # 7033
ASSET # 9327033001

Revision

Number	Revision Date	Revision Description
1	10/12/2026	Addendum 1
2	10/28/2026	Addendum 2

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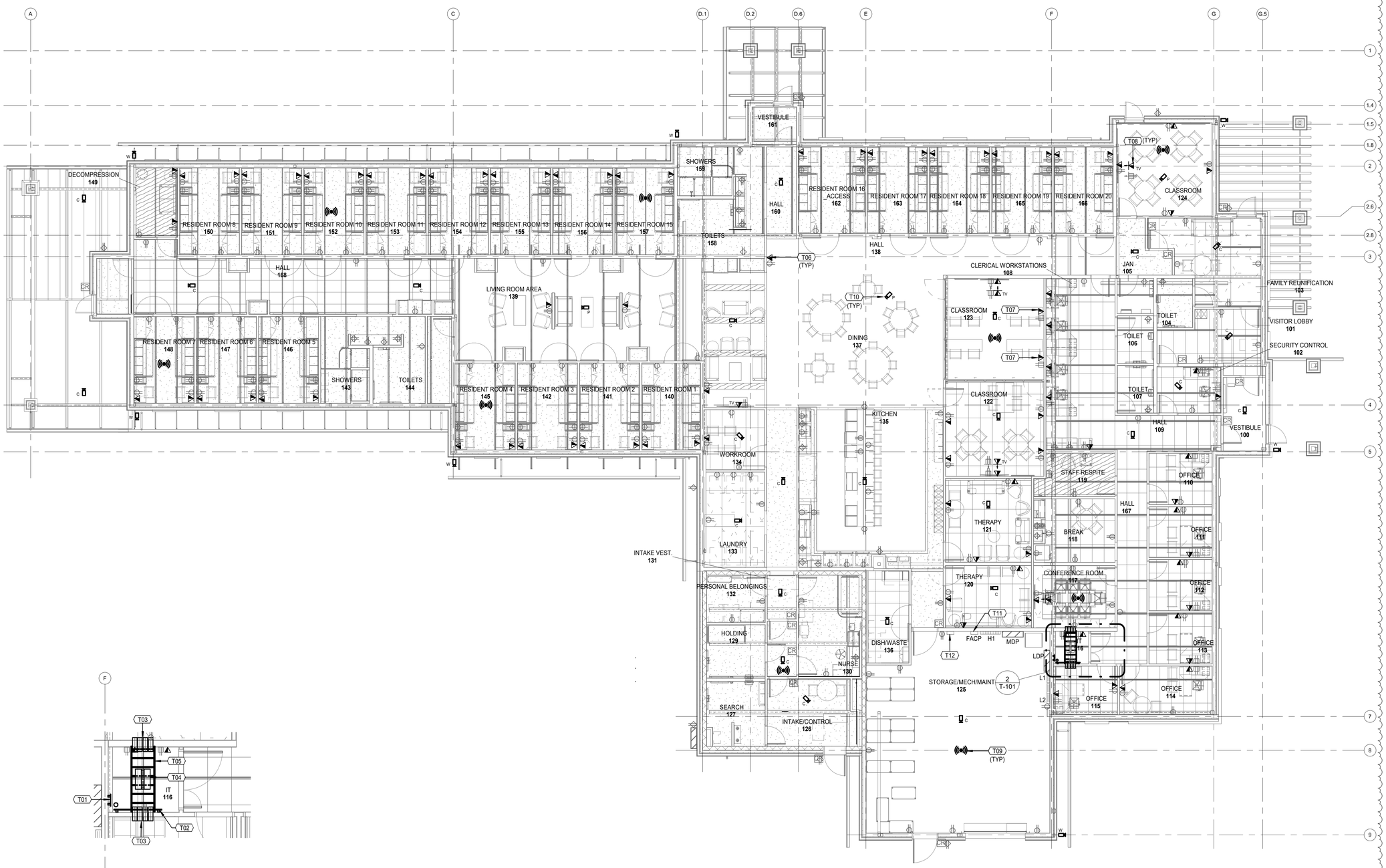
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ENLARGED IT CLOSET TECHNOLOGY

SCALE: 1/4" = 1'-0"

FIRST FLOOR - TECHNOLOGY

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

GENERAL NOTES

A. CONTACT AVIGILON FOR SURVEILANCE CAMERA SYSTEM. CONTRACTOR SHALL INCLUDE ALL REQUIRED ROUGH-IN, CABLING AND EQUIPMENT FOR A COMPLETE SYSTEM.

B. CONTACT LUMIX ELECTRICAL FOR ACCESS CONTROL AND INTERCOM SYSTEM. CONTRACTOR SHALL INCLUDE ALL REQUIRED ROUGH-IN, CABLING AND EQUIPMENT FOR A COMPLETE SYSTEM.

FLOOR PLAN NOTES

T01 GROUND BAR (BY ELECTRICAL CONTRACTOR). REFERENCE DETAILS ON ELECTRICAL DRAWINGS.

T02 4X8 SHEET OF PLYWOOD (BY ELECTRICAL CONTRACTOR).

T03 INSTALL (4) 4" CONDUIT SLEEVES ABOVE LADDER TRAY AND ABOVE ADJACENT DROP CEILING.

T04 INSTALL 2-POST RACK CENTERED IN ROOM WITH A DIMENSION OF 41" FROM FRONT OF RACK (FACING DOORS) TO FACE OF BACK WALL.

T05 INSTALL 24" WIDE LADDER TRAY, WALL TO WALL 24" ABOVE TOP OF TRACK WITH WATERFALL FITTINGS AT RACK.

T06 PROVIDE SINGLE CAT6 DROP TO EACH AND EVERY WALL DEVICE TERMINATED AT WALL JACK AND IT ROOM RACK PATCH PANEL.

T07 PROVIDE TWO CAT6 DROPS TO WALL DEVICE TERMINATED AT WALL JACKS AND IT ROOM RACK PATCH PANEL.

T08 PROVIDE SINGLE CAT6 DROP TO EACH AND EVERY AV DISPLAY TERMINATED AT WALL IN DISPLAY BACK BOX JACK AND IT ROOM RACK PATCH PANEL. PROVIDE 24" PATCH CORD FOR EACH DISPLAY.

T09 PROVIDE SINGLE CAT6 DROP TO EACH AND EVERY WIRELESS ACCESS POINT TERMINATED IN A KEYSTONE JACK IN A SURFACE MOUNT DATA BOX AND IT ROOM RACK PATCH PANEL. INSTALL SURFACE MOUNT DATA BOX IN DEEP, DOUBLE GANG JUNCITON BOX MOUNTED FLUSH WITH CEILING. PROVIDE 20' SERVICE LOOP.

T10 PROVIDE SINGLE CAT6 DROP TO POE CAMERA AND IT ROOM RACK PATCH PANEL. COORDINATE TERMINATION OF CABLE WITH CAMERA INSTALLER.

T11 PROVIDE SINGLE CAT6 DROP TO FIRE ALARM CONTROL PANEL TERMINATED AT PANEL AND IT ROOM RACK PATCH PANEL. COORDINATE TERMINATION OF CABLE WITH FIRE ALARM INSTALLER.

T12 PROVIDE SINGLE CAT6 DROP TO SECURITY PANEL TERMINATED AT PANEL AND IT ROOM RACK PATCH PANEL. COORDINATE TERMINATION OF CABLE WITH SECURITY INSTALLER.

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A View Project No. 26002230

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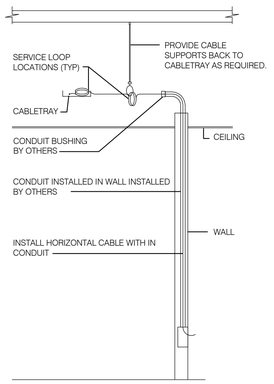
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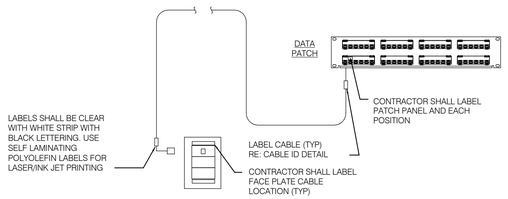
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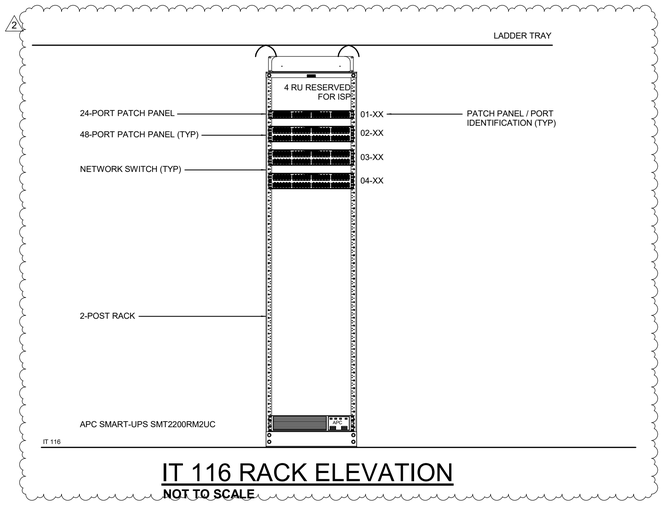
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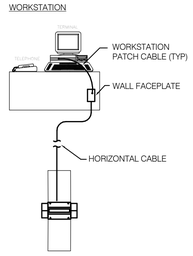
TYPICAL ROUGH-IN DETAIL
NO SCALE



TYPICAL CABLE LABEL LOCATION DETAIL
NO SCALE



IT 116 RACK ELEVATION
NOT TO SCALE



HORIZONTAL CABLE CABLE TOPOLOGY DIAGRAM
NO SCALE

GENERAL NOTES (TYPICAL ALL SHEETS)

A. CONDUIT ROUTING IS SHOWN FOR REFERENCE ONLY AND MAY NOT SHOW EXACT ROUTING TAKEN. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL CONDUIT INSTALLED FOR TELECOMMUNICATIONS USAGE UNLESS OTHERWISE NOTED.

B. ALL LOCATION ARE ROUGHED IN BY OTHERS. TECHNOLOGY CONTRACTOR SHALL PROVIDE AND INSTALL ALL FACE PLATES, MODULAR JACKS, CABLES, CABLE SUPPORTS, LABELS FOR CABLES AND ANY OTHER ITEMS NOTED ON DRAWINGS THAT IS NOT BEING PROVIDED BY OR INSTALLED BY OTHERS.

C. PROVIDE FIRE STOP ON ALL PIPING AT WALL AND FLOOR PENETRATIONS PER LOCAL CODE REQUIREMENTS. METHOD OF FIRE STOP SHALL MEET WALL/FLOOR RATING. RE: ARCHITECTURAL DRAWINGS FOR LOCATION OF FIRE RATED WALLS.

D. PROVIDE BONDING JUMPERS BETWEEN ALL CABINET/RACK AND SECTIONS OF CABLE TRAY UNLESS SYSTEM IS UL LISTED AND APPROVED AS A COMPLETE GROUNDED SYSTEM.

E. CONTRACTOR TO FIELD VERIFY ALL MEASUREMENTS PRIOR TO INSTALLATION.

F. PROVIDE LABELING FOR ALL GROUND WIRE AT EVERY TERMINATION POINT AND LABEL GROUND BAR.

G. CABLES SHALL BE BUNDLED WITH LIKE COLOR AND SHALL BE SECURED AND TIED IN A NEAT AND ORDERLY MANNER.

H. CONTRACTOR SHALL REFERENCE ARCHITECTURAL DRAWINGS FOR WALLS THAT ARE CONSTRUCTED FROM FLOOR TO STRUCTURE. CONTRACTOR SHALL MINIMIZE HOLE PENETRATION AND CONSOLIDATE CABLES INTO ONE PENETRATION. AFTER INSTALLATION CONTRACTOR SHALL SEAL HOLE AIR TIGHT.

I. LEAD ON-SITE PROJECT LOW VOLTAGE CONTRACTOR SHALL HAVE A CURRENT BISCI MEMBER AND BE RCDD CERTIFIED.

J. ALL LOW VOLTAGE CONTRACTORS WORKING ON SITE SHALL BE MANUFACTURER CERTIFIED BY THE ONE OF THE APPROVED MANUFACTURERS LISTED IN THE SPECIFICATION AND IN GOOD STANDING FOR A MINIMUM OF 2 YEARS.

K. CONTRACTOR SHALL PROVIDE HIS/HER OWN SUPPORTING OF CABLING FROM STRUCTURE ABOVE, I.E. TEMPERATURE CONTROL WIRING, SECURITY CONTROL WIRING, FIRE ALARM CONTROL WIRING, OR ANY OTHER WIRING CONTAINING VOLTAGE. CONTRACTOR SHALL NOT RUN PARALLEL WITH OR BE SUPPORTED BY ANY UTP, COAX OR VIDEO CABLING (CABLES INDICATED ON AV OR TECHNOLOGY DRAWINGS). IF CABLES ARE FOUND TO BE SUPPORTED WITH THESE CABLES, CONTRACTOR SHALL REMOVE CABLES, REROUTE AND RE-SUPPORT AT THEIR OWN EXPENSE. IF CABLES ARE DAMAGED WHILE EITHER INSTALLING OR REMOVING SUCH CABLES, CONTRACTOR SHALL COVER COST TO REPLACE CABLES AT THEIR OWN EXPENSE.

L. ALL LOW VOLTAGE CABLING, NEW AND EXISTING, SHALL BE RUN IN AN ORGANIZED MANNER, BUNDLED, AND SUSPENDED WITH HANGERS. HANGERS SHALL NOT BE SUSPENDED FROM, OR COME IN CONTACT WITH, ANY PORTION OF THE HVAC SYSTEM.

M. TELECOMMUNICATIONS CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL NEW CABLING TO BE RUN PARALLEL AND PERPENDICULAR TO BUILDING LINES, IN AN ORGANIZED MANNER, BUNDLED AND SUSPENDED PER THE SPECIFICATIONS. SUPPORTING EQUIPMENT FOR CABLING SHALL NOT BE SUSPENDED FROM, OR COME IN CONTACT WITH, ANY PORTION OF THE HVAC SYSTEM.

TECHNOLOGY SYMBOLS

LADDER TYPE CABLE-TRAY

CONDUIT CONCEALED IN CEILING OR WALL WITH THREE CONDUCTORS: 1-PHASE, 1-NEUTRAL, 1-GROUND WIRE, MINIMUM NO.12 WIRE UNLESS OTHERWISE SPECIFIED ON PLANS

CONDUIT RUN UNDERGROUND OR CONCEALED IN FLOOR SLAB

CONDUIT UP

CONDUIT DOWN

CONDUIT STUB-UP THROUGH WALL WITH BUSHING ON BOTH ENDS. SIZE AS NOTED ON PLANS

EMPTY CONDUIT STUB-UP INSIDE WALL TO ABOVE ACCESSIBLE CEILING WITH BUSHING ON THE END. SIZE AS NOTED ON PLANS

LOW VOLTAGE OUTLET, NUMBER OF CABLES AS NOTED ON PLANS (1"C, BY OTHERS)

TV LOW VOLTAGE OUTLET (FOR TV USAGE), NUMBER OF CABLES AS NOTED ON PLANS (1"C, BY OTHERS)

WIRELESS ACCESS POINT (BY OTHERS) INSTALLED BY CONTRACTOR.

SECURITY CAMERA (BY OTHERS) C=CEILING MOUNTED, P=PENDANT MOUNTED, W=WALL MOUNTED

EC ELECTRICAL CONTRACTOR (WORK DONE BY)

TC TECHNOLOGY CONTRACTOR (WORK DONE BY)

X"C LOW VOLTAGE 2" CONDUIT SLEEVE (UNLESS NOTED OTHERWISE), PROVIDE AND INSTALL CONDUIT SLEEVE ABOVE CEILING FOR CABLE-PASS THRU FOR LOW VOLTAGE CABLES USAGE (UTP, COAX & FIBER) ONLY. DO NOT ROUTE FIRE ALARM, CONTROL WIRING OR 12/24V WIRING IN THIS CONDUIT. INSTALL NYLON BUSHING ON BOTH ENDS.

CABLE AND FACEPLATE ID SEQUENCE

COPPER PATCH PANEL IDENTIFICATION (TYP)

01-XX
- PATCH PANEL PORT# (TYP)
- COPPER PATCH PANEL (TYP)

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L/F+a Project No. 26.8027.00

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MIKE KEHOE, GOVERNOR

STATE OF MISSOURI GREGORY J. FENDLER NUMBER PE-2006037230 PROFESSIONAL ENGINEER
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DEPARTMENT OF Corrections

JOPLIN COMMUNITY SUPERVISION CENTER

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PROJECT # C2512-01
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2	10/28/2026	Addendum 2

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