

San Angelo Independent School District

26-008

District Wide Intercom, 2025 Bond

The San Angelo Independent School District is accepting sealed proposals for the install of intercom systems throughout district. Submissions shall include all aspects of work outlined in the Special Terms and conditions. This project will take place on 14 different campuses throughout San Angelo and should be a consideration when bidding. A Prebid meeting will begin at the Administration Building, 1621 University, on Wednesday 05/13/26 at 9AM. Be prepared, with an ID, to check in at all front offices. Immediately following this we will walk Central High School, Oakes, and Ft. Concho Elementary. Additional walks may be scheduled through the district.

Proposals will be received in the Purchasing Department, 1621 University, San Angelo, TX 76904 until **3PM, Wednesday, May 20, 2026**. Proposal envelopes shall be plainly marked on the lower left-hand corner with **your company name** and the following information:

Sealed RFP #26-008
Your Company Name:

For: District Wide Intercom, 2025 Bond
Do Not Open Until: 05/20/2026 – 3PM

The bid packet may be found at <http://www.saisd.org/bids> OR may be obtained from the SAISD Purchasing Department, 1621 University, San Angelo, Texas, 325.947.3759.

Any deviation from our General Terms and Conditions for Bidding and the Special Terms and Conditions must be noted on the Deviation/Compliance Signature form provided (From E).

Proposals will be publicly opened immediately following the specified deadline. Any proposal received later than the specified time, whether delivered in person or mailed, will be disqualified. **FAXED & EMAILED PROPOSALS WILL NOT BE ACCEPTED.**

After evaluation of all proposals is completed, the Purchasing Department will present a recommendation to the SAISD Board of Trustees at a scheduled meeting. After approval by the Board of Trustees, the bid tab will be posted on the SAISD website at <http://www.saisd.org/bids>.

Disclosure Statement:

HB 914 requires vendors to submit a conflict-of-interest questionnaire for gifts given to public officers. HB 914 and this questionnaire may be found on the San Angelo ISD website at www.saisd.org/HB914. Each vendor desiring to do business with San Angelo ISD is required to familiarize themselves with this law and comply with all requirements. Failure to follow these requirements may result in being removed from the approved vendor list for San Angelo ISD.

The San Angelo Independent School District reserves the right to reject any or all proposals and to accept any proposal deemed most advantageous to the District.

If additional information should be required, contact the undersigned at 325.947.3759.

Respectfully,
Jason Henry
Director of Purchasing
Jason.Henry@saisd.org

San Angelo Independent School District

District Wide Intercom, 2025 Bond Request for Proposal #26-008

TABLE OF CONTENTS

- Special Terms and Conditions 88 pages
- SAISD Request for Proposal Form **(must return)** 1 page
- BID FORM **(must return)** 3 pages
- SAISD Standard Forms 25 pages
 - 1. General Conditions for Bidding
 - 2. Standard Terms and Conditions
 - 3. Non-Collusion Statement Form **(must return)**
 - 4. Felony Conviction Notification Form **(must return)**
 - 5. Bidders Certification Form **(must return)**
 - 6. Debarment and Suspension Certification Form **(must return)**
 - 7. Deviation/Compliance Form **(must return)**
 - 8. No Bid Notification Form **(return if applicable)**
 - 9. Certification Packet-6 pages **(must return)**
 - 10. Forms Checklist
 - 11. W-9 Form **(must return page 1)**

The following criteria will be used to award the bid based on the best value for the District. The % for scoring is listed beside the criteria requirement.

1. Purchase price **(40%)**
 2. Reputation of the vendor **(5%)**
 3. Quality of vendor's goods or services **(5%)**
 4. Extent to which the goods or services meet the district's needs **(20%)**
 5. Vendor's past relationship with district **(10%)**
 6. HUB requirements
 7. Total long-term cost to the district to acquire the goods **(10%)**
 8. Vendor's ultimate parent company or majority owner has its principal place of business in the State of Texas or employees at least 500 persons in this state (not applicable to contracts related to telecommunications and information services, building construction and maintenance, or instructional materials)
 9. Any other relevant factor listed in the request for proposal **(10%)**
- Availability of product and service in our local area

San Angelo Independent School District
Purchasing Department

Please duplicate the below label and affix to the outside of your sealed proposal envelope.

Sealed Bid	San Angelo Independent School District
	Purchasing Department
	1621 University Ave.
	San Angelo, TX 76904
	Attn: Jason A. Henry, Director of Purchasing
	Bid: 26-008
	District Wide Intercom, 2025 Bond
	Company Name _____
	Bid Deadline: 05/20/26 – 3:00 PM

Vendor's name and return address should be printed on the sealed proposal envelope.

San Angelo ISD has added a new feature to our bid opportunities webpage. You can sign up to receive an email alert whenever we post new bid opportunities to the webpage. Note: this is for all bid opportunities.

[If you're interested in signing up, go to https://www.saisd.org/bids](https://www.saisd.org/bids)

Click on the orange bell icon on the webpage



Click on the word "Purchasing" in the box that pops up.

Click Next

Fill in your name & email address.

Click "signup"

San Angelo Independent School District

Special Terms and Conditions District Wide Intercom, 2025 Bond RFP # 26-008

The San Angelo Independent School District is accepting sealed proposals for the install of intercom systems throughout district. Submissions shall include all aspects of work outlined in the Special Terms and conditions. This project will take place on 14 different campuses throughout San Angelo and should be a consideration when bidding. A Prebid meeting will begin at the Administration Building, 1621 University, on Wednesday 05/13/26 at 9AM. Be prepared, with an ID, to check in at all front offices. Immediately following this we will walk Central High School, Oakes, and Ft. Concho Elementary. Additional walks may be scheduled through the district. All Submissions shall include the qualifications demonstrated for the project. This section should include:

- Personnel, with resumes attached to the Project Manager & Superintendent
- Previous Related Experience, with concentration on K12
- References

For more information, or to schedule a sight visit contact Jason A. Henry at 325-947-3759. All bidders are highly encouraged to attend the Prebid meeting. (Jason.Henry@saisd.org)

All requests for substitutions shall be submitted by EOB 5/11/26 to be considered.

All questions shall be submitted no later than 2 PM on 5/15/26 to ensure they are answered.

ADDENDUM: In the event that any changes to this Bid Document occur **It is the bidder's responsibility to obtain any addenda that pertains to this bid.** All addenda will be posted on the Bid Opportunity page. <http://www.saisd.org/bids>

If this project is approved by the Board of Trustees, the district is expecting the work to take place during the Summer/ Fall of 2026. Must be delivered and in place by 11/20/26.

Proof of insurance will be required for general liability, automobile liability, and worker's comp. Please check the limits in the general conditions for bidding line 33.

All contractors/sub-contractors/employees of a contractor who work on District property where students are present must present a clear criminal history report to the District prior to the start of the project.

The Board of Trustees, for the purpose of complying with Section 2288, Subchapter B of the Texas Government Code for all public contracts, has adopted the prevailing wage rates as determined by the US Department of **Labor in accordance with the Davis —Bacon Act as the published rates for the District.** It is the responsibility of the contractor to pay the appropriate rate or higher on the construction project or be subject to penalty as set forth in section 2258.023 of the Texas General Government Code. This project **will be subject to bonding requirements. See general conditions line 33.**

All proposals **MUST** be submitted on the proposal form provided.

Proposal documents **MUST be signed by the company's authorized representative in the space(s) provided.** Failure to manually sign the proposal documents may result in disqualification of the proposal.

The District reserves the right to waive formalities and/or irregularities and to accept or reject any/each item separately or as a whole.

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DIVISION 09

09 5113 – ACOUSTIC PANEL CEILINGS

DIVISION 27

27 0000 – COMMUNICATION CABLING

27 5116 – PUBLIC ADDRESS SYSTEM



SECTION 09 5113 – ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

1.2 SUMMARY

- A. Scope
 - 1. Contractor shall provide and install a new ceiling tile after removal of existing loudspeakers. New ceiling tiles shall match surrounding tiles. When required, contractor shall provide clips to secure tiles in place in areas of return air systems.
- B. Section Includes
 - 1. Acoustical ceiling panels
- C. Related Sections
 - 1. Section 27 0000 "Communications Cabling"
 - 2. Section 27 5116 "Public Address Systems"

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
 - 2. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
 - 3. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
 - 4. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
 - 5. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
 - 6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels
 - 7. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
 - 8. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials
 - 9. ASTM E 580 Installation of Metal Suspension Systems in Areas Requiring Moderate Seismic Restraint
 - 10. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems
 - 11. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum
 - 12. ASTM E 1264 Classification for Acoustical Ceiling Products
- B. International Building Code
- C. ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality
- D. NFPA 70 National Electrical Code

- E. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures
- F. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components
- G. International Code Council-Evaluation Services Report - Seismic Engineer Report
 - 1. ESR 1308 - Armstrong Suspension Systems
- H. International Association of Plumbing and Mechanical Officials - Seismic Engineer Report
 - 1. 0244 - Armstrong Single Span Suspension System
- I. California Department of Public Health CDPH/EHLB/Standard Method v1.2 2017
- J. LEED - Leadership in Energy and Environmental Design is a set of rating systems for the design, construction, operation, and maintenance of green buildings.
- K. International Well Building Standard
- L. Mindful Materials
- M. Living Building Challenge
- N. U.S. Department of Agriculture BioPreferred program (USDA BioPreferred).
- O. Clean Rooms up to ISO Class 5 (Class 100)

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.
- B. Samples: Minimum 6-inch x 6-inch samples of specified acoustical panel; 8-inch-long samples of exposed wall molding and suspension system, including main runner and 4-foot cross tees.
- C. Shop Drawings: Layout and details of acoustical ceilings show locations of items that are to be coordinated with or supported by the ceilings.
- D. Acoustical Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For acoustical performance, each carton of material must carry an approved independent laboratory classification, such as Underwriter's Laboratory (UL), of NRC, CAC, and AC.
 - 1. If the material supplied by the acoustical subcontractor does not have an independent laboratory classification of acoustical performance on every carton, subcontractor shall be required to send material from every production run appearing on the job to an independent or NVLAP approved laboratory for testing, at the architect's or owner's discretion. All products not conforming to manufacturer's current published values must be removed, disposed of, and replaced with complying product at the expense of the Contractor performing the work.

1.5 QUALITY ASSURANCE

- A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer to ensure fit and function.
- B. Installer Qualifications: Company specializing in performing specified work type, a minimum of three years of documented experience, and approved by the manufacturer.
- C. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
- D. Surface Burning Characteristics: Tested per ASTM E 84 and complying with ASTM E 1264 Classification.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

1.7 WARRANTY

- A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:
 - 1. Acoustical Panels with HumiGuard® Max and HumiGuard® Plus performance: sagging and warping
 - 2. Acoustical panels with BioBlock® performance: growth of mold and mildew
 - 3. Grid System: rusting and manufacturer's defects.
- B. Warranty Period:
 - 1. Ceiling System: Thirty (30) years from date of substantial completion
 - 2. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.8 MAINTENANCE

- A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.
 - 1. Acoustical Ceiling Units: Furnish quantity of full-size units equal to 5.0 percent of amount installed.
 - 2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Ceiling Panels:
 - 1. Armstrong World Industries, Inc.

2.2 ACOUSTICAL CEILING UNITS

- A. Acoustical Panel Ceilings
 - 1. Surface Texture: Medium Texture
 - 2. Composition: Mineral Fiber
 - 3. Color: White
 - 4. Size: 20 in x 60 in, 24 in x 24 in, 24 in x 48 in, 24 in x 60 in
 - 5. Edge Profile: Angled Tegal, Beveled Tegal, Square Lay-in
 - 6. Noise Reduction Coefficient (NRC) ASTM C 423 Classified w/ UL label on product carton: 0.55
 - 7. Ceiling Attenuation Class (CAC): ASTM E1414/E1414M; Classified with UL label on product carton: 33, 35, 40.

8. Flame Spread: ASTM E 1264; Class A
9. Light Reflectance (LR) White Panel: ASTM E 1477; 0.80
10. Dimensional Stability: Standard
11. Recycle Content: Up to 43% recycled total content. (Total recycled content: pre-consumer, post-consumer and post-industrial)
12. Material Ingredient Transparency: Health Product Declaration (HPD); Declare Label
13. Life Cycle Assessment: Third Party Certified Environmental Product Declaration (EPD)
14. Indoor Air Quality Certified to SCS-105 v4.2-2023.
15. Contractor is responsible for confirming compatibility with the existing grid suspension system at each building.
16. Acceptable Manufacturers:
 - a) Armstrong World Industries CORTEGA Model 769 (2' x 4')
 - b) Armstrong World Industries Model 933 (2' x 4')
 - c) Armstrong World Industries Model 2210 (2' x 2')

2.3 METAL SUSPENSION SYSTEMS

- A. Contractor shall provide new ceiling tiles that are compatible with existing suspension system.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations. (Exception: HumiGuard Max Ceilings)

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.
- B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.
 1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

3.3 INSTALLATION

- A. Follow manufacturer installation instructions.
- B. Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.
- C. Suspend main beam from overhead construction with hanger wires spaced 4 feet on center along the length of the main runner. Install hanger wires plumb and straight.
- D. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.
- E. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.

- F. Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

3.4 ADJUSTING AND CLEANING

- A. Replace damaged and broken panels.
- B. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove any ceiling products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.

END OF SECTION

SECTION 27 00 00 – COMMUNICATIONS CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Documents: Provisions of General Conditions, Supplementary Conditions, and the sections included under Procurement & Contract Requirements are included as part of this section as though bound herein.
- C. Section 09 5113 "Acoustic Panel Ceilings"
- D. Section 27 5116 "Public Address Systems"

1.2 SUMMARY

- A. Section includes:
 - 1. Base bid: Furnish and install a warranted and certifiably functioning telecommunications distribution structured cabling system for IP speaker locations in existing facilities district wide.
 - 2. Alternates #1-2: Furnish and install a warranted and certifiably functioning telecommunications distribution structured cabling system for IP speaker locations in the two alternate facilities.
 - 3. Add Alternate #3: Relocation of band hall TC at Central HS to adjacent wall space.
 - a. Provide new 6-strand fiber backbone from TC to MC, terminate, test as per specifications.
 - b. Install OFCI equipment rack on a new plywood backboard. Backboard is CFCI as per specifications.
 - c. Re-terminate and test 18 existing Category 6 cables.
 - d. Provide and install new 48-port patch panel.
 - e. Provide and install new telecommunications secondary bus bar for grounding.
 - f. Bond and Ground rack to bar, bar to building ground.
 - 4. Contractor responsible for coordinating, purchasing, and installing all conduit, surface raceways and dedicated cable pathways for all base bid and alternate proposals.
 - 5. Contractor is required to submit project documentation upon completion of installation.
 - 6. The documentation is essential for timely implementation of communication systems. Documentation includes copper and fiber test results and all record drawings.
- B. Related Requirements – contractor will adhere to all current standards including:
 - 1. ANSI/TIA Telecommunications Commercial Building Wiring Standards, current editions.
 - 2. ANSI/NFPA-70, National Electric Code.
 - 3. BICSI, Telecommunications Distribution Methods Manual, current edition.
 - 4. BICSI, Information Transport Systems Installation Methods Manual, current edition.
 - 5. BICSI, Customer-Owned Outside Plant Design Reference Manual, current edition.

Commented [RE1]: Tailor to project scope

1.3 DEFINITIONS

- A. AEC: Architectural, engineering and consulting team to include all design consultants.
- B. Access Provider: An operator that provides a circuit path or facility between the service provider and user. An access provider can also be a service provider.
- C. AHJ: Authority Having Jurisdiction
- D. ARC: Aluminum rigid conduit.

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- E. AWG – American Wire Gauge – The standardized system for gauging the diameter of round, solid, non-ferrous, electrically-conducting wire.
- F. AWS: Advanced Wireless Service
- G. BICSI: Building Industry Consulting Service International.
- H. BOM: Bill of Materials
- I. Bonding: The permanent joining of the metallic conducting parts of equipment and conductor enclosures to assure an electrically conductive path between them that will ensure electrical continuity and have sufficient capacity to safely conduct any foreign current likely to be imposed to ground.
- J. Bonding Conductor: A conductor used to interconnect the telecommunications bonding infrastructure to the service equipment (power) ground of the building.
- K. EF – Entrance Facility – An entrance to a building for both public and private network service cables, including wireless, that includes the entrance point of the building and continues to the entrance room or space.
- L. GRC: Galvanized rigid conduit.
- M. Grounding: A conducting connection, whether intentional or unintentional, between electrical circuits or equipment and the earth, or some conducting body that serves in place of the earth
- N. IMC: Intermediate Metal Conduit.
- O. MC: Main Cross Connect An enclosed space for housing telecommunications equipment, cable terminations, service provider fiber and security and paging head end equipment.
- P. MPTL: Modular Plug Terminated Link, when horizontal cabling terminates directly to a device via field installable modular plug.
- Q. NFPA: National Fire Protection Association
- R. PBB: Primary Bonding Busbar - A busbar placed in a convenient and accessible location and bonded, by means of the Telecommunications Bonding Conductor (TBC), to the building's service equipment (power) ground. Formerly known as the Telecommunications Main Grounding Busbar (TMGB).
- S. RCDD: Registered Communications Distribution Designer.
- T. SBB: Secondary Bonding Busbar - A common point of connection for telecommunications system and equipment bonding to ground, located in the distributor room. Formerly known as the Telecommunications Grounding Busbar (TGB).
- U. Service Provider: The operator of a service that provides telecommunications transmission delivered over access provider facilities.
- V. TBB – Telecommunications Bonding Backbone – The conductor that interconnects the Primary Bonding Busbar (PBB) to the Secondary Bonding Busbar (SBB).
- W. TBC: Telecommunication Bonding Conductor. TBC – Telecommunications Bonding Conductor – A conductor that interconnects the telecommunications bonding infrastructure to the building's service equipment (power) ground. Formerly known as the bonding conductor for telecommunications.
- X. TEBC – Telecommunications Equipment Bonding Conductor – A conductor that connects the Primary Bonding Busbar (PBB) or Secondary Bonding Busbar (SBB) to equipment racks or cabinets.
- Y. TC: Telecommunications Closet - An enclosed space for housing telecommunications equipment, cable terminations, and cross-connect cabling. It is the recognized location of the cross-connect between the backbone and horizontal facilities.
- Z. WAP: Wireless Access Point.

1.4 PERFORMANCE REQUIREMENTS

- A. The Contractor shall provide and pay for all materials, supplies, machinery, equipment, tools, superintendence, labor, services, insurance, and all water, fuel, transportation, and other facilities necessary for the execution and completion of the work covered by the Contract Documents.

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- B. Unless otherwise specifically provided in this Contract, all equipment, material, and articles incorporated in the work covered by this Contract are to be new and of the most suitable grade for the purpose intended.
- C. All work under this Contract shall be performed in a skillful and professional manner. The Contractor agrees to employ only orderly and competent employees, skillful in the performance of the type of work required under this contract; and agrees that whenever informed by the Owner in writing that any employee(s) on the work is (are), in its opinion, incompetent, unfaithful or disorderly, shall be discharged from the work and shall not again be employed on the work without the Owner's written consent.
- D. Materials or work described in words, which so applied, have a well-known technical or trade meaning shall be held to refer to such recognized standards. Neither custom nor usage of trade shall require the Owner to accept materials or workmanship not in strict and complete compliance with the Contract Documents.
- E. The Owner makes no representations as to the accuracy or completeness of the site information furnished to the Contractor by the Owner and does not expressly or impliedly warrant same and is not responsible for any interpretations or conclusions reached by the Contractor with respect thereto. It is Contractor's sole responsibility to verify to its own satisfaction all site information.
- F. The Contractor is responsible for having visited the site and ascertained pertinent local conditions such as location, accessibility, and character of the site or building, the character and extent of existing work within and adjacent to the site, and any other work being performed thereon at the time of the submission of his proposal. Any failure to do so will not relieve him of responsibility for successfully performing the work without additional expense to the Owner.
- G. The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies, or omissions discovered shall be reported to the Owner at once.
- H. If in the performance of the Contract, subsurface, latent, or concealed conditions at the site are found to be materially different from the information included in the specification and the resulting Contract Documents, or if unknown conditions of an unusual nature are disclosed differing materially from the conditions usually inherent in work of the character shown and specified, the Owner shall be notified in writing of such conditions before they are disturbed. A/E, with the approval of the Owner, will promptly make such changes the Specifications as deemed necessary to conform to the different conditions, and any increase or decrease in the Work, or in the time within which the Work is to be completed, resulting from such changes will be adjusted by Change Order subject to the prior approval of the Owner.
- I. Before submitting its proposal to the Owner, and continuously after execution of the Contract, the Contractor shall carefully study and compare this specification and shall at once report to the Owner any error, inconsistency, or omission the Contractor may discover, including any requirements which may be contrary to any law, ordinance, rule, regulation, or order of any public authority bearing on the performance of the work. By submitting its proposal for the Contract and the Work, the Contractor agrees that the specification and resulting Contract Documents appear accurate, consistent, and complete as far as can be determined. If the Contractor has reported in writing an error, inconsistency, or omission, has promptly stopped the affected work until otherwise instructed, and has otherwise followed the instructions of the Owner, the Contractor shall not be liable to the Owner for any damage resulting from any such errors, inconsistencies or omissions in this specification and resulting Contract Documents. The Contractor shall perform no portion of the Work at any time without the Contract Documents and, where required, approved Project Drawings, Product Data or Samples for such portion of the Work.
- J. The Contractor shall perform the Work in accordance with the Contract Documents and submittals.
- K. The Contractor shall arrange for the securing of all necessary permits and pay for same.

- L. The system must be able to report any programmed alarm events through various means of communication including email, SMS Text and/or through the client software.

1.5 CONTRACTOR QUALIFICATIONS

- A. The nature of the structured cabling system being warranted by the manufacturer, and the manufacturer's requirements for that warranty delivery being the use of certified installers precludes the use of subcontractors to the communications cabling. Subcontractors for this system are not permitted.
- B. The Contractor selected to provide the installation of this system shall be certified by the manufacturing company in all aspects of design, installation, and able to provide warranty service of the products described herein.
- C. The Contractor shall utilize the authorized manufacturer components in provisioning this Project.
- D. Contractor shall have a minimum of five (5) years of recent experience on structured cabling systems of similar type and size.
- E. Contractor shall comply with all federal, state, and local statutes regarding qualifications of firms.
- F. The Contractor shall be experienced in all aspects of this work and shall be required to demonstrate direct experience on recent systems of similar type and size.
- G. The Contractor shall own and maintain tools and equipment necessary for successful installation of optical and Category 6/6A metallic premise distribution systems.
- H. The Contractor shall have personnel who are adequately trained in the usage of such tools and equipment.
- I. Owner reserves the right to reject bid of any bidder who has previously failed to perform properly, or complete on time, contracts of a similar nature.
- J. Contractor must have personnel certified by BICSI on staff for the implementation and installation of this project.
- K. Preparation of shop drawings shall be under direct supervision of an RCDD.
- L. Installation shall be under direct supervision of a Technician, who shall be always present when work of this section is performed at project site.

1.6 QUALITY ASSURANCE

- A. Contractor shall have a documented quality assurance program. This program shall have internal inspection team(s) to measure the service and product quality produced by the Contractor's technicians against internal and Industry standards.

1.7 SUBMITTALS

- A. Action Submittals
 - 1. Successful Contractor shall submit an electronic PDF copy of the submittal package within 15 days of written notification to proceed or other written documentation from the Owner.
 - 2. Cover Sheet and Section 1 – Information
 - a. Cover sheet containing the Company Name and/or logo, Title of submittal package, client name, and Contractor work address with a point of contact (POC) and phone number.
 - 3. Section 2 – Product Data
 - a. Manufacturer's catalog information showing dimensions, colors, and configurations.
 - b. Submittals shall include all items listed in PART 2 – PRODUCTS of this document and the manufacturers cut sheets for the following:
 - 1) Manufacturers cut sheets for all products.

- 2) In cases of multiple product numbers on a single cut sheet, the Contractor shall identify the proper part number with cloud, box, highlight or a black X or check mark.
- B. Informational Submittals
1. Successful Contractor shall submit an electronic PDF copy of the submittal package within 15 days of written notification to proceed or other written documentation from the Owner. The PDF shall be organized into the following sections:
 2. Cover Sheet and Section 1 — Information, Pricing and Material
 - a. Cover sheet containing the Company Name and/or logo, Title of submittal package, client name, and Contractor work address with a point of contact (POC) and phone number.
 - b. Line item pricing
 3. Section 2 — Pre-Qualification Certificates
 - a. Contractor shall submit the following documents with project proposal:
 - b. A letter of approval from the manufacturer indicating completion of pre-qualification requirements.
 - 1) Training certificates for design, engineering, and installation of the proposed products.
 4. Section 4 — Warranty Documentation
 - a. Provide example of manufacturer warranty.
 - b. Complete documentation regarding the manufacturer's warranty shall be submitted as part of the proposal. This shall include but is not limited to a sample of the warranty that would be provided to the customer when the installation is complete and documentation of the support procedure for warranty issues.
 5. All submittals shall be delivered to the Owner / Consultant with complete documentation. Submittals missing cut sheets, drawings, certification documents or are not properly filled out per this section shall be summarily rejected in whole. Supplying partial submittal packages for the purposes of ordering materials is not an approved practice and shall be rejected in whole.
 6. The low voltage pre-construction meeting shall be delayed until all sub-Contractors have received approved submittal packages from the Consultant.
- C. Closeout Submittals
1. The Contractor shall provide all test and record drawings at the time of patch cable delivery. This requirement shall be met prior to the start of any final acceptance process. Delays in completing this documentation shall result in a delay in the final acceptance process.
 2. Contractor shall be furnished with either a set of CAD files or the Revit model to use for record drawings.
 3. Upon completion of final engineering and incorporation of the AEC review comments, Contractor shall provide to the Owner for its records the Record Drawings detailing the following:
 - a. Cable routes for all horizontal and backbone pathways.
 - 1) Pathways shall be shown in separate colors - Do not use yellow in the drawings.
 - 2) Provide a key legend distinguishing the colors with the specific route.
 - 3) Pathways shall show the cable plant from the work area outlet to the nearest MC / TC and the fiber and copper backbone (if applicable) pathways from each TC to the MC. (Fiber pathway is required for Alternate #3 only).
 - 4) Pathways shall include all work area locations including wireless access points, surveillance cameras, or other drop locations.
 - b. Rack elevations

- 1) Rack elevations shall show all components as installed under this contract.
- 2) Contractor shall label each component describing the component. (Examples: Fiber termination shelf, copper backbone patch panel, station cabling patch panel etc.).
- c. Detailed layout of the wall elevations interior to all technology spaces (if applicable systems are present).
- d. Show all drop locations with their approved labeling at the actual locations they were installed. Drawing labels shall match the label used on the surface enclosure at each work area outlet.
4. Drawings shall contain the Contractors' own title block on the edge of the drawing and shall include the company name, address, phone number, and date of the final drawings.
 - a. Use any part of the Consultant title block, copyright data or seals will not be accepted.
5. Drawing documentation shall be in the following format:
 - a. One (1) electronic copy transmitted to the consultant through an approved transmittal process.
 - b. Drawings shall be in PDF format.
6. Drawings shall be provided to the Consultant a minimum of two weeks prior to the final acceptance walk. Coordinate with the Consultant and Owner, during the pre-construction meeting to schedule this delivery.
7. The drawings shall be reviewed on site with the Owner, Contractor, and Consultant present as part of the final acceptance process. Drawings rejected for any reason shall delay the final acceptance process until resolved.
- D. Testing Results
 1. In addition to the project record drawings, the Contractor shall provide the testing information for all horizontal station cabling and all fiber backbone cabling including copper cabling that is considered MPLT.
 2. Test results shall be provided to the Consultant a minimum of two weeks prior to the final acceptance walk. Coordinate with the Consultant and Owner, during the pre-construction meeting to schedule this delivery.
 3. The test results shall be reviewed with the close out drawings prior to the final acceptance process. Test results rejected for any reason will delay the final acceptance process until resolved.
 4. Reference section three for additional testing requirements.
- E. In addition to the above copies the Contractor shall provide the cabling manufacturer the necessary copies of all test documentation as part of the warranty completion process and return a copy of the warranty document as provided by that manufacturer.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Stored materials shall be protected from exposure to harmful environmental conditions and at temperature conditions recommended by manufacturer.
 1. The Owner shall provide a classroom at the Technology Center for the storing of all active electronic components related to this project. All cable, conduit, and termination hardware may be stored in a Contractor provided connex. The connex may be placed inside the secured yard at the Tech Center facility.
 2. Access control credentials shall be provided to the Contractor and will be used to gain access to the building and the secured lot.
- C. Handle products and systems in accordance with manufacturer's instructions.

- D. Contractors are required to remove all empty containers and other trash associated with the system. This includes all packaging, excess cable and other materials that hold no value to the Owner.

1.9 PROJECT CONDITIONS

- A. Project Environmental Requirements
 - 1. Comply with requirements of referenced standards and recommendations of material manufacturers for environmental conditions before, during, and after installation.
 - 2. Do not begin installation until you are instructed to perform by the Owner / Consultant.
 - 3. All Contractors will comply with Owner policies concerning alcohol, tobacco, and firearms as well as any other Owner policy governing dress, behavior etc while on campus or on any land owned by the Owner.

1.10 COORDINATION

- A. Single Point of Contact / Project Manager
 - 1. Contractor shall provide a single point of contact, i.e., Project Manager, to speak for the Contractor and to provide the following functions:
 - a. Initiate and coordinate tasks with the Owner and Consultant.
 - b. Provide day-to-day direction and on-site supervision of Contractor personnel.
 - c. Ensure conformance with all Contract provisions.
 - d. Attend weekly OAC meetings coordinated by the Consultant.
 - 2. If the Project manager is unable to remain continuously on site a project, a senior technician shall be required to remain, and they shall be responsible for day-to-day activities and reporting all status to the Project Manager.
- B. Technical Support
 - 1. Contractor shall provide technical support consisting of two technicians for a full working day when Owner deems necessary during the physical cut over of the paging system.
 - 2. The personnel providing technical support shall:
 - a. Have intimate knowledge of the system and materials that were used.
 - b. Be skilled in all use of equipment and materials used under the Contract.
 - c. Be competent to troubleshoot and fix problems associated with Contractor provided materials.
 - d. Have the test equipment, tools, and materials needed to troubleshoot and remediate problems associated with Contractor provided materials and installation.

1.11 WARRANTY & MAINTENANCE AGREEMENTS

- A. Structured Cabling System Extended Product Warranty and Application Assurance Program
 - 1. Extended Product Warranty
 - a. The Extended Product Warranty covers product defects for all Contractor provided and installed components of the premise distribution. The manufacturer will warrant, from the date the project warranty certification is issued by the manufacturer to the end-user, the following:
 - b. The products that comprise the registered premise distribution will be free from manufacturing defects in material or workmanship under normal and proper use.
 - c. Under the Product Warranty, manufacturer will either repair or replace the defective product itself at manufacturer's cost. The manufacturer will pay an

Authorized Installation Company for the cost of labor to repair or replace any such defective product on behalf of the manufacturer.

- B. Warranty
 - 1. Contractor will provide the full product and performance warranty under the manufacturer's extended warranty program.
 - 2. Contractor shall provide a full 12-month warranty period on installation from the date of final acceptance.
- C. Persons / Entity Covered
 - 1. This Limited Warranty will be for the benefit of the person or entity to which the manufacturer's Registration Certificate is issued and any successor (Transferable) in interest to the site in which such System was originally installed by the manufacturer or an Authorized manufacturer's Reseller.

PART 2 - PRODUCTS

2.1 GENERAL

- A. The contractor shall provide new cables, patch panels, surface enclosures, and patch cordage in all existing buildings requiring new IP speakers as shown in the plans.

2.2 CATEGORY 6A TWISTED PAIR CABLE

- A. Acceptable manufacturer: Leviton RDT CMP
- B. Part Number:
 - 1. 11141650
 - 2. Jacket: Blue for all locations and types

2.3 CAT 6A INSERTS

- A. Acceptable manufacturer: Leviton
- B. eXtreme Cat 6A QuickPort Jack, Channel-Rated, Blue for all locations.
- C. Part numbers:
 - 1. PN# 6110G-RL6

2.4 COPPER PATCH CORDS

- A. Acceptable manufacturer: Leviton
- B. Part numbers:
 - 1. 6AS10-xx (where xx is length)
- C. Colors
 - 1. White for all speaker locations.
- D. Lengths
 - 1. 6" in all TC and MC rooms
 - 2. 10' for all classroom, conference room, corridors, where data cabling can be terminated above an accessible lay-in ceiling.
 - 3. Speakers located inside open ceiling environments, such as gymnasiums, shops, locker rooms, weight rooms, tennis building and ROTC facility at Central HS, will be terminated and connected directly to the device.

2.5 SURFACE ENCLOSURES

- A. Acceptable manufacturer: Leviton Surface Mount, QuickPort, Plenum Rated, White.

- B. Part numbers:
 - 1. 41089-1WP
 - 2. Use at all locations above ceiling for all classroom, conference room, and corridors where data cabling can be terminated above an accessible ceiling space protected by acoustical ceiling tiles.

2.6 PATCH PANELS

- A. Acceptable manufacturer: Leviton QuickPort
- B. Part numbers:
 - 1. 49255-H24
 - 2. 49255-H48
- C. Coordinate with Owner on placement of new patch panels in existing racks. Port count shall be based on total overall device counts being supported by a particular MC or TC.

2.7 ADDITIONAL EQUIPMENT RACKS

- A. Contractor shall include a line-item budget for the installation of five new wall mounted equipment racks for various TC locations as needed for the project.
- B. Acceptable manufacturer: Chatsworth EZ Swing rack, 25"D x 11U
- C. Part Number: 13602-725
- D. Assume plywood backboard availability. No wire management required.

2.8 THREADED ROD PROTECTOR

- A. If Contractor uses threaded rod for pathway supports, or if a bundle is near, or will touch any other craft's threaded rod, a protector shall be installed by the Contractor.
- B. Acceptable manufacturer:
 - 1. Chatsworth 11085-001

2.9 NON-CONTINUOUS CABLE SUPPORTS

- A. Requirements
 - 1. Non-continuous cable supports shall be manufactured by Erico Caddy J-Hooks, Panduit, or approved substitute.
- B. Description
 - 1. Non-continuous cable supports shall provide a bearing surface of sufficient width to comply with required bend radii of high-performance cables; UL Listed.
 - 2. Bundles shall be a maximum 24 cables. Multiple bundles shall not share a J-Hook.
 - 3. Non-continuous cable supports shall have flared edges to prevent damage while installing cables.
 - 4. Non-continuous cable supports sized 1 5/16" and larger shall have a cable retainer strap to provide containment of cables within the hanger. The cable retainer strap shall be removable and reusable and be suitable for use in air handling spaces.
 - 5. If required, assemble to manufacturer recommended specialty fasteners including beam clips, flange clips, C and Z purlin clips.
 - 6. Multi-tiered non-continuous cable support assemblies shall be used where separate cable compartments are required. Assemblies may be factory assembled or assembled from pre-packaged kits. Assemblies shall consist of a steel angled hanger bracket holding up to six non-continuous cable supports, rated for indoor use in non-corrosive environments; UL Listed.
 - 7. If required, the multi-tier support bracket may be assembled to manufacturer recommended specialty fasteners including beam clips, flange clips, C and Z purlin clips.

8. If Contractor installs drop wire for pathway support devices, installation must comply with all NEC requirements including attaching both ends of drop wire as well as color-coded securing clips. Contractor is responsible for all damage and/or interference of other building systems using this method and will remediate at Contractor's sole expense.

2.10 NON-METALIC SURFACE RACEWAY SYSTEMS

- A. Provide plastic surface raceway in classrooms, administration areas, and corridors where fishable walls and pathways are not possible. Ref drawings for device locations.
- B. Acceptable Manufacturer: Panduit LD Series or Wiremold Uniduct 2900 series.
 1. Acceptable color: White
 2. Base and cover shall be a one-piece latching design constructed of rigid PVC compound.
 3. Base must be equipped with a manufacturer installed adhesive backing.
 - a. Contractor shall also be required to screw the raceway into the surface of the wall using manufacturer approved methods. Use of drywall screws is prohibited. Screws shall be installed flush to the interior of the raceway to protect the cable jacket.
 4. Must meet UL94V-0 and FT4 standards for nonflammable self-extinguishing characteristics.
- C. Contractor shall include all drop ceiling connectors, tees, and cover clips to hide any joints that may be visible.
- D. Contractor shall include one additional cartoon or up to 160ft for contingency purposes.

2.11 CONDUIT PATHWAYS

- A. Provide and install conduit pathways as shown in the contract documents.
- B. Reference drawings for conduit sizes. All conduits are 1" UNO in the drawings.
- C. All conduit installed inside ceiling spaces shall be electrical metallic tubing (EMT).
- D. All conduit installed exposed, inside the building (weight rooms, gymnasiums, shops, ROTC, Tennis Building or in other areas where conduit is exposed to damage, shall be intermediate metal conduit (IMC).
- E. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.

2.12 INTERMEDIATE METAL CONDUIT (IMC)

- A. Acceptable Manufacturers:
 1. Allied Tube & Conduit: www.alliedeg.com/#sle.
 2. Wheatland Tube Company: www.wheatland.com/#sle.
 3. O-Z/Gedney, a brand of Emerson Industrial Automation; www.emersonindustrial.com.
 4. Tenaris (formerly Maverick Tube Corporation); www.tenaris.com
 5. Other Owner approved alternatives.
- B. Description: The City of Chicago Electrical Code, Type IMC galvanized steel intermediate metal conduit complying with ANSI C80.6 and listed and labeled as complying with UL 1242.
- C. Fittings:
 1. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 2. Hazardous Locations: Use fittings listed and labeled as complying with UL 1203 for the classification of the installed location.
 3. Material: Use steel or malleable iron.
 4. Connectors and Couplings: Use threaded type fitting.

2.13 ELETRICAL METALLIC TUBING (EMT)

- A. Acceptable manufacturers:
 - 1. Allied Tube & Conduit: www.alliedeg.com/#sle.
 - 2. Wheatland Tube Company: www.wheatland.com/#sle.
 - 3. O-Z/Gedney, a brand of Emerson Industrial Automation; www.emersonindustrial.com.
 - 4. Tenaris (formerly Maverick Tube Corporation); www.tenaris.com
 - 5. Other Owner approved alternatives.
- B. NFPA 70, Type EMT steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.
- C. Type EMT steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.
- D. Fittings:
 - 1. Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 - 2. Use steel or malleable iron.
 - 3. Do not use die cast zinc fittings.
 - 4. Connectors and Couplings: Use compression (gland) type with insulated throat.
 - 5. Do not use indenter type connectors and couplings.
 - 6. Do not use set-screw type connectors and couplings.
 - 7. Damp or Wet Locations (where permitted): Use fittings listed for use in wet locations.

2.14 ALTERNATE #3 – NEW FIBER FROM BAND HALL TC TO MC – SOUSA HALL CENTRAL HS

- A. Acceptable manufacturer: Berktek, 12-strand, OM4, armored, plenum rated.
- B. Part number:
 - 1. PDPK012FB3010/F5

2.15 ALTERNATE #3 – FIBER ENCLOSURE, ADAPTER PANELS

- A. Install one new fiber enclosure in the Sousa Band Hall in Central HS.
- B. Acceptable manufacturer: Leviton, OPT-X 200i SDX, 1RU.
 - 1. Part Number: 5R1UH-W03
- C. Fiber adapter panel, with duplex shuttered LC, OM4
 - 1. Acceptable manufacturer: Leviton
 - 2. Part number: 5F100-S2Q
 - 3. QTY: 2 – one panel for the TC, one panel for the MC.
- D. Blank adapter panels – TC Only
 - 1. Acceptable manufacturer: Leviton
 - 2. Part number: 5F100-PLT

2.16 ALTERNATE #3 - GROUNDING BUSBAR

- A. Secondary Bonding Busbar (SBB)
 - 1. Acceptable manufacturer: Chatsworth
 - 2. Part number: 13622-012 grounding wire
- B. Contractor will provide a #6 AWG stranded copper wire cable insulated with a green jacket between the ground bar located in the room to the equipment, ladder rack, equipment rack, and other required grounding points using proper end attachment hardware in those spaces. This does not include the installation of a grounding backbone between the MC and each TC.
- C. The Contractor shall attach grounding cable to appropriate end connecting hardware using manufacturer-approved materials and methods.

2.17 ALTERNATE #3 - COMPRESSION LUGS

- A. Acceptable manufacturer: Chatsworth
 - 1. Part Number: 40162-90#
 - 2. All lugs shall be two-hole long barrel compression and sized for the #6 cable size. Set hole spacing on lug to match ground bar.

2.18 ALTERNATE #3 - TELECOMMUNICATIONS BONDING BACKBONE

- A. The contractor shall provide the Telecommunications Bonding Backbone between the new SBB and the PBB in the MC.
 - 1. Contractor will size the grounding backbone as per the NEC and the measured distance from the ground bar to the building ground and to the panel ground.
 - 2. Telecommunications Bonding Backbone shall follow NEC Article 250 and TIA-607-D.

PART 3 - EXECUTION

3.1 ENTRANCE FACILITIES

- A. Contractor shall be responsible for any damages to active network electronics or any existing cable plant connection. Contractor shall report any damage to the Owner immediately.

3.2 TECHNOLOGY PATHWAYS AND SPACES

- A. Components of the system shall be installed in a neat, professional manner.
- B. Wiring color codes shall be strictly observed, and terminations shall be uniform throughout the system.
- C. Identification markings and systems shall be uniform.
- D. Comply with TIA 568.2-D wiring codes for cabling.
- E. Cable pathway
 - 1. All cable pathways in exposed ceiling and exposed areas of cloud ceiling environments, shall be concealed within conduit.
 - a. Conduit and bushings shall be by the communications cabling contractor.
 - 2. Cable pathways above accessible ceiling shall be installed in dedicated J-Hook pathways.
 - 3. Conduits shall be free of debris prior to placing cable.
 - a. Cable that is placed in conduits with debris and found to be damaged shall be replaced at Contractor's sole expense.
 - 4. Change of direction of cables from a cable bundle shall not be accomplished using a Velcro strap.
 - 5. Cable bundles shall always exit cable tray vertically with the use of "waterfalls" or "cable drop" assembly. Cable turning vertically over right angles or wire basket shall be deemed to be in violation of bend radius requirements.
 - 6. Cable bundles shall be supported via J-Hooks attached to the existing building structure and framework at a maximum of five (5) foot intervals.
 - 7. Cables shall not be supported, rest on, or touch any part of the building except for approved structured cables support/suspension devices.
 - 8. Pathways shall not be attached to lift out ceiling grid supports or laid directly on the ceiling grid or tiles.
 - 9. Pathways shall not be attached to or supported by fire sprinkler heads or delivery systems, or any environmental sensor located in the ceiling air space including duct work.
 - 10. Fasten cables on vertical runs to cable trays every 18 inches.
 - 11. Fasten and support cables that pass from one cable tray to another or drop from cable trays to equipment enclosures. Fasten cables to the cable tray at the point of exit and

- support cables independent of the enclosure. The cable length between cable trays or between cable tray and enclosure shall be no more than 60 inches.
- F. Sleeves
1. Use of existing sleeves is approved.
 2. Cable pathway sleeves shall be properly sized for anticipated capacity plus 50%, equipped with bushings on both sides for all fire wall penetrations.
 3. Use of sleeves pre-loaded with fire stop, such as the STI EZ Path, Flamestopper through wall fittings is approved for use in all firewall locations. These devices do not need to be used in areas where firewalls are not being used. This includes all sleeves over hard ceilings, exposed ceilings etc. Product shall be installed prior to cable installation for protection of cables.
 - a. Cables installed prior to firestop system shall be removed and reinstalled at Contractor's sole expense.
 4. Firestop all Structured Cabling sleeves to meet wall rating for flame and water stream tests.
 5. Re-seal all conduits entering MC or TC room that had their fire stop removed as part of this scope.
- G. Horizontal Cabling
1. Contractor shall provide horizontal cables to connect each information outlet to the backbone subsystem on the same floor.
 2. Each run of cable between the termination block and the Telecommunication Outlet shall be continuous without any joints or splices.
 3. The 4-pair UTP cables shall be run using a star topology format from the administration subsystem (MC/TC) to every individual Telecommunication Outlet.
 4. The length of each individual run of horizontal cable from the administration subsystem (MC or TC) on each floor to the Telecommunication Outlet shall not exceed 295 ft (90 m).
 5. The Contractor shall adhere to the manufacturers' requirements for pulling tension of all cables.
 6. Plastic tie wraps are not permitted in the pathway for structured cable. All cables bundled by plastic tie wraps during any phase of the installation shall be replaced at Contractor's expense.
 7. Contractor shall Coordinate with electrical contractor for final pathway support to include but not limited to, sleeves, conduits through exposed ceiling spaces etc.
 8. Cables shall not be attached to lift out ceiling grid supports or laid directly on the ceiling grid or tiles.
 9. Cables shall not be attached to or supported by fire sprinkler heads or delivery systems or any environmental sensor located in the ceiling air space including duct work.
 10. During initial cable installation, or "rough-in," cable shall be protected.
 - a. Cable shall not be left exposed on the floor.
 - b. Cable shall be protected with open-top boxes, properly used slings, and approved barricades.
 - c. Cable shall not be suspended by tie wraps or any other means which cause cable deformation.
 - d. Use wide-based support systems appropriate to bundle size to support cable during rough-in phase.
 - e. Contractor is required to coordinate placement of cables in locations and at construction phases to avoid paint on the cables. Coordination shall be with the General Contractor. Painting cabling is considered a field modification by the manufacturer and alters the fire rating of the cable jacket. Cables coated with paint shall be replaced at Contractor's sole expense if coordination has not occurred.

11. Contractor shall not install cable in any conduit prior to the installation of conduit bushings.
12. Contractor shall observe the recommended bending radius and pulling strength requirements of the 4-pair UTP cable during handling and installation.
 - a. Bends which deform the cable jacket shall be avoided. Violation of bend radius shall be remedied with the replacement of the cable at the Contractor's sole expense.
13. Cables pathways leaving J-Hooks to conduit stub outs shall be a gradual sweep.
14. In suspended ceiling and raised floor areas where duct, cable trays or conduit are not available, the Contractor shall bundle, in bundles of 24 or less, station wiring with Velcro straps snug, but not deforming the cable geometry.
15. Cable bundles shall be supported via J-Hooks and/or saddles/slings attached to the building structure and framework at a maximum of five (5) foot intervals.
16. The Contractor shall not install any cable pathways above an electrical room.
17. Pathways shall not be parallel to electrical pathways without proper separation.
 - a. Station cables and tie cables pathways shall be routed at right angles to electrical power circuits.
18. In suspended ceiling and raised floor areas where walker duct, cable trays or conduit are not available, the Contractor shall bundle station wiring with hook-and-loop (Velcro) cable straps at appropriate distances.
 - a. The cable bundling shall be supported via J-Hooks attached to the existing building structure and framework.
 - b. Each J-Hook shall contain only one type of transmission media.
19. Cables shall not be supported by mechanical ductwork or any of its support structure.
20. Cables shall not wrap around, or in general, touch building structural systems.
21. Conduit pathways installed by the Contractor shall not exceed 100 feet or contain more than two 90-degree bends without utilizing appropriately sized pull boxes.
22. All outlets shall be protected from construction-related dust by using dust-proof barriers. Outlets not protected shall be replaced at Contractor's expense.
23. Any cable found contaminated with paint, or other agents, shall be replaced at the contractor's cost.
24. 36" service loops shall be installed at the work area outlet above the device location in a J-Hook and configured in an industry standards compliant arrangement at all locations. This shall include all direct terminated devices where the service loop should be placed in an area where the pathways are easily accessible.
25. No support may be secured to the drop ceiling grid support wire. Contractors installing their support devices to the grid wire will replace the assembly at no cost to the client, or Consultant.
26. Contractors that violate these standards will be required to remove the cable at fault, correct the pathway, and re-install the cable at Contractor's sole expense.
- H. Backbone Cabling – Alternate #3 Only.
 1. All cable shall be continuous and non-spliced from termination point to termination point.
 2. Cable shall not exceed allowable bend radius according to manufacturer, BISC1 and TIA-569-E standards.
 3. Fiber optic cable shall have service loops of 10' at each end and each service loop shall be properly secured above ceiling.
 4. Copper and fiber backbone shall be supported in dedicated J-Hooks. Backbone cabling may be supported in the same cable tray with the horizontal providing proper separation and pathway management are used.
- I. Surface enclosure installation:
 1. Install surface enclosures in ceiling spaces for all wall mounted device locations calling for ceiling-based outlets as shown on the drawings.

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- 2. Coil the maintenance loop and insert it directly over the device location.
 - 3. Support with dedicated J-Hook installed on wall surface or suspended by dedicated grid wire or all thread supported by structure. Devices should be installed within twelve inches of the ceiling tile.
- J. Patch panels:
- 1. Contractor will calculate the number of ports based on the number of LAN outlets served by the MC or TC. Patch panel density must provide for an additional 10% growth capability.
 - 2. Install panels in coordination with the technology group.
- K. Penetrations
- 1. Seal all conduit and textile innerduct entering structures at the first box or outlet to prevent entrance into the structure of gases, liquids, or rodents.
 - 2. Install proper firestopping products.
 - 3. Exposed Textile Innerduct Penetrations: Install conduit sleeves or fire barrier sealing systems in all openings where open and exposed textile innerduct passes through fire-rated walls and floors. After installation, install intumescent fire barrier penetration sealing material (Hilti system) between textile innerduct and sleeves or fire barrier system.
 - 4. Raceway Penetrations: After textile innerduct installation, install intumescent fire barrier penetration sealing material (Hilti system) between textile innerduct and conduit or wire way at all exposed penetration locations.
 - 5. Protect adjacent surfaces from damage during water seal or fire stop installation. Repair any damage.
- L. Penetrations of walls, floors, and ceilings:
- 1. Prior consent
 - a. The Contractor shall make no penetration of floors, fire-rated walls, or ceiling without the prior consent of the Owner.
 - 2. The use of PVC sleeves in any interior pathway location is not acceptable.
 - 3. Sealing penetrations
 - a. Where penetrations through acoustical walls or other walls for cableways have been provided for the Contractor or made by the Contractor, such penetrations shall be sealed by the Contractor in compliance with applicable code requirements.
 - b. Where penetrations through fire-rated walls for cableways have been provided for the Contractor or made by the Contractor, the Contractor shall seal such penetrations as required by code.
- M. Conduit Installation
- 1. Install products in accordance with manufacturer's instructions.
 - 2. Perform work in accordance with NECA 1 (general workmanship).
 - 3. Install intermediate metal conduit (IMC) in accordance with NECA 101. F.
 - 4. Unless dimensioned, any conduit routing indicated is diagrammatic.
 - 5. When conduit destination is indicated without specific routing, determine exact routing required.
 - 6. Conceal all conduits unless specifically indicated to be exposed.
 - 7. Conduits in the following areas may be exposed, unless otherwise indicated:
 - a. Electrical rooms.
 - b. Mechanical equipment rooms.
 - c. Within joists in areas with no ceiling.
 - 8. Unless otherwise approved, do not route conduits exposed:
 - a. Across floors.
 - b. Across roofs.
 - c. Across top of parapet walls.
 - d. Across building exterior surfaces.
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9. Route all conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
10. Arrange conduit to maintain adequate headroom, clearances, and access.
11. Protect stub-ups from damage where conduits rise through floor slabs.
12. Arrange conduit to provide no more than the equivalent of two (2) 90-degree bends between pull points.
13. Arrange conduit to provide no more than 100 feet between pull points.
14. Make bends and offsets so ID is not reduced.
15. Keep legs of bends in the same plan and straight legs of offsets parallel, unless otherwise indicated.
16. Use raceway fittings compatible with raceways and suitable for use and location.
17. Run concealed raceways, with a minimum of bends, in the shortest practical distance considering the type of building construction and obstructions, unless otherwise indicated.
18. Route conduits above water and drain piping where possible.
19. Arrange conduit to prevent moisture traps.
20. Provide drain fittings at low points and at sealing fittings where moisture may collect.
21. Maintain minimum clearance of 6 inches between conduits and piping for other systems.
22. Maintain minimum clearance of 6 inches between conduits and hot surfaces. This includes but is not limited to a. Heaters. b. Hot water piping. c. Flues.
23. Group parallel conduits in the same area together on a common rack.
24. Conduit Support:
 - a. Secure and support conduits in accordance with the National Electrical Code and the city of San Angelo.
 - b. Provide independent support from building structure.
 - c. Do not provide support from piping, ductwork, or other systems.
 - d. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.
 - e. Use conduit strap to support single surface-mounted conduit.
 - f. Use clamp back spacer with conduit strap for damp and wet locations to provide space between conduit and mounting surface.
 - g. Use metal channel (strut) with accessory conduit clamps to support multiple parallel surface-mounted conduits.
 - h. Use conduit clamp to support single conduit 1 1/2 inch and smaller from beam clamp or threaded rod and for fastening raceways to trapeze supports.
 - i. Use trapeze hangers assembled from threaded rods and metal channel (strut) with accessory conduit clamps to support multiple parallel suspended conduits.
 - j. Secure raceways and cables to support single-bolt conduit clamps.
 - k. Use of spring steel conduit clips for support of conduits is not permitted.
 - l. Use of wire for support of conduits is not permitted.
25. Connections and Terminations:
 - a. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
 - b. Use suitable adapters where required to transition from one type of conduit to another.
 - c. Provide drip loops for liquid-tight flexible conduit connections to prevent drainage of liquid into connectors.
 - d. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.

- e. Provide insulating bushings or insulated throats at all conduit terminations to protect cabling.
- f. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
- 26. Penetrations:
 - a. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of an approved Structural Engineer.
 - b. Make penetrations perpendicular to surfaces unless otherwise indicated.
 - c. Provide sleeves for penetrations as indicated or as required to facilitate installation.
 - d. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
 - e. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
 - f. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods.
 - g. Install sealing fittings in suitable, approved, and accessible locations.
- 27. Maximum Conduit Size: 1 inch (27 mm) unless otherwise noted.
- 28. Conduit Movement Provisions:
 - a. Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
 - 1) Where conduits cross structural joints intended for expansion, contraction, or deflection.
- 29. Condensation Prevention:
 - a. Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation. This includes, but is not limited to:
 - 1) Where conduits pass from outdoors into conditioned interior spaces.
 - 2) Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
- 30. Provide pull string in all conduits where cables may be installed by others in the future.
 - a. Use No. 14 AWG zinc-coated steel or monofilament plastic line with not less than 200-lb tensile strength.
 - b. Leave minimum slack of 12 inches at each end.
- 31. Provide insulation bushings at all terminations.
- 32. Comply with EIA/TIA-569-D. 1.
- 33. Quality Requirements, for additional requirements.
 - a. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer.
 - b. Replace components that exhibit signs of corrosion.
 - c. Correct deficiencies and replace damaged or defective conduits.
- 34. Conduit cleaning
 - a. Clean interior of conduits to remove moisture and foreign matter.

3.3 BACKBOARDS – ALTERNATE #3 ONLY

- A. Plywood shall be painted white with fire retardant paint on all sides.
- B. Plywood shall meet all applicable codes.
- C. Do not paint over the manufacturer's fire rating stamp.

- D. Affix plywood to wall with 3/8" toggle bolts spaced no more than 24" around perimeter or 2" self-drilling screws fastened through plywood and drywall to studs spaced no less than 24" along perimeter and vertically along all studs spanned.
- E. Install plywood with bottom edge no lower than 24" AFF.

3.4 RACKS AND WIRE MANAGERS

- A. Contractor will provide and install new racks and per T Series drawings.
 - 1. Racks will be mounted to the floor with non-conductive washers 3'8" drop-in anchors with hex nuts.
 - 2. Floor mounted open racks will be secured from the top rail to the backboard in the room with a length of cable runway to prevent movement.
 - 3. All racks will be grounded to the isolated ground bar within the TC using a standard ground lug and #6 green jacketed cable.
- B. Contractor will provide and install vertical wire managers and ladder rack in location and quantity per T Series drawings.

3.5 BONDING AND GROUNDING – ALTERNATE #3 ONLY

- A. Communication bonding and grounding will be in accordance with the NEC®, NFPA, and TIA-607-D.
- B. Horizontal cables and equipment will be grounded in compliance with ANSI/NFPA 70 and local requirements and practices.
- C. Outside plant cable, conduit, and terminals shall be grounded per manufacturer's instructions at all ends.
- D. Cable tray grounding
 - 1. Ground basket in accordance with NFPA 70, TIA 607-D and Manufactures requirements.
 - 2. Painted and coated surfaces shall be neatly prepared for grounding lugs. Excessive removal of painting and/or coating shall be corrected with new product at Contractor's sole expense.
 - 3. Contractor shall follow manufacturer's technical instructions for quantity of grounding connections and installation to ensure assembly maintains manufacturers UL listed assembly.
- E. Grounding lugs:
 - 1. Both holes in the lugs shall be secured with appropriate hardware.
 - 2. Attaching hardware shall be secured via irreversible crimps.
 - 3. Grounding lugs shall have a metal-to-metal attaching connection.
 - 4. Painted and coated surfaces shall be neatly prepared for grounding lugs. Excessive removal of painting and/or coating shall be corrected with new product at Contractor's sole expense.
 - 5. Contractor shall follow manufacturer's technical instructions for installation.
- F. Telecommunications Secondary Bonding Busbar (SBB)
 - 1. The Contractor shall furnish and install an SBB in each new TC.
 - 2. Contractor shall ensure the SBBs are installed using only manufacturer-approved installation methods and materials.
- G. Intra-room grounding conductors:
 - 1. Contractor shall provide a #6 AWG stranded copper wire cable insulated with a green jacket between the ground bar located in the room to the equipment, ladder rack, each equipment rack individually, and other required grounding points using proper end attachment hardware.
 - a. This does not include the installation of a grounding backbone between the MC and each TC. See item D for information pertaining to grounding backbones outside the confines of the telecommunications space.

2. The Contractor shall attach grounding cable to appropriate end connecting hardware using manufacturer-approved materials and methods.

3.6 IDENTIFICATION AND LABELING

- A. Labeling — Work Area Locations
 1. Contractor shall contact Owner's Technology Projects Manager to verify labeling standards.
 2. The Contractor shall be responsible for printed labels for all cables and cords, distribution frames, and outlet locations, according to Owner approved specifications at the time of delivery. Labels shall not be handwritten.
 3. Ceiling grid labels shall match the work area location above ceiling.
 - a. The Contractor shall label, according to Owner cabling standards, all cable runs at the MC/TC and Horizontal Cable locations.
 - b. Owner labeling standard requires the following information to be visible at each work area outlet:
 - 1) MC or TC, Patch Panel Number (starting with "1") and port number per patch panel (starting with "1")
 - 2) Examples:
 - (a) MC 1-36 (denotes port 36 of Patch Panel 1 in the MC)
 - (b) TC1 2-36 (denotes port 36 of Patch Panel 2 in the TC)
 - 3) All locations shall use the above system unless otherwise directed by the Owner.
 - c. Cable identifiers shall be sequential on the MC/TC patch panels.
 - d. The Contractor shall label both ends of each cable within two (2) inches of the termination. This is behind the faceplate, behind the surface enclosure, and the patch panel with permanent machine-generated labels.
 - e. Labels shall be machined printed Brady (or equivalent).
 - f. Do not place labels on the ceiling grid directly adjacent to a light.
 - g. Labeling above ceiling location shall consist of black text on white tape using 3/8" tape with 30 pt. font.
- B. Labeling — Surface Enclosures
 1. Label all drops on the enclosure cover, just above the insert. Do not label on the back of the enclosure.
 2. Affix a machine printed Brady (or equivalent) label over the handwritten Sharpie identification if applicable.
- C. Labeling — Patch Panels
 1. Label all patch panel ports as per Owner Labeling standards.
 2. Patch panel port labeling shall be machined generated (Brady or equivalent).
 3. Labels shall not be handwritten.
 4. Cable identifiers shall be sequential on the MC/TC patch panels.
- D. Labeling — Conduit OSP penetrations for MC and TC rooms (if applicable)
 1. Label backbone fiber 12" above the point where the cable enters the underground conduit from inside the TC or MC. Backbone shall be labeled with the destination of the fiber / copper. Example: TC-1-12-Strand OM4 50/125
 2. Label unused conduit sleeves with their destination from each comm room. "MC Spare" as needed.

3.7 TESTING

- A. All testing equipment utilized for all cable testing shall be calibrated within the past 12 months by the manufacturer and have the latest version of software installed.
- B. Copper link testing:

1. All twisted-pair copper cable links shall be tested for continuity, pair reversals, shorts, opens, and performance as indicated below. Additional testing is required to verify Category performance. Horizontal cabling shall be tested using a level IIIe or level IV test unit for Category 6A performance compliance.
 - a. Continuity - Each pair of each installed cable shall be tested using a test unit that shows opens, shorts, polarity, and pair-reversals, crossed pairs, and split pairs. Shielded/screened cables shall be tested with a device that verifies shield continuity in addition to the above stated tests. The test shall be recorded as pass/fail as indicated by the test unit in accordance with the manufacturers' recommended procedures and referenced to the appropriate cable identification number and circuit or pair number.
 - b. Any faults in the wiring shall be corrected and the cable re-tested prior to final acceptance.
 - c. All NVP settings must match the manufacturer cabling installed used for the project. Failure to properly match this setting shall result in all tests being rejected.
 - d. Passing test results for every copper cable/conductor and every fiber strand which was furnished as part of the product. Tested items marked with an (*) shall not be acceptable.
2. Length - Each installed cable link shall be tested for installed length using a TDR type device. The cables shall be tested from patch panel to patch panel, block to block, patch panel to outlet or block to outlet as appropriate.
 - a. The cable length shall not exceed the maximum distances set forth in the ANSI/TIA/EIA-568-C.0 & ANSI/TIA/EIA-568-C2 Standards.
 - b. Cable lengths shall be recorded, referencing the cable identification number and circuit or pair number. For multi-pair cables, the shortest pair length shall be recorded as the length for the cable.
3. Category 6/6A Performance:
 - a. Follow the Standards requirements established in ANSI/TIA/EIA-568-C.2 A level III test unit is required to verify category 6/6A performances including:
 - 1) Wire map
 - 2) Resistance
 - 3) Characteristic impedance
 - 4) Length
 - 5) Propagation delay
 - 6) Delay skew
 - 7) Insertion loss (attenuation)
 - 8) NEXT (near-end crosstalk) and NEXT at the smart remote
 - 9) PSNEXT (Power sum near-end crosstalk loss)
 - 10) Return loss
 - 11) ACR-N (attenuation to crosstalk ratio at the near end) and ACR-N at the smart remote
 - 12) PS ACR-N (power-sum attenuation to crosstalk ratio) and PS ACR-N at the smart remote
 - 13) ACR-F (equal level far-end crosstalk)
 - 14) PS ACR-F (power-sum equal level far-end crosstalk)
- C. Acceptable testing manufacturers:
 1. Trend Lan-Tek
 2. Fluke Networks
 3. Owner approved equal.
- D. MPTL Testing:
 1. Test all installed links in accordance with ANSI/TIA-568.2-D (or the latest version) for the specific Category rating (e.g., Category 6 or 6A).

2. The test limit must specifically be selected as "TIA Cat [6/6A] MPTL" on the field tester.
 3. Use a Permanent Link Adapter connected to the patch panel or jack.
 4. Use a specialized Patch Cord Adapter (e.g., Fluke Networks DSX-PCA004 or equivalent) to mate with the field-terminated plug. Standard channel adapters are prohibited as they do not measure the performance of the final mated connection.
 5. Test 100% of links for wire map, length, propagation delay, delay skew, DC resistance, insertion loss, NEXT, PS-NEXT, ACR-N, PS-ACR-N, ACR-F, and PS-ACR-F.
 6. Include mandatory DC Resistance Unbalance testing to ensure compatibility with high-power PoE (Power over Ethernet) devices.
 7. Provide electronic test reports for 100% of installed links.
 8. Reports must explicitly state the "MPTL" test limit was used for all direct-attach connections
- E. Fiber optic link testing:
1. All testing of terminated fiber shall comply with and be tested to ANSI/TIA 568-B standards.
 2. Testing shall be performed on all terminated fibers with a Level III tester.
 3. The system loss measurements will be provided at 850 and 1310 nanometers for multimode fibers and 1310 and 1550 for single mode fibers.
 4. Fiber links will have a maximum loss of the following:
 - a. Allowable cable loss per km (km of fiber in link) + (.4dB) (number of connectors) = maximum allowable loss
 - b. A mated connector to connector interface is defined as a single connector for the purpose of this specification.
 - c. Taking the sum of the bi-directional measurements and dividing that sum by two will calculate loss numbers for the installed link.
 5. Any link not meeting the requirements of the standard will be accurately documented and immediately communicated with the Owner and Contractor. Failed or broken fiber strands will not be accepted.
 6. Contractor will provide the fiber test results with the copper station cabling results.
- F. Test Failure
1. In the event of a test failure, the Contractor is required to remedy the failure and provide a channel which meets or exceeds the Category 6/6A or fiber optic TIA standards.
 - a. The Contractor will be required to repair and re-test the failed cable or strand with a tester which meets the standard for Category 6/6A or fiber optic cable testing as appropriate.
 - b. Tests results will be under the observation of Owner's Technical Staff and/or Architect/Engineer.
 - c. Notification for, and assent of, re-test must be given and received no less than 48 hours prior to re-test.
 - d. Documentation of successful re-test will be delivered to Owner within 48 hours after the re-test.
 - e. All replacement/repair/re-testing necessary to produce a link that meets the requirements specified in this document shall be included in base bid price.

3.8 FIELD QUALITY CONTROL

- A. Site visits and final acceptance:
1. The Project Manager and/or Manufacturer System Manager shall perform on-going inspections during construction. All work shall be performed in a high-quality manner,

- and the overall appearance shall be clean, neat, and orderly.
2. Consultant shall provide overhead cabling inspections as directed by the Owner / Contractor work schedule. During this time, all cable pathways in the required area shall be reviewed by the Technology Consultant. All identified areas of non-compliance with the contract documents shall be provided on a field report and distributed to the Contractor, and the Owner.
 3. Final acceptance site visits shall be performed by the Contractor(s), consultant, and Owner to ensure all installed work area outlet locations are properly identified on the record drawings and that all labeling and terminations meet the requirements of the contract documents and industry standards.
 4. Repeated site visits to review previously documented items shall be subject to strict limitations that shall result in the Contractor being charged on a time and mileage basis. Any documented item that requires more than two site visits by the consultant / Owner shall be subject to this penalty.

END OF SECTION

SECTION 27 5116 – PUBLIC ADDRESS SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Documents: Provisions of General Conditions, Supplementary Conditions, and the sections included under Procurement & Contract Requirements are included as part of this section as though bound herein.
- C. Owner General Requirements
- D. Section 09 5113 "Acoustic Panel Ceilings"
- E. Section 27 1000 "Communications Cabling"

1.2 SUMMARY

- A. Section Includes
 - 1. Extend existing configuration software – programming for connectivity to stand alone buildings as described in the plans and specifications.
 - 2. Control Interfaces
 - 3. Power Supplies
 - 4. Speakers
- B. Scope
 - 1. Scope of work includes a district-wide migration to Valcom IP-based paging system. The following scope summary describes the design intent of the project. Refer to drawings for detailed requirements for demolition and installation.
 - 2. The work to be provided under this section consists of furnishing and installing all equipment, cabling, labor, supervision, and services necessary for the installation of a complete and operating communication system consisting of intercommunication, public address, and time/event controller interface as shown or indicated on the drawings and/or as set forth in the specifications.
 - a. Cat6A cabling is listed under the Div 27 0000 specifications.
 - b. Scope includes the demolition and removal of abandoned analog speakers, associated wiring, and termination hardware.
 - c. Removal and disposal of all existing paging headend equipment.
 - 1) Processor cards from CHS and Lakeview HS shall be turned over to the Owner. All other cards and devices shall be disposed of by the Contractor.
- C. Phasing
 - 1. Contractor shall complete the paging upgrade in Central HS (CHS) in the summer of 2026 to support the demolition of the existing head end in September.
 - a. Contractor shall install new cables and devices in all facilities in CHS prior to removing any component of the existing system.
 - b. Following a successful turn up of the new system, the contractor shall return to each facility and remove the existing devices and associated wiring and termination hardware and replace the ceiling tiles.
 - 2. The contractor shall develop a schedule for installations at the remaining campuses starting with Lakeview HS, followed by the elementary campuses, then the MS campuses and finally the two alternate campuses.
- D. Related Requirements
 - 1. AVIXA Rack Building for Audiovisual System 2019
 - 2. AVIXA Cable Labeling for Audiovisual Systems
 - 3. AVIXA Audiovisual Systems Performance Verification
 - 4. ANSI/TIA-568 Commercial Building Telecommunications Cabling Standard

5. ANSI/TIA-569 Commercial Building Standard for Telecommunications Pathways and Spaces.
6. ANSI, ASTM, UL, NEMA, IEEE and FCC standards as applicable.
7. Building Industry Consulting Service International (BICSI) Telecommunications Distribution Methods Manual.
8. "Basic Principles for suspended Loudspeaker Systems", Technical Notes Volume 1, Number 19, JBL Professional or latest edition.
9. Underwriters Laboratory (UL) listed and recognized equipment and materials.
10. Americans with Disabilities Act (ADA)
11. In the event of a conflict between documents referenced herein and the contents of this specification, the contents of this specification shall be considered the superseding document except for the ADA, NFPA and NEC publications.

1.3 DEFINITIONS

- A. AVIXA: Trade association representing the professional audiovisual and information communications industries worldwide.
- B. CTS: Certified Technology Specialist
- C. EMI: Electromagnetic interference.
- D. RBB: Rack bonding busbar. A busbar within a cabinet, frame, or rack.
- E. RBC: Rack bonding conductor. Bonding conductor from the rack or rack bonding busbar to the telecommunications equipment bonding conductor.
- F. MC: Main Cross Connect An enclosed space for housing telecommunications equipment, cable terminations, service provider fiber and security and paging head end equipment.
- G. Screen: A metallic layer, either a foil or braid, placed around a pair or group of conductors.
- H. Shield: A metallic layer, either a foil or braid, placed around a pair or group of conductors.
- I. S/FTP: Overall braid screened cable with foil screened twisted pair.
- J. S/UTP: Overall braid screened cable with unscreened twisted pairs.
- K. TBC: Telecommunication Bonding Conductor. The TBC bonds the AV-PBB to the service equipment (power) ground. Formerly known as the bonding conductor for telecommunications.
- L. TC: Telecommunications Closet - An enclosed space for housing telecommunications equipment, cable terminations, and cross-connect cabling. It is the recognized location of the cross-connect between the backbone and horizontal facilities.
- M. TEBC: Telecommunications equipment bonding conductor. A conductor that connects the primary bonding busbar, secondary bonding busbar or supplementary bonding network to equipment racks or cabinets, rack bonding busbars, or rack bonding conductors.
- N. Federal Communications Systems (FCC).
- O. Institute of Electrical and Electronics Representatives (IEEE).
- P. National Electrical Manufacturer's Association (NEMA).
- Q. National Fire Protection Association (NFPA) Publications (Latest revisions and pertinent addendums).

1.4 PERFORMANCE REQUIREMENTS

- A. In the installation of this work, the Contractor shall comply with the requirements of Owner's standards, local and state laws and ordinances and the National Electrical Code.
- B. Anything in the Drawings or Specifications that shall not comply with the above laws, ordinances, and rules, shall be referred to the attention of Owner's representatives for a decision before proceeding with that part of the work.
- C. Performance References:
 1. The Contractor shall submit a minimum of three (3) references with names, addresses and telephone numbers of the operating personnel who can be contacted regarding previous installed systems of equivalent size and scope.

2. Submitting incomplete or inaccurate reference information can be a reason to disqualify bidding Contractor.

1.5 SYSTEM & SUBSYSTEM REQUIREMENTS

- A. The design intent of the Public Address System is to be a hybrid of IP enabled headend, IP endpoints with analog speakers and audio amplifiers supporting exterior horns and interior common zones.
- B. Supply and install a complete supervised network-based intercom system. Field wiring shall be a hybrid of CAT 6A cable and analog cable. IP-enabled station equipment shall utilize standard RJ-45 modular connections. Wiring shall be capable of either being installed in conduit or hook support system, where shown on the plans.
- C. The system shall be capable of interconnecting with the building LAN (Local Area Network). This connection shall be minimal and utilize only one Ethernet 1 Gb connection per station to accomplish all intercom operations. Ethernet ports and associated network switches that are required to connect any intercom devices will be provided by the Owner.
- D. Provide a separate circuit for each room and administrative area so each room, speaker, amplifier, and emergency messaging display/clock can be individually addressed.
- E. Overall intercom communications network shall utilize Ethernet or VoIP communications between all major components: administrative consoles, intercom stations, amplifiers and individual paging speakers, and network switches. Systems not capable of supervising all networked devices including network amplifiers, network speakers, notification switches, and emergency messaging display/clocks will not be acceptable.
- F. The network shall support a VLAN configuration to separate activity in the intercom system from other in building LAN traffic. In locations where the supervised network communications system will be considered as part of the facilities life safety systems, a dedicated and isolated network shall be required.
- G. The system shall interface to the facilities iPBX via SIP trunk connectivity.
- H. The Communications System shall include master clock support and synchronization of digital secondary clocks, event scheduling, and messaging software allowing the facility to configure multiple schedules per school, multi zone time tone signaling for class changes, and message notification.
- I. Hardware: Contractor shall supply equipment, accessories, cables, and connectors necessary for system to operate according to stated functional requirements, whether said products are listed.
- J. Software: Contractor shall utilize manufacturer's official and current version of configuration software at the time of installation.
- K. Control Interfaces: Shall be labeled or configured with graphical user interface as appropriate.
- L. Power Supplies: As required, Contractor shall provide necessary power supplies for devices requiring DC voltage.
- M. Uninterruptible Power Supplies (UPS): Contractor shall provide a minimum of one managed UPS per public address equipment rack for all pre-power amplifier equipment, whether specified or shown. Signal processing equipment and a minimal amount of audio amplifiers shall be connected to the UPS to allow for the Owner to announce emergency instructions of the audio-video system if desired.
- N. Unless otherwise provided in the Specifications, reference to any equipment, material, article, or patented process, by trade name, make or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. If the respondent wished to make a substitution to the Specifications, the respondent shall furnish to the Representative Consultant the name of the manufacturer, the model number, and other identifying data and information necessary to aid the Representative Consultant in evaluating the substitution, and such substitution shall be subject to the Representative Consultant's approval. Substitutions shall be approved only if determined by the

Representative Consultant to be equivalent to that specified. A proposal containing a substitution is subject to disqualification if the Owner's representative does not approve the substitution. Quantities of products shall be verified with drawings and any discrepancies reported to the Owner's representative in writing for resolution.

- O. Unapproved product substitutions which have been provided and/or installed shall be replaced with the specified products at Contractor's sole expense.
- P. Furnish all accessories necessary to integrate each piece of equipment into the system including rack mounts and other mounting devices, special connectors, and interfaces.
- Q. Coordinate with Architect the finish of all exposed items to blend with adjacent architectural elements of the building.
- R. Major components of the system such as DSP, power amplifiers, mixer-preamplifiers, and tuners, shall have a device, whether internal or external, which provides protection against voltage spikes and current surges originating from commercial power sources.

1.6 DESCRIPTION OF NETWORK INTERCOM / PA / MESSAGING FEATURES

- A. The system shall utilize a decentralized network structure not requiring any head-end equipment, central server, or any other control hardware to maintain system operation. Systems utilizing centralized electronics and subject to a single-point-of-failure (power supply, CPU, server, power, etc.) shall not be accepted unless the system has 100% duplication of all centralized operating equipment running concurrently and can automatically take over, including up to the minute programming configuration in the event of a failure of the main system head-end electronics or any required, centralized electronics required to make the system fully operational. Systems that are not based on decentralized structure or systems that do not provide 100% duplication of head-end or systems that operate in a "down-graded" operational mode as the result of a centralized failure are not acceptable.
- B. All IP-enabled station devices shall receive power and data through a Power-Over-Ethernet switch. Once plugged into the LAN through a Power-over-Ethernet network switch, all networked devices shall be immediately operational and as applicable shall place or receive calls and pages from stations as well as page all devices in the network. Consoles, intercom stations, clocks, emergency displays, or speakers connected to the network shall not require any network configuration or administration to function.
- C. Each Intercom Station, Loudspeaker, clock/message display, shall be assignable to all or any combination of Unlimited Paging, Program Distribution or Time Zones in the system.
- D. Each Classroom shall be provided with one IP speaker/clock combination.
- E. Corridors and common areas shall consist of IP speaker/clock combination.
- F. Speech shall be transmitted in the frequency range from 50 Hz to 7 kHz and shall use a maximum of 128 kbps of bandwidth during a call. To assure maximum intelligibility, all system audio shall be HD Audio as defined in Intel™ High-Definition Audio Specifications, June 17, 2010.
- G. Intercom communications between consoles and system devices shall be non-blocking with no channel restrictions or limitations (other than network capacity) to the number of simultaneous conversations at any time between pairs of intercom stations, intercom station to console, console to console, console to speaker or zone of speakers, program source to a speaker or zone of speakers, or bell tones to a speaker or zone of speakers regardless of number of stations or consoles.
- H. All IP enabled devices shall have the ability to have their programming downloaded, individually or simultaneously via the network. Programming shall be downloadable in a series of human readable, industry standard comma-separated values (CSV) files that can be saved and edited using common spreadsheet applications. Consoles, intercom stations, clocks, displays, and speakers residing on a network shall have the ability to update their programming, simultaneously from a CSV file. Furthermore, all IP enabled devices shall also have the capability to be configured directly, such that device numbers, names, zones,

- and call-in destinations can be altered in real time without the uploading or downloading of their programming. System shall be capable of uploading firmware updates to all device classes simultaneously, via the network, without the requirement of tools, by authorized technician or qualified facility technician or representatives.
- I. Audio communications between all devices shall be accomplished with latency values of a maximum of 0.1 seconds and connection times of 0.01s for 1 to 500 speakers.
 - J. The system shall support a minimum of 50 channels of simultaneous duplex communication paths on the intercom system LAN, plus a minimum of 10 simultaneous duplex channels for PBX integration.
 - K. The system shall be capable of routing calls from the Public Switched Telephone Network (PSTN) into any classroom, zone or the entire school via the District's SIP enabled Telephone System. This shall allow for remote monitoring and two-way voice communications from outside the facility to classrooms as well as paging into areas of the school. Additional features shall include:
 - 1. The ability to place call-ins from classroom call stations to SIP Telephones.
 - 2. The ability to initiate calls from SIP Telephones to eSeries Classroom Speakers.
 - 3. The ability to initiate zone and all call paging announcements from SIP Telephones to zones throughout the facility.
 - 4. The ability to make outside calls from Administrative Consoles to the PSTN via the Districts Phone System.
 - L. The System shall allow users to configure multiple schedules per school, with an unlimited number of programmable events in each schedule. Each Event shall sound a user selectable tone, play a user provided audio file or an external audio source. In addition, a textual message shall be programmed to display on associated message displays throughout the school. All scheduling assignments shall be performed via a simple to use, Graphical User Interface (GUI) from a non-dedicated PC, residing in the school. Programming shall also be accomplished from a non-dedicated PC at the District Office. The following features and functions shall be provided. Systems that cannot provide these shall not be acceptable.
 - M. The system schedules shall facilitate the requirements of combined facilities (e.g., elementary, and middle schools in a common building) where multiple schedules running concurrently would be required.
 - N. Each event shall play any of the available tones, audio files or audio sources provided. Events shall be directed to any one or more Time Zones in the systems.
 - O. Events shall include textual messages to clock/message displays. These shall be formatted as fixed, flashing or scrolling displays that can include up to 200 characters in length.
 - P. Time Tones may be manually activated from Administrative Consoles or selected SIP phones residing on the school's IP PBX.
 - Q. An integral Master Clock shall provide time synchronization to all secondary, digital clock / Message Displays throughout the school. The communications shall be capable of obtaining time synch signal from any NTP timeserver.
 - R. The System shall be capable of automatically distribute SMS and email notifications to relevant staff members when an emergency event is occurring at the facility. Notifications shall be distributed to user alert devices such as mobile phones and smart devices. Mobile phones shall receive the notifications as SMS messages while smart devices shall receive email messages. Emergency events include:
 - 1. The activation of emergency-themed element icons on a PC GUI (e.g., Lockdown, Evacuate, etc.)
 - 2. Emergency Calls placed from Call Stations located room locations.
 - S. The system shall automatically distribute SMS and email notifications to appropriate technical support staff if the system is experiencing a fault.

1.7 QUALIFICATIONS

-
- A. Contractor
1. The Contractor must have a current manufacturer installers certification at the time of bid submission.
 2. The Contractor must show proof that PA system integration is the primary function of the company.
 3. The Contractor shall provide proof that it supports a well-trained maintenance force in the area local to the project.
 4. The Contractor must maintain a fully staffed installation and service facility equipped with appropriate test equipment for repair of systems such as those specified herein.
 5. The Contractor shall be, or have direct relations through their subcontractors, an approved manufacturer's representative for all products they furnish and install.
 6. The Contractor shall be certified by the manufacturing company in all aspects of design, installation, and able to provide warranty service of the products described herein.
 7. The Contractor shall utilize the authorized manufacturer components in provisioning this project.
 8. The Contractor shall show proof that it has been in the paging system installation business for a period of not less than 3 years and has successfully, completed projects of equivalent size and scope.
 9. Contractor shall have a documented quality assurance program. This program shall have internal inspection team(s) to measure the service and product quality produced by the Contractor's technicians against internal and Industry standards.
 10. Contractor shall comply with all federal, state, and local statutes regarding qualifications of firms.
 11. The Contractor shall be experienced in all aspects of this work and shall be required to demonstrate direct experience on recent systems of similar type and size.
 12. The Contractor shall have personnel who are adequately trained in the usage of such tools and equipment.
 13. The use of uncertified subcontractors to the Contractor is not permitted.
 14. Contractor must provide on-site supervision and project management by person(s) experienced in the installation of public address systems.
 15. To facilitate timely service and warranty onsite requirements, the Contractor must have an established office located within 300 miles of the project.
- B. Manufacturer
1. Manufacturer shall have a minimum of ten (10) years' experience in the manufacture of public address system products.
 2. Maintain a 24-hour toll free telephone assistance line or online presence for Owner and installer support.

1.8 SUBMITTALS

- A. Action Submittals:
1. Contractor shall submit an electronic PDF copy of the submittal package within 15 days of written notification to proceed or other written documentation from the Owner. Sheets within the PDF shall be organized into the following sections:
 2. Cover Sheet and Section 1 — Information, and Material
 - a. Cover sheet contains the Company Name and/or logo, Title of submittal package, project name, and Contractor work address with a point of contact (POC) and phone number.
 3. Section 2 — Product Data
 - a. Material list with itemized pricing
 - b. Manufacturer's catalog information showing dimensions, colors, and configurations.

- c. Submittals shall include all items listed in PART 2 – PRODUCTS of this document and the Manufacturers cut sheets for the following:
 - 1) Manufacturers cut sheets for all products. Items shall be arranged in the same order as the material list. Lengthy installation manuals shall not be submitted.
 - 2) In cases of multiple product numbers on a single cut sheet, the Contractor shall identify the proper part number with a black X, check mark, or highlight.
- B. Informational Submittals:
 - 1. Section 1 – Pre-Qualification Certificates
 - a. Contractor shall submit the following documents:
 - 1) A letter of approval from the manufacturer indicating completion of pre-qualification requirements.
 - 2) Training certificates for design, representative and installation of the proposed products.
 - 2. Section 2 – Warranty Documentation
 - a. Provide example of documentation regarding the Contractor's warranty.
 - 3. All submittals shall be delivered to the Architect without incomplete documentation. Submittals missing cut sheets, drawings, certification documents or are not properly filled out per this section shall be summarily rejected in whole. Supplying partial submittal packages for the purpose of ordering materials is not an approved practice and shall be rejected in whole.
 - 4. The low voltage pre-construction meetings for all integrators shall be delayed until Contractor has received approved submittal packages from the Consultant.
- C. Closeout Submittals:
 - 1. Upon completion of final representative and incorporation of the Architect review comments, Contractor shall provide to the Architect for its records the following close out documentation:
 - 2. Record or As Build Drawings which shall include but not limited to:
 - a. Functional block diagrams for each integrated audio-video system.
 - b. All integrated audio-video or public address junction box locations.
 - c. Equipment rack locations.
 - d. Rack elevations.
 - 1) Rack elevations shall show all components as installed under this contract.
 - 2) Contractor shall label each component describing the component. (Examples: Cafeteria Amplifier or Gymnasium DSP etc.).
 - e. Floor plan drawings with device locations and associated assigned item number.
 - f. Mounting detail for equipment and hardware.
 - g. Schedule of all devices with associated panel termination, zoning, power circuits, etc.
 - h. Corrected product submittal information.
 - 3. A complete inventory list of installed products shall include:
 - a. Manufacturer name.
 - b. Model number.
 - c. Serial number.
 - d. Room number and/or description of installed location.
 - 4. Operation and Maintenance Manuals shall include:
 - a. Include detailed procedures for system operation that begin with startup procedures and continue through system shut down referenced in section 3.3 Training.
 - b. List of manufacture recommended maintenance and intervals with manufacture support contact information.

- D. Drawings shall contain the Contractors' own title block on the edge of the drawing and shall include the company name, address, phone number, and date of the final drawings. Use of any part of the Architect title block is not acceptable at any time.
- E. Drawing documentation shall be in the following format:
 - 1. One (1) electronic copy transmitted to the consultant through an approved transmittal process.
 - 2. Drawings shall be in PDF format.
- F. Drawings shall be provided to the Consultant two weeks prior to the final testing and commissioning of the system. Coordinate with the Consultant and Owner during the pre-construction meeting for Contractor to schedule this delivery date.
- G. The drawings shall be reviewed on site with the Consultant and Owner prior to the final acceptance process. Drawings rejected for any reason shall delay the final acceptance process until resolved.
- H. Testing Results
 - 1. In addition to the project record drawings, the Contractor shall provide the testing information for all public address cabling. (UTP cabling testing requirements are in the Div 27 0000 specification).
 - 2. Test results shall be provided to the Owner two weeks prior to the expected final acceptance of the system(s). Coordinate with the Consultant and Owner during the pre-construction meeting for low voltage Contractors to schedule this delivery date.
 - 3. Test results rejected for any reason shall delay the final acceptance process until resolved.

1.9 QUALITY ASSURANCE

- A. The Owner's representative shall make regular progress inspections. The Contractor shall make their job supervisor available to assist during these visits.
- B. The Contractor shall thoroughly familiarize themselves with the complete construction documents, to have visited all sites affecting the proposed work, studied bid package information and all necessary details of the complete set of drawings and Specifications and to have included in the proposal an amount to cover all work.
- C. The Contractor shall keep a complete set of drawings, specification, reviewed submittals, and progress markups on the job site always. These documents shall be made available during Owner's representative site progress visits. Changes made during installation shall be noted in the project markup set.
- D. Submission of bids shall be deemed evidence of Contractor's knowledge, review, and examination of the construction documents.
- E. Provide a competent supervisor and support technical personnel and is acceptable to the Owner and Consultant during installation. Notify the Owner's representative in writing prior to any project supervisor replacement.

1.10 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Stored materials shall be protected from exposure to harmful environmental conditions and at temperature conditions recommended by manufacturer.
 - 1. The Owner shall provide a classroom at the Technology Center for the storing of all active electronic components related to this project. All cable, conduit, and termination hardware may be stored in a Contractor provided connex. The connex may be placed inside the secured yard at the Tech Center facility.
 - 2. Access control credentials shall be provided to the Contractor and will be used to gain access to the building and the secured lot.
- C. Handle products and systems in accordance with manufacturer's instructions.

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- D. Contractors are required to remove all empty containers and other trash associated with the system. This includes all packaging, excess cable and other materials that hold no value to the Owner.

1.11 PROJECT CONDITIONS

- A. Project Environmental Requirements
1. Comply with requirements of referenced standards and recommendations of material manufacturers for environmental conditions before, during, and after installation.
 2. Do not begin installation until you are instructed to perform by the Owner / Consultant.
 3. All Contractors will comply with Owner policies concerning alcohol, tobacco, and firearms as well as any other Owner policy governing dress, behavior etc while on campus or on any land owned by the Owner.
- B. Damages
1. The Contractor shall be liable for all damages to portions of the building caused by it, including but not limited to the following:
 - a. Damage to any portion of the building caused by the movement of tools, materials, or equipment.
 - b. Damage to any component of the construction of spaces "turned over" to the Contractor.
 - c. Damage to the electrical distribution system and/or other space "turned over" to the Contractor.
 - d. Damage to the electrical, mechanical and/or life safety or other systems caused by inappropriate operation or connections made by the Contractor or other actions of Contractor.
 - e. Other damage to the materials, tools and/or equipment of the Owner, its Consultant, other Contractors, agents, and lessees.

1.12 COORDINATION

- A. Single Point of Contact / Project Manager
1. Contractor shall provide a single point of contact, i.e., Project Manager, to speak for the Contractor and to provide the following functions:
 2. Initiate and coordinate tasks with the Owner and Consultant.
 3. Provide day-to-day direction and on-site supervision of Contractor personnel.
 4. Ensure conformance with all Contract provisions.
 5. Attend weekly OAC meetings coordinated by the Consultant.
 - a. Where connection between components or control features are accomplished over the Owner's LAN, Contractor shall coordinate with the Owners IT department for IP addresses, firewall access, and other issues pertaining to successful integration.
 - b. Provide day-to-day direction and on-site supervision of Contractor personnel.
 - c. Ensure conformance with all Contract provisions.
 - d. Attend weekly OAC meetings coordinated by the Consultant.
 - e. If the Project Manager is unable to remain continuously on site with this project, a senior technician shall be required to remain, and they shall be responsible for day-to-day activities and reporting all status to the Project Manager.
 - f. Cooperate and coordinate as required with other Contractors who are responsible for work not included in this section.
 - g. Provide all information as required or requested by the Owner or Consultant for the project to be completed to the satisfaction of the Owner.

- h. Notify Owner and Consultant in a timely manner of system design or installation conflicts, which affect the intended use or performance of the system.
- 6. Technical Support
 - a. Contractor shall provide technical support consisting of two technicians for a full working day when Owner deems necessary during the physical cut over of the paging system.
 - b. The personnel providing technical support shall:
 - c. Have intimate knowledge of the system and materials that were used.
 - d. Be skilled in all use of equipment and materials used under the Contract.
 - e. Be competent to troubleshoot and fix problems associated with Contractor provided materials.
 - f. Have the test equipment, tools, and materials needed to troubleshoot and remediate problems associated with Contractor provided materials and installation.

1.13 WARRANTY

- A. The Contractor warrants to the Owner that all materials and equipment furnished under this specification will be new unless otherwise specified, and that all Work will be of excellent quality, free from faults and defects and in conformance with the specification. All Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.
- B. The Contractor warrants the materials, workmanship, and work to be in conformance with the Contract Documents included in this Project, for one full year from the approved substantial completion date unless a longer warranty or special guarantee is specified. Contractor shall assign to Owner all warranties and guarantees from or rights against any manufacturer, supplier or distributor of equipment, fixtures and other material installed in or incorporated in the Work at the time of Acceptance by Owner.
- C. Contractor Labor Warranty Period: One (1) year after date of Final Acceptance.
- D. The Warranty binds the Contractor to correct any work that does not conform to such Contract Documents or any defects in workmanship or materials furnished under this Contract which may be discovered within the one-year period. The Contractor shall, at its own expense, correct such defect after receiving notice from the Owner by repairing same to the condition called for in the Contract Documents.
- E. Contractor shall warrantee the repaired/replacement item for one year from date of repair/replacement. This warranty shall cover parts, labor, travel, and all other expenses.
- F. All replacement, installation, integration, maintenance, and testing provided in conjunction with the warranty provisions of such contract will be provided at no additional cost to the Owner.
- G. Additional Warranty
 - 1. Contractor will state any additional Contractor supplied warranty.
 - 2. Contractor shall provide the Owner with a list of all contact information for warranty purposes to include phone numbers, email addresses and business and technical support hours.
 - 3. All recall notices occurring during the manufacturer's warranty period will automatically be forwarded to the Owner.
 - 4. All recall notices occurring after the expiration of the manufacturer's warranty will be forwarded to the Owner for a period of 2 years after the warranty expires.
 - 5. Service Under Warranty
 - 6. The warranty service shall be on a 24-hour/day, 365-day/year basis with a response time not to exceed four hours. The respondent shall certify that its proposed service

facility shall initiate, within one business day, on-site repair to any critical system product that fails while under warranty.

7. Upon receipt of written notice, Contractor shall remedy defects within two calendar days, or the Owner shall seek other means to correct the defects and the Contractor, or its surety shall be liable for expenses.
8. If it becomes necessary for the Owner to contract out for warranty repairs, due to an inability or failure of the Contractor to perform such repairs, the Contractor shall reimburse the Owner for all invoices for parts, labor, materials, travel, per-diem, and all other related expenses such as shipping/handling costs to perform such repairs, within 30 days from presentation of an invoice from the Owner. This shall only occur after the Contractor has been given two calendar days to respond and correct the problem. The cost limitation for such repairs will not exceed the actual costs as listed above which are related to the repair.

1.14 BID

- A. Contractor shall be required to provide the following documents with the bid response.
 1. Training certificates for design, engineering, and installation of the proposed product types.
 2. A list of all current installations that shall be ongoing during this project, and the manpower requirements for each of those installations.
 3. Performance references as described herein. References with an invalid phone number shall be considered as an incomplete response and may be disqualified.
 4. Sample of the warranty that would be provided to the Owner when the installation is complete and documentation of the support procedure for warranty issues.
 5. Resume of qualification with the Contractor's bid proposal indicating the following:
 - a. A technical resume of experience for the Contractor's Project Manager and on-site installation supervisor (Project Foreman) who shall be assigned to this project. The project manager shall have a minimum of 5 years' experience on projects of equivalent size and design. The Project Foreman shall have a minimum of 3 years related project experience working crews of 4 or more personnel with a minimum of AVIXA CTS certification.
 - b. A list of technical product training attended by the Contractor's personnel that shall install the system.
 - c. Any sub-Contractor who shall assist the primary Contractor in performance of this work shall have the same training and certification as the primary Contractor. The use of certified Subcontractors is not prohibited for this project.

PART 2 - PRODUCTS

2.1 PA SYSTEM COMPONENTS

- A. Provide a complete solution for unifying all campus audio systems with an easy-to-use software interface. Use specialized server software, hardware components, a data network for bells, public address announcements, and intercom communications throughout campus. The user interface of the system shall be an intuitive, easy-to-use, Web-based application that allows office personnel to easily manage bell schedules, make pre-recorded or live announcement to various zones, and conduct intercom communications with individual locations.
- B. Manufacturers:
 1. VALCOM, Inc Roanoke VA USA
- C. IP6000 Communication System
 1. The Applications Server, Model VEIP6K, when used in a Class Connection IP6000 IP School Communications System shall provide scheduling, clock control and on

demand distribution of WAV formatted audio to simultaneous groups of speakers per event. The server shall feature simple browser-based interface to facilitate easy manipulation of custom audio files for use as class change tones or emergency notification. Schedules shall be capable of automated initiation based upon day of the week, calendar date up to one year in advance and shall feature manual control capability. The 1U server shall utilize web browser access for setup of schedules, and real-time control. The server shall be capable of simultaneously operating multiple schedules, events per schedule and simultaneously occurring events. The schedules shall feature one-second event resolution. Events shall be capable of controlling paging, relays, and/or streaming audio. The server shall allow cascading events from a single time trigger. Schedules shall be presented to the user in a calendar view showing school year and months with tabs for other options. The server shall provide for default screen view after login and permissions per user. The Application Server shall provide on demand access of pre-loaded audio files via web browser or contact closure. Additionally, the Applications Server shall provide for "Quick Page" on demand triggers for easy origination of unscheduled events and shall import and convert audio files from many .wav formats with both an option to enhance audio files during import and an option to record page audio to a file. Events shall feature programmable pre/post page delays and volume control per event. The server shall control VE8001AR/VE8002AR/VE8004ARs to provide streaming audio to page group(s) and use VE8048 inputs to execute events from the Playlist. Controlling VE8048 relays from events shall be inherent. The server shall communicate with VIP-102B setup tool for setup and dial code and group information. Users shall have the ability to enter names for displaying dial codes, page groups, inputs, events, and schedules.

2. Shall seamlessly integrate to any VoIP/SIP or legacy phone system via SIP, FXO or Loop Start Trunk.
- D. Contractor shall provide (1) VE8014AR at the MC and connect (1) port to the existing telephone systems trunk port. System shall be able to add analog access talk paths with 4 (four) ports.
1. FXS station port access shall be via CC Model #VE8014BR (four ports).
- E. Enhanced Network Station Port Model VE801XAR will provide a single 10/100 Ethernet port and one to four FXS station ports. The Enhanced Network Station Port Model VE801XAR will provide all circuitry and software to convert network data to audio output and analog telephone control signals. The Enhanced Network Station Port Model VE801X will provide all circuitry and software to convert input audio and analog telephone events to zone page audio and control information suitable for transmission to other Class Connection IP Solutions products. The Enhanced Network Station Model VE801XAR shall be powered an 802.3af PoE Ethernet switch port.
- F. Provide one (1) SIP Analog Telephone Adapter (ATA) interface (a ATA191-3PW-K9 Phone Adapter recommended). This interface shall provide transparent access from the building telephone system to the intercom DTMF analog port. The intercom system shall feature a distinctive dial tone and DTMF touch tone recognition to provide this transparent interface.
- G. Contractor shall provide a one or more Networked Page Zone Extenders at the MC and each TC. The purpose of this Networked Page Zone Extender is to provide streaming audio out to common area speakers (analog speakers). Connect the building's common area speakers to the Networked Page Zone Extender channels are required. The Networked Page Zone Extenders provide a single 10/100 Ethernet port, audio input/output circuits and N.O. relay contact outputs. The unit shall be SIP compatible. The Networked Page Zone Extender shall provide all circuitry and software to convert network data to zone page audio output. The Networked Page Zone Extender shall also provide all circuitry and software to convert input audio to zone page audio and control information suitable for transmission to other Class Connection IP Solutions products over a data network. The Networked Page Zone Extender shall be powered via an 802.3af PoE Ethernet switch port.

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- 1. Low level audio connection shall be via Model #VE8004BR (four ports)
 - H. Administrative console (PA)
 - 1. Contractor shall provide and install administrative consoles. Contractor shall coordinate exact location with Owner.
 - a. Central HS – Building A – Tucker: Qty (2)
 - b. Central HS – Building B – Sousa Hall: Qty (1)
 - c. Central HS – Building C – ROTC/Powell: Qty (1)
 - d. Central HS – Building D – Kelton Ag: Qty (1)
 - e. Central HS – Building E – Smith Gym: Qty (1)
 - f. Central HS – Building F – Dedrickson and Trevino: Qty (2)
 - g. Central HS – Building G – Michelangelo: Qty (1)
 - h. Central HS – Building H – Tennis: Qty (1)
 - i. Central HS – Building I – Schweitzer: Qty (1)
 - j. Central HS – Building J – Holmes: Qty (1)
 - k. Central HS – Building K – Bacon: Qty (1)
 - l. Central HS – Building L & M – Carlyle & Newton: Qty (2)
 - m. Central HS – Building N – Twain: Qty (1)
 - n. Lake View HS – Building A/B: Qty (3)
 - o. Lake View HS – Building C: Qty (0)
 - p. Lake View HS – Building D: Qty (1)
 - q. Lake View HS – Building E: Qty (0)
 - r. Lake View HS – Building F: Qty (0)
 - s. Lake View HS – Building G: Qty (1)
 - t. Belaire ES: Qty (3)
 - u. Bonham ES: Qty (3)
 - v. Bradford ES: Qty (3)
 - w. Fort Concho ES: Qty (3)
 - x. Glenmore ES: Qty (3)
 - y. Goliad ES: Qty (3)
 - z. Holiman ES: Qty (3)
 - aa. Lamar ES: Qty (3)
 - bb. Santa Rita ES: Qty (3)
 - cc. Lincoln MS: Qty (4)
 - dd. Lone Star MS: Qty (4)
 - ee. Central on Oaks (DAEP/PAYS): (7)
 - ff. Add Alternate 1 – Austin PL Center: (2)
 - gg. Add Alternate 2 – San Jacinto ES: (1)
 - 2. Valcom Model # VE-8025.
 - I. Equipment Shelf
 - 1. Provide 1 RMU rack shelf, single sided as required.
 - 2. Rack shelf shall be Valcom Model #VP-9202
 - J. Single Face Speaker/Clock
 - 1. Class Connection IP talkback speakers with clock and display
 - 2. SIP and Multicast Enabled
 - 3. Easy to install via RJ45.
 - 4. Powered Over Ethernet
 - 5. Controlled and Set Up via a software interface.
 - 6. Firmware Upgradeable
 - 7. Fully Supervised
 - 8. Compatible with Zoom, Cisco, Nortel, Avaya, and most VoIP phone systems
 - 9. Capable of providing superior talkback quality.
 - 10. Acceptable Manufacturer:
 - a. Valcom VL520BK-F-FC
 - K. Single Face Speaker/Clock, Large
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1. Class Connection IP talkback speakers with clock and display
 2. SIP and Multicast Enabled
 3. Easy to install via RJ45.
 4. Powered Over Ethernet
 5. Controlled and Set Up via a software interface.
 6. Firmware Upgradeable
 7. Fully Supervised
 8. Compatible with Zoom, Cisco, Nortel, Avaya, and most VoIP phone systems
 9. Capable of providing superior talkback quality.
 10. Acceptable Manufacturer:
 - a. Valcom VL550F
- L. Dual Face Speaker/Clock
1. Double sided VL522BK-F-FC
 2. Controlled and Set Up via a software interface.
 3. Easy to install via RJ45.
 4. Powered Over Ethernet
 5. Accurate via updates from a network time server
- M. Auditoriums & Performing Arts
1. Provide a wall-mounted analog speaker in auditoriums or performing arts spaces.
 2. Acceptable Manufacturer:
 - a. Valcom V1921W
 - 1) Provide with VB-S11 surface backbox.
- N. Network Page Zone Extender
1. Acceptable Manufacturer:
 - a. Valcom VE8004BR
- O. Common Areas and Restrooms
1. Audio amplifiers required for common areas and corridors shall be located within the nearest TC. Coordinate with Division 27 000 as required.
 2. Contractor to confirm with Owner all paging zone requirements.
 3. Class Connection Speakers for interior Common Areas and Restrooms shall be as follows:
 - a. The one-way wall mount speaker type (S1) for Common Areas and Restrooms shall be Model # V-1920C with # VB-S11 square surface mounted mount metal backbox.
 - b. The one-way 2' x 1' lay in tile speaker type (S1) shall be Model # V-9021 for Common Areas and Restrooms.
- P. Building Exterior
1. Required Class Connection One Way Horns for the building exterior shall be:
 2. The one-way flex horn Model # V-1080-GY with V-9809 enclosure and square cover.
- Q. Power Supplies
1. Provide and install power supplies as required within the nearest TC/MC.
 2. Power supplies shall be Valcom Model # V-C6124P
- R. Battery Backup Power Unit
1. Unit shall be rack mounted, consisting of time-delay relay, sealed lead-calcium battery, battery charger, on-off switch, "normal" and "emergency" indicating lights, and adequate capacity to supply maximum equipment power requirements for one hour of continuous full operation.
 2. Unit shall supply public address equipment with 12- to 15-V dc power automatically during an outage of normal 120-V ac power.
 3. Battery shall be on float charge when not supplying system and able to transfer automatically to supply system after three to five seconds of continuous outage of normal power, as sensed by time-delay relay.
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4. Unit shall automatically retransfer system to normal supply when normal power has been reestablished for three to five seconds continuously.
5. Acceptable Manufacturer: Cyber Power PR2200LCDRT2U.

2.2 FIRESTOPPING

- A. Provide products in compliance with local AHJ.
- B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 1. STI
 2. Hilti
 3. 3M
 4. Approved equivalent

2.3 WIRE AND CABLE

- A. Refer to section 27 0000 for structured cabling requirements.
- B. All additional cabling shall be by Division 27 5116 Contractor.
- C. Acceptable Manufacturers
 1. Belden
 2. West Penn Wire
 3. Liberty
 4. Windy City Wire

PART 3 - EXECUTION

3.1 INSTALLATION AND PROGRAMMING

- A. General Installation Expectations:
 1. The Contractor shall provide and install a complete and functional public address system as specified within. The system shall be free from all defects, buzzes, and hums.
 2. Install equipment as specified, as indicated on Shop Drawings, and as required. Installation shall be in accordance with manufacturers' instructions and applicable codes.
 3. If, in the opinion of the Contractor, there is anything in the Drawings or Specifications that shall not comply with the ordinances, and rules, the matter shall be referred to the attention of Owner's representatives for a decision before proceeding with that part of the work. No change in the Drawings or in the Specifications shall be made without full consent in writing by the Owner's representative.
 4. Contractor shall coordinate with Section 11 5200 and 27 4116 for emergency page override of audio systems.
 - a. The Valcom IP6000 System shall operate under the following audio priority scheme.
 - 1) An emergency page suspends all other audio.
 - 2) An emergency tone suspends all other audio except the above
 - 3) A normal page suspends all other audio except the above
 - 4) A tone suspends all other audio except the above
 - 5) A program source audio event suspends nothing.
 - 6) Interrupted lower priority functions shall be restored after conclusion of the higher priority function.
 5. The Contractor shall obtain the Owner's permission before proceeding with any work necessitating cutting into or through any part of building structures such as girders, beams, concrete or tile floors, partition ceilings.

6. Contractor shall provide components, wire, connectors, materials, parts, equipment, and labor necessary for the complete installation of the system, in full accordance with the recommendations of the equipment manufacturers and the requirements, Specifications and all applicable codes.
7. The Contractor shall be responsible for providing firestopping services for required cable pathways.
8. The Contractor shall take necessary steps to ensure that the required firefighting apparatus is accessible always. Flammable materials shall be kept in suitable places outside the building.
9. The Contractor shall install the materials in accordance with the manufacturer's specifications.
10. Equipment shall be held firmly in place with manufacturers' recommendation and/or EIA standard types of mounting hardware. All equipment shall be installed to provide reasonable safety for the operator.
11. The Contractor shall promptly correct all defects for which the Contractor is responsible.
12. The Contractor shall ensure that all records and reports, City relations, engineering, metering, inspections, testing, quality or service standards and safety measures comply with standards applicable for the State where the work is being performed.
13. The Contractor shall coordinate all work with the Owner's assignee or as shall be designated at a future date.
14. The Contractor shall remove all excess material and debris and return to its original state of cleanliness. The Contractor shall maintain a work area free of debris, trash, empty cable reels, scrap wire, etc., and dispose of such items daily.
15. Upon completion of installation and prior to acceptance, all equipment shall be thoroughly cleaned and made free from extraneous bits of solder, wire, etc. by the Contractor. Contractor shall clean work area and remove all waste and trash. Debris resulting from the installation shall be removed from all areas and disposed of by the Contractor.
16. It shall be the responsibility of the installation Contractor to furnish any special installation equipment or tools necessary to properly complete the installation.
17. The Contractor shall not roll or store cable reels without an appropriate underlay.
18. The Contractor shall not place any distribution cabling alongside power lines, or share the same conduit, channel, or sleeve with electrical apparatus.
19. The Contractor shall ensure that the maximum pulling tensions of the specified distribution cables are not exceeded at any time during the placement facilities. Failure to follow the appropriate guidelines may require the Contractor to provide additional material and labor necessary to properly rectify the situation. This shall also apply to all damages sustained to the cables by the installation Contractor during the implementation.
20. All wiring, materials, and equipment must be listed and labeled by a nationally recognized testing laboratory.
21. All wiring, materials, and equipment must be suitable for the environment they are to be permanently installed in.
22. All equipment proposed by the Contractor must be new and unused. Equipment refers to all hardware, software, equipment, cabling, materials, and incidentals etc.
23. Provide manufacturer's original box or shipping container from one (1) of every serialized.
24. All work shall be done in a thorough and conscientious manner according to industry standards and shall be subject to inspection and acceptance.
25. An appropriate construction schedule shall be developed by the Contractor and shall be subject to approval by the Owner's representatives. The construction schedule shall include at least one installation supervisor, or lead technician, for on-site management of the project.

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26. Prior to starting the installation, the assigned installation supervisor, or lead technician, shall participate in a "walk-through" of the project location with the Owner's representatives to review the installation documentation, verify that all construction necessary for the installation has been completed, and verify all installation methods and cable routes.
 27. The Contractor shall be responsible for completing a standardized report form addressing the weekly progress of the installation schedule.
 28. The Contractor shall maintain conductor polarity identification at the main equipment room, backbone, and horizontal connections in accordance with industry practices.
 29. The Contractor shall provide any necessary screws, anchors, clamps, tie wraps, distribution rings, power supplies, miscellaneous grounding, and support hardware, etc., necessary to facilitate the installation of the system.
 30. The Contractor shall coordinate all final power requirements, conduits, and conduit sleeves prior to rough in installation.
 31. The Contractor shall be responsible for installation of proper grounding and bonding.
 32. The Contractor shall be responsible for labeling all cable, distribution frames, and outlet locations, according to industry and Owner standards.
 33. It shall be the responsibility of the installation Contractor to furnish any special installation equipment or tools necessary to properly complete the installation.
 34. The Contractor shall not roll or store cable reels without an appropriate underlay.
 35. The Contractor shall not place any distribution cabling alongside power lines, or share the same conduit, channel, or sleeve with electrical apparatus.
 36. The Contractor shall ensure that the maximum pulling tensions of the specified distribution cables are not exceeded at any time during the placement facilities. Failure to follow the appropriate guidelines may require the Contractor to provide additional material and labor necessary to properly rectify the situation. This shall also apply to all damages sustained to the cables by the installation Contractor during the implementation.
 37. Materials shall be consistent throughout the building. Where two or more units of the same class of equipment are required, these units shall be the product of a single manufacturer and shall be the same product with the same material, model, and manufacturer number.
 38. Wiring, materials, and equipment shall be delivered and stored in a clean dry space. They shall be properly packaged in factory fabricated type containers and protected from damaging fumes, construction debris, and traffic until job completion.
 39. All installation techniques and fixtures shall result in ease of maintenance and ready access to all components for testing measurements. All external screws, nuts, and locking washers shall be stainless steel. No self-tapping screws shall be used unless specifically approved by the Owner's representatives. All parts shall be made of corrosion resistant material, such as plastic, anodized aluminum or brass. All materials used in installation shall be resistant to fungus growth and moisture deterioration. An inert dielectric material shall separate dissimilar metals apt to corrode through electrolysis under the environmental operating conditions specified.
 40. The Contractor shall submit for approval, a detailed description of the procedures and equipment included for the complete operational installation.
- B. Wiring Plan Requirements
1. Distribution of the cabling shall be accomplished through cable trays, conduit raceways, ducts, core-holes, extended columns, false half columns, and plenums. Cabling shall be run at right angles from cable trays. Horizontal cable segments shall be placed in cable trays and with cable exits/entrances supported by distribution rings or J Hooks. Cable may not rest on ceiling tile, be supported on existing ducting, tied, or supported by fire alarm, security or electrical infrastructure nor interlaced with existing cable.
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2. The Contractor shall be responsible for providing an approved ground at all equipment locations. The Contractor shall also be responsible for ensuring ground continuity by properly bonding all appropriate cabling, closures, cabinets, service boxes, and frameworks. All grounds shall consist of a minimum of 12 AWG copper wire or larger as required by code and shall be supplied from an approved building ground and bonded to the main electrical ground.
 3. Observe proper circuit and loudspeaker wiring polarity. Properly and clearly label connections and wires as to function and polarity. No cables shall be wired with polarity reversal between connectors, at either end. Take care when wiring microphone cables to ensure that constant polarity is maintained.
 4. Contractor is responsible for coordinating final cable pathways and necessary conduit sleeves.
 5. At the rack/cabinet, the cable bundle shall be neatly dressed and secured.
 6. Minimum Specifications:
 - a. All wire and cable shall be UL approved, meet all national, state, and local codes, and manufacturers recommendations for connected components for its intended application.
 - b. Plenum Insulation shall be rated for a minimum of 300 volts and satisfy the Underwriters Laboratories (UL) listed fire rated cable insulation requirements in plenum areas.
 - c. Cable runs shall be continuous runs. Mid-span cable splicing is not acceptable.
 - d. Any pulling compound or lubricant used in cable installation shall not deteriorate the conductor or the insulation.
 - e. Under carpet wiring and flat wiring shall not be used.
 - f. Manufacturer's recommended cabling supersedes wire specified in this section.
 - g. Contractor responsible for verifying all plenum rated spaces prior to installation. Provide Plenum rated cable as required.
 - h. Contractor to verify and provide cabling that is applicable to its installed environment.
- C. Cable Management
1. The bend radius for twisted-pair cables is standardized at 12" (3" diameter).
 2. Bundle cables within the guidelines of 2005 National Electrical Code (NEC) in Article 310.15(B)(2).
 3. Avoid mounting the cabling components in places that block accessibility to other equipment (such as a power strip or fans) in and out of the racks.
 4. Avoid
 - a. Applying extra twists.
 - b. Pulling or stretching beyond the specified pulling load rate.
 - c. Bending it beyond the specified bend radius, and not beyond 90°.
 - d. Creating tension in the suspension runs.
 - e. Stapling or applying pressure with the cable ties.
 5. Avoid exposing cables to areas of condensation and direct sunlight.
 6. Remove any abandoned cables, as they restrict the airflow, and contribute to the possible increase in the operational temperatures, which can affect the durability of the system.
 7. The NEC (NFPA 70), Article 800.133 (2005 NEC) indicates the separation requirements. This section of the NEC specifies the following: Communication wires and cables shall be separated at least 50 mm (2 inches) from conductors of any electric, power, Class 1, non-power limited fire alarm, or medium-power network-powered broadband communication circuits. However, there are multiple exceptions to this generic rule, so refer to the NEC (NPFA 70) standard for more information.
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8. All cabling shall have machine generated labels self-laminating. Handwritten labels shall not be accepted.
9. No cable ties shall be allowed on any low voltage cabling.
- D. Rack Dressing
 1. All Racks require Lacer Bars or Strips to provide clean cable management withing the rack.
 2. All racks require the cable segregation of AC cables, Speaker Cables, low impedance balanced cabling, and twisted pair cables.
 3. No Cable Ties; Velcro only.
- E. Identification, Labeling and Documentation
 1. The Contractor shall label all termination devices, panels, enclosures, and equipment rooms. The Contractor shall mark each unit with permanently attached, self-laminating markings that shall not impair the equipment or present a hazard to maintenance personnel.
 2. Place wire identification numbers on each end of all conductors. Install markers to be readable from left to right or top to bottom. Wire numbers shall be computer printed and self-laminating. Handwritten labels are not acceptable.
 3. Mark all spare conductors and coil neatly located at the bottom of the equipment rack.
 4. The contractor shall label power cables near the plug end. Label shall match equipment permanent label or function.

3.2 TESTING REQUIREMENTS

- A. Upon completion of system installation, Communications Integrator shall test every speaker for operation and proper dB level (70-75 dBA) for the area to be covered using a constant "pink noise/white noise" input signal through "All Call" and measuring the level with a Sound Level Meter.
- B. The Contractor shall perform tests in the presence of the Owner's representatives. Performing the testing procedures specified herein assures that the equipment and interconnection meet the performance characteristics specified. If testing indicates that the performance characteristics are not met, the test shall be declared a failure. The communication equipment and interconnection cabling shall be modified and/or repaired accordingly. The failed test and any other test that may be affected by the modification and/or repair shall be rerun. After all components have been installed, the integrity of the equipment and interconnection cabling shall be verified.
- C. If a system test fails because of any component(s) in the system, the failed component(s) shall be corrected or substituted with other components and the tests shall be repeated. If a component has been modified because of the system test failure, a report shall be prepared and delivered to Owner's Representatives prior to retesting. The Contractor shall prepare and submit all test procedures and data forms for the post installation and system test to the Owner's representatives.
- D. The test report shall contain the description of all tests performed, the results obtained, and any required adjustments or modifications necessary because of testing and installation. This report shall reflect the as-built communication equipment and interconnection cabling. An authorized representative of the Contractor shall sign the test report. A copy of the test report shall be sent to the Owner's representatives prior to scheduling Final Observations.
 1. Sample Test Report:

ITEM	ROOM/AREA	INPUT / OUTPUT	SOURCE	TEST RESULT	RECOMMENDED CORRECTIVE ACTION
1	Cafeteria Stage	AV-01 HDMI IN	Tech Laptop	No image displayed.	Verify HDBaseT connectivity on 12/25/19.

- E. The test procedures shall have the Owner's representative's approval before the tests.

- F. Contractor shall demonstrate to the Owner's representatives that the equipment operates as specified and that the tests meet performance requirements.
- G. The Contractor shall ensure that the equipment is in first class working condition and free of short circuits, ground loops, parasitic oscillations, excessive hum, RF interference, or instability of any form.
- H. The Contractor shall test each operational component and adjust for equal sound levels at a given volume setting and replace defective items.
- I. Contractor shall ensure that all loudspeaker and distributed audio systems described herein are balanced and optimized for maximum quality sound and coverage of listening areas.

3.3 TRAINING

- A. Owner and end user training shall be videotaped and provided to the Owner as project closeout documentation.
- B. System training shall be provided for the operator/user and technical staff in separate training meetings.
 - 1. Owner and end user training shall be held at Owner's convenience and to the Owner's satisfaction.
 - 2. Technical operation and maintenance training shall be held at Owner's convenience and to the Owner's satisfaction.
 - 3. The Contractor shall provide documentation demonstrating the Owner and/or Owner's Representatives understand the operation and maintenance of the system.
- C. Complete operation and maintenance manuals and preliminary as-built drawings shall be delivered to the Owner one week prior to training sessions.
- D. Operator/user training shall minimally consist of:
 - 1. Provide printed reference material for each trainee that documents and explains in layman's terms:
 - a. System block diagram
 - b. Normal day-to-day operation
 - c. Operator selectable features
 - 2. Provide in person training with Q & A session covering system operation, functions, and web interface.
- E. Technical Operations and Maintenance training shall consist of:
 - 1. The technical explanation shall be sufficiently thorough so that staff personnel shall be able to make any programming changes required, analyze malfunctions and make equipment substitutions or bypasses necessary to maintain system operation except for the malfunctioning equipment or circuits.
 - 2. Provide printed reference material for each trainee that documents and explains in technical terms:
 - a. System block diagram with technical features
 - b. Technical operation, adjustments, and programming
 - c. System features and programming
 - d. Review of as-built drawings.
 - 3. Provide in person training with Q & A session.
- F. Contractor shall provide a complete and comprehensive list of the maintenance schedule for all installed and/or provided equipment. The list shall be provided in both printed and Adobe Acrobat formats.

3.4 ACCEPTANCE OF SYSTEMS

- A. Specifications set forth for construction of the system have been devised to ensure system compatibility and performance. Compliance with these Specifications shall be determined during periodic observations of construction. Repeated failure to comply with the

specification shall be considered before the initial acceptance phase of the plant commences.

- B. Prior to the Contractor performing final testing, deliver preliminary as-build documents and system testing documentation to Owner for use in conducting testing observation.
- C. Once accepted by the Architect and Owner all documentation / program code becomes the property of the Owner.
- D. Within ten days of receipt of the final acceptance notice, the Owner's representatives shall schedule and perform the final inspection. When the work is found acceptable under the contract documents and the contract is fully performed, declare substantial completion of the project.

END OF SECTION

SAN ANGELO ISD PAGING UPGRADE

ALTERNATES:

ADD ALTERNATE 1: AUSTIN PROFESSIONAL LEARNING

ADD ALTERNATE 2: SAN JACINTO ES

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T103	FLOOR PLAN - CENTRAL HS - BUILDING B - SOUSA HALL - REVISED WING
T104	FLOOR PLAN - CENTRAL HS - BUILDING C - ROTCPWELL
T105	FLOOR PLAN - CENTRAL HS - BUILDING D - KELTON AS
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T135	FLOOR PLAN - CENTRAL ON OAKS (DAPRYPAYS)
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SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



COVER SHEET

Sub. No. SAN-1003-01	Sheet No. TG100
Drawn By: /	
Designed By: /	
Date: /29/2026	

- AC - ACCESS CONTROL
AFF - ABOVE FINISHED FLOOR
AHJ - AUTHORITY HAVING JURISDICTION
AV - AUDIO AND VIDEO
BBC - BACKBONE BONDING CONDUCTOR
BICSI - BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL
C - CONDUIT
CD - CONSTRUCTION DOCUMENTS
CCTV - CLOSED CIRCUIT TELEVISION
CO - CONDUIT ONLY (EMPTY CONDUIT WITH MULE TAPE)
CP - CONTROL PANEL
CU - COPPER
DR - DOOR RELEASE
EF - ELECTRICAL CONTRACTOR
EF - ENTRANCE FACILITY
EL - EMERGENCY LOCK DOWN
EP - ENTRANCE POINT
EPT - ELECTRONIC POWER TRANSFER
ESS - ELECTRONIC SAFETY AND SECURITY
FBO - FURNISHED BY OTHERS
FCC - FEDERAL COMMUNICATIONS COMMISSION
GND - GROUND
HC - HORIZONTAL CROSS-CONNECT
HR - HOME RUN
HVAC - HEATING, VENTILATION, AND AIR CONDITIONING
IBO - INSTALLED BY OTHERS
IDF - INTERMEDIATE DISTRIBUTION FRAME
IEEE - THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
ISP - INTERNET SERVICE PROVIDER
JB - JUNCTION BOX
LV - LOW VOLTAGE
MB - MARKER BOARD
MC - MAIN CROSS-CONNECT
MDF - MAIN DISTRIBUTION FRAME
MH - MANHOLE
MIC - MICROPHONE
MMF - MULTI-MODE FIBER
MD - MOTION DETECTOR
MPOE - MAIN POINT OF ENTRY
NEC - NATIONAL ELECTRICAL CODE
NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NIC - NOT IN CONTRACT
NTS - NOT TO SCALE
OC - ON CENTER
PB - PULL BOX
PBB - PRIMARY BONDING BUSBAR
PM - PROJECTOR MOUNT
PNL - PANEL
POC - POINT OF CONTACT
POE - POWER OVER ETHERNET
POS - POINT OF SALE
PP - PATCH PANEL
RCP - REFLECTED CEILING PLAN
RFI - REQUEST FOR INFORMATION
RFP - REQUEST FOR PROPOSAL
RMU - RACK MOUNT UNIT
SBB - SECONDARY BONDING BUSBAR
SMF - SINGLE MODE FIBER
SMR - SURFACE MOUNTED RACEWAY
SW - SWITCH
TBC - TELECOMMUNICATION BONDING CONDUCTOR
TC - TELECOMMUNICATIONS CLOSET
TE - TELECOMMUNICATIONS ENCLOSURE
TIA - TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TYP - TYPICAL
UG - UNDERGROUND
UL - UNDERWRITERS LABORATORIES INC
UNO - UNLESS NOTED OTHERWISE
UPS - UNINTERRUPTIBLE POWER SUPPLY
USB - UNIVERSAL SERIAL BUS
VC - VOLUME CONTROL
VP - VIDEO PROJECTOR
WAP - WIRELESS ACCESS POINT
WP - WEATHER PROOF

PROJECT ACRONYMS

01. ANY DIMENSIONS SHOWN ON THESE DRAWINGS ARE INTENDED TO PROVIDE A GENERAL LOCATION AS REQUESTED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALL DIMENSIONS PRIOR TO ROUGH-IN AND IMMEDIATELY REPORT ANY CONFLICTS WITH THE OUTLET PLACEMENT TO THE GENERAL CONTRACTOR.
02. ALL CABLE BUNDLES WILL BE SUPPORTED EVERY 48" 60" OC WITH A J-HOOK OR OTHER APPROVED PATHWAY DEVICE. REFERENCE SPECIFICATIONS AND DETAILS FOR ADDITIONAL CABLING PATHWAY INSTALLATION REQUIREMENTS. CONTRACTOR WHO VIOLATES THESE REQUIREMENTS WILL BE REQUIRED TO REPLACE THE AFFECTED CABLE PLANT AT THEIR EXPENSE.
03. PLASTIC TIE WRAPS ARE NOT PERMITTED AT ANY TIME ON THIS INSTALLATION. ALL CABLE ROUGH-IN AND DRESS-OUT WILL BE WITH VELCRO ONLY. ALL CABLES BUNDLED WITH PLASTIC TIE WRAPS SHALL BE IMMEDIATELY REPLACED AT THE CONTRACTOR'S EXPENSE.
04. DO NOT INSTALL ANY CABLES IN ANY CONDUIT SLEEVE, STUB UP, OR WALL CAP WITHOUT A PROTECTIVE BUSHING. CABLES PULLED INTO UNPROTECTED CONDUITS WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE. DO NOT INSTALL ANY CABLING INTO ANY CONDUIT THAT HAS NOT BEEN CONFIRMED TO BE BLOWN CLEAR. COORDINATE WITH ELECTRICAL PRIOR TO ROUGH IN OF ANY CABLING.
05. ANY CABLING FOUND PAINTED DURING THE CONSTRUCTION PROCESS WILL BE REPLACED AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND PAINTER TO AVOID CONFLICTS.
06. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REFERENCE BOTH THE PROJECT DRAWINGS AND THE PROJECT SPECIFICATIONS. TOGETHER THEY FORM THE COMPLETE CONTRACT DOCUMENTS. PLEASE REFERENCE THE PROJECT SPECIFICATIONS FOR ALL MATERIALS, EQUIPMENT AND COMPONENTS NOT INDICATED ON THE DRAWING SET.
07. CONTRACTOR SHALL COORDINATE ALL FINAL CAMERA LOCATIONS, HEIGHTS AND CAMERA VIEWING ANGLES WITH OWNER/OWNER'S REPRESENTATIVE. FAILURE TO COORDINATE ALL FINAL CAMERA LOCATIONS, HEIGHTS AND VIEW ANGLES MAY REQUIRE RELOCATION OF CONDUITS, CABLE AND CAMERA LOCATIONS AT CONTRACTOR'S EXPENSE.
08. CONTRACTOR SHALL COORDINATE TECHNOLOGY, TELECOM, SECURITY AND AUDIO VISUAL LOCATIONS SO THAT DATA AND POWER ARE AT THE SAME HEIGHT AND SPACED 18"-24" APART UNLESS SPECIFIED OTHERWISE. REFERENCE TECHNOLOGY AND MEP SHEETS FOR COORDINATION.
09. ALL CABLING INSTALLED IN AREAS WITH EXPOSED CEILINGS SHALL BE INSTALLED IN A PROPERLY SIZED CONDUIT PATHWAY. CONDUIT PATHWAYS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. THE CONDUIT MAY BE PAINTED TO MATCH CEILING COLOR AS DIRECTED BY THE CONTRACT DOCUMENTS.
10. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW THE ARCHITECTURAL DEMOLITION DRAWINGS FOR ALL DEMOLITION AREAS.
11. CONTRACTOR SHALL DOCUMENT ALL EXISTING TECHNOLOGY, TELECOM, SECURITY AND AUDIO VISUAL DEVICES AND LOCATIONS PRIOR TO DEMOLITION OF CEILINGS AND SPACES. PROVIDE TEMPORARY SUPPORT IN ALL DEMOLITION AREAS FOR DEVICES. RE-INSTALL ALL EXISTING DEVICES IN NEW CEILINGS.
12. CONTRACTOR SHALL DOCUMENT ALL EXISTING CEILING TECHNOLOGY, TELECOM, SECURITY AND AUDIO VISUAL LABELING ON EXISTING CEILING GRID. PROVIDE NEW LABELING PER SPECIFICATIONS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR STOPPING ALL TECHNOLOGY, TELECOM, SECURITY AND AUDIO VISUAL CONDUIT PENETRATIONS FROM WATER OR RODENT INGRESS IN ALL BUILDINGS UPON COMPLETION OF THE PROJECT.
14. IN ROOMS WITH EXISTING AUDIO SYSTEMS, DIV. 275116 CONTRACTOR SHALL PROVIDE/INSTALL OUTPUT FROM NEAREST ZONED SPEAKER AND TERMINATE INTO AUDIO TRANSFORMER TO DUCK MULTIMEDIA SIGNALS SO PAGING AUDIO AND BELLS ARE HEARD AUDIBLY.

GENERAL PROJECT NOTES

DATA OUTLET LOCATION(S) INSTALLED ON WALL. CONTRACTOR SHALL PROVIDE (1) 1" CONDUIT PATHWAY FROM EACH LOCATION TO THE NEAREST ACCESSIBLE CEILING SPACE TO A 1-GANG BACK BOX. COORDINATE DATA AND POWER LOCATIONS SO THAT DATA AND POWER ARE AT THE SAME HEIGHT AND IN CLOSE PROXIMITY. CONTRACTOR SHALL PROVIDE AND INSTALL DATA CABLING TO 1-GANG BACK BOX, FACEPLATE(S) AND JACK(S) AS SHOWN ON PLANS. REFERENCE DATA NOMENCLATURE FOR DATA OUTLET QUANTITY AND INSTALLATION HEIGHT AND TYPE.

DATA OUTLET(S) INSTALLED IN FLOOR BOX. CONTRACTOR SHALL PROVIDE AND INSTALL A FLOOR BOX. CONTRACTOR SHALL PROVIDE AND INSTALL (1) 1" CONDUIT PATHWAY FROM NEAREST ACCESSIBLE CEILING SPACE TO FLOOR BOX LOCATION SHOWN ON PLANS. COORDINATE WITH MEP PLANS AND SHARE COMMON PATHWAY. CONTRACTOR SHALL PROVIDE AND INSTALL DATA CABLING TO FLOOR BOX, FACEPLATE(S) AND DATA JACK(S) TO EACH LOCATION SHOWN. REFERENCE DATA NOMENCLATURE FOR DATA OUTLET QUANTITY AND INSTALLATION HEIGHT AND TYPE.

DATA OUTLET(S) INSTALLED ABOVE CEILING SPACE. CONTRACTOR SHALL PROVIDE AND INSTALL A 1-GANG BACK BOX 6" ABOVE CEILING. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL 6" OF 1" CONDUIT PATHWAY FROM 1-GANG BACK BOX. CONTRACTOR SHALL PROVIDE AND INSTALL DATA CABLING TO 1-GANG BACK BOX, FACEPLATE(S) AND DATA JACK(S) TO EACH LOCATION SHOWN.

OUTLET INSTALLATION LOCATION

XX #

INDICATES QUANTITY OF DATA DROPS TO BE INSTALLED

OUTLET INSTALLATION TYPE:

AC - OUTLET INSTALLED IN CEILING SPACE
AP - OUTLET INSTALLED ABOVE CEILING FOR ACCESS POINT
CC - OUTLET INSTALL 18" ON CENTER AFF
FB - OUTLET INSTALLED IN FLOOR BOX
FN - OUTLET INSTALLED IN FURNITURE
HB - OUTLET INSTALLED IN CEILING SPACE FOR PANIC BUTTON HUB
HD - OUTLET INSTALLED AT 44" AFF
HS - OUTLET INSTALLED AT 12" AFF UNO
MB - OUTLET INSTALLED 6" ABOVE MARKER BOARD
ML - OUTLET INSTALLED 18" AFF IN MULLION
PI - OUTLET INSTALLED IN CEILING FOR PAGING INTERFACE
POS - OUTLET INSTALLED ABOVE WORK SURFACE FOR POINT OF SALES
RW - OUTLET INSTALLED IN RACEWAY
SC - OUTLET INSTALLED FOR SURVEILLANCE CAMERA
TV - OUTLET INSTALLED AT 24" BELOW CEILING HEIGHT UNO
VP - OUTLET INSTALLED AT PROJECTOR LOCATION
WS - OUTLET INSTALLED ABOVE WORK SURFACE

DATA SYMBOLS LEGEND

SINGLE SIDED SPEAKER CLOCK LOCATION. CONTRACTOR SHALL PROVIDE REQUIRED BACK BOX FOR SINGLE SIDED SPEAKER CLOCK INSTALLATION FOR ROUGH-IN. CONTRACTOR SHALL COORDINATE FINAL HEIGHT OF CLOCK PRIOR TO FINAL ROUGH IN. CONTRACTOR SHALL PROVIDE AND INSTALL (1) 1" CONDUIT FROM NEAREST ACCESSIBLE CEILING SPACE TO CONTRACTOR'S BACK BOX. CONTRACTOR SHALL PROVIDE AND INSTALL SINGLE SIDED CLOCK AS PER SPECIFICATIONS. ALL CLOCKS ARE MOUNTED AT 8'-0" AFF UNLESS NOTED OTHERWISE.

DOUBLE SIDED SPEAKER CLOCK LOCATION. CONTRACTOR SHALL PROVIDE REQUIRED BACK BOX FOR DOUBLE SIDED SPEAKER CLOCK INSTALLATION FOR ROUGH-IN. CONTRACTOR SHALL COORDINATE FINAL HEIGHT OF CLOCK PRIOR TO FINAL ROUGH IN. CONTRACTOR SHALL PROVIDE AND INSTALL (1) 1" CONDUIT FROM NEAREST ACCESSIBLE CEILING SPACE TO CONTRACTOR'S BACK BOX. CONTRACTOR SHALL PROVIDE AND INSTALL DOUBLE SIDED CLOCK AS PER SPECIFICATIONS. ALL CLOCKS ARE MOUNTED AT 8'-0" AFF UNLESS NOTED OTHERWISE.

EXTRA-WIDE SINGLE SIDED SPEAKER CLOCK LOCATION. CONTRACTOR SHALL PROVIDE REQUIRED BACK BOX FOR SINGLE SIDED SPEAKER CLOCK INSTALLATION FOR ROUGH-IN. CONTRACTOR SHALL COORDINATE FINAL HEIGHT OF CLOCK PRIOR TO FINAL ROUGH IN. CONTRACTOR SHALL PROVIDE AND INSTALL (1) 1" CONDUIT FROM NEAREST ACCESSIBLE CEILING SPACE TO CONTRACTOR'S BACK BOX. CONTRACTOR SHALL PROVIDE AND INSTALL SINGLE SIDED CLOCK AS PER SPECIFICATIONS. ALL CLOCKS ARE MOUNTED AT 8'-0" AFF UNLESS NOTED OTHERWISE.

PAGING / INTERCOM CABINET LOCATION.

PAGING / INTERCOM AUDIO INPUT PLATE LOCATED UNDER RECEPTION DESK. CONTRACTOR TO PROVIDE BACK BOX WITH (1) 1" CONDUIT TO NEAREST ACCESSIBLE CEILING. CONTRACTOR TO PROVIDE COVER PLATE.

ADMINISTRATIVE INTERCOM PHONE LOCATION. CONTRACTOR TO PROVIDE CABLING.

APPROXIMATE LOCATION OF PAGING / INTERCOM SPEAKER/HORN. CONTRACTOR SHALL PROVIDE AND INSTALL (1) 1" CONDUIT SLEEVE FROM NEAREST ADJACENT AND ACCESSIBLE CEILING SPACE TO BACK BOX. INSTALLED 8'-0" AFF FOR INTERIOR AND 12' AFF FOR ALL EXTERIOR LOCATIONS UNO. CONTRACTOR SHALL COORDINATE FINAL INSTALLATION LOCATION AND HEIGHT. NO POWER REQUIRED AT THESE LOCATIONS. FAILURE TO COORDINATE MAY RESULT IN RELOCATION OF THE HORN AT CONTRACTOR'S EXPENSE.

APPROXIMATE LOCATION OF CEILING MOUNTED INTERCOM SPEAKER LOCATION. CONTRACTOR SHALL PROVIDE AND INSTALL CEILING MOUNTED INTERCOM SPEAKER. CONTRACTOR SHALL SECURE AND SUPPORT PER MANUFACTURER'S SPECIFICATIONS AND TO TYPE OF CEILING. REFERENCE ARCHITECTURAL RCP PLANS FOR CEILING HEIGHT AND TYPE. CONTRACTOR SHALL COORDINATE WITH MEP PLANS FOR DEVICES ON THE GRID AND IN THE CEILING SPACE. FAILURE TO COORDINATE WILL RESULT IN RELOCATION OF THE SPEAKER AT CONTRACTOR'S EXPENSE.

VOLUME CONTROL LOCATIONS. CONTRACTOR SHALL PROVIDE AND INSTALL (1) 1" CONDUIT FROM ACCESSIBLE CEILING SPACE TO BACK BOX. CONTRACTOR SHALL PROVIDE AND INSTALL VOLUME CONTROL PER SPECIFICATIONS AT LOCATIONS SHOWN ON PLANS. REFERENCE AV DETAIL NOMENCLATURE FOR INSTALLATION HEIGHT AND TYPE.

PUBLIC ADDRESS SYSTEM AND CLOCK SYMBOLS LEGEND

LOCAL SOUND SYSTEM SURFACE MOUNTED SPEAKERS. CONTRACTOR SHALL SUPPORT SPEAKERS PER MANUFACTURER'S APPROVED METHODS ONLY FROM EITHER STRUCTURAL STEEL OR WITH UNI-STRUT SUPPORTED BY THE STRUCTURAL STEEL. REFERENCE STRUCTURAL DRAWINGS FOR JOISTS AND BEAM LOCATIONS. CONTRACTOR SHALL PROVIDE AND INSTALL (1) 1 1/4" CONDUIT FROM ACCESSIBLE CEILING SPACE TO BACK BOX. CONTRACTOR SHALL SUPPORT SPEAKER CABLE IN SEPARATE J-HOOKS FROM STRUCTURED CABLING FROM SOUND EQUIPMENT RACK TO SPEAKER LOCATION.

LOCAL SOUND SYSTEM SPEAKERS IN CEILING. CONTRACTOR SHALL SUPPORT SPEAKERS IN CEILING PER MANUFACTURER'S APPROVED METHODS ONLY FROM EITHER STRUCTURAL STEEL OR WITH UNI-STRUT SUPPORTED BY THE STRUCTURAL STEEL. REFERENCE STRUCTURAL DRAWINGS FOR JOISTS AND BEAM LOCATIONS.

AUDIO AND/OR VIDEO OUTLET ON WALL. CONTRACTOR SHALL PROVIDE AND INSTALL (1) 1 1/4" CONDUIT FROM ACCESSIBLE CEILING SPACE TO BACK BOX (UNO) AT TV - OUTLET INSTALLED BEHIND TV. COORDINATE AV LOCATIONS SO THAT THEY ARE HIDDEN FROM AUDIENCE VIEW AND BEHIND DISPLAY. REFERENCE DETAILS AND/OR KEYNOTES FOR COORDINATION. CONTRACTOR SHALL PROVIDE AND INSTALL AV CABLING, FACEPLATE(S) AND JACKS. REFERENCE DETAILS AND DRAWINGS FOR OUTLET TYPES AND QUANTITIES.

CEILINGS MOUNTED FLAT PANEL MONITOR LOCATION. CONTRACTOR SHALL PROVIDE AND INSTALL (1) 1 1/4" CONDUIT FROM ACCESSIBLE CEILING SPACE TO BACK BOX (UNO). COORDINATE AV LOCATIONS SO THAT AV OUTLETS ARE AT THE SAME HEIGHT AND IN CLOSE PROXIMITY TO POWER AND OTHER INPUT/OUTPUT LOCATIONS. REFERENCE DETAILS FOR COORDINATION. CONTRACTOR SHALL PROVIDE AND INSTALL A/V CABLING, FACEPLATE(S) AND JACKS. REFERENCE DETAILS AND DRAWINGS FOR OUTLET TYPES AND QUANTITIES.

AUDIO VISUAL SYMBOLS LEGEND

CEILING MOUNTED AUDIO-VISUAL OR PUBLIC ADDRESS SYSTEM DEVICE.

FLOOR MOUNTED AUDIO-VISUAL OR PUBLIC ADDRESS SYSTEM DEVICE.

WALL MOUNTED AUDIO-VISUAL OR PUBLIC ADDRESS SYSTEM DEVICE.

S1 XX

FB XX

HS1 XX

DEVICE TYPE ONLY. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

DEVICE TYPE ONLY. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

DEVICE TYPE ONLY. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

AUDIO-VISUAL AND PUBLIC ADDRESS SYSTEM SYMBOL CALL OUT

PAGING MATRIX

Locations	Demo Requirements	New Clock Speaker Type Requirement	Double	Single - W	Double - W
Classrooms	Remove ceiling speaker. Remove and cover over PTT button. Replace ceiling tile where ceiling speaker was installed. Remove all wiring from device to head end. If classroom has a wall mounted speaker then remove speaker and cover over back box with single gang stainless steel blank plate.	1 wall mounted above door or nearest door. Avoid CMU walls if possible. If CMU only option then include raceway for pathway. Data drop above ceiling.			
Conference Rooms	Remove ceiling speaker. Remove and cover over PTT buttons. Replace ceiling tile where ceiling speaker was installed. Remove all wiring from device to head end.	1 wall mounted above door or nearest door			
Cafeteria ES	Remove ceiling or wall mounted surface speakers. Do not attempt to remove any wall mounted speaker installed flush in the wall. Replace ceiling tile where ceiling speaker was installed. Remove all wiring from device to head end. Add cover plate over speaker back box if speaker was wall mounted.	1 or 2 single sided, larger model, depending on room size, wall mounted,		1 or 2 single sided, larger model, depending on size, wall mounted,	
Cafeteria MS	Remove ceiling or wall mounted surface speakers. Do not attempt to remove any wall mounted speaker installed flush in the wall. Replace ceiling tile where ceiling speaker was installed. Remove all wiring from device to head end. Add cover plate over speaker back box if speaker was wall mounted.	1 or 2 single sided, larger model, depending on room size, wall mounted,		1 or 2 single sided, larger model, depending on size, wall mounted,	
Cafeteria HS	Remove ceiling or wall mounted surface speakers. Do not attempt to remove any wall mounted speaker installed flush in the wall. Replace ceiling tile where ceiling speaker was installed. Remove all wiring from device to head end. Add cover plate over speaker back box if speaker was wall mounted.	2 or more single sided, larger model, depending on room size, wall mounted,		1 or 2 single sided, larger model, depending on size, wall mounted,	
Gym or MP - ES	Remove ceiling or wall mounted surface speakers. Do not attempt to remove any wall mounted speaker installed flush in the wall. Replace ceiling tile where ceiling speaker was installed. Remove all wiring from device to head end. Add cover plate over speaker back box if speaker was wall mounted.	1 or 2 single sided, larger model, depending on room size, wall mounted,		1 or 2 single sided, larger model, depending on size, wall mounted,	
Gym or MP - MS	Remove ceiling or wall mounted surface speakers. Do not attempt to remove any wall mounted speaker installed flush in the wall. Replace ceiling tile where ceiling speaker was installed. Remove all wiring from device to head end. Add cover plate over speaker back box if speaker was wall mounted.	1 or 2 single sided, larger model, depending on room size, wall mounted,		1 or 2 single sided, larger model, depending on size, wall mounted,	
Gym or MP - HS	Remove ceiling or wall mounted surface speakers. Do not attempt to remove any wall mounted speaker installed flush in the wall. Replace ceiling tile where ceiling speaker was installed. Remove all wiring from device to head end. Add cover plate over speaker back box if speaker was wall mounted.	2 or more single sided, larger model, depending on room size, wall mounted,		1 or 2 single sided, larger model, depending on size, wall mounted,	
General Corridors	Remove ceiling speaker. Remove and cover over PTT button. Replace ceiling tile where ceiling speaker was installed. Remove all wiring from device to head end.	1 double sided speaker clock per 70', augment with ceiling mounted S1 or add second speaker clock if practical.	1 speaker per 70', augment with S1 or add second speaker clock if practical.		
Library	Remove ceiling or wall mounted surface speakers. Do not attempt to remove any wall mounted speaker installed flush in the wall. Replace ceiling tile where ceiling speaker was installed. Remove all wiring from device to head end. Add cover plate over speaker back box if speaker was wall mounted.	1 to 2 single sided wall mounted with additional S1 in support			
Restrooms	Remove existing ceiling speaker and replace with new. Most restrooms do not have speakers in them now.	Ceiling mounted S1 only regardless of ceiling types			
Locker Rooms - HS Only	Remove horns or mounted ceiling speakers. Cover back boxes with single gang stainless steel faceplate cover.	Wall mounted single sided speaker clock, like CR			
Staff lounge or break rooms	Remove ceiling speaker. Remove and cover over PTT button. Replace ceiling tile where ceiling speaker was installed. Remove all wiring from device to head end. If room has a wall mounted speaker then remove speaker and cover over back box with single gang stainless steel blank plate.	Single sided speaker clock, wall mounted on wall in room.			

Description

Date :

Revision:

Project:

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



GENERAL NOTES AND SYMBOLS

Job No.
D-SAN-1003-01

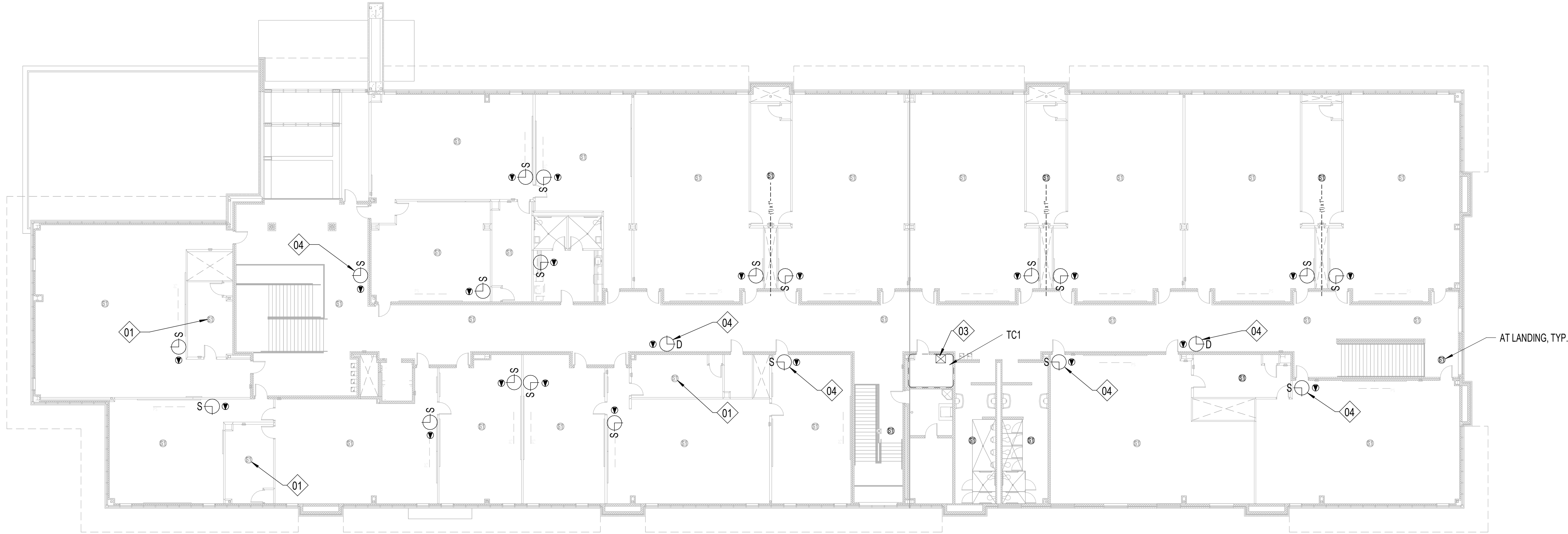
Sheet No.
TG101

Drawn By:
CV

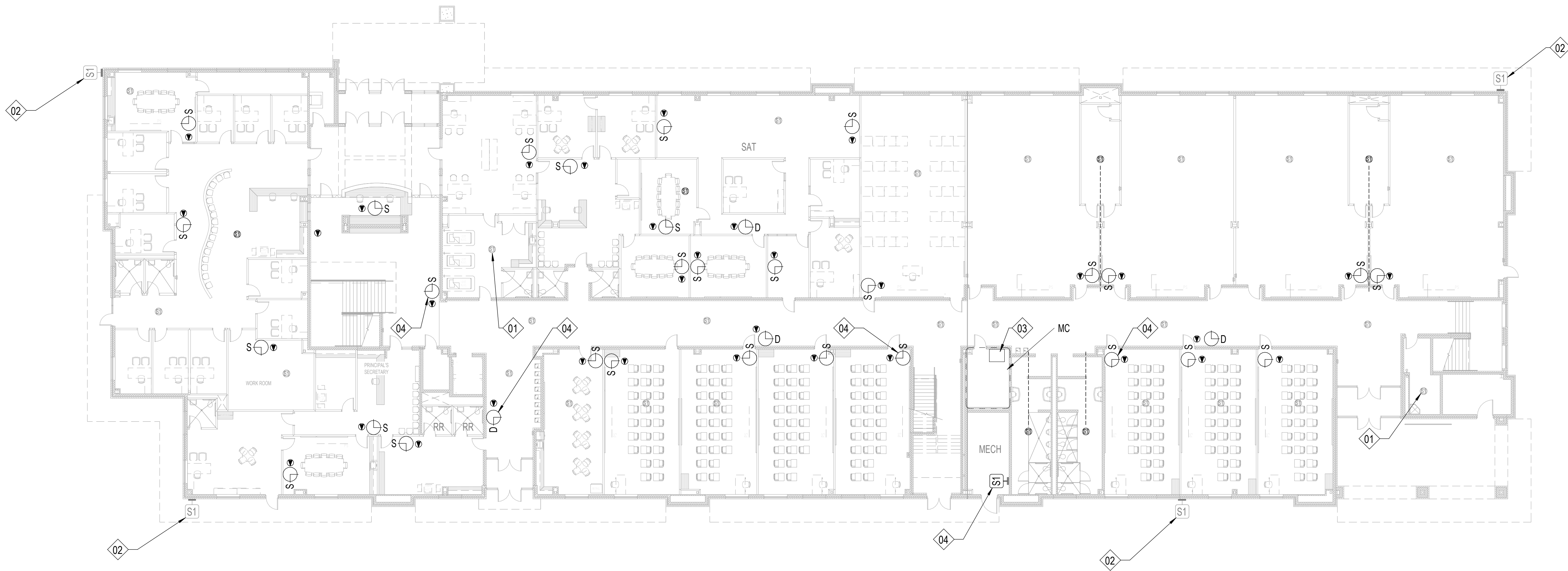
Designed By:
CV

Date:
04/29/2026

Autosave Docs:CRUX-San Angelo ISD Paging System UpgradeD-SAN-1003-01 SANSD HS -Paging Upgrade, TECH, 02240802D.rvt



2 FLOOR PLAN - CENTRAL HS - BUILDING A - TUCKER - LEVEL 2
T114 1/16" = 1'-0"



1 FLOOR PLAN - CENTRAL HS - BUILDING A - TUCKER - LEVEL 1
T101 1/16" = 1'-0"

SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

IN AREAS WITH CONCRETE OR MASONRY WALLS, CONTRACTOR SHALL PROVIDE SURFACE RACEWAY SYSTEM.

IN AREAS WITH EXPOSED CEILINGS, CONTRACTOR SHALL INSTALL ALL CABLING IN CONDUIT. COORDINATE PAINT/FINISH WITH OWNER.

CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.

CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.

CONTRACTOR WILL REQUIRE A LIFT TO ACCESS LAY-IN CEILING IN ALL FINE ARTS AND GYMNASIUM AREAS.

KEYNOTE LEGEND

(NOT ALL KEYNOTES MAY APPLY.)

01. EXISTING, CONTRACTOR SHALL REPLACE WITH NEW DEVICE AND NEW CABLING. CEILING TILE MAY REMAIN IN PLACE UNLESS DAMAGED.

02. EXISTING, TO REMAIN. CONTRACTOR SHALL INSTALL BRIDGE FROM ANALOG SPEAKER TO IP HEAD END.

03. CONTRACTOR SHALL COMPLETELY REMOVE ALL ABANDONED ANALOG SPEAKER WIRING AND SUPPORTING TERMINAL BLOCKS FROM THE FACILITY. TERMINAL BLOCKS THAT SUPPORT OTHER EXISTING DEVICES SHALL REMAIN.

04. INSTALL PLASTIC 1/2" RACEWAY FOR PATCH CABLE TO TOP OF SURFACE MOUNTED CLOCK BACK BOX. TERMINATE DATA ABOVE CEILING.

05. EXISTING, CONTRACTOR SHALL REMOVE DEVICE. DEMOLISH CABLING BACK TO ITS ORIGIN, AND INSTALL NEW BLANK FACEPLATE.

06. INSTALL DATA IN ADJACENT OVERHEAD CEILING SPACE. PROVIDE 1" SLEEVE THROUGH CMU WALL TO BACK OF CLOCK DISPLAY.

07. SURFACE MOUNTED CONDUIT NEEDED FOR ALL NEW PAGING AND RELATED DEVICES.

08. PROVIDE 1" CONDUIT TO TOP OF SURFACE MOUNTED CLOCK BACK BOX FOR PATCH CABLE. DATA SHALL BE TERMINATED ABOVE CEILING.

09. INSTALL SURFACE MOUNTED RACEWAY FROM DEVICE BACK TO TECH CLOSET LOCATION.

10. CEILING SPEAKER IN CAN MOUNTED TO STRUCTURAL STEEL.

11. THIS IS A PLASTER CEILING. CONDUIT OR PLASTIC RACEWAY WILL NEED TO BE SECURED TO THE CEILING ITSELF.

12. SPEAKERS MOUNTED TO STRUCTURAL STEEL.

13. INSTALL SURFACE RACEWAY FOR ENTIRE PATH FROM TC TO DEVICE.

14. EXISTING SPEAKER BUILT FLUSH IN WALL. DO NOT REMOVE. INSTALL NEW DEVICE ADJACENT TO EXISTING. INSTALL DATA DROP IN ACCESSIBLE CEILING IN ADJACENT SPACE.

15. REMOVE EXISTING HORNS AND LEAVE MOUNTS INTACT. REMOVE EXISTING CABLING. INSTALL NEW DUAL SIDED DEVICE ADJACENT TO FORMER HORN LOCATION. INSTALL DATA IN ADJACENT CEILING SPACE.

16. NEW RACK NEEDED AT THIS LOCATION. EXISTING RACK IS AT CAPACITY.

17. RACK AT CAPACITY. ADD PLYWOOD ADJACENT AND INCREASE SIZE OF RACK.

18. RECENTLY INSTALLED SPEAKER. REMOVE, PROTECT, AND REDEPLOY WHERE OTHER NEW ANALOG CEILING SPEAKERS ARE NEEDED.

19. J-BOX LARGER THAN 4X4" NEEDED HERE. PROVIDE ADDITIONAL SLACK FOR FUTURE RETERMINATIONS.

20. FIELD CONDITIONS MAY DIFFER FROM WHAT IS SHOWN. COORDINATE EXACT LOCATION WITH OWNER.

21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.

Description

Date:

Revision:

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01

Project:



FLOOR PLAN - CENTRAL
HS - BUILDING A - TUCKER

Job No.

D-SAN-1003-01

Drawn By:

CV

Designed By:

CV

Date:

04/29/2026

Sheet No.

T101

Autodesk Docs\CRUX-San Angelo ISD Paging System Upgrade\B-SAN-1003-01 SANSD ISD Paging Upgrade, TECH, 02\HOSTED\rv4



1 FLOOR PLAN - CENTRAL HS - BUILDING B - SOUSA HALL - SECOND FLOOR
T102 3/32" = 1'-0"

2 FLOOR PLAN - CENTRAL HS - BUILDING B - SOUSA HALL - FIRST FLOOR
T102 3/32" = 1'-0"

SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

IN AREAS WITH CONCRETE OR MASONRY WALLS, CONTRACTOR SHALL PROVIDE SURFACE RACEWAY SYSTEM.

IN AREAS WITH EXPOSED CEILINGS, CONTRACTOR SHALL INSTALL ALL CABLING IN CONDUIT. COORDINATE PAINT/FINISH WITH OWNER.

CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.

CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.

CONTRACTOR WILL REQUIRE A LIFT TO ACCESS LAY-IN CEILING IN ALL FINE ARTS AND GYMNASIUM AREAS.

KEYNOTE LEGEND

(NOT ALL KEYNOTES MAY APPLY)

01. EXISTING, CONTRACTOR SHALL REPLACE WITH NEW DEVICE AND NEW CABLING. CEILING TILE MAY REMAIN IN PLACE UNLESS DAMAGED.

02. EXISTING, TO REMAIN. CONTRACTOR SHALL INSTALL BRIDGE FROM ANALOG SPEAKER TO IP HEAD END.

03. CONTRACTOR SHALL COMPLETELY REMOVE ALL ABANDONED ANALOG SPEAKER WIRING AND SUPPORTING TERMINAL BLOCKS FROM THE FACILITY. TERMINAL BLOCKS THAT SUPPORT OTHER EXISTING DEVICES SHALL REMAIN.

04. INSTALL PLASTIC 1/2" RACEWAY FOR PATCH CABLE TO TOP OF SURFACE MOUNTED CLOCK BACK BOX. TERMINATE DATA ABOVE CEILING.

05. EXISTING, CONTRACTOR SHALL REMOVE DEVICE. DEMOLISH CABLING BACK TO ITS ORIGIN, AND INSTALL NEW BLANK FACEPLATE.

06. INSTALL DATA IN ADJACENT OVERHEAD CEILING SPACE. PROVIDE 1" SLEEVE THROUGH CMU WALL TO BACK OF CLOCK DISPLAY.

07. SURFACE MOUNTED CONDUIT NEEDED FOR ALL NEW PAGING AND RELATED DEVICES.

08. PROVIDE 1" CONDUIT TO TOP OF SURFACE MOUNTED CLOCK BACK BOX FOR PATCH CABLE. DATA SHALL BE TERMINATED ABOVE CEILING.

09. INSTALL SURFACE MOUNTED RACEWAY FROM DEVICE BACK TO TECH CLOSET LOCATION.

10. CEILING SPEAKER IN CAN MOUNTED TO STRUCTURAL STEEL.

11. THIS IS A PLASTER CEILING. CONDUIT OR PLASTIC RACEWAY WILL NEED TO BE SECURED TO THE CEILING ITSELF.

12. SPEAKERS MOUNTED TO STRUCTURAL STEEL.

13. INSTALL SURFACE RACEWAY FOR ENTIRE PATH FROM TC TO DEVICE.

14. EXISTING SPEAKER BUILT FLUSH IN WALL. DO NOT REMOVE. INSTALL NEW DEVICE ADJACENT TO EXISTING. INSTALL DATA DROP IN ACCESSIBLE CEILING IN ADJACENT SPACE.

15. REMOVE EXISTING HORNS AND LEAVE MOUNTS INTACT. REMOVE EXISTING CABLING. INSTALL NEW DUAL SIDED DEVICE ADJACENT TO FORMER HORN LOCATION. INSTALL DATA IN ADJACENT CEILING SPACE.

16. NEW RACK NEEDED AT THIS LOCATION. EXISTING RACK IS AT CAPACITY.

17. RACK AT CAPACITY. ADD PLYWOOD ADJACENT AND INCREASE SIZE OF RACK.

18. RECENTLY INSTALLED SPEAKER. REMOVE, PROTECT, AND REDEPLOY WHERE OTHER NEW ANALOG CEILING SPEAKERS ARE NEEDED.

19. J-BOX LARGER THAN 4X4" NEEDED HERE. PROVIDE ADDITIONAL SLACK FOR FUTURE RETERMINATIONS.

20. FIELD CONDITIONS MAY DIFFER FROM WHAT IS SHOWN. COORDINATE EXACT LOCATION WITH OWNER.

21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.

Description

Date:

Revision:

Project:

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - CENTRAL
HS - BUILDING B - SOUSA
HALL

Job No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026

Sheet No.
T102

Autosave Docs\\CRUX-San Angelo ISD Paging System Upgrade\\D-SAN-1003-01 SANSD ISD Paging Upgrade TECH (25)HOSTED.rvt



SHEET NOTES:
REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

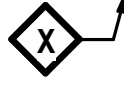
IN AREAS WITH CONCRETE OR MASONRY WALLS, CONTRACTOR SHALL PROVIDE SURFACE RACEWAY SYSTEM.

IN AREAS WITH EXPOSED CEILINGS, CONTRACTOR SHALL INSTALL ALL CABLING IN CONDUIT. COORDINATE PAINT/FINISH WITH OWNER.

CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.

CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.

CONTRACTOR WILL REQUIRE A LIFT TO ACCESS LAY-IN CEILING IN ALL FINE ARTS AND GYMNASIUM AREAS.

- KEYNOTE LEGEND** 
(NOT ALL KEYNOTES MAY APPLY.)
01. EXISTING, CONTRACTOR SHALL REPLACE WITH NEW DEVICE AND NEW CABLING. CEILING TILE MAY REMAIN IN PLACE UNLESS DAMAGED.
 02. EXISTING, TO REMAIN. CONTRACTOR SHALL INSTALL BRIDGE FROM ANALOG SPEAKER TO IP HEAD END.
 03. CONTRACTOR SHALL COMPLETELY REMOVE ALL ABANDONED ANALOG SPEAKER WIRING AND SUPPORTING TERMINAL BLOCKS FROM THE FACILITY. TERMINAL BLOCKS THAT SUPPORT OTHER EXISTING DEVICES SHALL REMAIN.
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 06. INSTALL DATA IN ADJACENT OVERHEAD CEILING SPACE. PROVIDE 1" SLEEVE THROUGH CMU WALL TO BACK OF CLOCK DISPLAY.
 07. SURFACE MOUNTED CONDUIT NEEDED FOR ALL NEW PAGING AND RELATED DEVICES.
 08. PROVIDE 1" CONDUIT TO TOP OF SURFACE MOUNTED CLOCK BACK BOX FOR PATCH CABLE. DATA SHALL BE TERMINATED ABOVE CEILING.
 09. INSTALL SURFACE MOUNTED RACEWAY FROM DEVICE BACK TO TECH CLOSET LOCATION.
 10. CEILING SPEAKER IN CAN MOUNTED TO STRUCTURAL STEEL.
 11. THIS IS A PLASTER CEILING. CONDUIT OR PLASTIC RACEWAY WILL NEED TO BE SECURED TO THE CEILING ITSELF.
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 13. INSTALL SURFACE RACEWAY FOR ENTIRE PATH FROM TC TO DEVICE.
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 15. REMOVE EXISTING HORNS AND LEAVE MOUNTS INTACT, REMOVE EXISTING CABLING. INSTALL NEW DUAL SIDED DEVICE ADJACENT TO FORMER HORN LOCATION. INSTALL DATA IN ADJACENT CEILING SPACE.
 16. NEW RACK NEEDED AT THIS LOCATION. EXISTING RACK IS AT CAPACITY.
 17. RACK AT CAPACITY. ADD PLYWOOD ADJACENT AND INCREASE SIZE OF RACK.
 18. RECENTLY INSTALLED SPEAKER. REMOVE, PROTECT, AND REDEPLOY WHERE OTHER NEW ANALOG CEILING SPEAKERS ARE NEEDED.
 19. J-BOX LARGER THAN 4X4" NEEDED HERE. PROVIDE ADDITIONAL SLACK FOR FUTURE RETERMINATIONS.
 20. FIELD CONDITIONS MAY DIFFER FROM WHAT IS SHOWN. COORDINATE EXACT LOCATION WITH OWNER.
 21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.

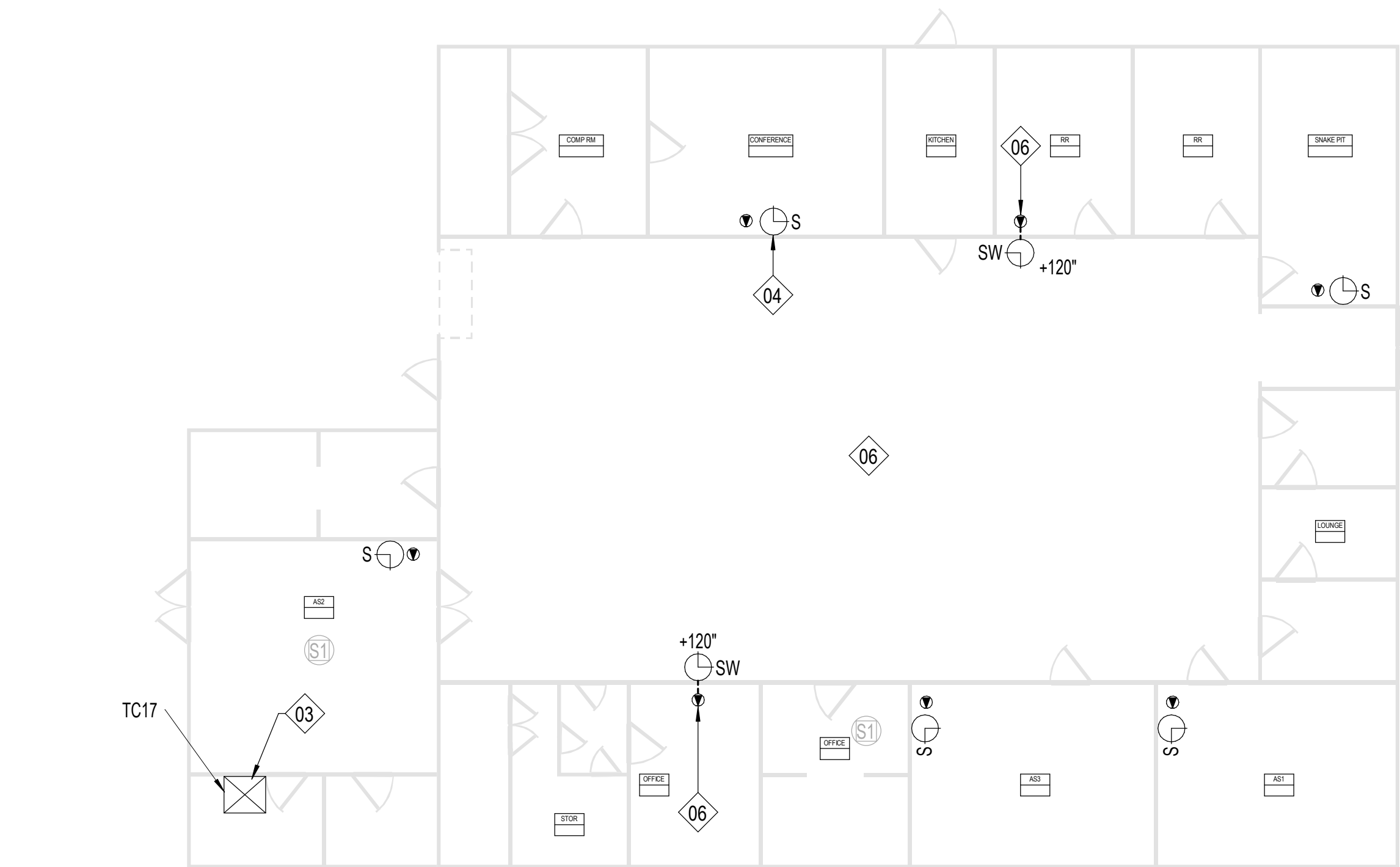
SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - CENTRAL
HS - BUILDING B - SOUSA
HALL - REVISED WING

Job. No. D-SAN-1003-01	Sheet No.
Drawn By: CV	T103
Designed By: CV	
Date: 04/29/2026	

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1 FLOOR PLAN - CENTRAL HS - BUILDING C - ROTC/POWELL
T104 1/8" = 1'-0"

SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

IN AREAS WITH CONCRETE OR MASONRY WALLS, CONTRACTOR SHALL PROVIDE SURFACE RACEWAY SYSTEM.

IN AREAS WITH EXPOSED CEILINGS, CONTRACTOR SHALL INSTALL ALL CABLING IN CONDUIT. COORDINATE PAINT/FINISH WITH OWNER.

CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.

CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.

CONTRACTOR WILL REQUIRE A LIFT TO ACCESS LAY-IN CEILING IN ALL FINE ARTS AND GYMNASIUM AREAS.

KEYNOTE LEGEND

(NOT ALL KEYNOTES MAY APPLY.)

01. EXISTING, CONTRACTOR SHALL REPLACE WITH NEW DEVICE AND NEW CABLING. CEILING TILE MAY REMAIN IN PLACE UNLESS DAMAGED.

02. EXISTING, TO REMAIN. CONTRACTOR SHALL INSTALL BRIDGE FROM ANALOG SPEAKER TO IP HEAD END.

03. CONTRACTOR SHALL COMPLETELY REMOVE ALL ABANDONED ANALOG SPEAKER WIRING AND SUPPORTING TERMINAL BLOCKS FROM THE FACILITY. TERMINAL BLOCKS THAT SUPPORT OTHER EXISTING DEVICES SHALL REMAIN.

04. INSTALL PLASTIC 1/2" RACEWAY FOR PATCH CABLE TO TOP OF SURFACE MOUNTED CLOCK BACK BOX. TERMINATE DATA ABOVE CEILING.

05. EXISTING, CONTRACTOR SHALL REMOVE DEVICE. DEMOLISH CABLING BACK TO ITS ORIGIN, AND INSTALL NEW BLANK FACEPLATE.

06. INSTALL DATA IN ADJACENT OVERHEAD CEILING SPACE. PROVIDE 1" SLEEVE THROUGH CMU WALL TO BACK OF CLOCK DISPLAY.

07. SURFACE MOUNTED CONDUIT NEEDED FOR ALL NEW PAGING AND RELATED DEVICES.

08. PROVIDE 1" CONDUIT TO TOP OF SURFACE MOUNTED CLOCK BACK BOX FOR PATCH CABLE. DATA SHALL BE TERMINATED ABOVE CEILING.

09. INSTALL SURFACE MOUNTED RACEWAY FROM DEVICE BACK TO TECH CLOSET LOCATION.

10. CEILING SPEAKER IN CAN MOUNTED TO STRUCTURAL STEEL.

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12. SPEAKERS MOUNTED TO STRUCTURAL STEEL.

13. INSTALL SURFACE RACEWAY FOR ENTIRE PATH FROM TC TO DEVICE.

14. EXISTING SPEAKER BUILT FLUSH IN WALL. DO NOT REMOVE. INSTALL NEW DEVICE ADJACENT TO EXISTING. INSTALL DATA DROP IN ACCESSIBLE CEILING IN ADJACENT SPACE.

15. REMOVE EXISTING HORNS AND LEAVE MOUNTS INTACT. REMOVE EXISTING CABLING. INSTALL NEW DUAL SIDED DEVICE ADJACENT TO FORMER HORN LOCATION. INSTALL DATA IN ADJACENT CEILING SPACE.

16. NEW RACK NEEDED AT THIS LOCATION. EXISTING RACK IS AT CAPACITY.

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18. RECENTLY INSTALLED SPEAKER. REMOVE, PROTECT, AND REDEPLOY WHERE OTHER NEW ANALOG CEILING SPEAKERS ARE NEEDED.

19. J-BOX LARGER THAN 4X4" NEEDED HERE. PROVIDE ADDITIONAL SLACK FOR FUTURE RETERMINATIONS.

20. FIELD CONDITIONS MAY DIFFER FROM WHAT IS SHOWN. COORDINATE EXACT LOCATION WITH OWNER.

21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.

Description

Date

Revision

Project

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



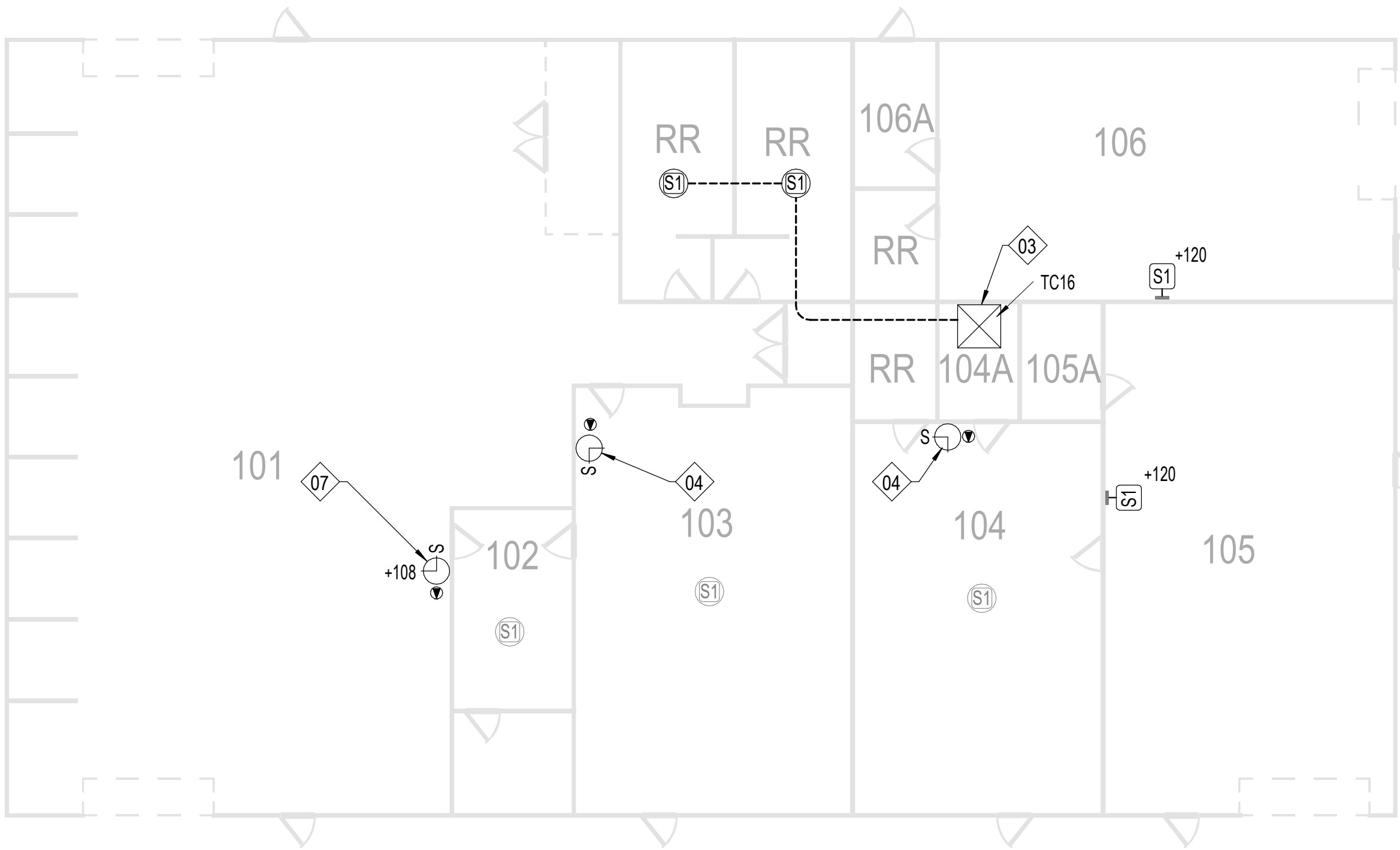
FLOOR PLAN - CENTRAL
HS - BUILDING C -
ROTC/POWELL

Job No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026

Sheet No.
T104

Autosave Docs\\CRUX-San Angelo ISD Paging System Upgrade\\D-SAN-1003-01 SANSD-103_Paging Upgrade_Tech_02\\HOSTED.rvt

1 FLOOR PLAN - CENTRAL HS - BUILDING D - KELTON - AG & BUILDING MAINTENANCE
1105 1/8" = 1'-0"



SHEET NOTES:

- REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.
- ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.
- IN AREAS WITH CONCRETE OR MASONRY WALLS, CONTRACTOR SHALL PROVIDE SURFACE RACEWAY SYSTEM.
- IN AREAS WITH EXPOSED CEILINGS, CONTRACTOR SHALL INSTALL ALL CABLING IN CONDUIT. COORDINATE PAINT/FINISH WITH OWNER.
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21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - CENTRAL
HS - BUILDING D - KELTON
AG

Job No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026

Sheet No.
T105

Autodesk Docs\\CRUX-San Angelo ISD Paging System Upgrade\\D-SAN-1003-01 SANSD-103_Paging Upgrade_Tech_02\\HOSTED.rvt

1	FLOOR PLAN - CENTRAL HS - BUILDING E - SMITH GYM
T106	1/8" = 1'-0"

ROOMS IN THIS AREA WILL REQUIRE A LIFT.



SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

IN AREAS WITH CONCRETE OR MASONRY WALLS, CONTRACTOR SHALL PROVIDE SURFACE RACEWAY SYSTEM.

IN AREAS WITH EXPOSED CEILINGS, CONTRACTOR SHALL INSTALL ALL CABLING IN CONDUIT. COORDINATE PAINT/FINISH WITH OWNER.

CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.

CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.

CONTRACTOR WILL REQUIRE A LIFT TO ACCESS LAY-IN CEILING IN ALL FINE ARTS AND GYMNASIUM AREAS.

KEYNOTE LEGEND

(NOT ALL KEYNOTES MAY APPLY.)

01. EXISTING, CONTRACTOR SHALL REPLACE WITH NEW DEVICE AND NEW CABLING. CEILING TILE MAY REMAIN IN PLACE UNLESS DAMAGED.

02. EXISTING, TO REMAIN. CONTRACTOR SHALL INSTALL BRIDGE FROM ANALOG SPEAKER TO IP HEAD END.

03. CONTRACTOR SHALL COMPLETELY REMOVE ALL ABANDONED ANALOG SPEAKER WIRING AND SUPPORTING TERMINAL BLOCKS FROM THE FACILITY. TERMINAL BLOCKS THAT SUPPORT OTHER EXISTING DEVICES SHALL REMAIN.

04. INSTALL PLASTIC 1/2" RACEWAY FOR PATCH CABLE TO TOP OF SURFACE MOUNTED CLOCK BACK BOX. TERMINATE DATA ABOVE CEILING.

05. EXISTING, CONTRACTOR SHALL REMOVE DEVICE. DEMOLISH CABLING BACK TO ITS ORIGIN, AND INSTALL NEW BLANK FACEPLATE.

06. INSTALL DATA IN ADJACENT OVERHEAD CEILING SPACE. PROVIDE 1" SLEEVE THROUGH CMU WALL TO BACK OF CLOCK DISPLAY.

07. SURFACE MOUNTED CONDUIT NEEDED FOR ALL NEW PAGING AND RELATED DEVICES.

08. PROVIDE 1" CONDUIT TO TOP OF SURFACE MOUNTED CLOCK BACK BOX FOR PATCH CABLE. DATA SHALL BE TERMINATED ABOVE CEILING.

09. INSTALL SURFACE MOUNTED RACEWAY FROM DEVICE BACK TO TECH CLOSET LOCATION.

10. CEILING SPEAKER IN CAN MOUNTED TO STRUCTURAL STEEL.

11. THIS IS A PLASTER CEILING. CONDUIT OR PLASTIC RACEWAY WILL NEED TO BE SECURED TO THE CEILING ITSELF.

12. SPEAKERS MOUNTED TO STRUCTURAL STEEL.

13. INSTALL SURFACE RACEWAY FOR ENTIRE PATH FROM TC TO DEVICE.

14. EXISTING SPEAKER BUILT FLUSH IN WALL. DO NOT REMOVE. INSTALL NEW DEVICE ADJACENT TO EXISTING. INSTALL DATA DROP IN ACCESSIBLE CEILING IN ADJACENT SPACE.

15. REMOVE EXISTING HORNS AND LEAVE MOUNTS INTACT, REMOVE EXISTING CABLING. INSTALL NEW DUAL SIDED DEVICE ADJACENT TO FORMER HORN LOCATION. INSTALL DATA IN ADJACENT CEILING SPACE.

16. NEW RACK NEEDED AT THIS LOCATION. EXISTING RACK IS AT CAPACITY.

17. RACK AT CAPACITY. ADD PLYWOOD ADJACENT AND INCREASE SIZE OF RACK.

18. RECENTLY INSTALLED SPEAKER. REMOVE, PROTECT, AND REDEPLOY WHERE OTHER NEW ANALOG CEILING SPEAKERS ARE NEEDED.

19. J-BOX LARGER THAN 4X4" NEEDED HERE. PROVIDE ADDITIONAL SLACK FOR FUTURE RETERMINATIONS.

20. FIELD CONDITIONS MAY DIFFER FROM WHAT IS SHOWN. COORDINATE EXACT LOCATION WITH OWNER.

21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.

Description

Date :

Revision:

Project:

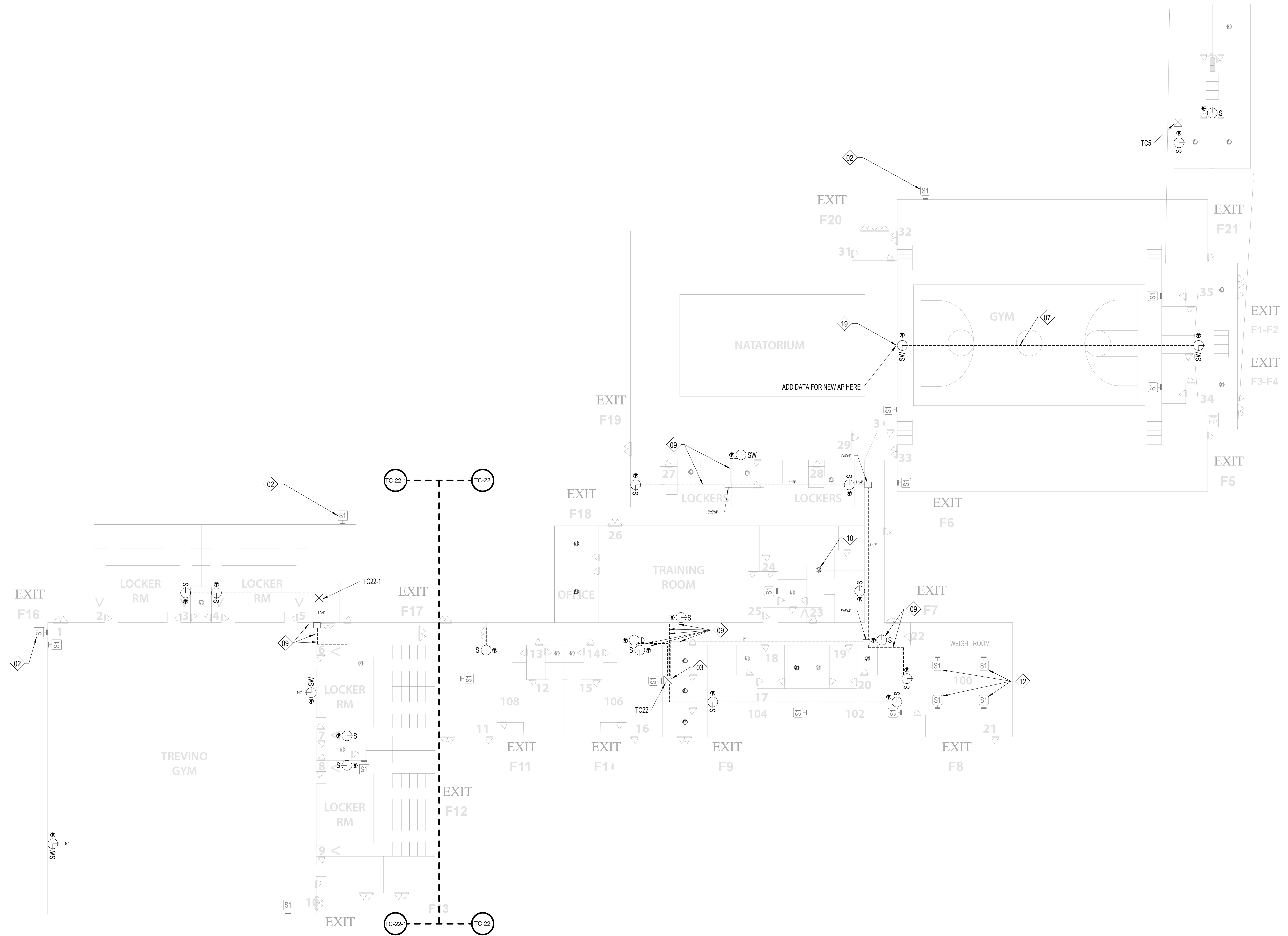
SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - CENTRAL
HS - BUILDING E - SMITH
GYM

Job. No. D-SAN-1003-01	Sheet No.
Drawn By: CV	T106
Designed By: CV	
Date: 04/29/2026	

Autosave Docs\CRUX-San Angelo ISD Paging System Upgrade\B SAN-1003-01 SANSD HS Paging Upgrade, TECH, 02\HOSTED.rvt



1 FLOOR PLAN - CENTRAL HS - BUILDING F - DEDRICKSON AND TREVINO
T107 1/16" = 1'-0"

SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

IN AREAS WITH CONCRETE OR MASONRY WALLS, CONTRACTOR SHALL PROVIDE SURFACE RACEWAY SYSTEM.

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CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.

CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.

CONTRACTOR WILL REQUIRE A LIFT TO ACCESS LAY-IN CEILING IN ALL FINE ARTS AND GYMNASIUM AREAS.

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(NOT ALL KEYNOTES MAY APPLY.)

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03. CONTRACTOR SHALL COMPLETELY REMOVE ALL ABANDONED ANALOG SPEAKER WIRING AND SUPPORTING TERMINAL BLOCKS FROM THE FACILITY. TERMINAL BLOCKS THAT SUPPORT OTHER EXISTING DEVICES SHALL REMAIN.

04. INSTALL PLASTIC 1/2" RACEWAY FOR PATCH CABLE TO TOP OF SURFACE MOUNTED CLOCK BACK BOX. TERMINATE DATA ABOVE CEILING.

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20. FIELD CONDITIONS MAY DIFFER FROM WHAT IS SHOWN. COORDINATE EXACT LOCATION WITH OWNER.

21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.

Description

Date:

Revision:

Project:

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - CENTRAL
HS - BUILDING F -
DEDRICKSON AND
TREVINO

Job. No.
D-SAN-1003-01

Drawn By:
CV

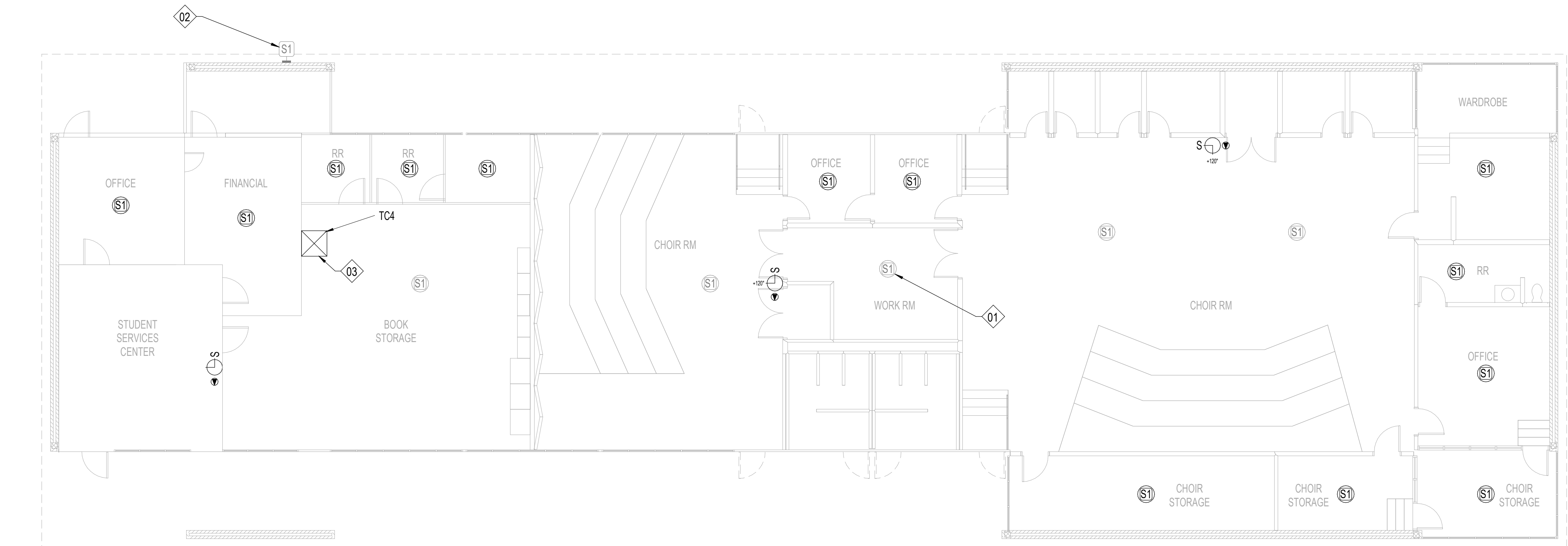
Designed By:
CV

Date:
04/29/2026

Sheet No.

T107

Autodesk Docs\CRUX-San Angelo ISD Paging System Upgrade\B SAN-1003-01 SANSD ISD Paging Upgrade, TECH, 02\HOSTED\rv4



1 FLOOR PLAN - CENTRAL HS - BUILDING G - MICHELANGELO - STUDENT SERVICES/FINE ARTS
T108 1/8" = 1'-0"

SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

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CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.

CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.

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Description

Date :

Revision:

Project:

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01

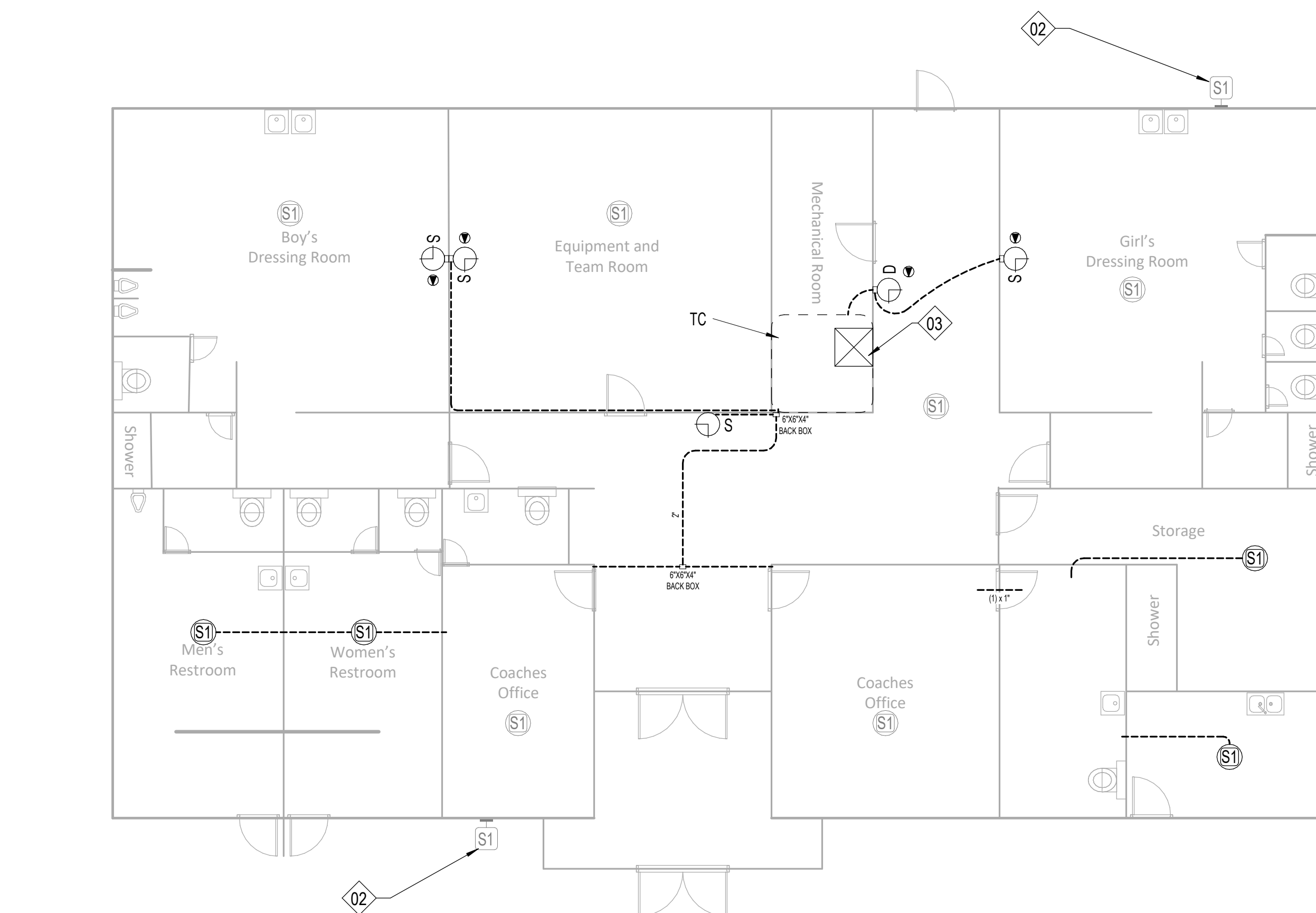


FLOOR PLAN - CENTRAL
HS - BUILDING G -
MICHELANGELO

Job. No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026

Sheet No.

T108



1	FLOOR PLAN - CENTRAL HS - BUILDING H - TENNIS BUILDING
T109	1/8" = 1'-0"

SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT
SPECIFIC NOTES.

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PROVIDE 1" SLEEVE THROUGH CMU WALL TO BACK OF CLOCK
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Description

9

Revision:

Project:



FLOOR PLAN - CENTRAL
HS - BUILDING H - TENNIS

Job. No.
D-SAN-1003-01

Drawn By:
CV

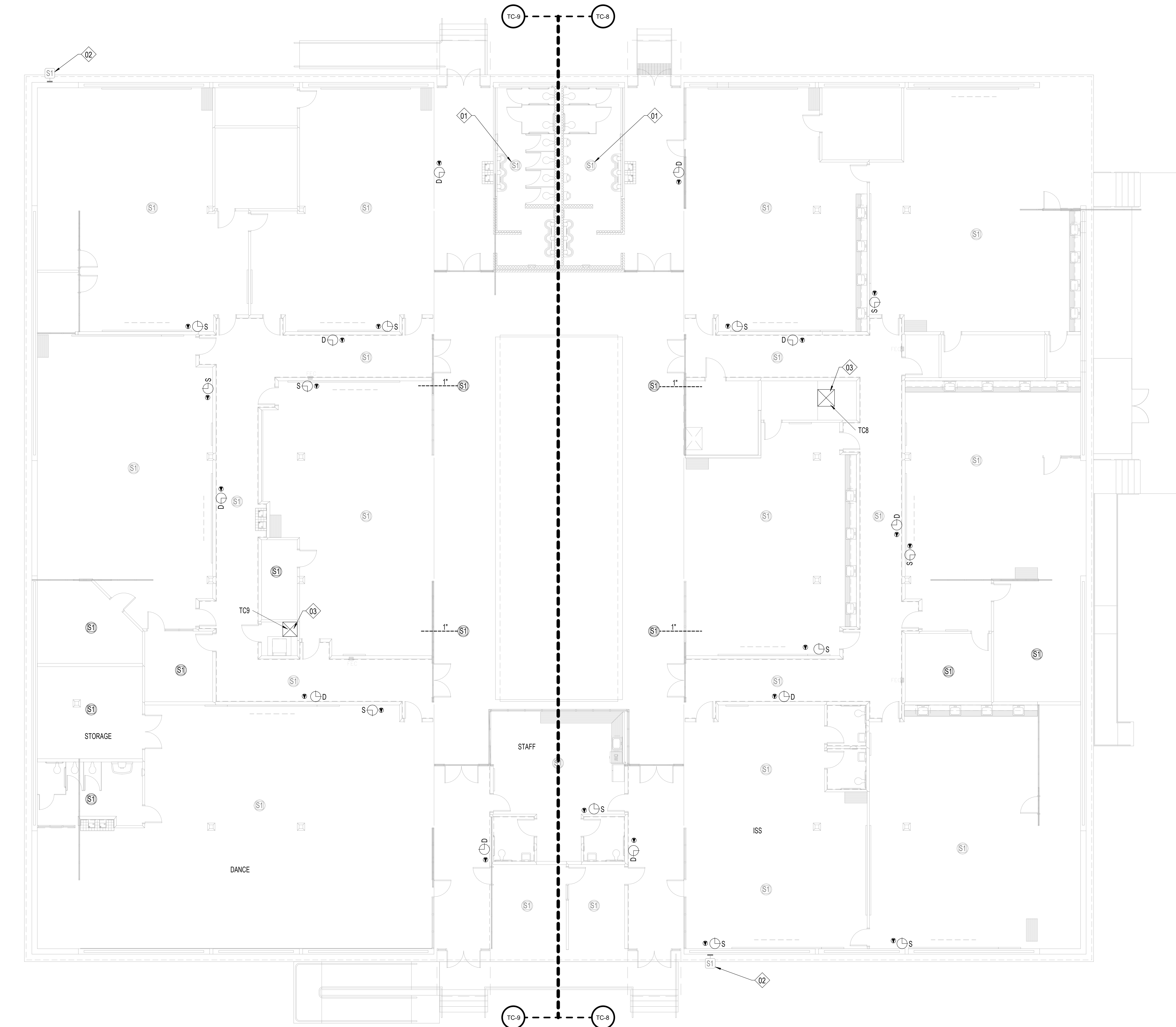
Designed By:
CV

Date:
04/29/2026

Sheet No.

T109

Autodesk Docs\CRUX-San Angelo ISD Paging System Upgrade\B SAN-1003-01 SANSD ISD Paging Upgrade, TECH, 02\HOSTED\T110



1 FLOOR PLAN - CENTRAL HS - BUILDING I - SCHWEITZER
T110 1/8" = 1'-0"

SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

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KEYNOTE LEGEND

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Description

Date

Revision

Project

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01

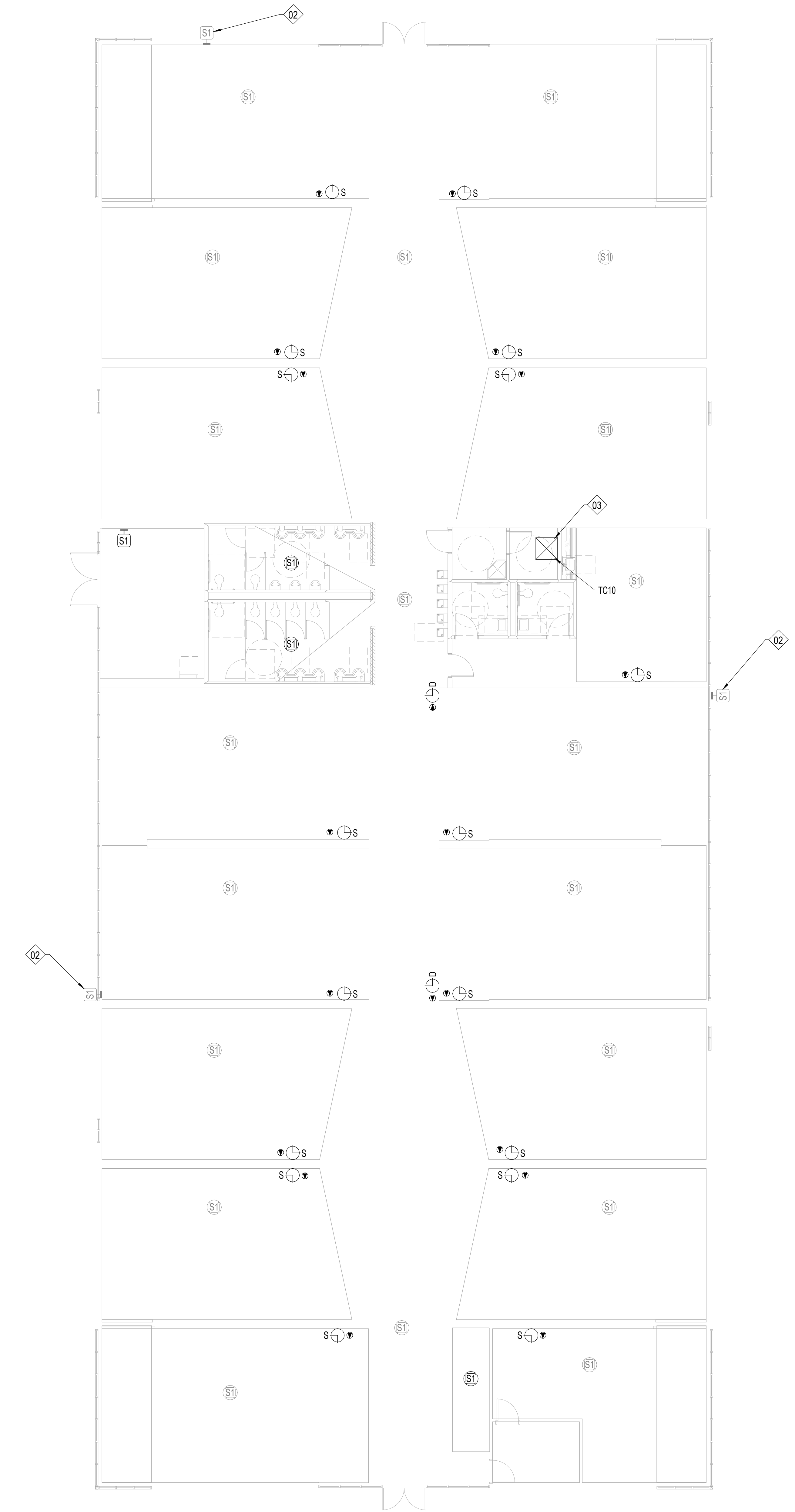


FLOOR PLAN - CENTRAL
HS - BUILDING I -
SCHWEITZER

Job No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026

Sheet No.
T110

Autodesk Docs\\CRUX-San Angelo ISD Paging System Upgrade\\D-SAN-1003-01 SANSD_HS_Paging Upgrade_Tech_02\\HOSTED.rvt



SHEET NOTES:

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- (NOT ALL KEYNOTES MAY APPLY.)
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1 FLOOR PLAN - CENTRAL HS - BUILDING J - HOLMES
T111 1/8" = 1'-0"

Description

Date

Revision

Project

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - CENTRAL
HS - BUILDING J - HOLMES

Job No. D-SAN-1003-01	Sheet No.
Drawn By: CV	T111
Designed By: CV	
Date: 04/29/2026	

Autodesk Docs\CRUX-San Angelo ISD Paging System Upgrade\B-SAN-1003-01 SANSD-HS_Paging Upgrade_Tech_02\HOSTED.rvt



1 FLOOR PLAN - BACON
T112 1/8" = 1'-0"

SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

IN AREAS WITH CONCRETE OR MASONRY WALLS, CONTRACTOR SHALL PROVIDE SURFACE RACEWAY SYSTEM.

IN AREAS WITH EXPOSED CEILINGS, CONTRACTOR SHALL INSTALL ALL CABLING IN CONDUIT. COORDINATE PAINT/FINISH WITH OWNER.

CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.

CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.

CONTRACTOR WILL REQUIRE A LIFT TO ACCESS LAY-IN CEILING IN ALL FINE ARTS AND GYMNASIUM AREAS.

KEYNOTE LEGEND

(NOT ALL KEYNOTES MAY APPLY.)

01. EXISTING, CONTRACTOR SHALL REPLACE WITH NEW DEVICE AND NEW CABLING. CEILING TILE MAY REMAIN IN PLACE UNLESS DAMAGED.
02. EXISTING, TO REMAIN. CONTRACTOR SHALL INSTALL BRIDGE FROM ANALOG SPEAKER TO IP HEAD END.
03. CONTRACTOR SHALL COMPLETELY REMOVE ALL ABANDONED ANALOG SPEAKER WIRING AND SUPPORTING TERMINAL BLOCKS FROM THE FACILITY. TERMINAL BLOCKS THAT SUPPORT OTHER EXISTING DEVICES SHALL REMAIN.
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21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.

Description

Date

Revision

Project

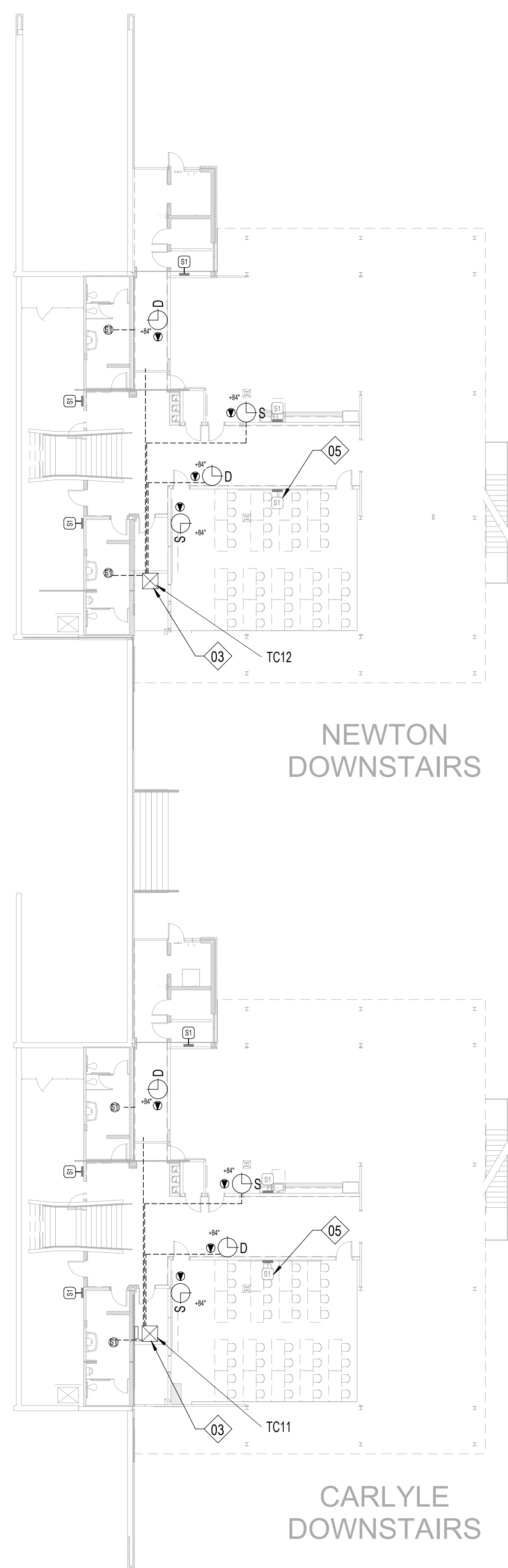
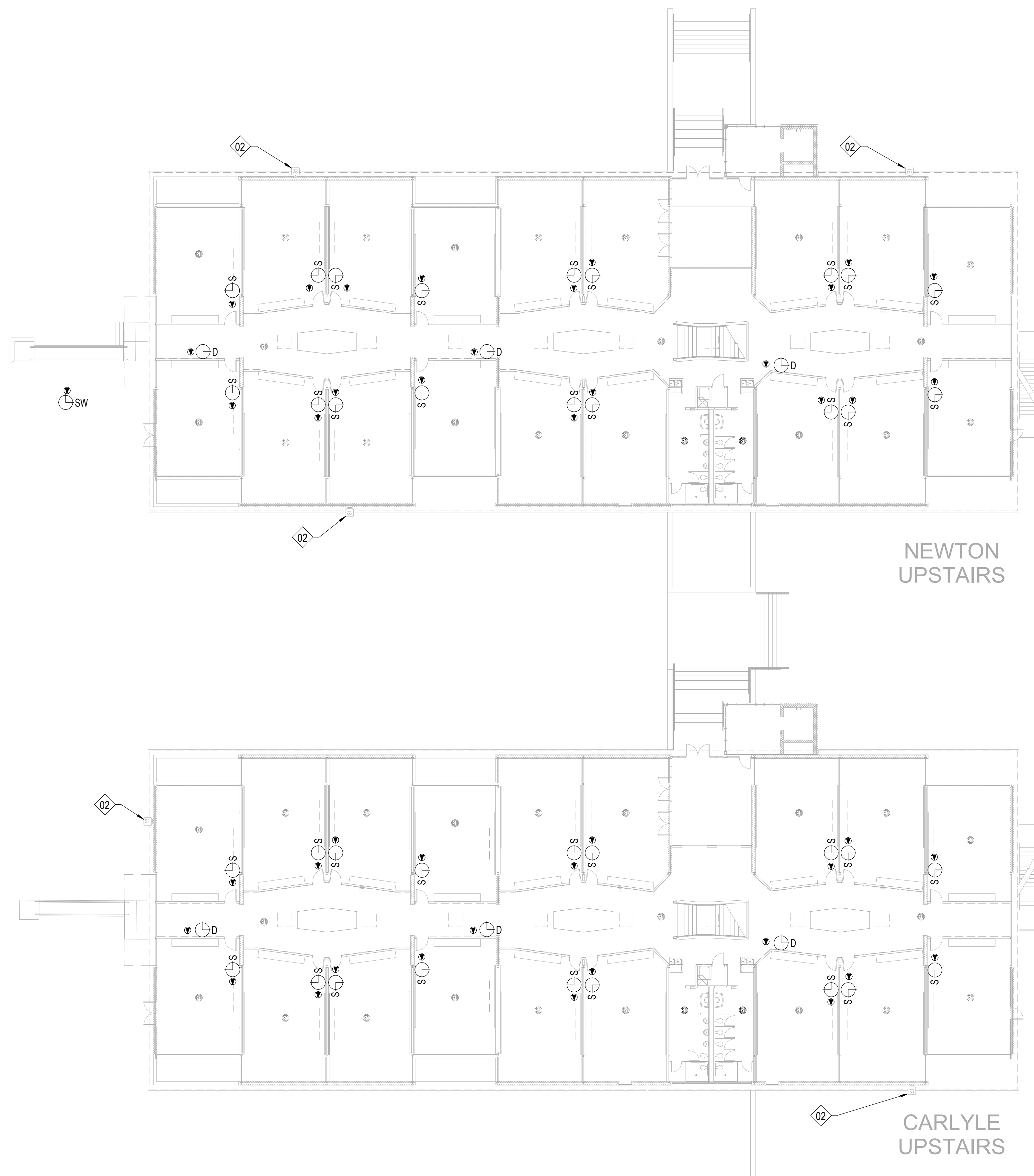
SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - CENTRAL
HS - BUILDING K - BACON

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1 FLOOR PLAN - CENTRAL HS - BUILDINGS L & M - CARLYLE & NEWTON
T113 1/16" = 1'-0"

Description

Date:

Revision:

Project:

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



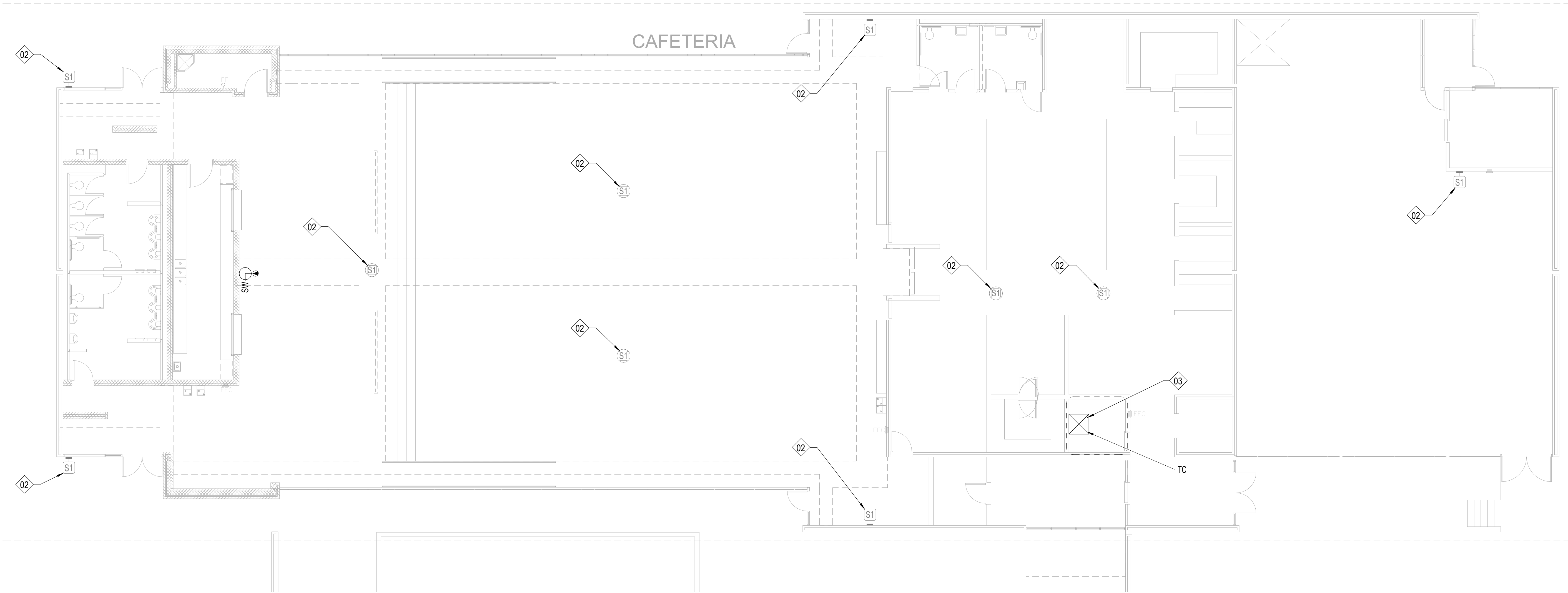
FLOOR PLAN - CENTRAL
HS - BUILDING M & L -
CARLYLE & NEWTON

Job No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026

Sheet No.

T113

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1 FLOOR PLAN - CENTRAL HS - BUILDING N - TWAIN
T114 1/8" = 1'-0"

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PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01

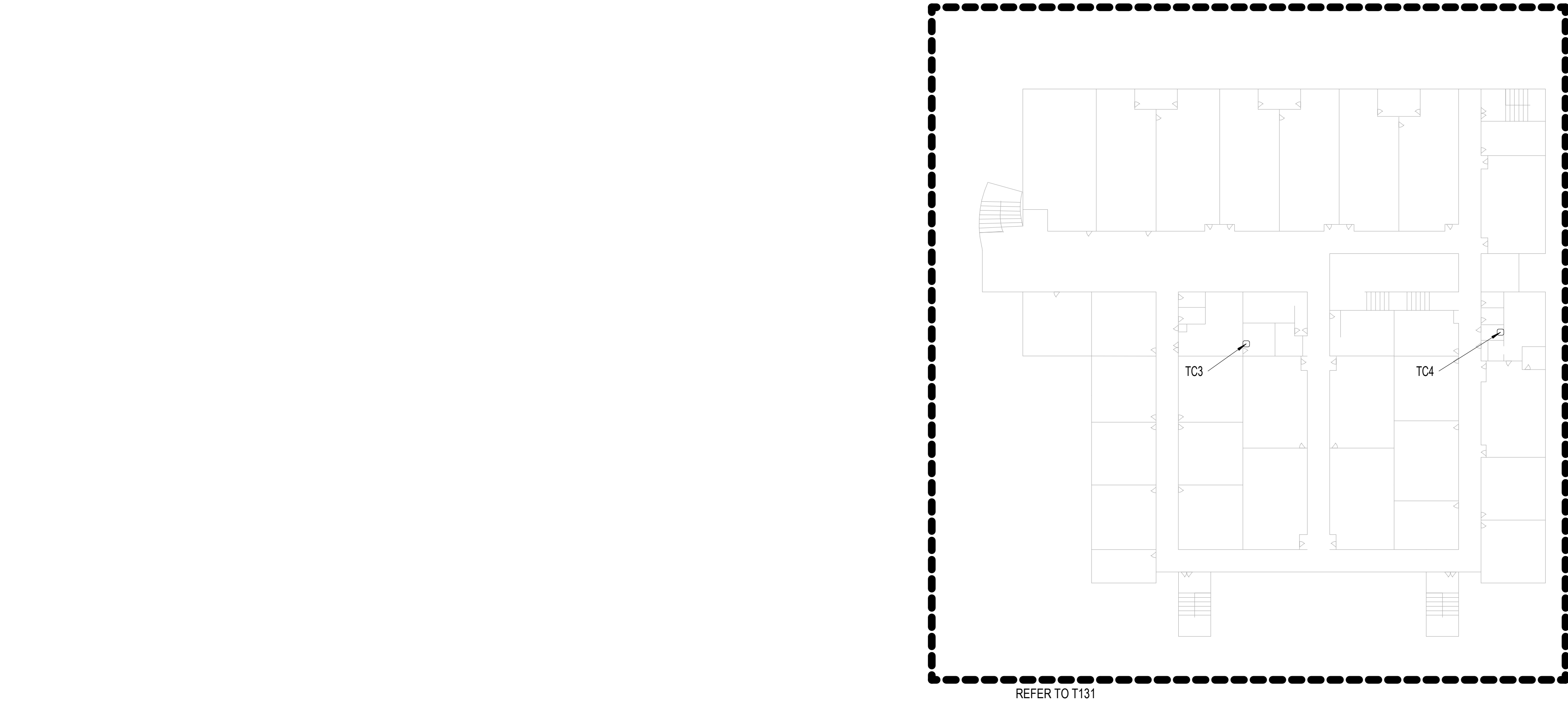


FLOOR PLAN - CENTRAL
HS - BUILDING N - TWAIN

Job No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026

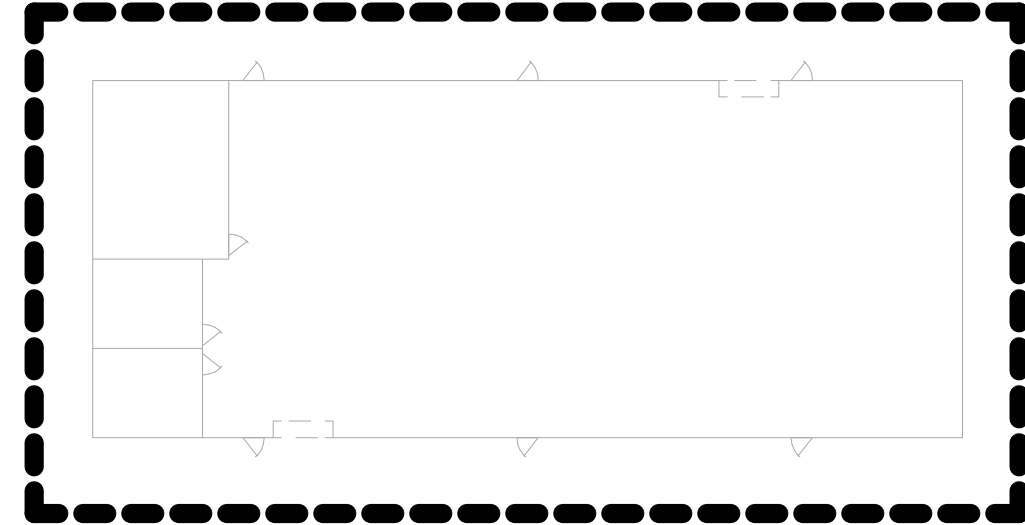
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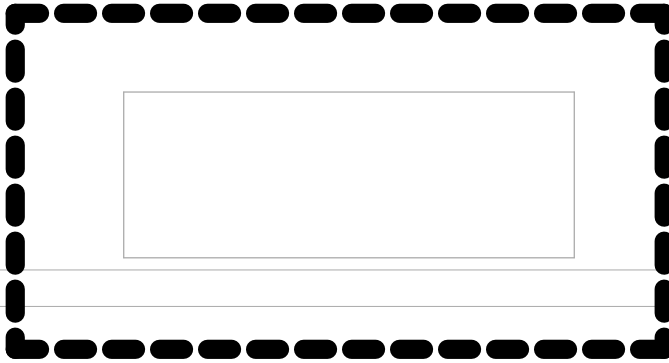


2 OVERALL FLOOR PLAN - LAKE VIEW HS - SECOND FLOOR
T115 1" = 50'-0"

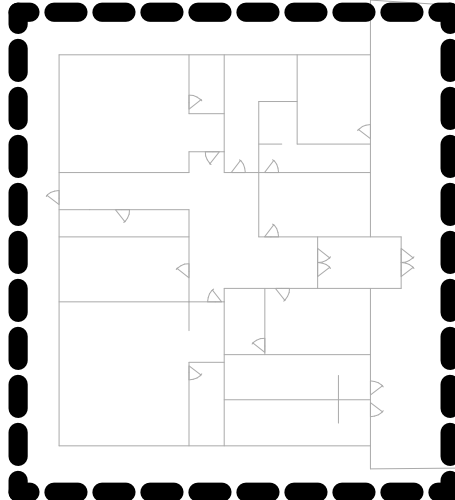
BUILDINGS C - REFER TO T132



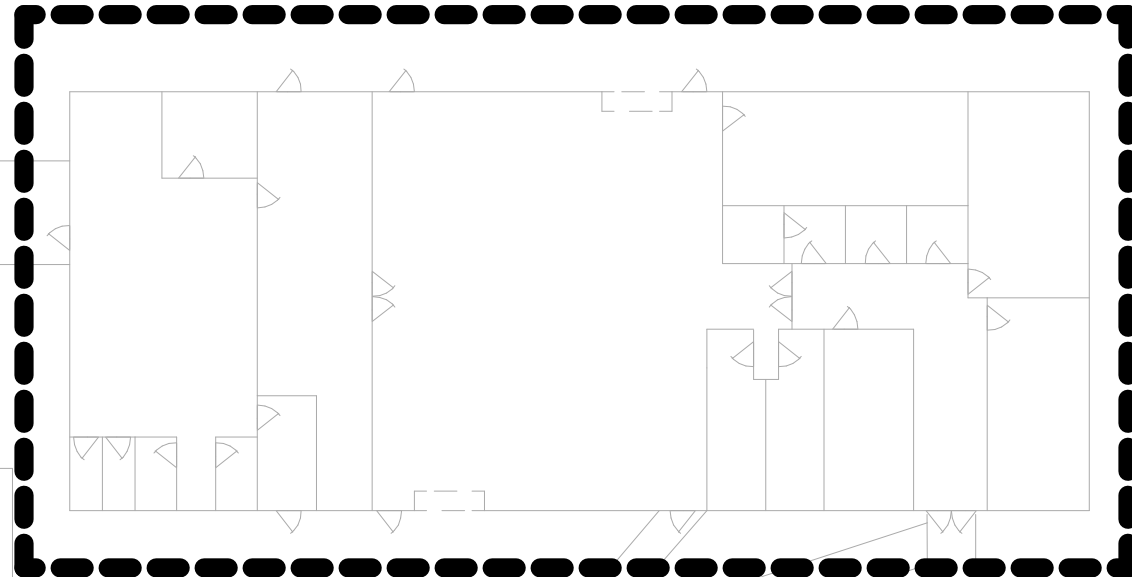
PORTABLE (SNACK SHACK) - REFER TO T135



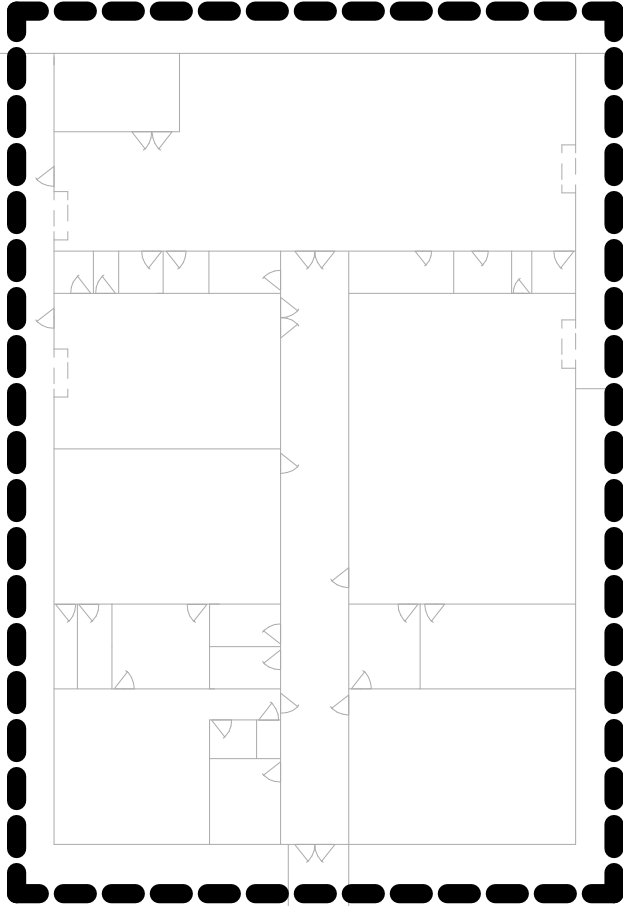
BUILDING D - REFER TO T133



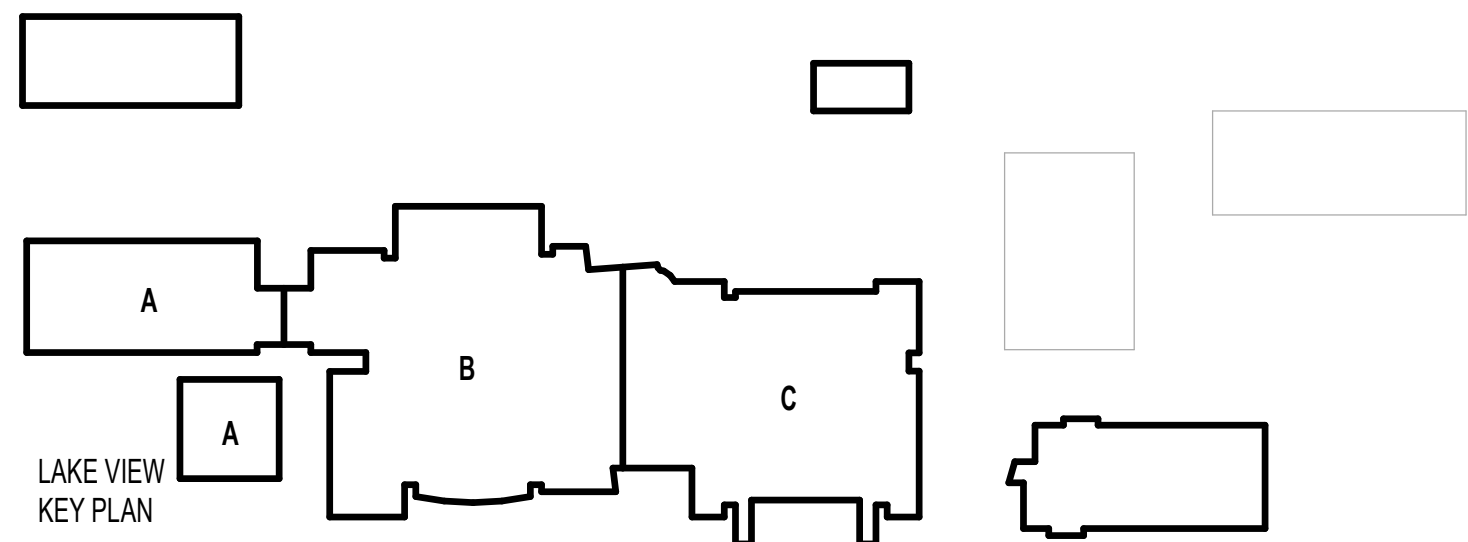
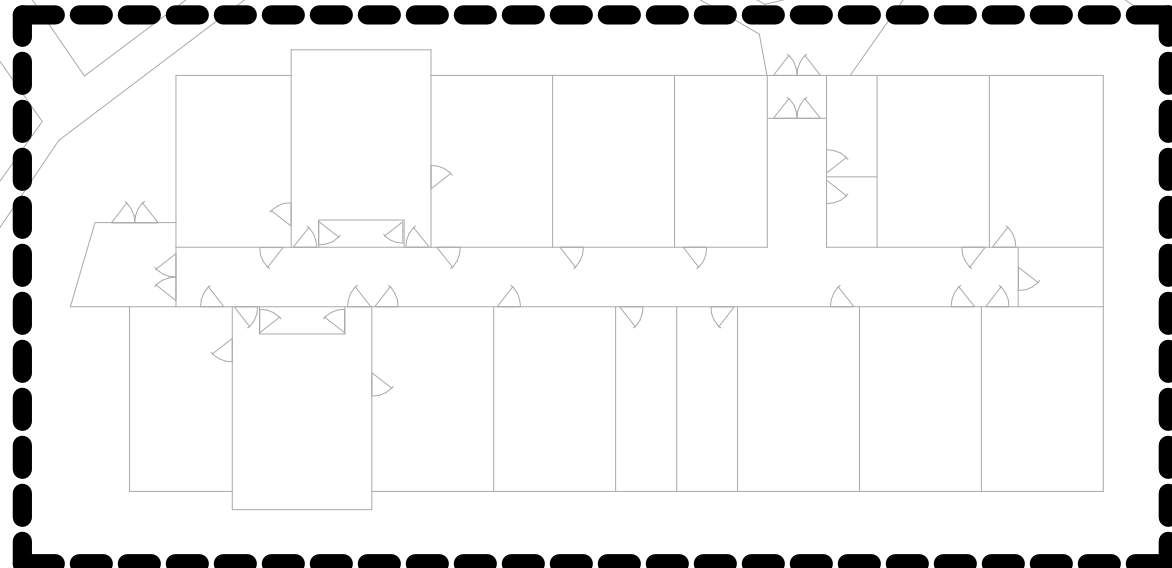
BUILDING E (ROT) - NOT IN SCOPE



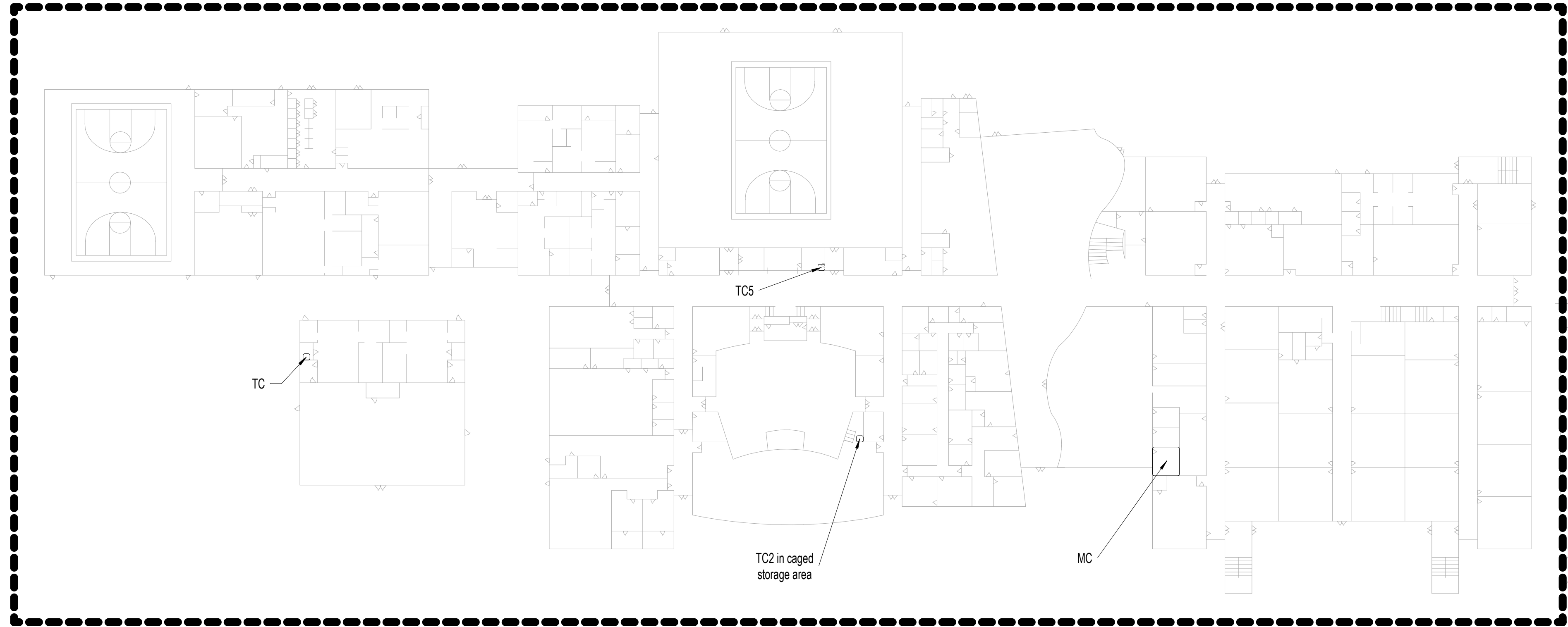
BUILDING F - NOT IN SCOPE



BUILDING G - REFER TO T134



BUILDINGS A & B - REFER TO T128-T131



1 OVERALL FLOOR PLAN - LAKE VIEW HS - FIRST FLOOR
T115 1" = 50'-0"

Description

Date

Revision

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OVERALL FLOOR PLAN -
LAKE VIEW HS

Job No.

D-SAN-1003-01

Drawn By:

CV

Designed By:

CV

Date:

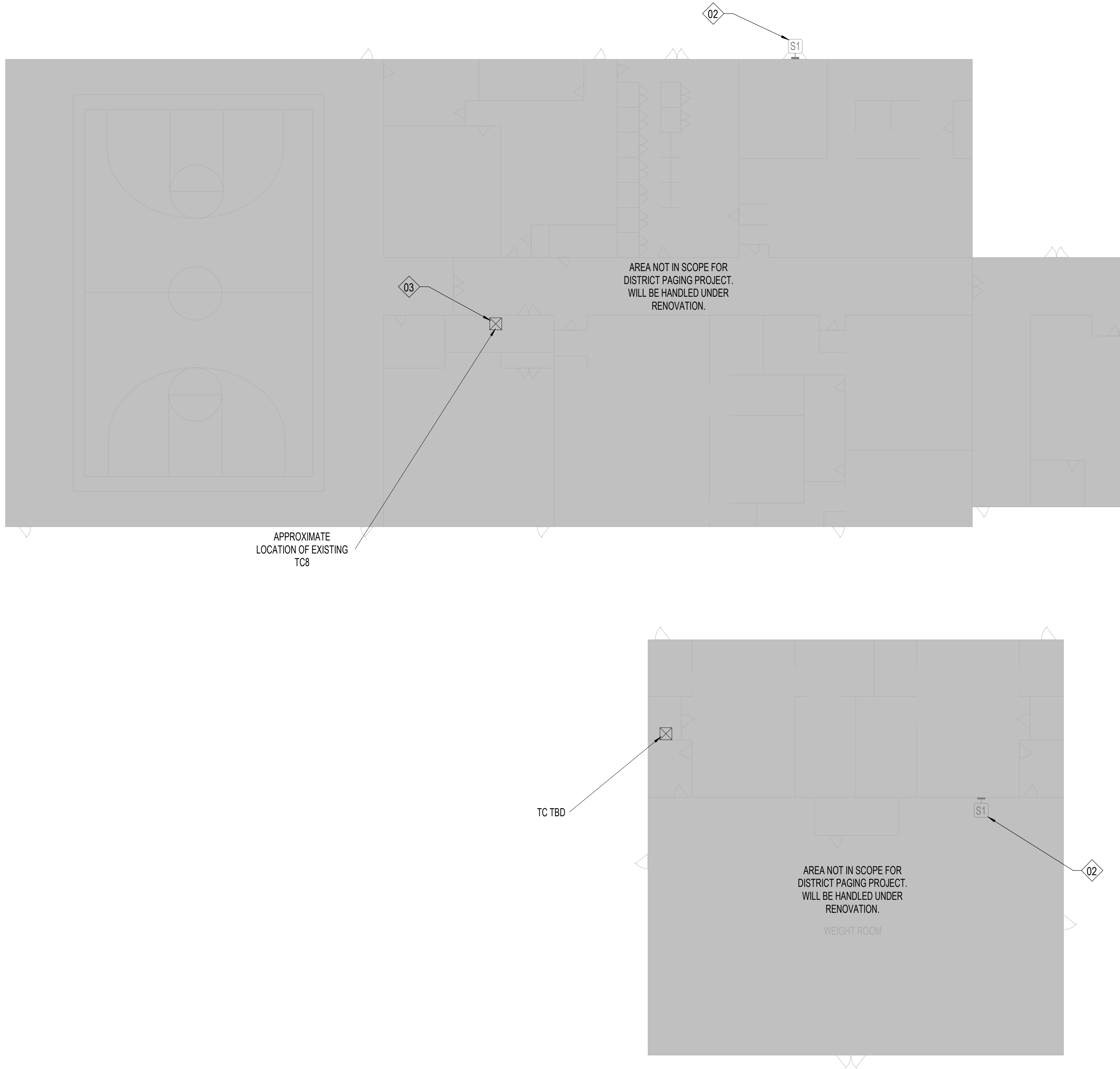
04/29/2026

Sheet No.

T115

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1 FIRST FLOOR LAKE VIEW HS - BUILDING A & B - AREA A
T116 1/16" = 1'-0"



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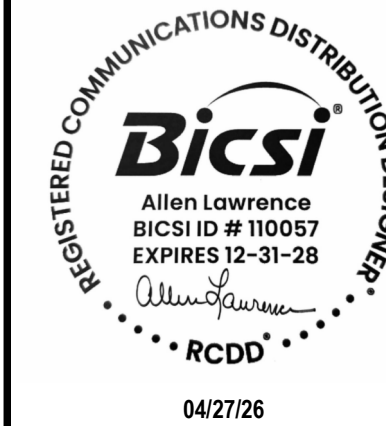
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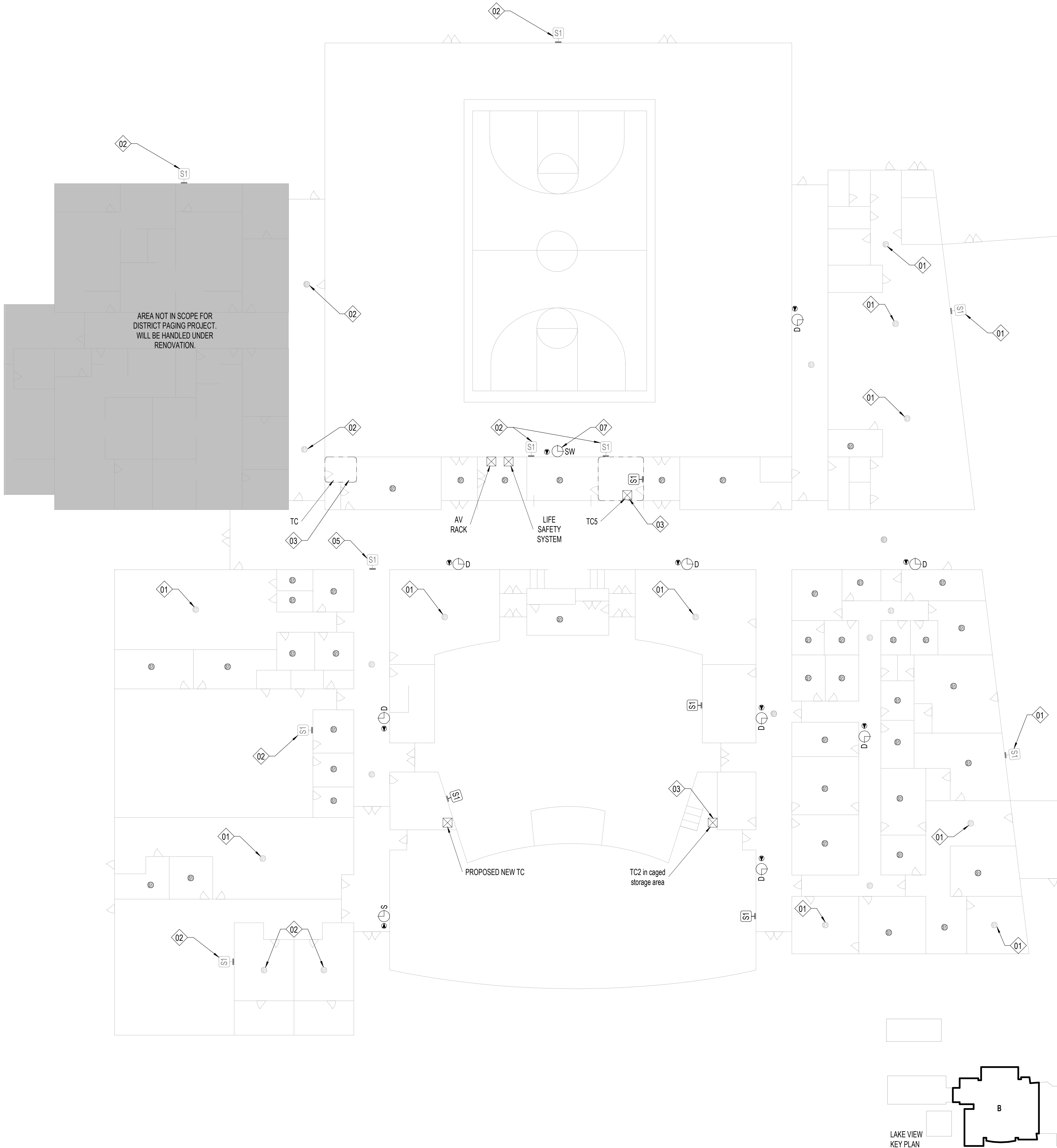
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TECHNOLOGY • SECURITY SOLUTIONS
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FLOOR PLAN - LAKE VIEW
HS - FIRST FLOOR -
BUILDING A & B - AREA A

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1 FIRST FLOOR LAKE VIEW HS - BUILDING A - AREA B
1117 1/16" = 1'-0"

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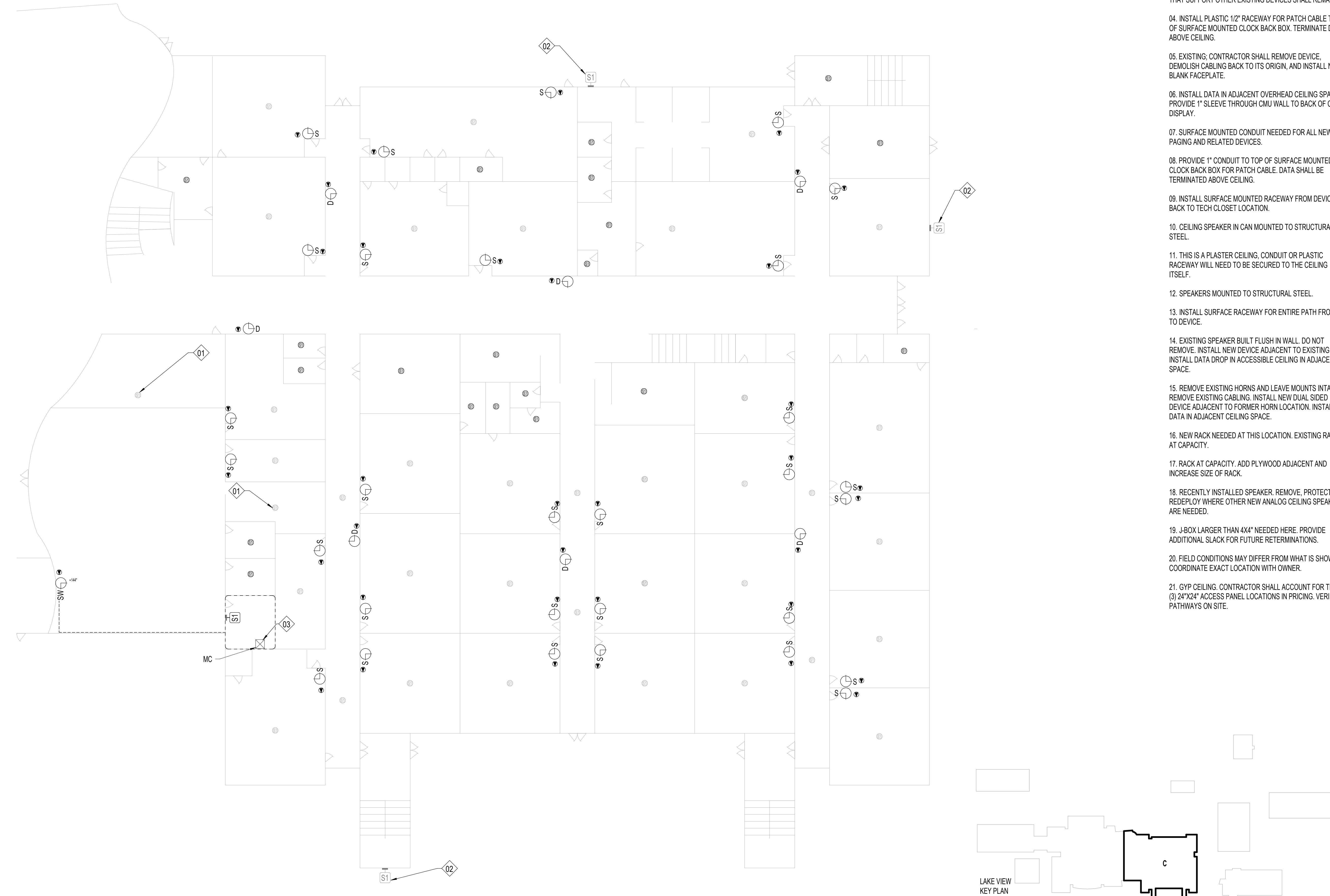
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D-SAN-1003-01



FLOOR PLAN - LAKE VIEW
HS - FIRST FLOOR -
BUILDING A - AREA B

Job No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026
Sheet No.
T117

Autodesk Docs\CRUX-San Angelo ISD Paging System Upgrade\B SAN-1003-01 SANSD ISD Paging Upgrade, TECH, 02\HOSTED.rvt



1 FIRST FLOOR LAKE VIEW HS - BUILDING A - AREA C
T118 1/16" = 1'-0"

SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

IN AREAS WITH CONCRETE OR MASONRY WALLS, CONTRACTOR SHALL PROVIDE SURFACE RACEWAY SYSTEM.

IN AREAS WITH EXPOSED CEILINGS, CONTRACTOR SHALL INSTALL ALL CABLING IN CONDUIT. COORDINATE PAINT/FINISH WITH OWNER.

CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.

CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.

CONTRACTOR WILL REQUIRE A LIFT TO ACCESS LAY-IN CEILING IN ALL FINE ARTS AND GYMNASIUM AREAS.

KEYNOTE LEGEND

(NOT ALL KEYNOTES MAY APPLY.)

01. EXISTING, CONTRACTOR SHALL REPLACE WITH NEW DEVICE AND NEW CABLING. CEILING TILE MAY REMAIN IN PLACE UNLESS DAMAGED.

02. EXISTING, TO REMAIN. CONTRACTOR SHALL INSTALL BRIDGE FROM ANALOG SPEAKER TO IP HEAD END.

03. CONTRACTOR SHALL COMPLETELY REMOVE ALL ABANDONED ANALOG SPEAKER WIRING AND SUPPORTING TERMINAL BLOCKS FROM THE FACILITY. TERMINAL BLOCKS THAT SUPPORT OTHER EXISTING DEVICES SHALL REMAIN.

04. INSTALL PLASTIC 1/2" RACEWAY FOR PATCH CABLE TO TOP OF SURFACE MOUNTED CLOCK BACK BOX. TERMINATE DATA ABOVE CEILING.

05. EXISTING, CONTRACTOR SHALL REMOVE DEVICE. DEMOLISH CABLING BACK TO ITS ORIGIN, AND INSTALL NEW BLANK FACEPLATE.

06. INSTALL DATA IN ADJACENT OVERHEAD CEILING SPACE. PROVIDE 1" SLEEVE THROUGH CMU WALL TO BACK OF CLOCK DISPLAY.

07. SURFACE MOUNTED CONDUIT NEEDED FOR ALL NEW PAGING AND RELATED DEVICES.

08. PROVIDE 1" CONDUIT TO TOP OF SURFACE MOUNTED CLOCK BACK BOX FOR PATCH CABLE. DATA SHALL BE TERMINATED ABOVE CEILING.

09. INSTALL SURFACE MOUNTED RACEWAY FROM DEVICE BACK TO TECH CLOSET LOCATION.

10. CEILING SPEAKER IN CAN MOUNTED TO STRUCTURAL STEEL.

11. THIS IS A PLASTER CEILING. CONDUIT OR PLASTIC RACEWAY WILL NEED TO BE SECURED TO THE CEILING ITSELF.

12. SPEAKERS MOUNTED TO STRUCTURAL STEEL.

13. INSTALL SURFACE RACEWAY FOR ENTIRE PATH FROM TC TO DEVICE.

14. EXISTING SPEAKER BUILT FLUSH IN WALL. DO NOT REMOVE. INSTALL NEW DEVICE ADJACENT TO EXISTING. INSTALL DATA DROP IN ACCESSIBLE CEILING IN ADJACENT SPACE.

15. REMOVE EXISTING HORNS AND LEAVE MOUNTS INTACT. REMOVE EXISTING CABLING. INSTALL NEW DUAL SIDED DEVICE ADJACENT TO FORMER HORN LOCATION. INSTALL DATA IN ADJACENT CEILING SPACE.

16. NEW RACK NEEDED AT THIS LOCATION. EXISTING RACK IS AT CAPACITY.

17. RACK AT CAPACITY. ADD PLYWOOD ADJACENT AND INCREASE SIZE OF RACK.

18. RECENTLY INSTALLED SPEAKER. REMOVE, PROTECT, AND REDEPLOY WHERE OTHER NEW ANALOG CEILING SPEAKERS ARE NEEDED.

19. J-BOX LARGER THAN 4X4" NEEDED HERE. PROVIDE ADDITIONAL SLACK FOR FUTURE RETERMINATIONS.

20. FIELD CONDITIONS MAY DIFFER FROM WHAT IS SHOWN. COORDINATE EXACT LOCATION WITH OWNER.

21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.

Description

Date

Revision

Project

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - LAKE VIEW
HS - FIRST FLOOR -
BUILDING A - AREA C

Job No.

D-SAN-1003-01

Drawn By:

CV

Designed By:

CV

Date:

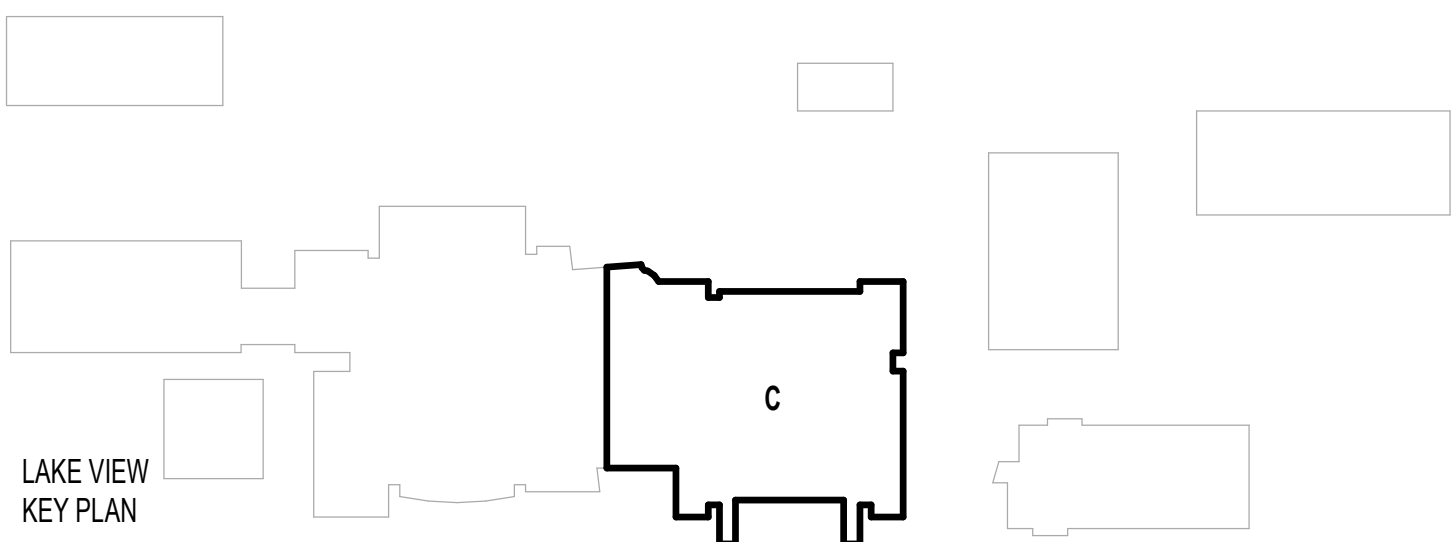
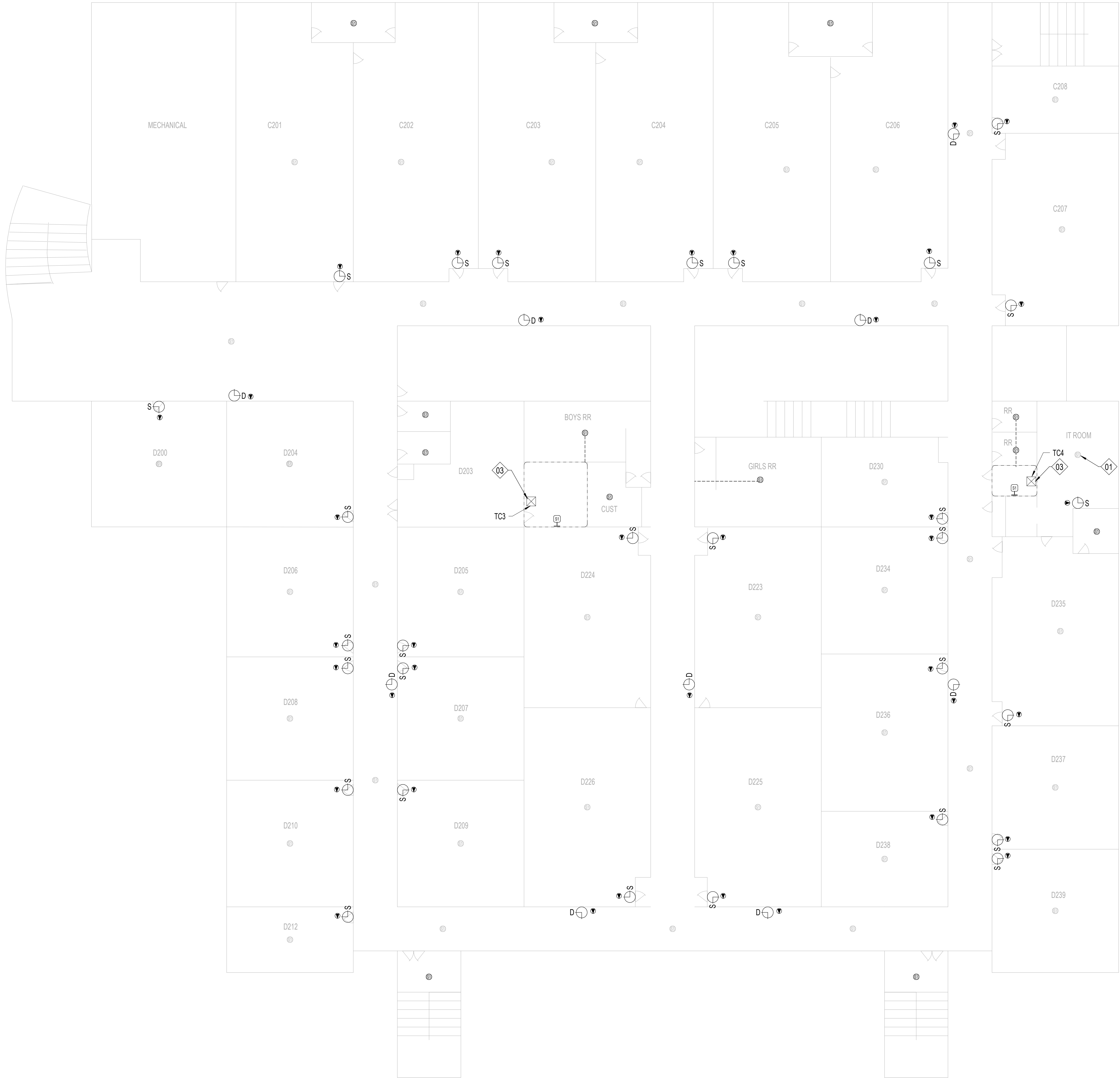
04/29/2026

Sheet No.

T118

Autodesk Docs\CRUX-San Angelo ISD Paging System Upgrade\B SAN-1003-01 SANSD ISD Paging Upgrade, TECH, 02\HOSTED\rv4

1 SECOND FLOOR LAKE VIEW HS - BUILDING A
T119 1/16" = 1'-0"



SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

IN AREAS WITH CONCRETE OR MASONRY WALLS, CONTRACTOR SHALL PROVIDE SURFACE RACEWAY SYSTEM.

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CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.

CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.

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(NOT ALL KEYNOTES MAY APPLY.)

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02. EXISTING, TO REMAIN. CONTRACTOR SHALL INSTALL BRIDGE FROM ANALOG SPEAKER TO IP HEAD END.
03. CONTRACTOR SHALL COMPLETELY REMOVE ALL ABANDONED ANALOG SPEAKER WIRING AND SUPPORTING TERMINAL BLOCKS FROM THE FACILITY. TERMINAL BLOCKS THAT SUPPORT OTHER EXISTING DEVICES SHALL REMAIN.
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17. RACK AT CAPACITY. ADD PLYWOOD ADJACENT AND INCREASE SIZE OF RACK.
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19. J-BOX LARGER THAN 4X4" NEEDED HERE. PROVIDE ADDITIONAL SLACK FOR FUTURE RETERMINATIONS.
20. FIELD CONDITIONS MAY DIFFER FROM WHAT IS SHOWN. COORDINATE EXACT LOCATION WITH OWNER.
21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.

Description

Date:

Revision:

Project:

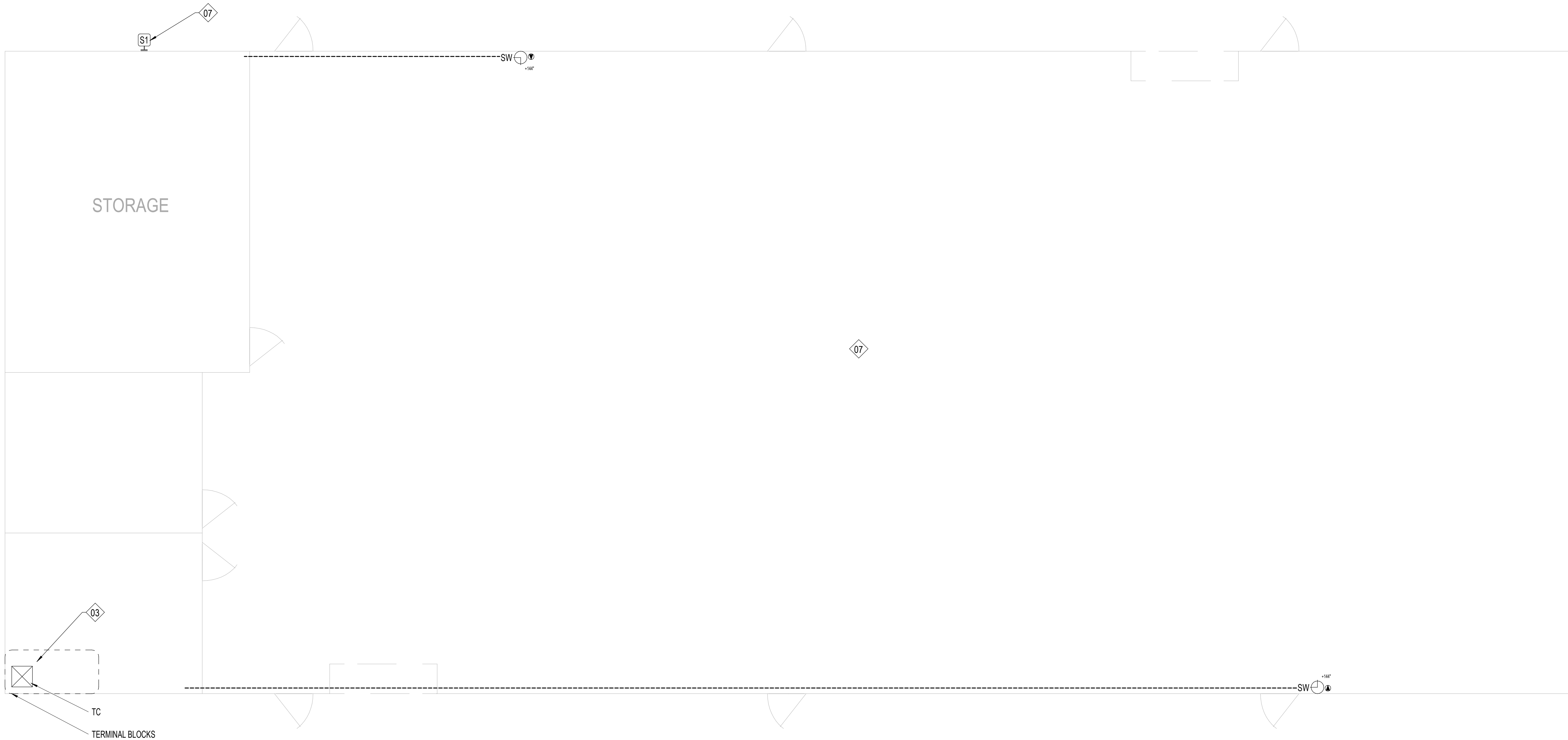
SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



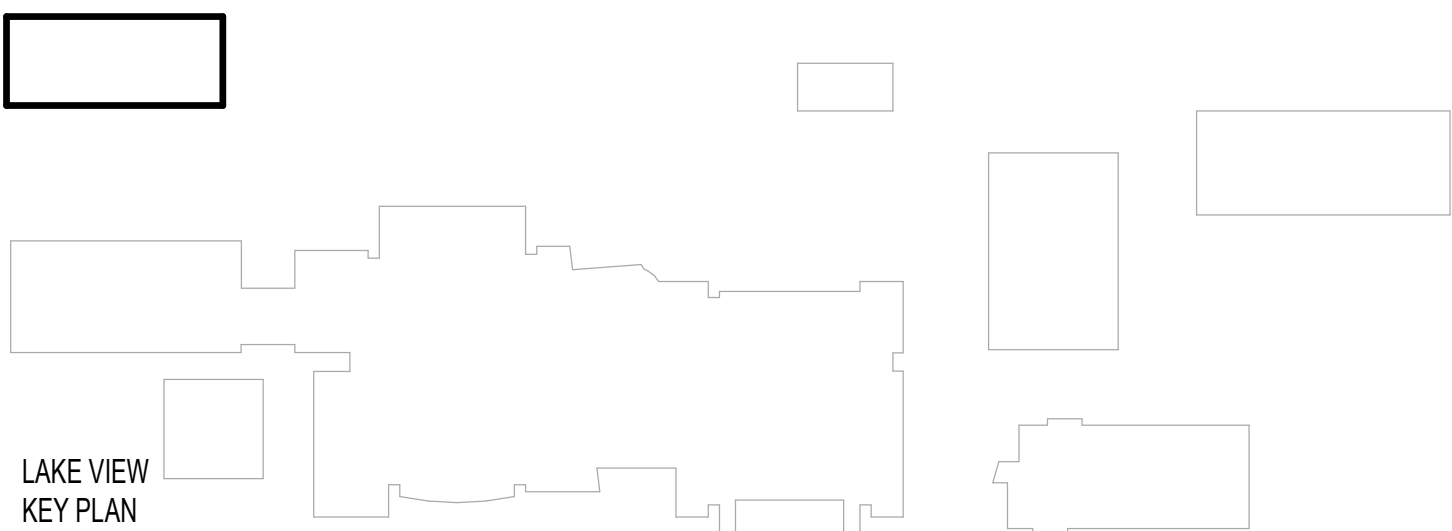
FLOOR PLAN - LAKE VIEW
HS - SECOND FLOOR -
BUILDING A - AREA C

Job No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026
Sheet No.
T119

Autodesk Docs\CRUX-San Angelo ISD Paging System Upgrade\B SAN-1003-01 SANSD ISD Paging Upgrade, TECH, 02\HOSTED\rv4



1 FLOOR PLAN - LAKE VIEW HS - BUILDING C
T120 1/8" = 1'-0"



SHEET NOTES:

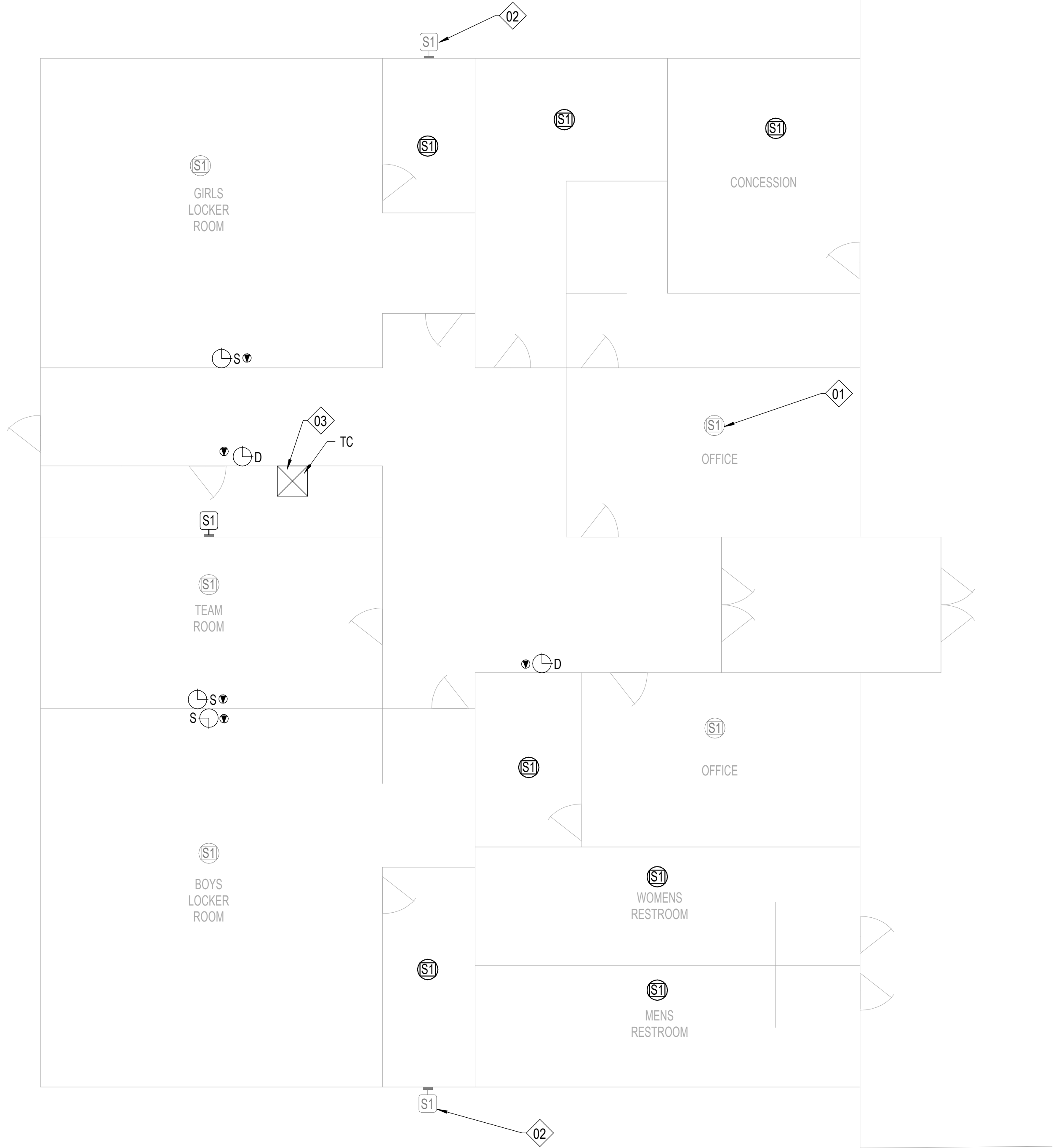
- REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.
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- CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.
- CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.
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KEYNOTE LEGEND

- (NOT ALL KEYNOTES MAY APPLY.)
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Description	
Revision:	
Project:	
SAN ANGELO ISD PAGING UPGRADE SAN ANGELO, TEXAS D-SAN-1003-01	
 REGISTERED COMMUNICATIONS DISTRIBUTION SYSTEM Allen Lawrence BICSI ID # 110057 EXPIRES 12-31-28 04/27/26	
 TECHNOLOGY + SECURITY SOLUTIONS 800.885.6440 www.cruxsolutions.com	
FLOOR PLAN - LAKE VIEW HS - BUILDING C	
Job No. D-SAN-1003-01 Drawn By: CV Designed By: CV Date: 04/29/2026	Sheet No. T120

1 FLOOR PLAN - LAKE VIEW HS - BUILDING D
T121 1/8" = 1'-0"



- SHEET NOTES:**
- REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.
- ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.
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Description	
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SAN ANGELO ISD PAGING UPGRADE SAN ANGELO, TEXAS D-SAN-1003-01	
 REGISTERED COMMUNICATIONS DISTRIBUTION SYSTEM Bicsi Allen Lawrence BICSI ID # 110057 EXPIRES 12-31-28 04/27/26	
 TECHNOLOGY + SECURITY SOLUTIONS 800.665.6440 www.cruxsolutions.com	
FLOOR PLAN - LAKE VIEW HS - BUILDING D	
Job No. D-SAN-1003-01 Drawn By: CV Designed By: CV Date: 04/29/2026	Sheet No. T121

SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

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KEYNOTE LEGEND

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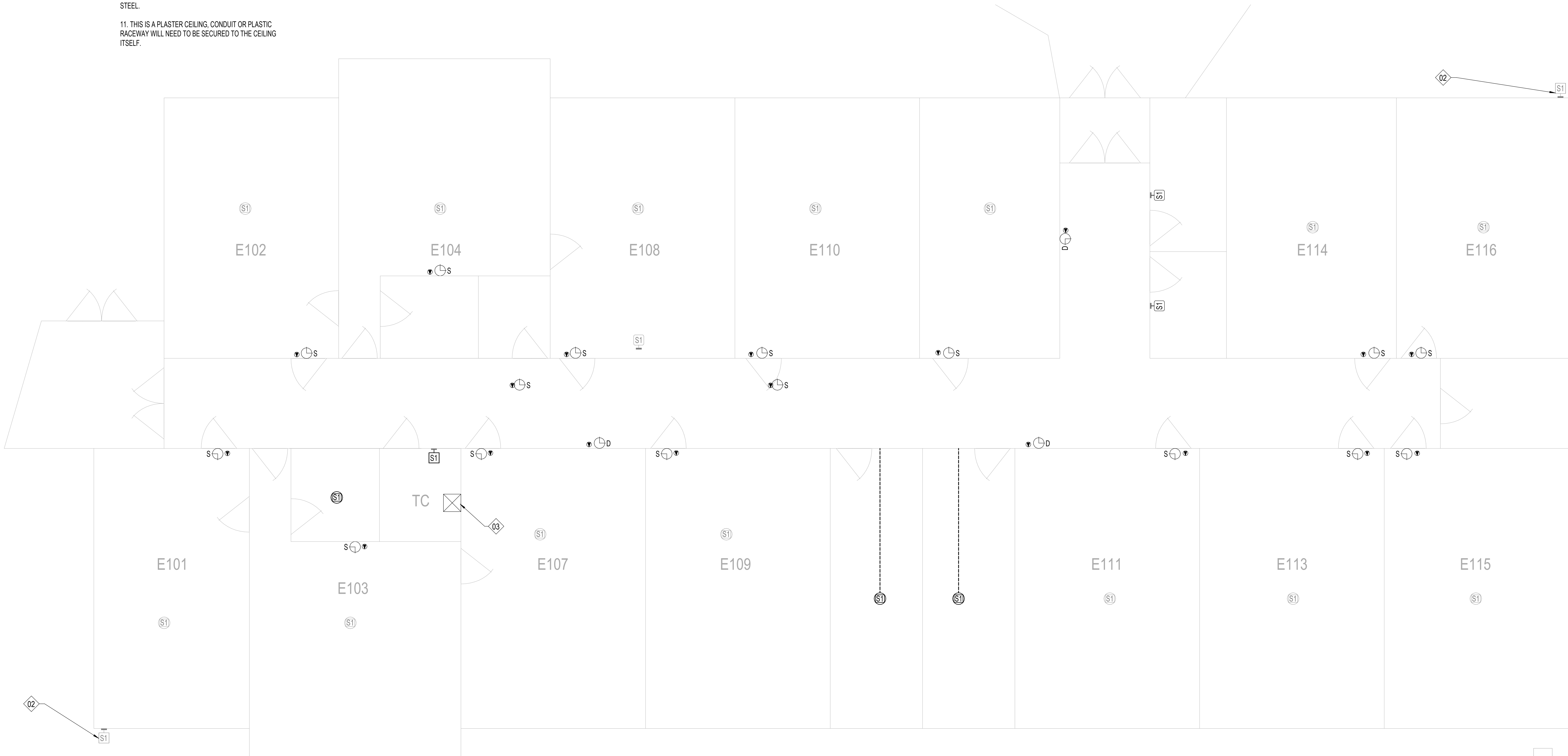
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1 FLOOR PLAN - LAKE VIEW HS - BUILDING G
T122 1/8" = 1'-0"

LAKE VIEW
KEY PLAN

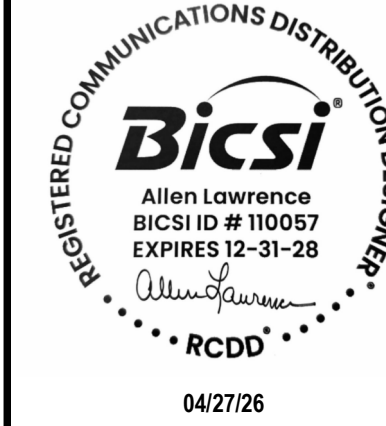
Description

Date:

Revision:

Project:

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - LAKE VIEW
HS - BUILDING G

Job No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026

Sheet No.

T122

1	FLOOR PLAN - LAKE VIEW HS - PORTABLE (SNACK SHACK)
T123	NTS

LAKE VIEW
KEY PLAN

SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT
SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

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16. NEW RACK NEEDED AT THIS LOCATION. EXISTING RACK IS AT CAPACITY.

17. RACK AT CAPACITY. ADD PLYWOOD ADJACENT AND INCREASE SIZE OF RACK.

18. RECENTLY INSTALLED SPEAKER. REMOVE, PROTECT, AND REDEPLOY WHERE OTHER NEW ANALOG CEILING SPEAKERS ARE NEEDED.

19. J-BOX LARGER THAN 4X4" NEEDED HERE. PROVIDE
ADDITIONAL SLACK FOR FUTURE RETERMINATIONS.

20. FIELD CONDITIONS MAY DIFFER FROM WHAT IS SHOWN.
COORDINATE EXACT LOCATION WITH OWNER.

21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.

Description

Date:

Revision:

Project:



**FLOOR PLAN - LAKE VIEW
HS - PORTABLES (SNACK
SHACK)**

Job. No.
D-SAN-1003-01

Drawn By:	CV
Designed By:	CV

Date:
04/29/2026

Sheet No.

T123



21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.

Sheet No.

T124

Autosave Docs:CRUX-San Angelo ISD Paging System Upgrade\B-SAN-1003-01 SANSD ISD Paging Upgrade, TECH, 02\HOSTED.rvt



SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

IN AREAS WITH CONCRETE OR MASONRY WALLS, CONTRACTOR SHALL PROVIDE SURFACE RACEWAY SYSTEM.

IN AREAS WITH EXPOSED CEILINGS, CONTRACTOR SHALL INSTALL ALL CABLING IN CONDUIT. COORDINATE PAINT/FINISH WITH OWNER.

CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.

CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.

CONTRACTOR WILL REQUIRE A LIFT TO ACCESS LAY-IN CEILING IN ALL FINE ARTS AND GYMNASIUM AREAS.

KEYNOTE LEGEND

(NOT ALL KEYNOTES MAY APPLY.)

01. EXISTING, CONTRACTOR SHALL REPLACE WITH NEW DEVICE AND NEW CABLING. CEILING TILE MAY REMAIN IN PLACE UNLESS DAMAGED.

02. EXISTING, TO REMAIN. CONTRACTOR SHALL INSTALL BRIDGE FROM ANALOG SPEAKER TO IP HEAD END.

03. CONTRACTOR SHALL COMPLETELY REMOVE ALL ABANDONED ANALOG SPEAKER WIRING AND SUPPORTING TERMINAL BLOCKS FROM THE FACILITY. TERMINAL BLOCKS THAT SUPPORT OTHER EXISTING DEVICES SHALL REMAIN.

04. INSTALL PLASTIC 1/2" RACEWAY FOR PATCH CABLE TO TOP OF SURFACE MOUNTED CLOCK BACK BOX. TERMINATE DATA ABOVE CEILING.

05. EXISTING, CONTRACTOR SHALL REMOVE DEVICE. DEMOLISH CABLING BACK TO ITS ORIGIN, AND INSTALL NEW BLANK FACEPLATE.

06. INSTALL DATA IN ADJACENT OVERHEAD CEILING SPACE. PROVIDE 1" SLEEVE THROUGH CMU WALL TO BACK OF CLOCK DISPLAY.

07. SURFACE MOUNTED CONDUIT NEEDED FOR ALL NEW PAGING AND RELATED DEVICES.

08. PROVIDE 1" CONDUIT TO TOP OF SURFACE MOUNTED CLOCK BACK BOX FOR PATCH CABLE. DATA SHALL BE TERMINATED ABOVE CEILING.

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11. THIS IS A PLASTER CEILING. CONDUIT OR PLASTIC RACEWAY WILL NEED TO BE SECURED TO THE CEILING ITSELF.

12. SPEAKERS MOUNTED TO STRUCTURAL STEEL.

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Description

Date:

Revision:

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01

Project:



FLOOR PLAN - BRADFORD ES

Job No.

D-SAN-1003-01

Drawn By:

CV

Designed By:

CV

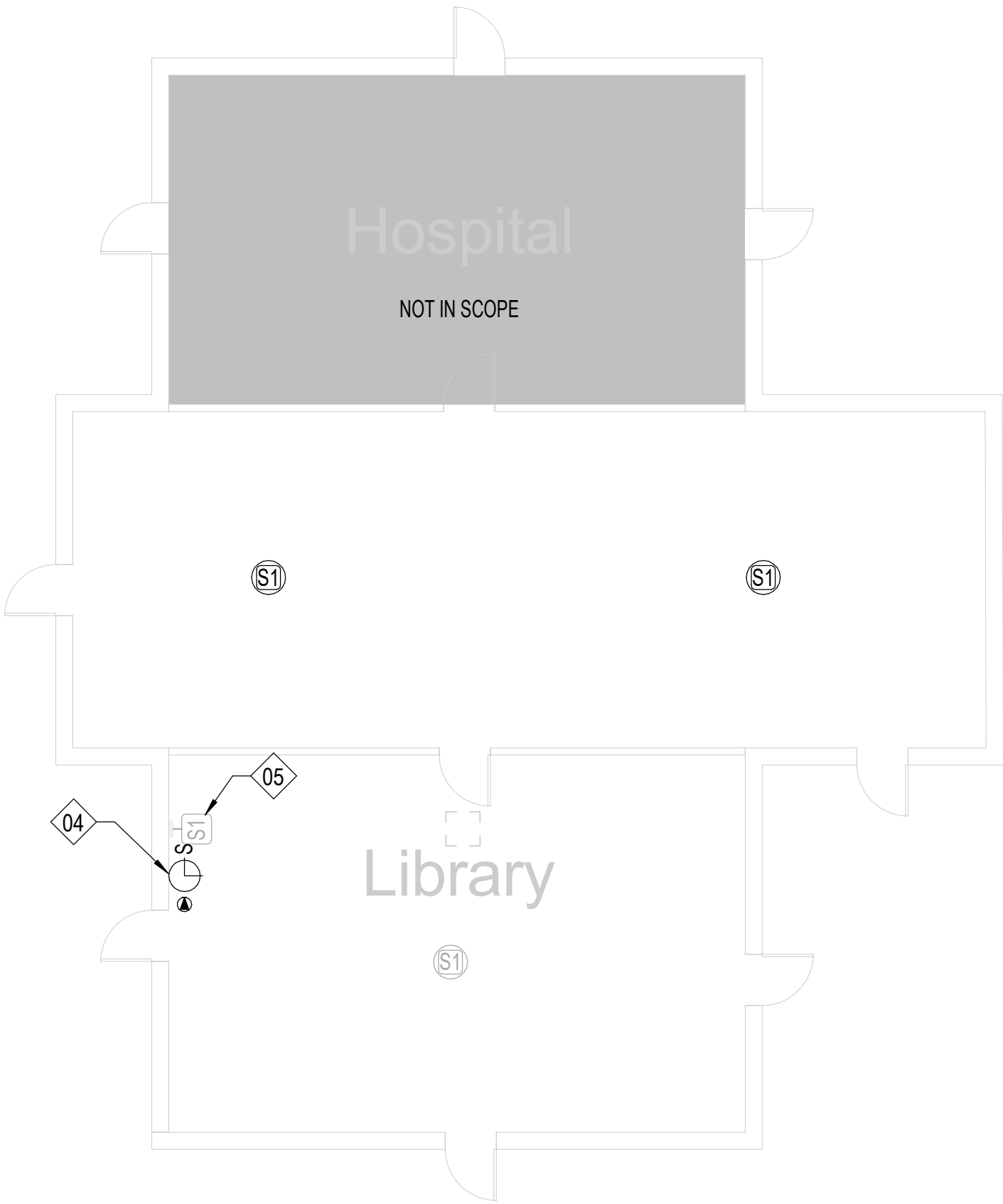
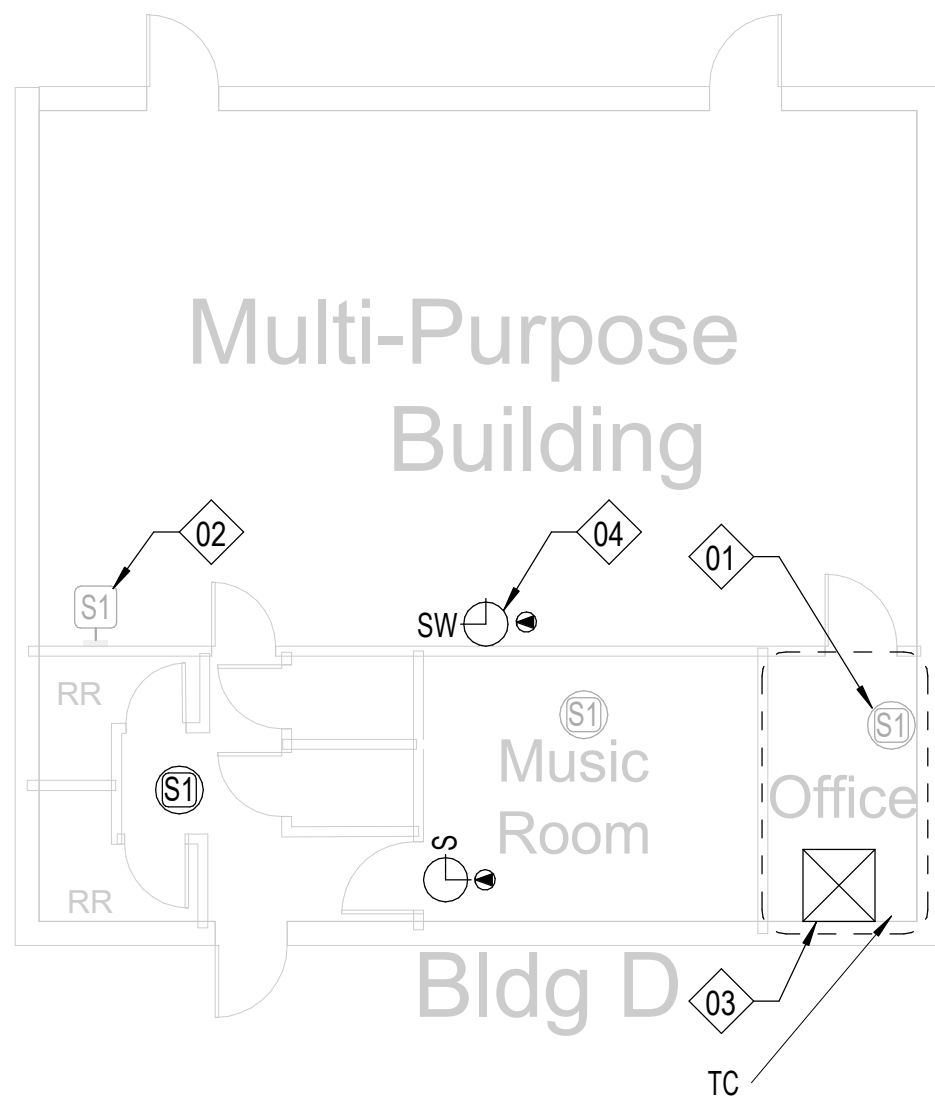
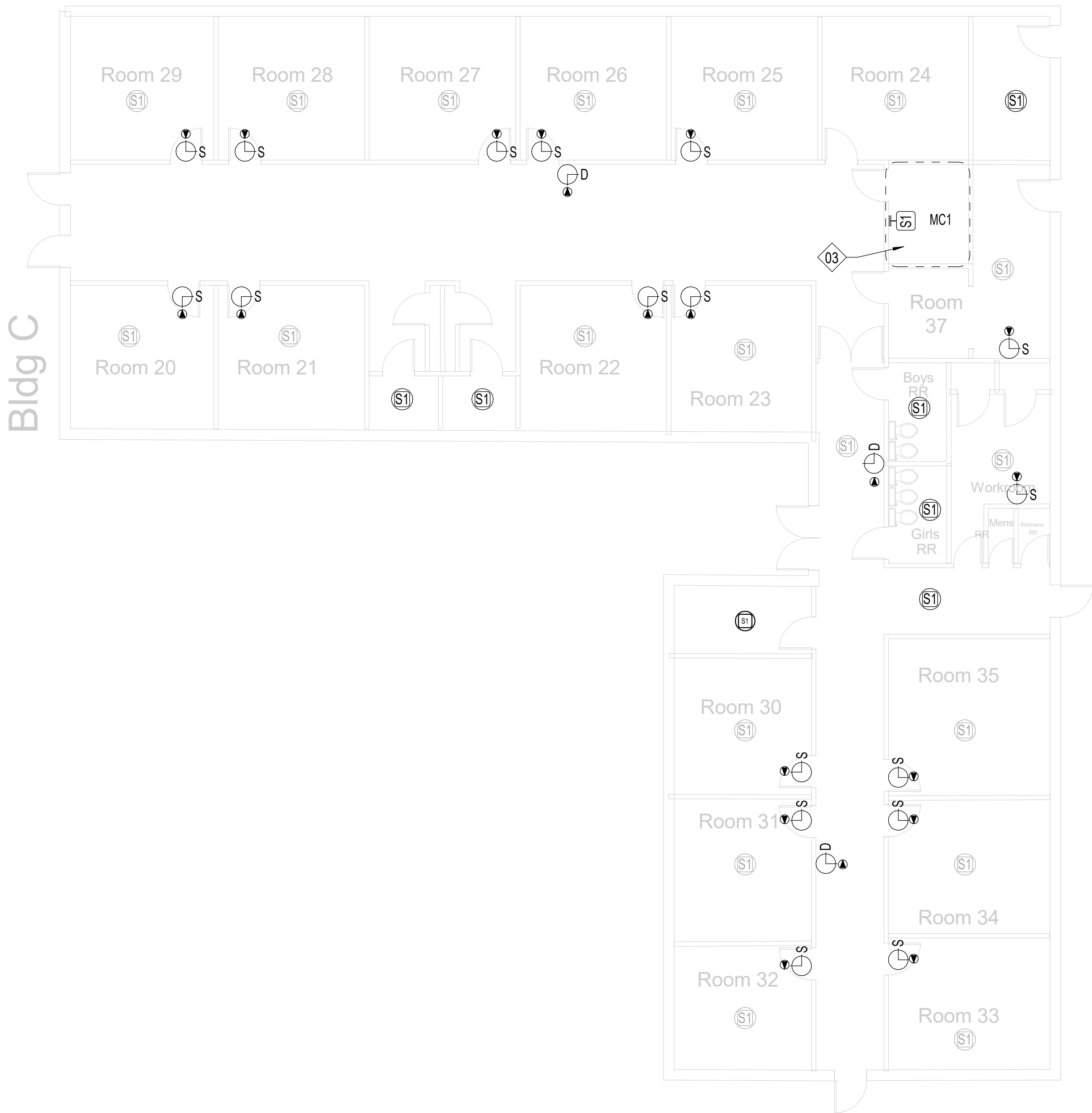
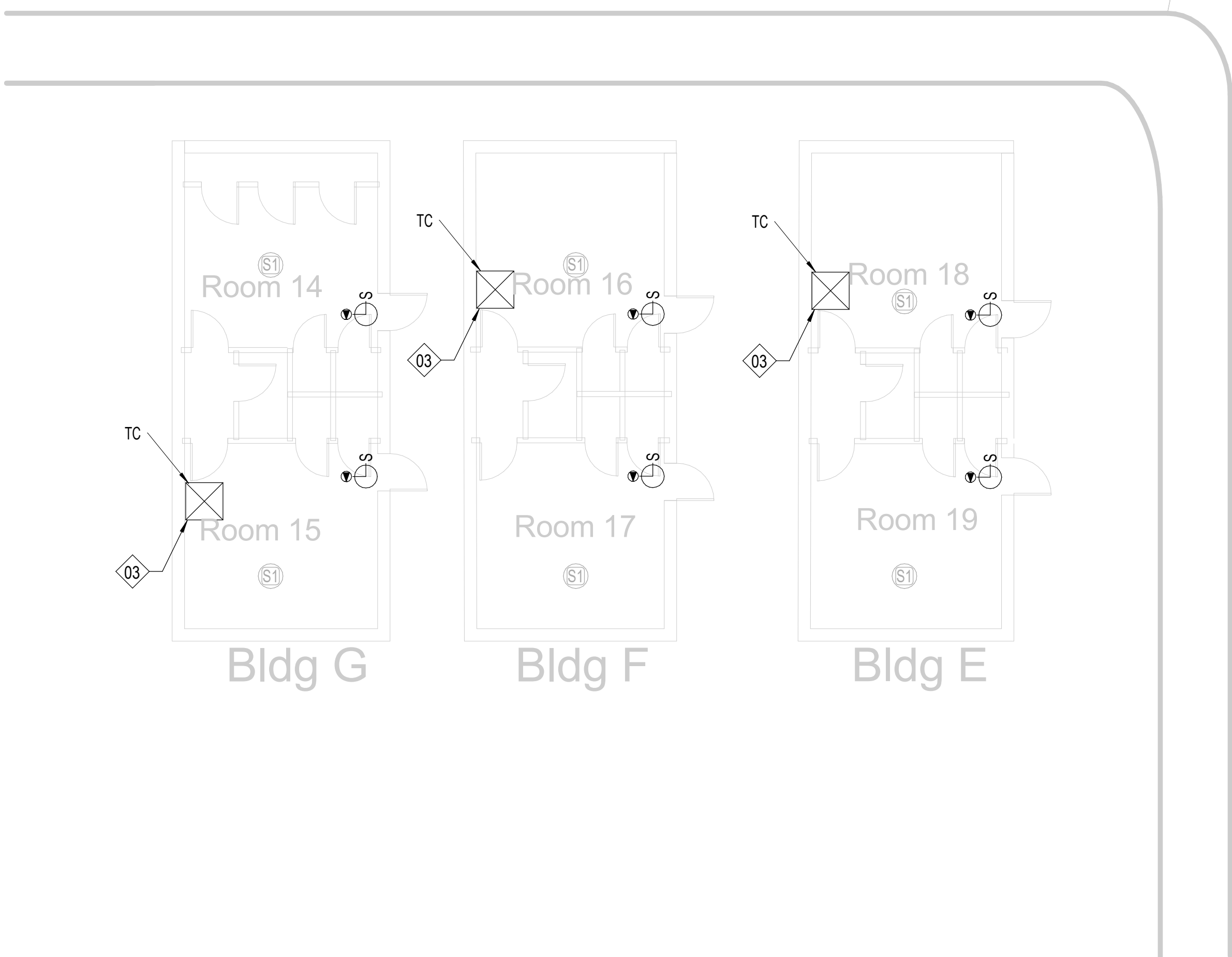
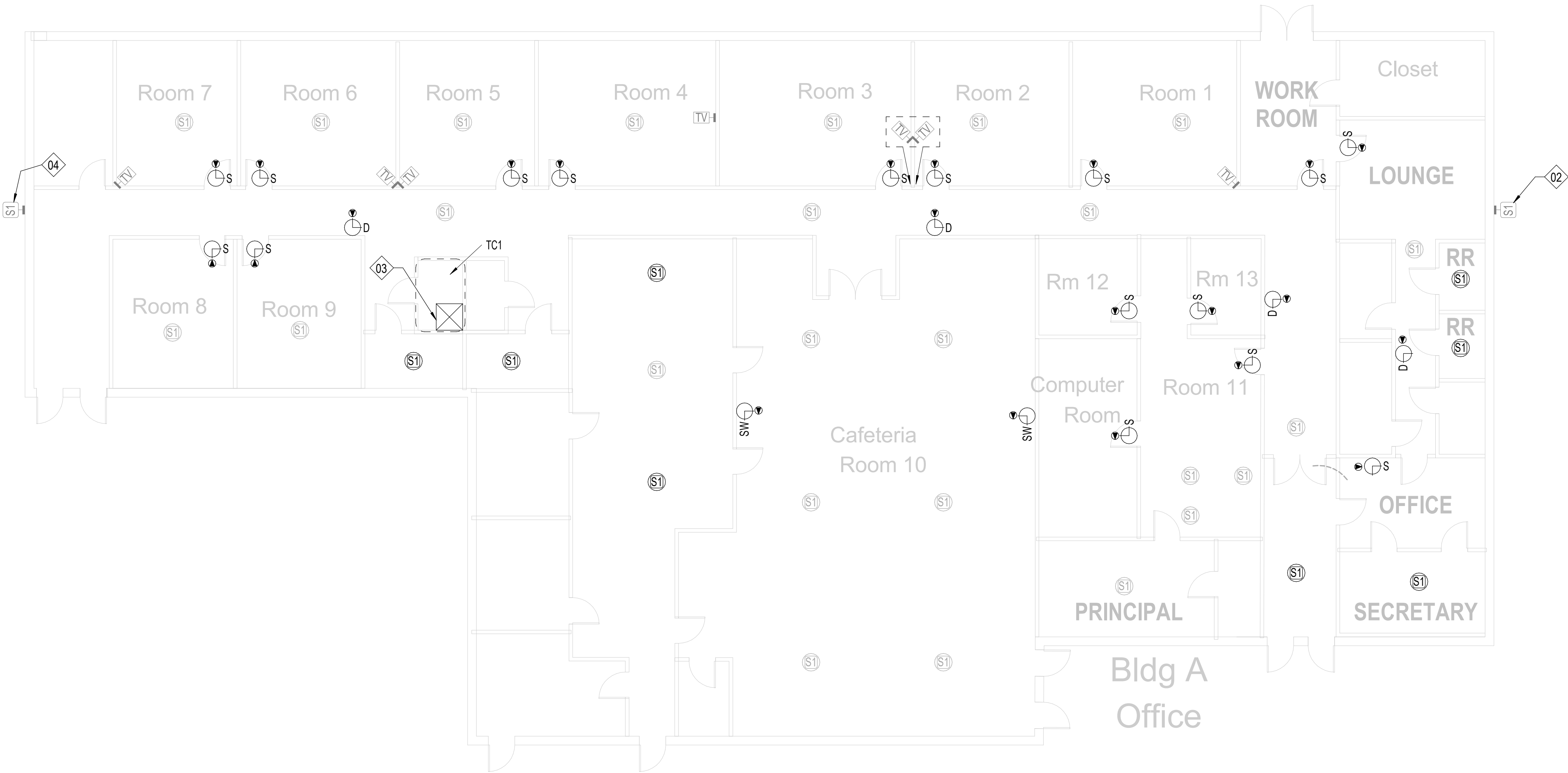
Date:

04/29/2026

Sheet No.

T126

Autosave Docx:CRUX-San Angelo ISD Paging System Upgrade\B SAN-1003-01 SANSD ISD Paging Upgrade, TECH, 02\HOSTED.rvt



SHEET NOTES:

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Description

Date

Revision

Project

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - FORT
CONCHO ES

Autosave Docs:CRUX-San Angelo ISD Paging System Upgrade\B-SAN-1003-01 SANSD ISD -Paging Upgrade- TECH_02\HOSTED\rv4

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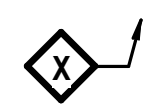
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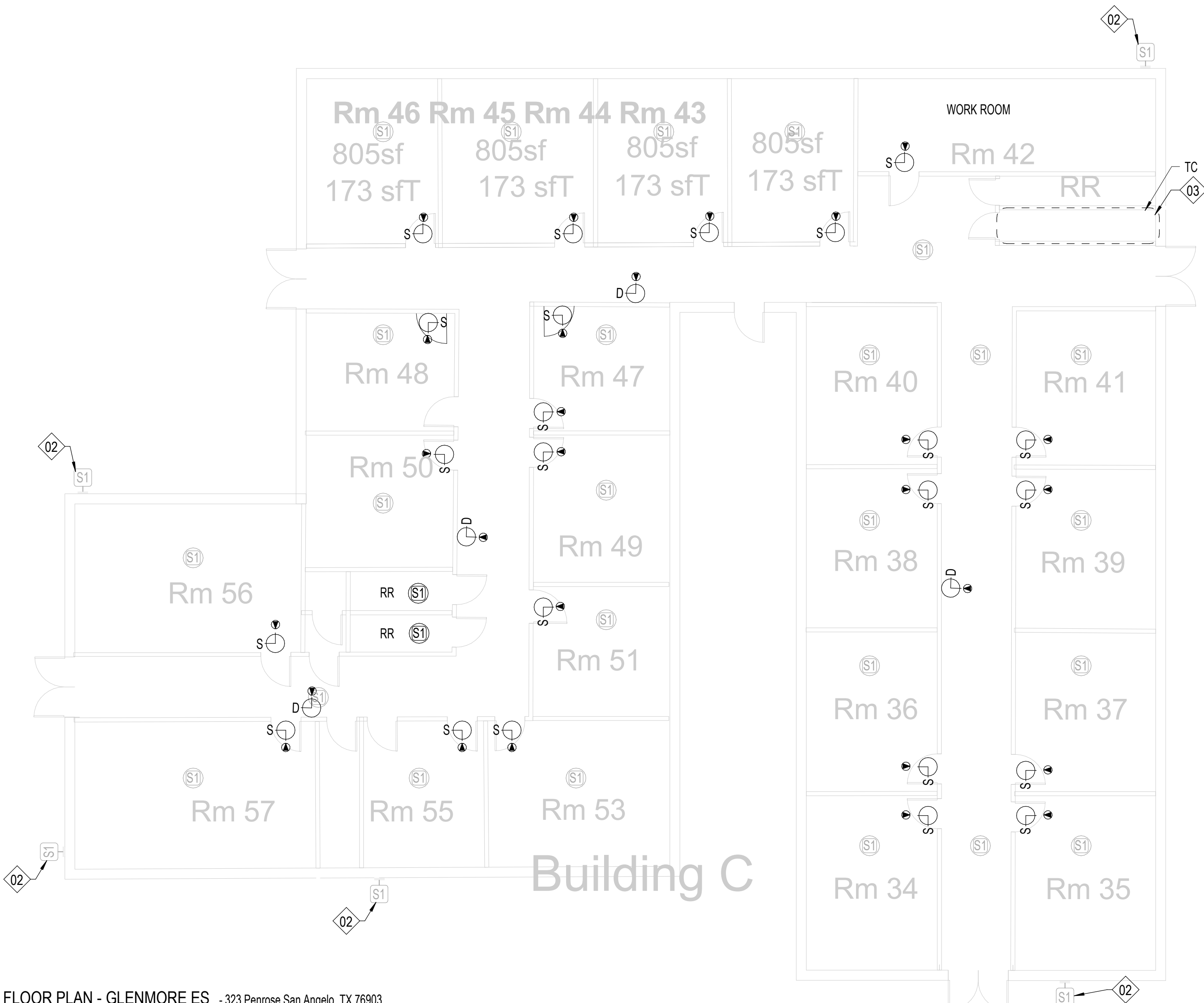
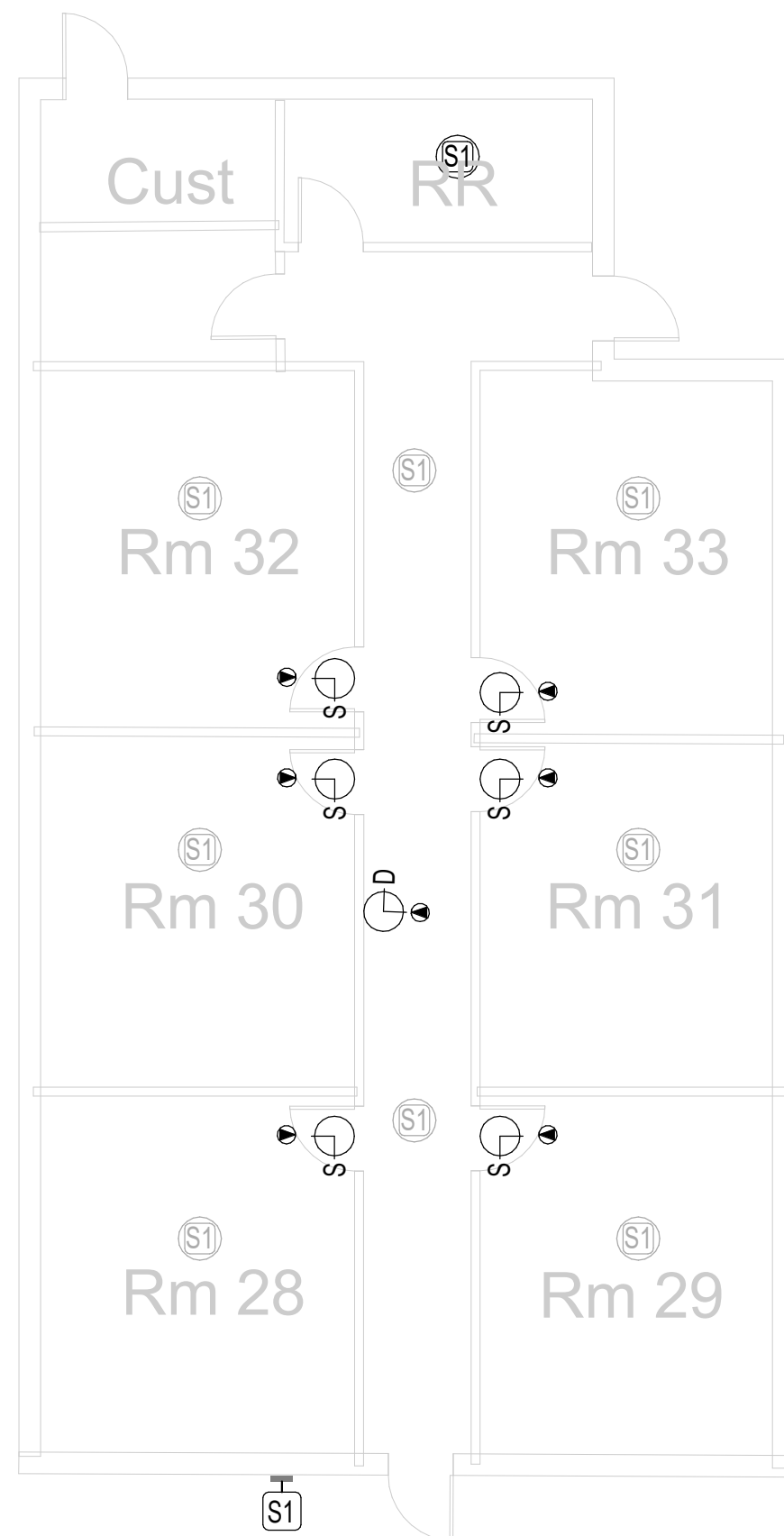
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Play Ground



Description

Date

Revision

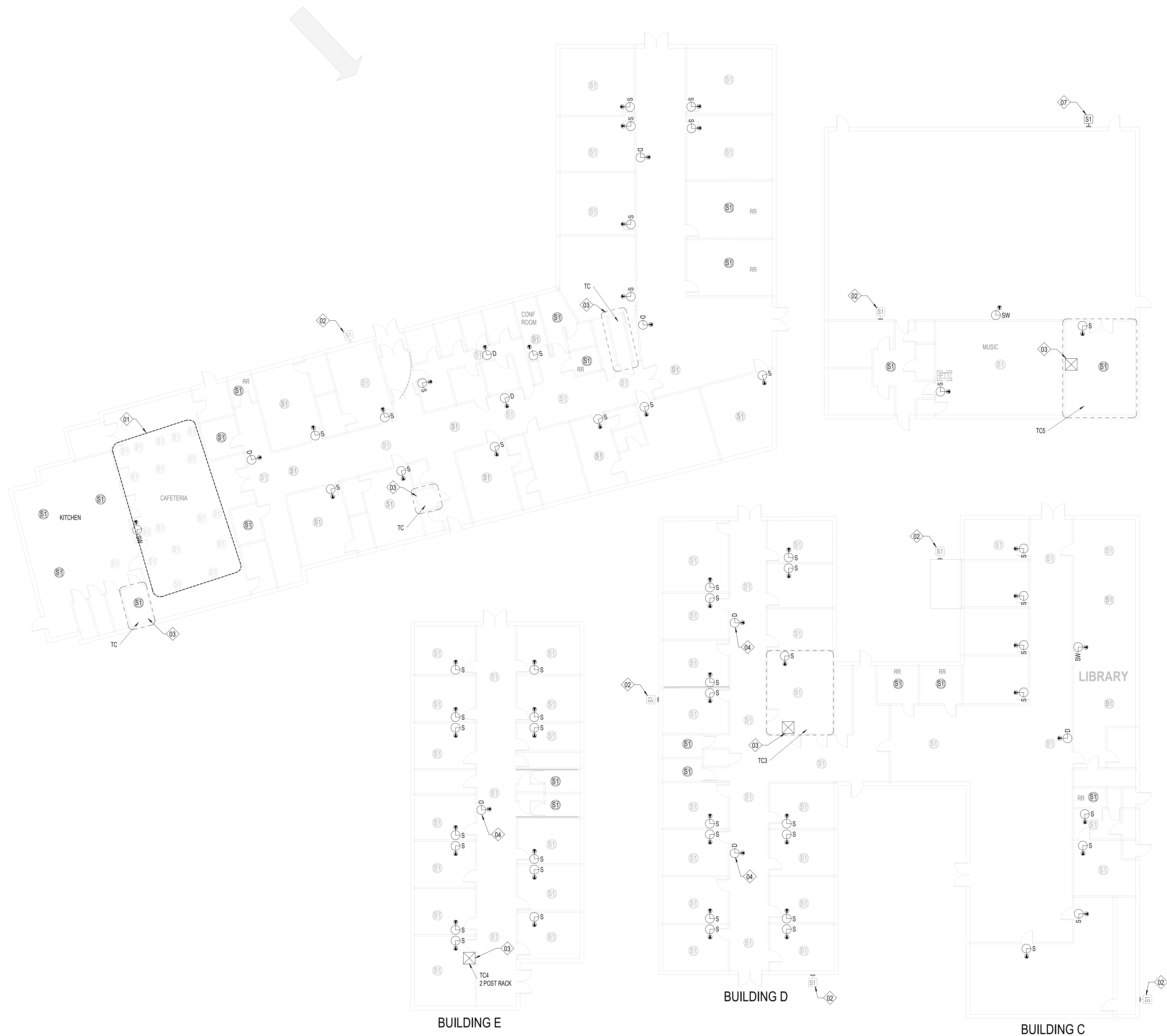
Project

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - GLENMORE ES

Job No. D-SAN-1003-01	Sheet No. T128
Drawn By: CV	
Designed By: CV	
Date: 04/29/2026	



SHEET NOTES:

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01

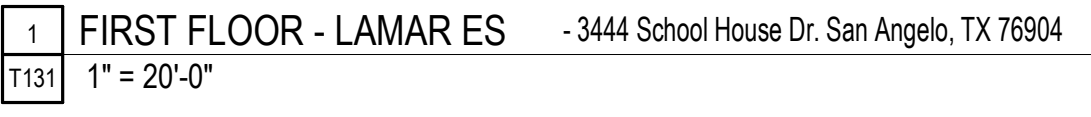
CRUX
TECHNOLOGY + SECURITY SOLUTIONS
800.685.6440
www.cruxsolutions.com

Job. No.
D-SAN-1003-I

Drawn By:
CM

Designed B

21. GYP CEILING. CONTRACTOR SHALL ACCOUNT FOR THREE (3) 24"X24" ACCESS PANEL LOCATIONS IN PRICING. VERIFY PATHWAYS ON SITE.



Autodesk Docs: CRUX-San Angelo ISD Paging System Upgrade\B SAN-1003-01 SANSD ISD Paging Upgrade, TECH, 02\HOSTED.rvt



SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

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1 FLOOR PLAN - SANTA RITA ES - 615 S. Madison San Angelo, TX 76901
T132 3/16" = 1'-0"

Description

Date:

Revision:

Project:

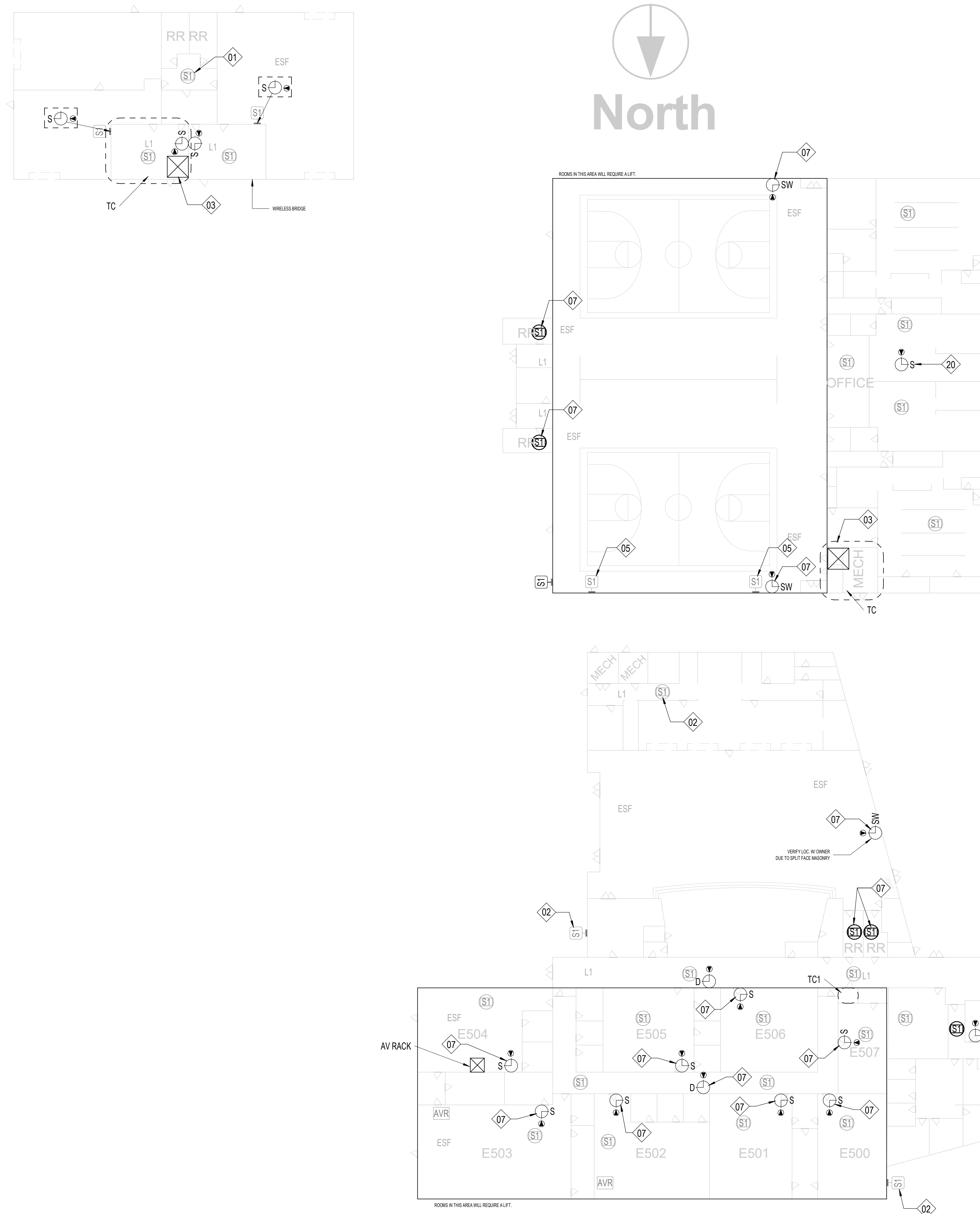
SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - SANTA RITA ES

Job No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026
Sheet No.
T132

Autosave Docs\CRUX-San Angelo ISD Paging System Upgrade\0-SAN-1003-01 SANSD ISD Paging Upgrade, TECH, 02\HOSTED\1.rvt



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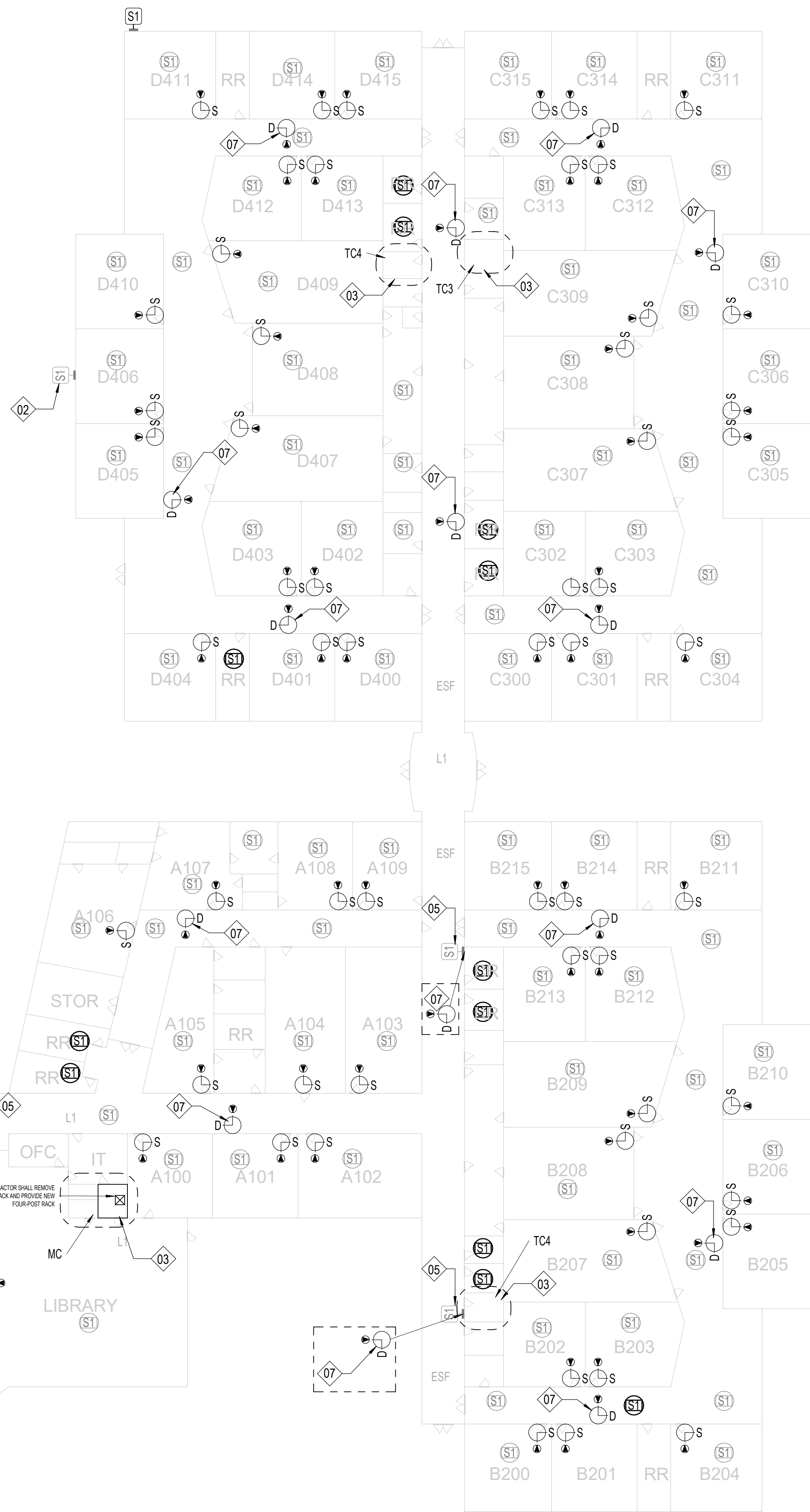
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Description

Date:

Revision:

Project:

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - LINCOLN MS



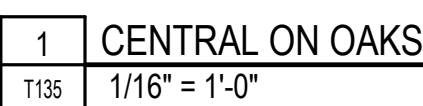
- 2500 Sherwood Way San Angelo, TX 76901

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1101

Autodesk Docs: \\CRUX-San Angelo ISD Paging System Upgrade\ID-SAN-1001-01 SAISD HS Paging Upgrade_TECH_v25(HOSTED).rvt



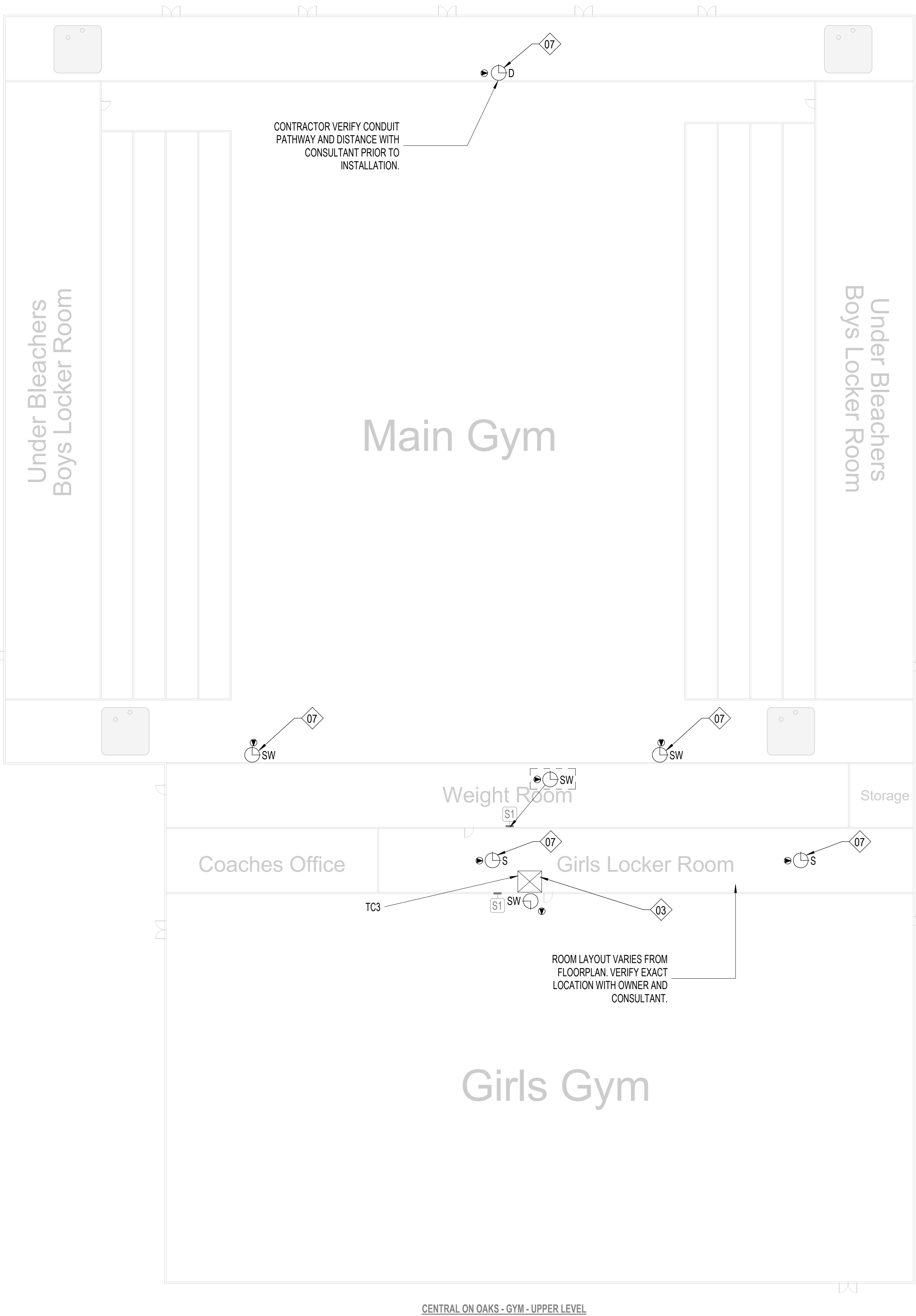
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Date: _____

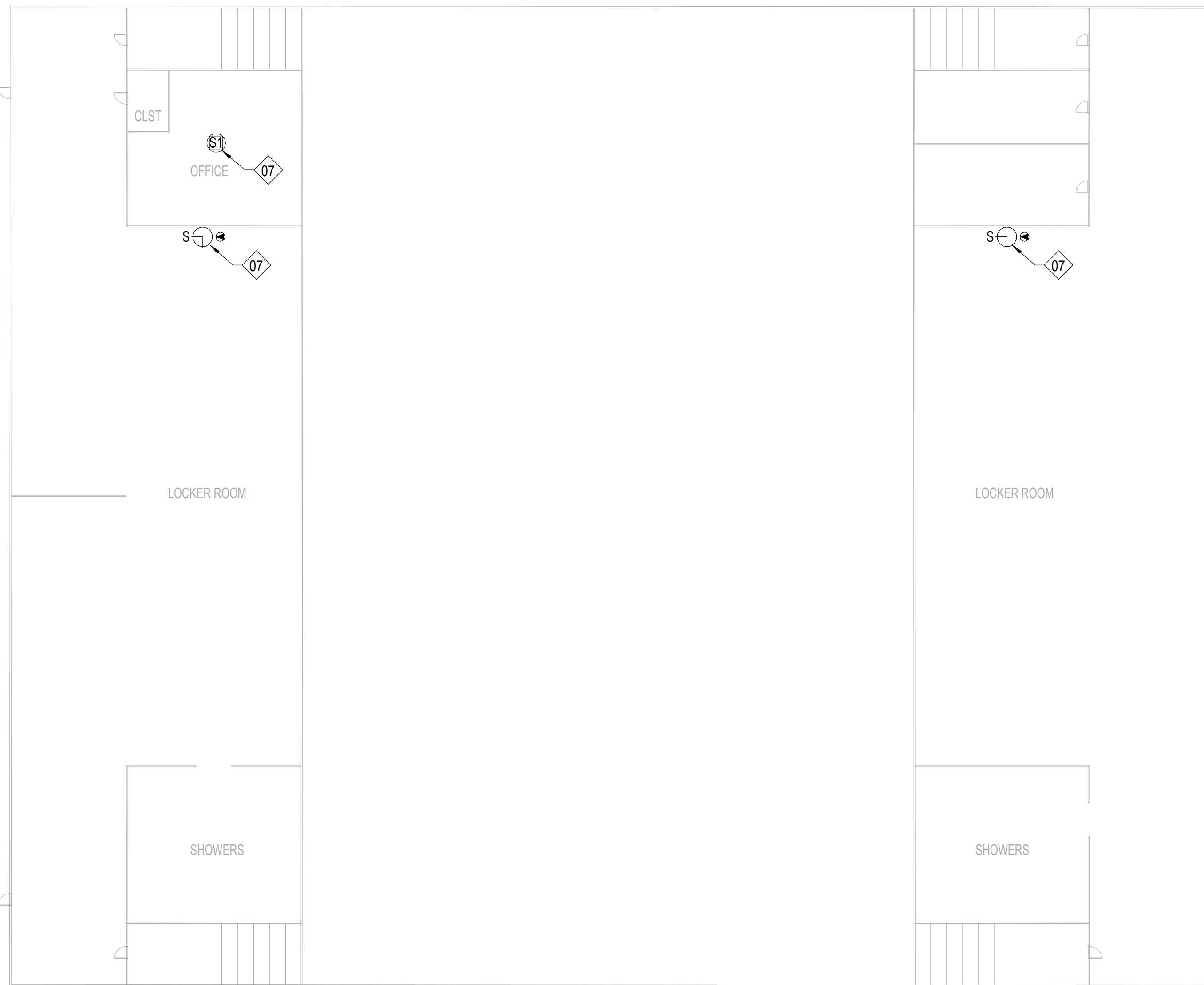
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Autodesk Docs: CRUX-San Angelo ISD Paging System Upgrade\B SAN-1003-01 SANSD ISD Paging Upgrade, TECH, 02\HOSTED\rv4

1 CENTRAL ON OAKS GYM
T136 1/16" = 1'-0"



CENTRAL ON OAKS - GYM - UPPER LEVEL



CENTRAL ON OAKS - GYM - LOWER LEVEL

SHEET NOTES:

REFERENCE SHEET TG101 FOR ALL SYMBOLS AND PROJECT SPECIFIC NOTES.

ALL CONDUITS SHALL BE 1" FOR ALL DEVICES UNLESS NOTED OTHERWISE ON THE TECHNOLOGY DRAWINGS.

IN AREAS WITH CONCRETE OR MASONRY WALLS, CONTRACTOR SHALL PROVIDE SURFACE RACEWAY SYSTEM.

IN AREAS WITH EXPOSED CEILINGS, CONTRACTOR SHALL INSTALL ALL CABLING IN CONDUIT. COORDINATE PAINT/FINISH WITH OWNER.

CONTRACTOR SHALL DEMOLISH ANY UNUSED CABLING BACK TO ITS ORIGIN AND DISPOSE.

CONTRACTOR SHALL REPLACE ALL EXISTING PTT BUTTONS PRESENT IN THE FACILITY WITH A BLANK COVER PLATE. CONTRACTOR SHALL LOCATE, DOCUMENT AND REMEDIATE IN THE SAME METHOD ANY PTT BUTTON NOT EXPLICITLY SHOWN IN THIS DRAWING SET.

CONTRACTOR WILL REQUIRE A LIFT TO ACCESS LAY-IN CEILING IN ALL FINE ARTS AND GYMNASIUM AREAS.

KEYNOTE LEGEND

(NOT ALL KEYNOTES MAY APPLY.)

01. EXISTING, CONTRACTOR SHALL REPLACE WITH NEW DEVICE AND NEW CABLING. CEILING TILE MAY REMAIN IN PLACE UNLESS DAMAGED.

02. EXISTING, TO REMAIN. CONTRACTOR SHALL INSTALL BRIDGE FROM ANALOG SPEAKER TO IP HEAD END.

03. CONTRACTOR SHALL COMPLETELY REMOVE ALL ABANDONED ANALOG SPEAKER WIRING AND SUPPORTING TERMINAL BLOCKS FROM THE FACILITY. TERMINAL BLOCKS THAT SUPPORT OTHER EXISTING DEVICES SHALL REMAIN.

04. INSTALL PLASTIC 1/2" RACEWAY FOR PATCH CABLE TO TOP OF SURFACE MOUNTED CLOCK BACK BOX. TERMINATE DATA ABOVE CEILING.

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11. THIS IS A PLASTER CEILING. CONDUIT OR PLASTIC RACEWAY WILL NEED TO BE SECURED TO THE CEILING ITSELF.

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13. INSTALL SURFACE RACEWAY FOR ENTIRE PATH FROM TC TO DEVICE.

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19. J-BOX LARGER THAN 4X4" NEEDED HERE. PROVIDE ADDITIONAL SLACK FOR FUTURE RETERMINATIONS.

20. FIELD CONDITIONS MAY DIFFER FROM WHAT IS SHOWN. COORDINATE EXACT LOCATION WITH OWNER.

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Description

Date

Revision

Project

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - CENTRAL
ON OAKS (DAEP/PAYS)
GYM

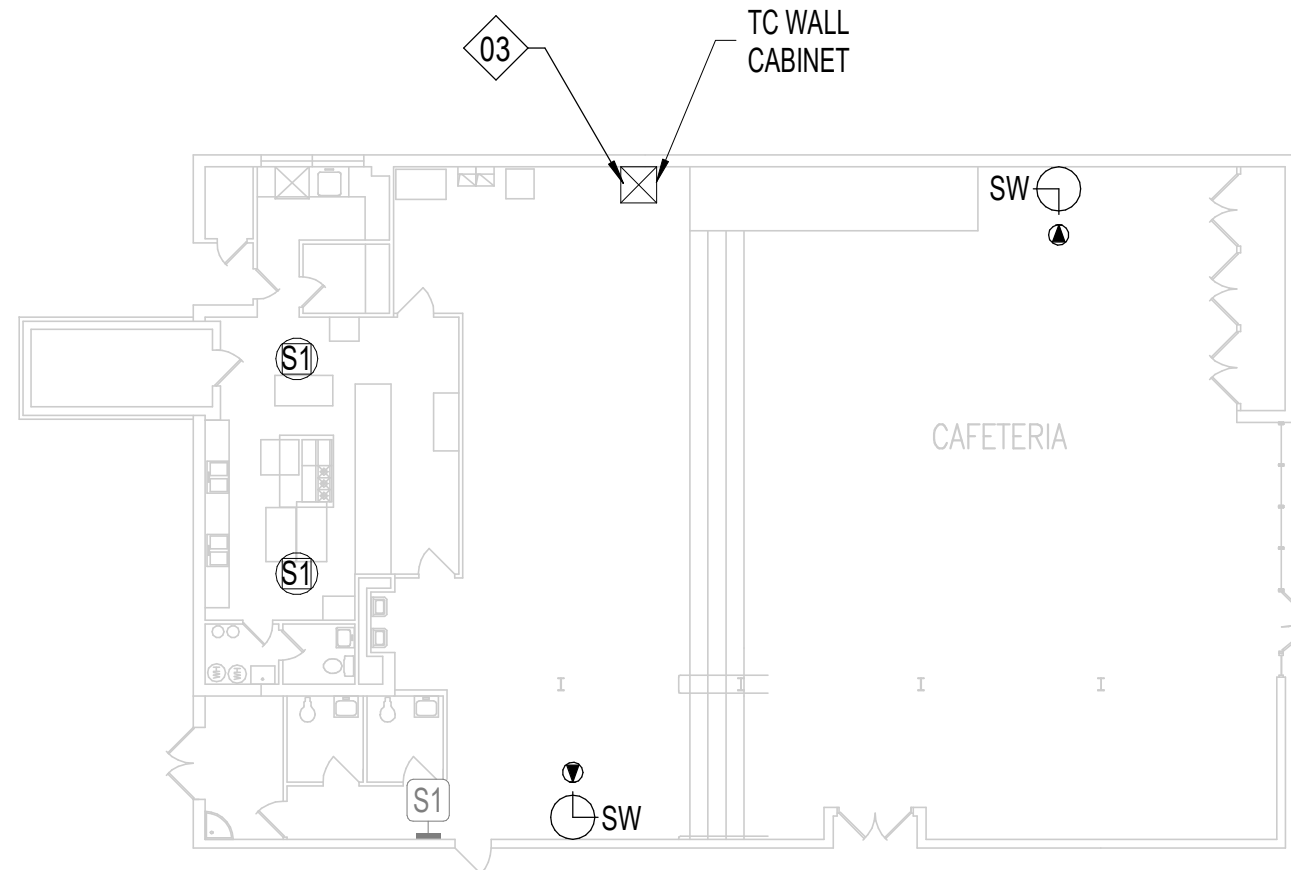
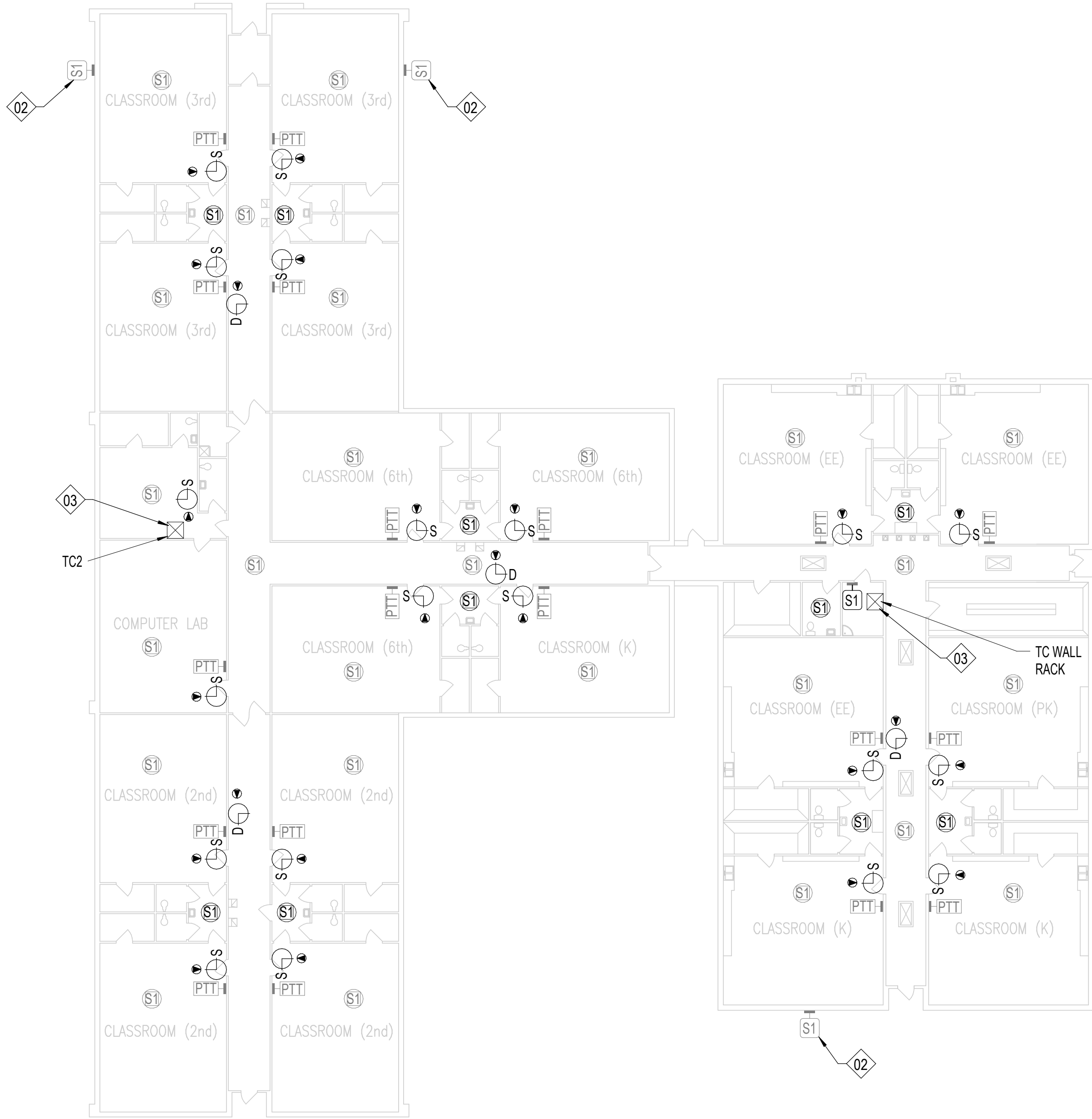
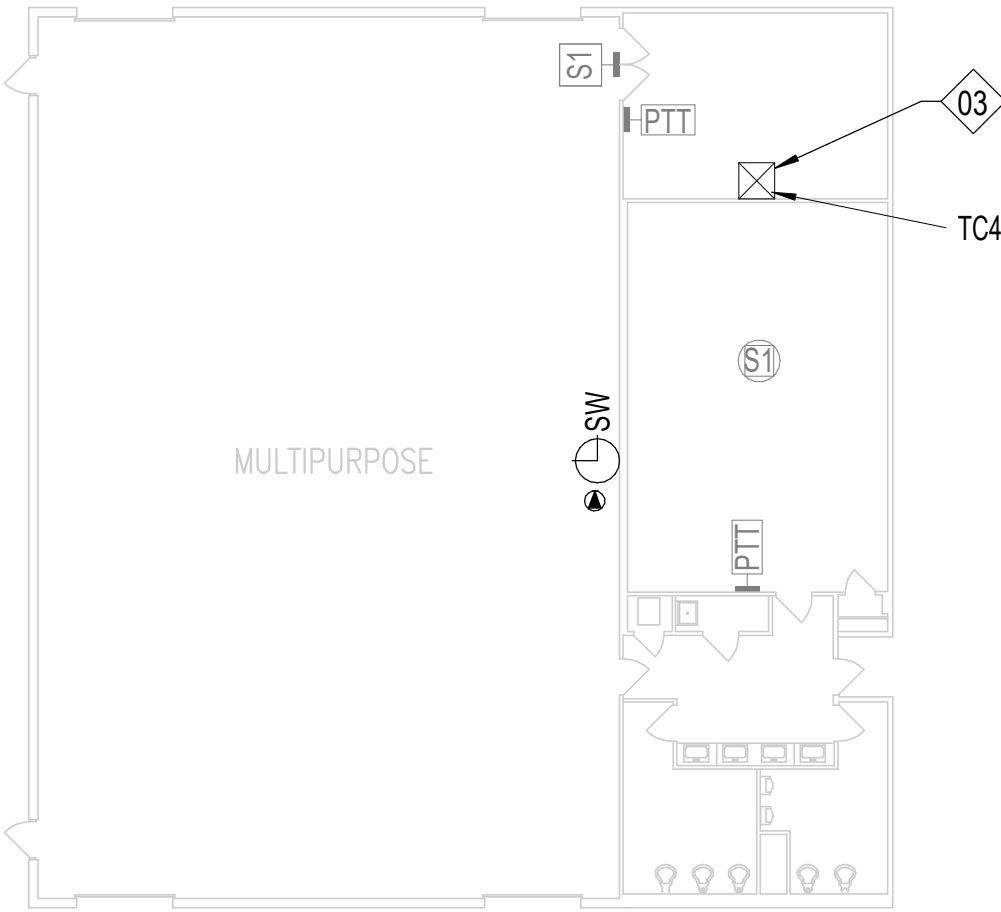
VOLUME

Job No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026

Sheet No.

T136

Autodesk Docs\CRUX-San Angelo ISD Paging System Upgrade\B SAN-1003-01 SANSD ISD Paging Upgrade, TECH_02\HOSTED.rvt



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(NOT ALL KEYNOTES MAY APPLY.)

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Description

Date:

Revision:

Project:

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01

CRUX
TECHNOLOGY • SECURITY SOLUTIONS
800.665.6440
www.cruxsolutions.com

FLOOR PLAN - AUSTIN
PROFESSIONAL LEARNING
(PL)

VOLUME

Job. No.

D-SAN-1003-01

Drawn By:

OG

Designed By:

OG

Date:

04/29/2026

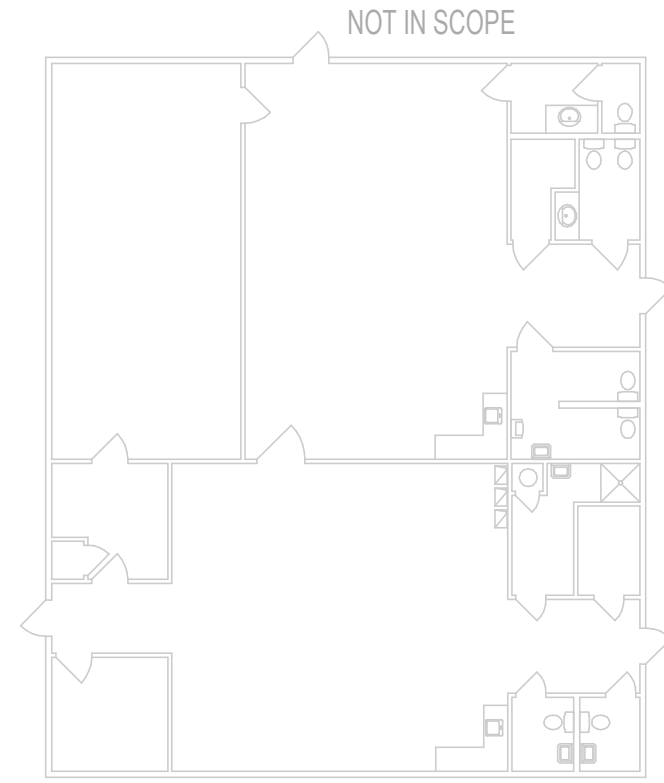
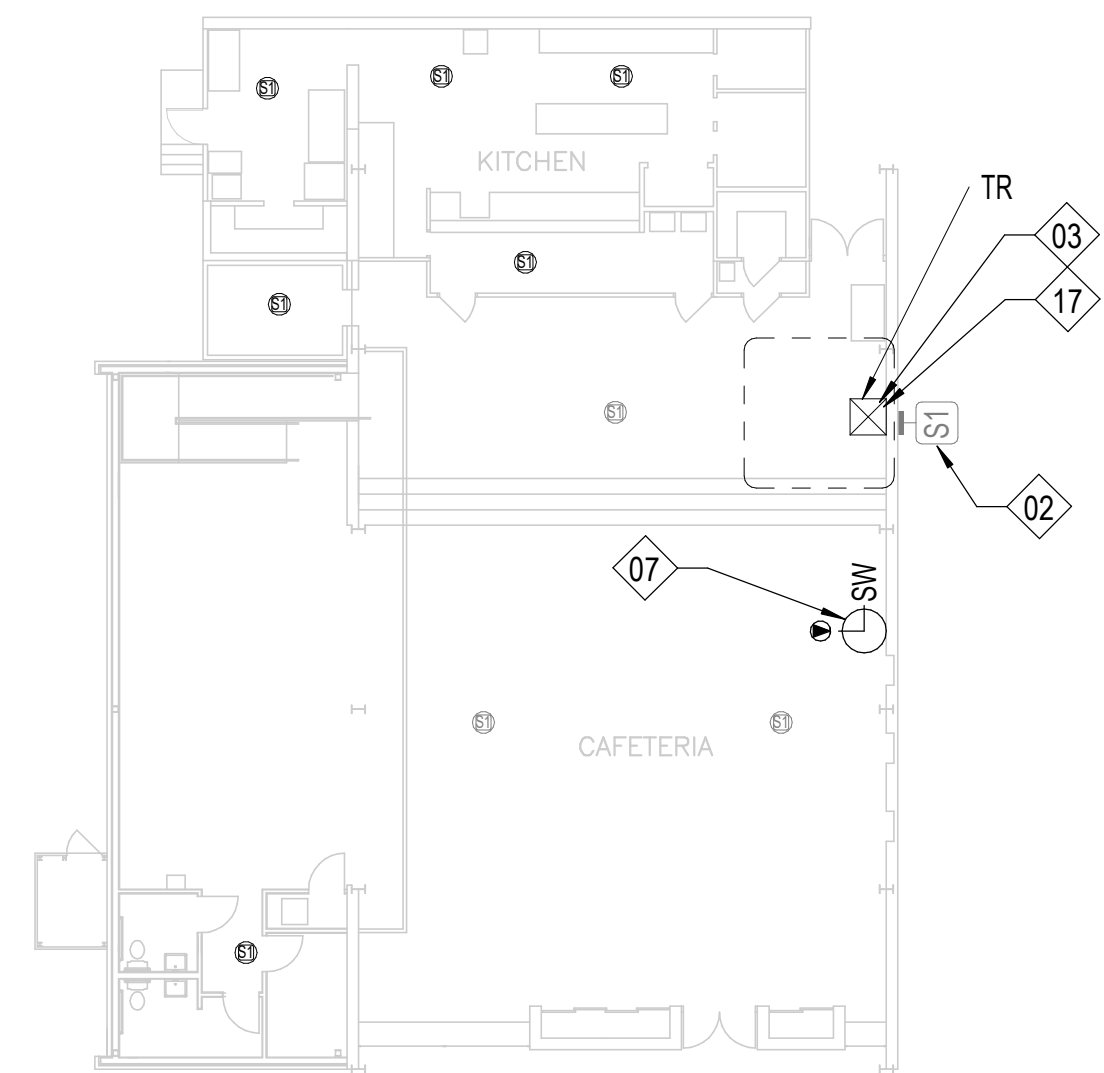
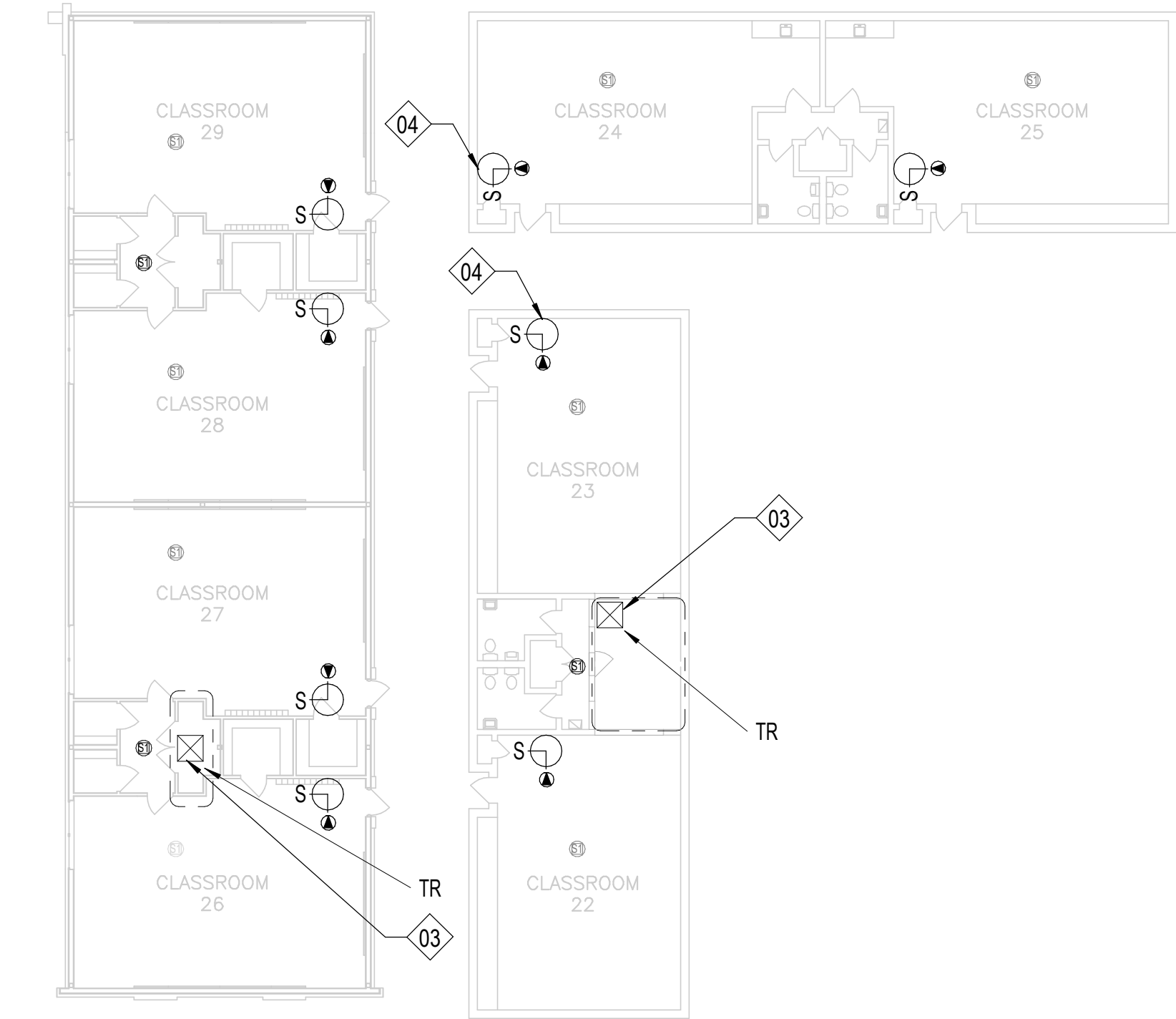
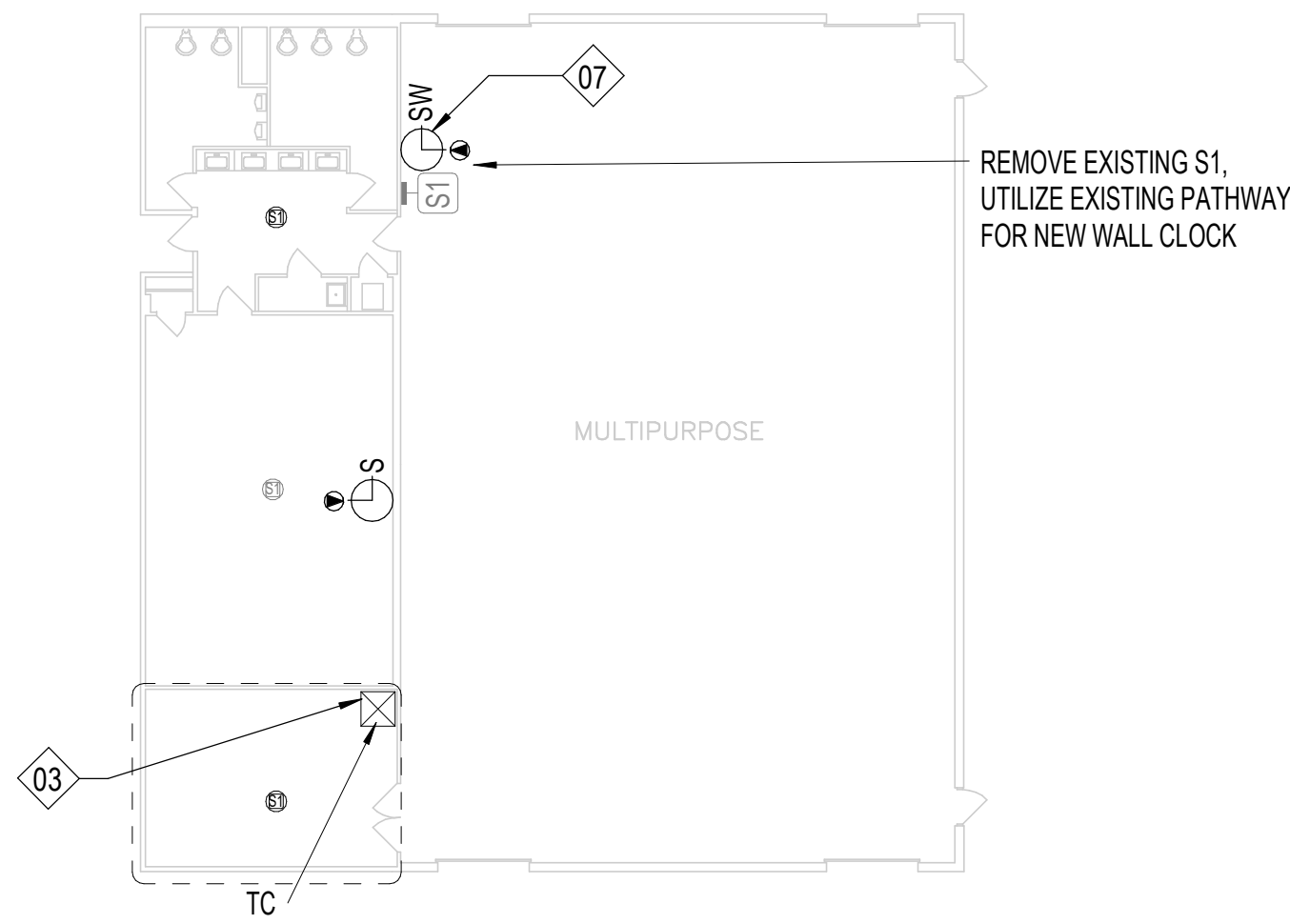
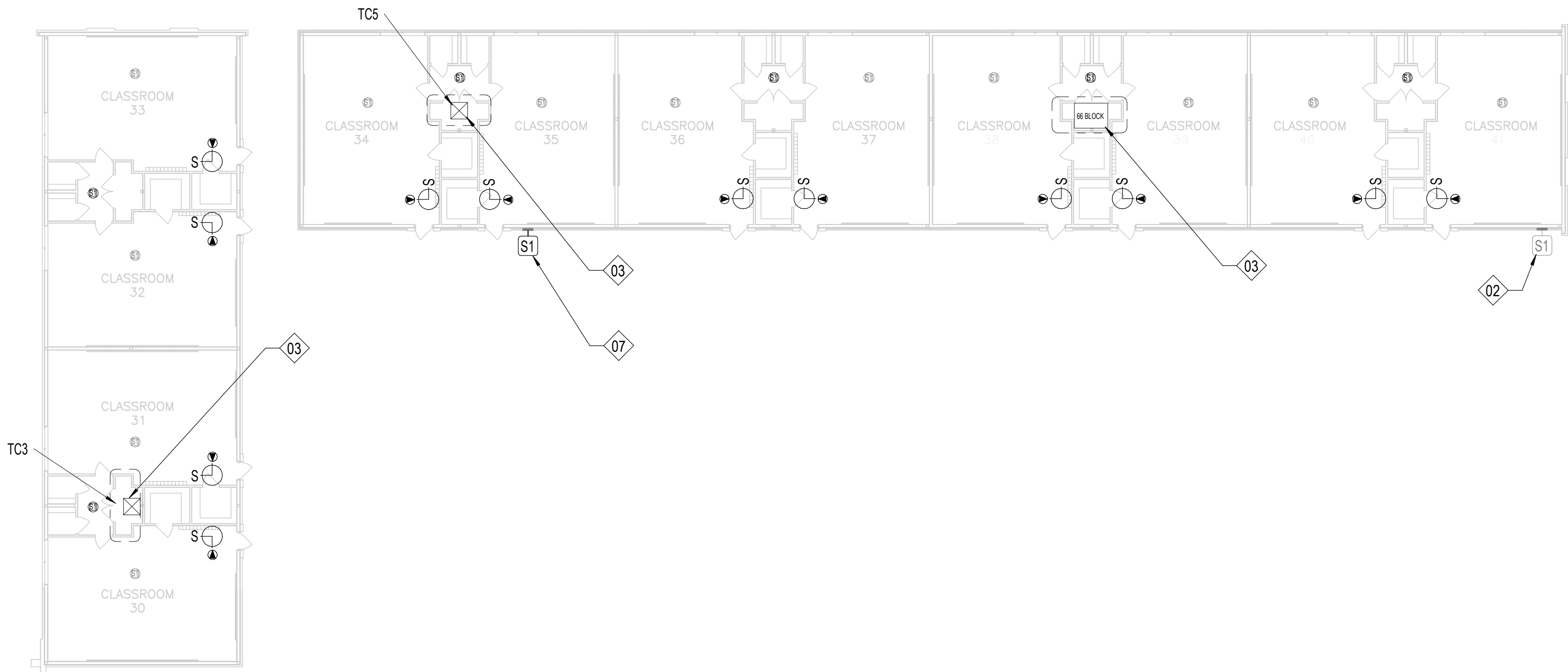
Sheet No.

T137

1 FIRST FLOOR - AUSTIN PROFESSIONAL LEARNING (PL) - ADD ALTERNATE 1

T137
1/16" = 1'-0"

Autodesk Docs\CRUX\San Angelo ISD Paging System Upgrade\B SAN-1003-01 SANSD ISD Paging Upgrade, TECH, 02\HOSTED\1.rvt



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Description

Date:

Revision:

Project:

SAN ANGELO ISD
PAGING UPGRADE
SAN ANGELO, TEXAS
D-SAN-1003-01



FLOOR PLAN - SAN JACINTO ES

Job No.
D-SAN-1003-01
Drawn By:
CV
Designed By:
CV
Date:
04/29/2026

Sheet No.

T138

San Angelo Independent School District

REQUEST FOR PROPOSAL

Bid Name:
District Wide Intercom, 2025 Bond

Opening Date and Time:
3:00 PM – 05/20/2026

Bid Number: 26-008

Location of Opening:

Completion Date: 11/20/26

Purchasing Department
1621 University
San Angelo, TX 76904

The undersigned authorized representative of the vendor indicated below hereby acknowledges:

1. That he/she is authorized to enter into contractual relationships on behalf of the company indicated below, and
2. That he/she has carefully examined this Bid Notice, the accompanying Bid Forms, and the General Terms and Conditions and Item Specifications associated with this Bid Invitation, and
3. That he/she proposes to supply any products or services submitted under this Bid Invitation at the prices quoted and in strict compliance with the General Terms and Conditions, and Item Specifications associated with this Bid Invitation, unless any exceptions are noted in writing with this bid response, and
4. That if any part of the bid is accepted, he/she will furnish all products or services awarded under this bid at the prices quoted and in strict compliance with the General Terms and Conditions, and Item Specifications associated with this Bid Invitation, unless any exceptions are noted in writing with this bid response, and
5. That any and all exceptions to the General Terms or Conditions of this bid have been noted in writing in this bid response, and that no other exceptions to the General Terms or Conditions will be claimed.

By submitting a bid, each bidder agrees to waive any claim it has or may have against the San Angelo Independent School District, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid; waiver of any requirements under the Bid Documents; or the Contract Documents; acceptance or rejection of any bids; and award of the Contract.

Offeror agrees to exhaust its administrative remedies under District Policy and the Disputes Clause of any resulting contract before seeking judicial relief of any type in connection with any matter related to this solicitation, the award of any contract, and any dispute under any resulting contract.

Name of Bidding Company	Date
Printed name of Authorized Representative	Signature of Authorized Representative
Position of Authorized Representative	E-mail Address

SAN ANGELO INDEPENDENT SCHOOL DISTRICT

District Wide Intercom, 2025 Bond

Request for Proposal #26-008

Authorizing Rep. _____

Company Name _____

Base Bid				
Item #		Total Cost	Leadtime for Material (Calendar Days)	Total Number of calendar days to complete job
Central High School, 655 Caddo, San Angelo, TX 76901				
1	Base Bid, <i>Turnkey project to include all work outlined in the Project Manual and as depicted on Drawings T101-T114. Contractor shall complete the paging upgrade in Central HS in the summer of 2026 to support the demolition of the existing head end in September</i> State your substantial completion date for CHS. _____ <i>No later than 9/1/26.</i>			
Lake View High School, 900 E 43rd, San Angelo, TX 76903				
2	Base Bid, <i>Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T115-T123.</i>			
Belaire Elementary School, 700 Stephen, San Angelo, TX 76905				
3	Base Bid, <i>Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T124.</i>			
Bonham Elementary School, 4630 Southland, San Angelo, TX 76904				
4	Base Bid, <i>Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T125.</i>			
Bradford Elementary School, 2302 Bradford , San Angelo, TX 76904				
5	Base Bid, <i>Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T126</i>			
Fort Concho Elementary School, 310 E Washington, San Angelo, TX 76903				
6	Base Bid, <i>Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T127.</i>			
Glenmore Elementary School, 323 Penrose, San Angelo, TX 76903				
7	Base Bid, <i>Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T128.</i>			
Goliad Elementary School, 120 E 39th, San Angelo, TX 76903				
8	Base Bid, <i>Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T129.</i>			
Holiman Elementary School, 1900 Ricks, San Angelo, TX 76904				
9	Base Bid, <i>Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T130.</i>			
Lamar Elementary School, 3444 School House, San Angelo, TX 76904				
10	Base Bid, <i>Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T131.</i>			
Santa Rita Elementary School, 615 S Madison, San Angelo, TX 76904				
11	Base Bid, <i>Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T132.</i>			

SAN ANGELO INDEPENDENT SCHOOL DISTRICT

District Wide Intercom, 2025 Bond

Request for Proposal #26-008

Authorizing Rep. _____

Company Name _____

Lincoln Middle School, 255 Lake View Heros, San Angelo, TX 76903

12	Base Bid, Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T133.			
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Lone Star Middle School, 2500 Sherwood Way, San Angelo, TX 76904

13	Base Bid, Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T134.			
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Central on Oakes, 218 N Oakes, San Angelo, TX 76904

14	Base Bid, Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T135-T136.			
----	---	--	--	--

Totals \$				
Contingency \$		100,000.00		
Total Project Cost + Contingency \$				

State your total calendar days needed to complete all Base Bid work	Total Calendar Days
---	---------------------

Alternate

Item #	Total Cost, Added to Base Bid	Leadtime for Material (Calendar Days)	Additional Calendar days added to the Base Bid per alternate
--------	-------------------------------	--	--

Austin PL Center, 700 N Van Buren St, San Angelo, TX 76901

1	Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T137.			
---	---	--	--	--

San Jacinto ES, 800 Spaulding St, San Angelo, TX 76903

2	Turnkey project to include all work outlined in the Project Manual and as depicted on Drawing T138.			
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Central HS - Sousa Hall TC Relocation, 655 Caddo St. San Angelo, TX 76904

3	For the relocation of the Sousa band hall TC at Central HS including the relocation and testing of eighteen data cables, the installation of an owner furnished wall mount rack, plywood backboard, new fiber backbone and all new termination hardware as per the Div 27 specifications and sheet T1.02.			
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Unit Pricing (All unit pricing will be used for additions and deductions.)

1	Cost to add a new ceiling mounted analog speaker with wiring to existing IP bridge. Assume wiring length up to 195'. Speaker and cabling as per Div 27 specifications. Assume installation in existing acoustic 2x2 ceiling tile.	Yes		No	
2	Cost to add a new exterior mounted analog horn with wiring to existing IP bridge. Assume wiring length up to 195' Horn and cabling as per Div 27 specifications. Assume new 3/4" core sleeve through existing building envelope into adjacent accessible ceiling space.	Yes		No	
3	Cost to add a new single sided, standard size, wall mounted speaker / clock including all mounting hardware and licensing requirements. All materials and labor as per Div 27 specifications.	Yes		No	
4	Cost to add a new double sided standard size wall mounted speaker / clock including all mounting hardware and licensing requirements. All materials and labor as per Div 27 specifications.	Yes		No	
5	Cost to add a new single sided extra large size wall mounted speaker / clock including all mounting hardware and licensing requirements. All materials and labor as per Div 27 specifications.	Yes		No	
6	Cost to add a new Cat6A, plenum rated data cable with surface enclosure and new patch cable. Assume length of cable at 250', available patch panel space, all terminations, testing and labeling as per Div 27 Specifications.	Yes		No	

Request for Proposal #26-008

Company Name _____

1	Did you Attend the <i>PRE BID WALK</i> ? (05/13/26 @ 9AM)	Yes	No
2	Did you include your mandatory Bid Bond?	Yes	No
3	Do you have any deviations from the bid specifications (All deviation must be listed on FORM E to be accepted)	Yes	No
4	Once approved by the School Board on 6/15/26 state your anticipated start date. _____		
5	Are you or your subcontractor certified to install all equipment and or wiring you are bidding? (Attach all Certifications.)	Yes	No
6	Will you be able to respond to warranty calls within 24 hours? If no state your response time _____ Hours, or _____ Days.	Yes	No

05/11/26	Substitutions due for review	
05/13/26	PRE BID WALK 9AM	
05/15/26	Last day for questions 2PM	
05/20/26	Bids Due by 3PM	
05/22/26	Last Day of School	
06/15/26	Board Approval	
08/13/26	First Day of School	
09/01/26	Tentative Demolition to begin at Central High School	
11/20/26	Districts Anticipated Substantial Completion Date	

List at least three ISD references or recent commercial customers, with contact information. Or attach 3 letters of reference to your bid.	
Name Of Customer, Contact Email, Contact Phone Number	

SAN ANGELO INDEPENDENT SCHOOL DISTRICT

GENERAL CONDITIONS FOR BIDDING

1. Bids shall be submitted on this form. All prices must be typed or written in ink. Bids written in pencil will not be accepted. Each bid shall be placed in a separate envelope, sealed and properly identified with the bid title and the time and date to be opened.
2. Bids must be received in the Purchasing Department office **before the hour and date specified**. **DO NOT FAX OR EMAIL YOUR BID!**
3. The prices bid should be F.O.B. destination, inside delivery. All freight charges must be included in your bid pricing. If otherwise, state on Deviation/Compliance Signature form.
4. Delivery shall be made during normal school hours unless prior approval has been obtained from authorized District personnel.
5. All items bid must be new, unused, and in first-class condition, packaged in containers suitable for shipment and storage. If otherwise, state on Deviation/Compliance Signature form.

All electrical items must meet all applicable OSHA standards and regulations, and must bear the appropriate listing from US, FMRC, NEMA, or U L Laboratories.

Materials Safety Data Sheets (MSDS) on chemicals or any other products customarily requiring MSDS Sheets must be provided for each ordering department. MSDS Sheets must be delivered along with the shipment within the contract period. Additional MSDS Sheets must be provided in a timely manner at no charge upon request to the District.
6. Installation: the successful bidder shall provide the following services on the items bid, at no additional cost to the District, if otherwise, state on Deviation/Compliance Signature form.
 - a. Provide transportation of items to the facility.
 - b. Place the items in the proper location within the facility.
 - c. Uncrate and completely assemble (if otherwise, state on Deviation/Compliance Signature form).
 - d. Provide adjustment by a trained installation mechanic.
 - e. Remove all the debris from site.
7. The District is exempt from Federal Excise Tax, and State Tax. Do not include tax in your bid totals. If it is determined that tax was included in the bid, it will not be included in the tabulation or any awards. The tax exemption certificate will be furnished upon request.
8. Any catalog, brand name, or manufacturer's reference used in the bid is **descriptive and not restrictive** and is intended to indicate type and quality desired. Bids on brands of like nature and quality will be considered. If bidding on other than referenced specifications, bid must show manufacturer, brand, model, etc. of item being offered. If other than brand(s) specified is offered, complete descriptive information of each article being bid should be included with the bid. If bidder takes no exception to the specification of referenced data, he will be required to furnish brand names, models, etc. as specified.
9. Samples, when requested, must be furnished at no cost to the District. Each sample, when requested, should be clearly marked with bidder's name and item number on the bid. **DO NOT ENCLOSE IN OR ATTACH BID TO SAMPLE.**
10. The Board of Trustees of San Angelo Independent School District reserves the right to accept or reject all or any part of any bid, waive minor technicalities and award the bid to best serve the interest of the District.
11. The District reserves the right to purchase or lease-purchase additional articles as listed on this bid subject to verification of the same or lower prices and conditions on bid.
12. All items and services being bid must conform to all appropriate local, state, and federal laws, ordinances, and regulations.
13. It is to be understood that the bidder, if awarded an order or contract, agrees to protect, defend, and hold harmless the San Angelo Independent School District from any suits or demands for payment that may be brought against it for the use of any patented material, process, article, or device that may enter into the manufacture and/or construction or from a part of the work covered by either order or contract and, bidder further agrees to indemnify and hold harmless the San Angelo Independent School District from suits or actions of every nature and description brought against it for, or on account of any injuries or damages received or sustained by any party or parties by, or for any of the acts of the vendor, his servants or agents.

14. It is not the policy of the District to purchase on the basis of low bids alone. In evaluating bids submitted and per the Texas Education Code 44.031(b), the following considerations shall be taken into account to determine the best value for the District.
 - a. the purchase price;
 - b. the reputation of the vendor and of the vendor's goods or services;
 - c. the quality of the vendor's goods or services;
 - d. the extent to which the goods or services meet the district's needs;
 - e. the vendor's past relationship with the district;
 - f. the impact on the ability of the district to comply with laws and rules relating to historically underutilized businesses;
 - g. the total long-term cost to the district to acquire the vendor's goods or services;
 - h. for a contract for goods and services, other than goods and services related to telecommunications and information services, building construction and maintenance, or instructional materials, whether the vendor or the vendor's ultimate parent company or majority owner: (a) has its principal place of business in this state; or (b) employs at least 500 persons in this state; and
 - i. any other relevant factor specifically listed in the request for bids and proposals.
15. The contract will be awarded in the best interest of San Angelo Independent School District. Specific award information is located under Specific Terms and Conditions Item #1.
16. Any and all protests regarding San Angelo ISD bidding procedures will be governed by the San Angelo Independent School District Board Policy for Grievances.
17. If the District fails to appropriate funds to provide for the annual renewal of a contract, the District may cancel without termination charge. This is provided that the Contractor receives at least 30 days written notice of the termination stating the lack of funding as the reason for the termination.
18. The San Angelo Independent School District may not be held liable for non-funding of a contract caused through no fault of its own.
19. Vendors not responding appropriately to Bid Requests will be deleted from our qualified vendor list and will not be reinstated unless specifically requested. SAISD reserves the right to delete vendors that do not respond appropriately.
20. All Bidders must execute the "Affidavit of Non-Collusion", "Felony Conviction Notification", "Bidders Certification", "Debarment and Suspension Certification Form", "Deviation/Compliance Signature Form", or "No Bid Notification" enclosed herewith for his bid to be considered. The name of the company representative on these forms should be the same.
21. Bid results will be presented to the San Angelo Independent School District Board of Trustees for approval at the earliest opportunity following the bid/proposal opening if \$50,000 or greater.
22. It is the policy of the San Angelo Independent School District not to discriminate on the basis of sex, disability, race, color, or national origin in its educational programs and/or activities, nor in its employment practices.
23. The bidder shall not sell, assign, transfer, or convey any contract resulting from this proposal, in whole or part, without the prior written consent from the District. Such consent shall not relieve the assigned of liability in the event of default by the assignee.

STANDARD TERMS AND CONDITIONS

1. CERTIFICATION: By signature on Bid Document the vendor certifies that:
 - a. The vendor has not paid, or agreed to pay, any person, other than bona fide employees, a fee or brokerage resulting from the award of any contract resultant from this bid.
 - b. The prices in this bid have been arrived at independently without consultation, communication, or agreement, for the purpose of restricting competition as to any matter relating to such prices, with any other vendor or potential vendor.
2. CONTRACT MODIFICATION: No modification of this contract shall bind buyer unless a formal contract amendment is executed between buyer and vendor.
3. CONTRACT AND PURCHASE ORDERS: A response to this Bid Document is an offer to contract with the SAISD and its members based upon the Item Specifications and the Standard Terms and Conditions contained in the Bid Document. Bids do not become contracts unless and until they are accepted by the SAISD and put into effect by the issuance of a Purchase Order(s) signed by an authorized representative of the SAISD Purchasing Department.

This contract shall collectively include (1) the General Terms and Conditions and the Item Specifications included in the Bid Document and any subsequent addenda thereto, (2) the bidder's signed Notice of Bid Document sheet and any other data collection sheets included with the Bid Invitation, (3) the bidder's entire response to the Bid Invitation, (4) the bidder's Notice of Award Letter, (5) and any additional terms, conditions, or instructions contained in each individual Purchase Order. The contract shall be interpreted by and governed under the law of the State of Texas in Tom Green County.

4. PACKING AND SHIPPING: (If applicable) the vendor shall be responsible for industry standard packing which conforms to requirements of carrier's tariffs and ICC regulations. Containers must be clearly marked as to the purchase order number. All shipments are to be F.O.B. destination, freight prepaid, to San Angelo Independent School District at the specific address on the purchase order. Delivery shall be made during normal working hours only, 8:00am to 3:00pm, unless approval for late delivery has been obtained.
5. NO REPLACEMENT OF DEFECTIVE TENDER: (If applicable) every tender of goods must fully comply with all the provisions of this contract as to time of delivery, quantity, assortment, quality, and the like. If a tender is made which does not fully conform, this shall constitute a breach, and vendor shall not have the right to substitute a conforming tender.
6. DEFAULT IN ONE INSTALLMENT TO CONSTITUTE A TOTAL BREACH: (If applicable) each installment or lot of this contract is dependent on every other installment or lot and delivery of non-conforming goods/services or a default of any nature under one installment or lot will impair the value of the whole contract and constitutes a breach of the contract as a whole.
7. GRATUITIES: The buyer may, by written notice to the vendor, cancel this contract if it is found by buyer that gratuities, in the form of entertainment, gifts or otherwise were offered or given by the vendor or any agent or representative of the vendor, to any employee of the San Angelo Independent School District with a view toward securing an order or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performing of such order. In the event this contract is canceled by the buyer pursuant to this provision, buyer shall be entitled, in addition to any other rights and remedies, to recover or withhold from the vendor the amount of the gratuity.
8. WARRANTIES: (If applicable) vendor warrants that all goods delivered under this contract will conform to the requirements of this contract (including all applicable descriptions, specifications, drawings, and samples), and will be free from defects in design and fit for the intended purposes. Any inspection or acceptance of the goods by buyer shall not alter or affect the obligations of vendor or the right of buyer under the foregoing warranties.
9. ASSIGNMENT-DELEGATION: No right or interest in this contract shall be assigned by vendor without the written permission of buyer, and no delegation of any duty of vendor shall be made

without permission of buyer. Any attempted assignment of delegation shall be wholly void and totally ineffective for purposes unless made in conformity with this paragraph.

10. ASSIGNMENT-CLAIMS: Vendor and the San Angelo Independent School District recognize that in actual economic practice overcharges resulting from anti-trust violations are in fact borne by the District. Therefore, the vendor hereby assigns the District any and all claims for such overcharges.
11. ADVERTISING: Vendor shall not advertise or publish, without the District's prior consent, the fact that the District has entered into this contract, except to the extent necessary to comply with proper requests for information as provided by appropriate statutes.
12. TITLE AND RISK OF LOSS: (If applicable) the title and risk of loss of the goods shall not pass to the District until the District actually receives the goods at the point of delivery.
13. INSPECTION: (If applicable) all goods are subject to final inspection and acceptance by the District. Material/services failing to meet the requirements of this contract will be held at vendor's risk and may be returned to the vendor. If so returned, the cost of transportation, unpacking, inspection, repackaging, reshipping, or other like expenses are the responsibility of the vendor.
14. LIENS: All goods delivered, and labor performed under this contract shall be free of all liens, and if the District requests, a formal release of all liens will be delivered to the District.
15. INDEMNIFY: Vendor agrees to indemnify and hold the District harmless from any damage or expense whatsoever resulting to the District from any and all claims and demands on account of infringement or alleged infringement of any patent in connection with the manufacture or use of any product included in this contract. Upon written requests the vendor will defend, at its own cost and expense, any legal action or suit against the District involving any such alleged patent infringement and will pay and satisfy any and all judgments or decrees rendered in any such legal actions or suits. Vendor will indemnify San Angelo Independent School District against all claims for damages to persons or property resulting from defects in materials or workmanship.
16. REMEDIES AND APPLICABLE LAWS: This contract shall be governed by San Angelo Independent School District and vendor shall have all remedies afforded each by the Uniform Commercial Code, as adopted in the State of Texas, except as otherwise provided in this contract or in statutes pertaining specifically to the State. This contract shall be governed by the laws of the State of Texas, and suits pertaining to this contract may be brought only in the courts of the State of Texas in Tom Green County.
17. CONFLICT OF INTEREST: This contract is subject to cancellation by buyer if any person significantly involved in initiating, negotiating, securing, drafting or creating the contract on behalf of San Angelo Independent School District, is at any time while the contract is in effect, an employee of any other party to the contract in any capacity or a consultant to any other party of the contract with respect to the subject matter of the contract.
18. FORCE MAJEURE: Neither party shall be held responsible for any losses resulting if the fulfillment of any terms or conditions of this contract is delayed or prevented by any other cause not within the control of the party whose performance is interfered with and which, by the exercise of reasonable diligence, said party is unable to prevent.
19. RIGHT TO ASSURANCE: Whenever one party to this contract in good faith has reason to question the other party's intent to perform, he may demand that the other party give a written assurance of this intent to perform. In the event that demand is made and no assurance is given within five (5) days, the demanding party may treat this failure as an anticipatory repudiation of the contract.
20. INTERPRETATION-PAROL EVIDENCE: This contract is intended by the parties as a final expression of their agreement and is intended also as a complete and exclusive statement of the terms of this agreement. No course of prior dealing between the parties and no usage of the trade shall be relevant to supplement or explain any term used in this contract. Acceptance or acquiescence in a course of performance rendered under this contract shall not be relevant to determine the meaning of this contract even though the accepting or acquiescing party has knowledge of the nature of the performance and opportunity to object. Whenever a term defined by the Uniform Commercial Code is used in this contract, the definition contained in the Code is to control.

21. COMPLIANCE OF LAWS: The final contract must follow all federal and Texas State laws and regulations and is subject to termination by the Governing Board of the San Angelo Independent School District, termination for non-availability of funding and for prepayment, without penalty.
22. CHOICE OF LAW: The parties hereby agree that this agreement was negotiated, made and entered in the State of Texas and under the laws of the State of Texas.
23. INFRINGEMENT: Contractor agrees to protect San Angelo Independent School District from claims involving infringement or copyrights.
24. TECHNICAL SPECIFICATIONS: Technical specifications define the minimum acceptable standard.
25. REMEDIES FOR NON-PERFORMANCE OF CONTRACT, AND TERMINATION OF CONTRACT: If the vendor cannot comply with the terms and conditions in fulfilling its contract as anticipated, the vendor must supply the same products or services contracted from other sources at the contract price. The vendor's delay in the above will constitute the vendor's material breach of contract, whereupon the SAISD may terminate the vendor's contract for cause as provided by the remainder of this section.

If any delay or failure of performance is caused by a Force Majeure event as described in section #18 of this Standard Terms and Conditions document entitled "Force Majeure," the SAISD may, in its sole discretion, terminate this contract in whole or part, provided such termination follows the remaining requirements of this section.

Except as otherwise provided for within the Standard Terms and Conditions of this document, this contract may be terminated in whole or in part by either party in the event of substantial failure by the other party to fulfill its obligations under this contract through no fault of the terminating party; provided that no such termination may be implemented unless and until the other party is given (1) at least ten (10) days written notice (delivered by certified mail, return receipt requested) of intent to terminate, and (2) an opportunity for consultation with the terminating party, followed by a reasonable opportunity, of not more than ten (10) working days, to rectify the defects in products or performance, prior to termination.

Valid causes for termination of this contract will include, but are not limited to:

- (a) The vendor's failure to adhere to any of the provisions of the General Conditions and Standard Terms and Conditions of the Bid Document.
 - (b) The vendor delivering any product(s) that fails to meet the Item Specifications included in this Bid Invitation relating to the awarded product(s).
 - (c) The vendor delivering any substitution(s) of product(s) different than those originally bid and awarded without the written approval of SAISD.
 - (d) The vendor's incomplete response to the Bid Document.
 - (e) And the vendor's noncompliance to any additional terms, conditions, or instructions contained in each individual Purchase Order issued by the SAISD.
26. ORDER OF PRECEDENCE: In the event of conflict, the following precedence shall prevail: 1) terms and conditions set forth on the face of the contract, 2) provisions set forth on specifications, 3) provisions set forth in Referenced Documents; and 4) the general bidding instructions to bidders.
 27. ERRORS OR OMISSIONS: The District is not responsible for any bidder's errors or omissions.
 28. CONFIDENTIAL INFORMATION: If a vendor believes that a bid, proposal, offer, or specification contains information that shall be withheld from disclosure, a statement advising the procurement officer must be attached and noted on page one of the document.
 29. ADDENDUM: In the event that any changes to this Bid Document occur after the mailing or other delivery of the original Bid Document, the changes or corrections to this Bid Invitation will be made by addendum. **It is your responsibility to obtain any addenda that pertains to this bid.** We are no longer mailing the specifications or addenda.
 30. EXTENSION/NON-APPROPRIATIONS CLAUSE: This contract may be renewed for two additional one-year terms if the vendor and the District agree.
 31. Price increases for additional year will be negotiated not to exceed the CPI in the San Angelo area at the time of renewal. Price negotiations may be negotiated to prices below the current pricing.

32. Negotiations for additional years and price restructuring must be completed forty-five (45) days before the date of renewal.
33. INSURANCE REQUIREMENTS - PROOF OF INSURANCE WILL BE REQUIRED FOR GENERAL LIABILITY, AUTOMOBILE LIABILITY, AND WORKERS' COMP. INSURANCE LIMITS WILL BE \$1,000,000 PER OCCURRENCE ON GENERAL LIABILITY, \$500,000 ON AUTO, AND STATUTORY LIMITS ON WORKERS' COMP. THESE REQUIREMENTS APPLY TO ALL CATEGORIES WHERE SERVICES ARE PROVIDED ON A SAN ANGELO ISD SITE.

CONSTRUCTION BOND REQUIREMENTS - BONDING SURETIES MUST BE QUALIFIED TO DO BUSINESS IN TEXAS AND ACCEPTABLE TO THE DISTRICT.

BID BOND IN THE AMOUNT OF FIVE PERCENT (5%) OF THE BID MUST BE SUBMITTED WITH ANY CONSTRUCTION BID.

PAYMENT BONDS WILL BE REQUIRED IF THE CONTRACT FOR SERVICES EXCEEDS \$25,000.00.

PERFORMANCE BONDS WILL BE REQUIRED IF THE CONTRACT FOR SERVICES EXCEEDS \$100,000.00.

FORM A

NON-COLLUSION STATEMENT

The undersigned Proposer, by signing and executing this proposal, certifies and represents to the **San Angelo Independent School District** that Proposer has not offered, conferred or agreed to confer any pecuniary benefit, as defined by Section 1.07 (a)(6) of the Texas Penal Code, or any other thing of value, as consideration for the receipt of information or any special treatment or advantage relating to this proposal;

the Proposer also certifies and represents that Proposer has not offered, conferred or agreed to confer any pecuniary benefit or other things of value as consideration for the recipient's decision, opinion, recommendation, vote or other exercise of discretion concerning this proposal.

the Proposer certifies and represents that Proposer has neither coerced nor attempted to influence the exercise of discretion by any officer, trustee, agent or employee of the **San Angelo Independent School District** concerning this proposal on the basis of any consideration not authorized by law.

the Proposer also certifies and represents that Proposer has not received any information not available to other proposers so as to give the undersigned an advantage with respect to this proposal.

the Proposer further certifies and represents that Proposer has not violated any state, federal or local law, regulation or ordinance relating to bribery, improper influence, collusion or the like and that Proposer will not in the future, offer, confer, or agree to confer any pecuniary benefit or other thing of value of any officer, trustee, agent or employee of the **San Angelo Independent School District** in return for the person having exercised the person's official discretion, power or duty with respect to this proposal;

the Proposer certifies and represents that it has not now and will not in the future offer, confer, or agree to confer a pecuniary benefit or other thing of value to any office, trustee, agent or employee of the **San Angelo Independent School District** in connection with information regarding this proposal, the submission of this proposal, the award of this proposal or the performance, delivery or sale pursuant to this proposal;

the Proposer certifies that the Proposer has not prepared this proposal and will not prepare any future proposals arising from this Request for Proposal (RFP) in collusion with any other respondent, and that the content of any future proposals arising out of this RFP will not be communicated by the undersigned nor by any employee or agent to any other person engaged in this type of business prior to the District's selection of a contractor for this RFP.

FIRM NAME

ADDRESS

CITY/STATE/ZIP

TYPED NAME OF REPRESENTATIVE(S)

SIGNATURE OF REPRESENTATIVE(S)

DATE

FORM B

FELONY CONVICTION NOTIFICATION

State of Texas Legislative Senate Bill No. 1, Section 44.034, Notification of Criminal History, Subsection (a), states, "a person or business entity that enters into a contract with a school district must give advance notice to the District if the person or owner or operator of the business entity has been convicted of a felony." The notice must include a general description of the conduct resulting in the conviction of a felony.

Subsection (b) states, "a school district may terminate a contract with a person or business entity if the district determines that the person or business entity failed to give notice as required by Subsection (a) or misrepresented the conduct resulting in the conviction." The district must compensate the person or business entity for services performed before the termination of the contract.

**This notice is not required of a publicly held corporation.
Please complete the information below:**

I, the undersigned agent for the firm named below, certify that the information concerning notification of felony convictions has been reviewed by me and the following information furnished is true to the best of my knowledge.

Vendor's Name: _____

Authorized Company Official's Name (please print or type):

A. My firm is a publicly held corporation; therefore, this reporting requirement is not applicable:

Signature of Company Official: _____ Date: _____

B. My firm is neither owned nor operated by anyone who has been convicted of a felony.

Signature of Company Official: _____ Date: _____

C. My firm is owned or operated by the following individual(s) who has/have been convicted of a felony:

Name of Felon(s): _____

Details of Conviction(s): _____

Signature of Company Official: _____ **Date:** _____

(Name should be the same as on the affidavit-Form A)

Contractor is responsible for the performance of the persons, employees and/or subcontractors Contractor assigns to provide services for the San Angelo ISD pursuant to this Contract on any and all San Angelo ISD campuses or facilities. Contractor will not assign individuals to provide services at a San Angelo ISD campus or facility who have a history of violent, unacceptable, or grossly negligent behavior or who have a felony conviction, without the prior written consent of the San Angelo ISD Purchasing Department. Prior to supplying labor services under this Contract, Contractor shall provide a list identifying the individuals, employees and subcontractors that may be assigned to San Angelo ISD along with a letter signed by an appropriate officer of Contractor that affirms compliance with this provision. Contractor will revise such letter each time there is a change in Contractor's personnel assigned to a San Angelo ISD campus or facility, but in any case, annually on the anniversary date of this Contract, if applicable.

BIDDER'S CERTIFICATION

The 1985 Texas Legislature passed HB 620 relating to bids by nonresident contractors. The pertinent portion of the Act has been extracted and is as follows:

Section 1. (a)

- (2) "Nonresident bidder" means a bidder whose principal place of business is not in this state but excludes a contractor whose ultimate parent company or majority owner has its principal place of business in this state.
- (3) "Texas resident bidder" means a bidder whose principal place of business is in this state and includes a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

Section 1. (b) The state or a governmental agency of the state may not award a contract for general construction, improvements, services, or public works projects or purchases of supplies, materials, or equipment to a nonresident bidder unless the nonresident's bid is lower than the lowest bid submitted by a responsible Texas resident bidder by the same amount that a Texas resident bidder would be required to underbid a nonresident bidder to obtain a comparable contract in the state in which the nonresident's principal place of business is located.

I certify that _____ is a
(Company Name)

Resident Bidder of Texas as defined in HB 620.

Signature_____

Print Name_____

.....
I certify that _____ is a
(Company Name)

Nonresident Bidder of Texas as defined in HB 620 and our principal place of business is:

(City and State)

Signature_____

Print Name_____

FORM D

DEBARMENT OR SUSPENSION CERTIFICATION FORM

Non-Federal entities are prohibited from contracting with or making sub-awards under covered transaction to parties that are suspended or debarred or whose principals are suspended or debarred. Covered transactions include procurement of goods or services equal to or in excess of \$100,000. Contractors receiving individual awards of \$100,000 or more and all sub-recipients must certify that the organization and its principals are not suspended or debarred.

By submitting this offer and signing this certificate, this bidder:

- ♦ Certifies that no suspension or debarment is in place, which would preclude receiving a federally funded contract under the Federal OMB, A-102, Common Rule (§ .36).

Vendor Name:_____

Vendor Address:_____

Vendor Telephone:_____

Authorized Company Official's Name:_____
(printed)

Signature of Company Official:_____

Date:_____

FORM E

DEVIATION/COMPLIANCE FORM

COMPANY NAME _____

ADDRESS	CITY	STATE
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CITY STATE

STATE

PHONE NUMBER _____

FAX NUMBER _____

If the undersigned bidder intends to deviate from the General Conditions Standard Terms and Conditions or Item Specifications listed in this bid invitation, all such deviations must be listed on this page, with complete and detailed conditions and information included or attached. The District will consider any deviations in its bid award decisions, and the District reserves the right to accept or reject any bid based upon any deviations indicated below or in any attachments or inclusions.

In the absence of any deviation entry on this form, the bidder assures the District of their full compliance with the Standard Terms and Conditions, Item Specifications, and all other information contained in this Bid Invitation.

- ☐ No Deviation
- ☐ Yes Deviations

If yes is checked, please list below.

[illegible]

FORM F

NO BID NOTIFICATION

VENDOR NAME _____ AGENT'S NAME _____

ADDRESS _____ BID NUMBER _____

_____ DESCRIPTION _____

The San Angelo Independent School District is interested in receiving competitive pricing on all items bid. We also want to keep your firm as a bidder and supplier of materials and equipment. Therefore, it is important for us to determine why you are not bidding on this item. We will analyze your input carefully and try to determine if future changes are needed in our specifications and/or procedures.

I did not bid for the following reason: (PLEASE CHECK ONE OF THE LISTED REASONS)

- _____ Do not supply the requested product
- _____ Quantities offered are too small or too large to be supplied by my company.
(please circle one of the underlined)
- _____ Specifications are "too tight" or written around a particular product.
(Please elaborate on this item) _____
- _____ I cannot bid against manufacturer or jobber on this item.
(please circle one of the underlined)
- _____ Time frame for bidding was too short for my organization.
- _____ Not awarded a contract by SAISD when you felt you were low bidder.
- _____ Other _____

Please indicate your choice for remaining on San Angelo ISD's bid list.

_____ I wish to remain on bid list.

_____ I do not wish to remain on bid list.

VENDOR'S SIGNATURE

DATE

Certification Packet

VENDOR NAME

In accordance with §200.326 of the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (sometimes referred to as the new "EDGAR"), this Addendum ("Addendum") is proof of the vendor's willingness and ability to comply with certain requirements which may be applicable to specific SAISD purchases using federal grant funds.

It amends and is hereby incorporated into an existing agreement between the parties as follows:

I. REQUIRED CONTRACT PROVISIONS FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS – APPENDIX II TO 2 CFR PART 200

(A) Contracts for more than the simplified acquisition threshold currently set at \$150,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

Pursuant to Federal Rule (A) above, when federal funds are expended by SAISD, SAISD reserves all rights and privileges under the applicable laws and regulations with respect to this procurement in the event of breach of contract by either party.

Does vendor agree? YES _____ Initials of Authorized Representative of vendor

(B) Termination for cause and for convenience by the grantee or subgrantee including the manner by which it will be affected and the basis for settlement. (All contracts in excess of \$10,000)

Pursuant to Federal Rule (B) above, when federal funds are expended by SAISD, SAISD reserves the right to immediately terminate any agreement in excess of \$10,000 resulting from this procurement process in the event of a breach or default of the agreement by Vendor, in the event vendor fails to: (1) meet schedules, deadlines, and/or delivery dates within the time specified in the procurement solicitation, contract, and/or a purchase order; (2) make any payments owed; or (3) otherwise perform in accordance with the contract and/or the procurement solicitation. SAISD also reserves the right to terminate the contract immediately, with written notice to vendor, for convenience, if SAISD believes, in its sole discretion that it is in the best interest of SAISD to do so. The vendor will be compensated for work performed and accepted and goods accepted by SAISD as of the termination date if the contract is terminated for convenience of SAISD. Any award under this procurement process is not exclusive and SAISD reserves the right to purchase goods and services from other vendors when it is in the best interest of SAISD.

Does vendor agree? YES _____ Initials of Authorized Representative of vendor.

(C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 601.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

Pursuant to Federal Rule (C) above, when federal funds are expended by SAISD on any federally assisted construction contract, the equal opportunity clause is incorporated by reference herein.

Does vendor agree to abide by the above? YES _____ Initials of Authorized Representative of vendor

(D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

Pursuant to Federal Rule (D) above, when federal funds are expended by SAISD, during the term of an award for all contracts and subgrants for construction or repair, the vendor will be in compliance with all applicable Davis-Bacon Act provisions.

Does vendor agree? YES _____ Initials of Authorized Representative of vendor

(E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

Pursuant to Federal Rule (E) above, when federal funds are expended by SAISD, the vendor certifies that during the term of an award for all contracts by SAISD resulting from this procurement process, the vendor will be in compliance with all applicable provisions of the Contract Work Hours and Safety Standards Act.

Does vendor agree? YES _____ Initials of Authorized Representative of vendor

(F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR §401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

Pursuant to Federal Rule (F) above, when federal funds are expended by SAISD, the vendor certifies that during the term of an award for all contracts by SAISD resulting from this procurement process, the vendor agrees to comply with all applicable requirements as referenced in Federal Rule (F) above.

Does vendor agree? YES _____ Initials of Authorized Representative of vendor

(G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended—Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251- 1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

Pursuant to Federal Rule (G) above, when federal funds are expended by SAISD, the vendor certifies that during the term of an award for all contracts by SAISD resulting from this procurement process, the vendor agrees to comply with all applicable requirements as referenced in Federal Rule (G) above.

Does vendor agree? YES _____ Initials of Authorized Representative of vendor

(H) Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

Pursuant to Federal Rule (H) above, when federal funds are expended by SAISD, the vendor certifies that during the term of an award for all contracts by SAISD resulting from this procurement process, the vendor certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation by any federal department or agency.

Does vendor agree? YES _____ Initials of Authorized Representative of vendor

(I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non- Federal award.

Pursuant to Federal Rule (I) above, when federal funds are expended by SAISD, the vendor certifies that during the term and after the awarded term of an award for all contracts by SAISD resulting from this procurement process, the vendor certifies that it is in compliance with all applicable provisions of the Byrd Anti-Lobbying Amendment (31 U.S.C. 1352). The undersigned further certifies that:

(1) No Federal appropriated funds have been paid or will be paid for on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with the awarding of a Federal contract, the making of a Federal grant, the making of a Federal loan, the entering into a cooperative agreement, and the extension, continuation, renewal, amendment, or modification of a Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying”, in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all covered sub-awards exceeding \$100,000 in Federal funds at all appropriate tiers and that all subrecipients shall certify and disclose accordingly.

Does vendor agree? YES _____ Initials of Authorized Representative of vendor

RECORD RETENTION REQUIREMENTS FOR CONTRACTS PAID FOR WITH FEDERAL FUNDS – 2 CFR § 200.333

When federal funds are expended by SAISD for any contract resulting from this procurement process, the vendor certifies that it will comply with the record retention requirements detailed in 2 CFR § 200.333. The vendor further certifies that vendor will retain all records as required by 2 CFR § 200.333 for a period of three years after grantees or subgrantees submit final expenditure reports or quarterly or annual financial reports, as applicable, and all other pending matters are closed.

Does vendor agree? YES _____ Initials of Authorized Representative of vendor

CERTIFICATION OF NON-COLLUSION STATEMENT

Vendor certifies under penalty of perjury that its response to this procurement solicitation is in all respects bona fide, fair, and made without collusion or fraud with any person, joint venture, partnership, corporation or other business or legal entity.

Does vendor agree? YES _____ Initials of Authorized Representative of vendor

CERTIFICATION REGARDING BOYCOTTING CERTAIN ENERGY COMPANIES

If (a) company is not a sole proprietorship; (b) company has ten (10) or more full-time employees; and (c) this contract has a value of \$100,000 or more that is to be paid wholly or partly from public funds, the following certification shall apply; otherwise, this certification is not required. Pursuant to TEX. GOV'T CODE Ch. 2274 of SB 13 (87th session), the company hereby certifies and verifies that the company, or any wholly owned subsidiary, majority-owned subsidiary, parent company, or affiliate of these entities or business associations, if any, does not boycott energy companies and will not boycott energy companies during the term of the contract. For purposes of this contract, the term "company" shall mean an organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or limited liability company, that exists to make a profit. The term "boycott energy company" shall mean "without an ordinary business purpose, refusing to deal with, terminating business activities with, or otherwise taking any action intended to penalize, inflict economic harm on, or limit commercial relations with a company because the company (a) engages in the exploration, production, utilization, transportation, sale, or manufacturing of fossil fuel-based energy and does not commit or pledge to meet environmental standards beyond applicable federal and state law, or (b) does business with a company described by paragraph (a)." See TEX. GOV'T CODE § 809.001(1).

Does vendor agree? YES _____ Initials of Authorized Representative of vendor

CERTIFICATION PROHIBITING DISCRIMINATION AGAINST FIREARM AND AMMUNITION INDUSTRIES

If (a) company is not a sole proprietorship; (b) company has at least ten (10) full-time employees; (c) this contract has a value of at least \$100,000 that is paid wholly or partly from public funds; (d) the contract is not excepted under TEX. GOV'T CODE § 2274.003 of SB 19 (87th leg.); and (e) governmental entity has determined that company is not a sole-source provider or governmental entity has not received any bids from a company that is able to provide this written verification, the following certification shall apply; otherwise, this certification is not required. Pursuant to TEX. GOV'T CODE Ch. 2274 of SB 19 (87th session), the company hereby certifies and verifies that the company, or association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or limited liability company, including a wholly owned subsidiary, majority-owned subsidiary parent company, or affiliate of these entities or associations, that exists to make a profit, does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association and will not discriminate during the term of this contract against a firearm entity or firearm trade association. For purposes of this contract, "discriminate against a firearm entity or firearm trade association" shall mean, with respect to the entity or association, to: "(1) refuse to engage in the trade of any goods or services with the entity or association based solely on its status as a firearm entity or firearm trade association; (2) refrain from continuing an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association; or (3) terminate an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association. See TEX. GOV'T CODE § 2274.001(3) of SB 19. "Discrimination against a firearm entity or firearm trade association" does not include: "(1) the established policies of a merchant, retail seller, or platform that restrict or prohibit the listing or selling of ammunition, firearms, or firearm accessories; and (2) a company's refusal to engage in the trade of any goods or services, decision to refrain from continuing an existing business relationship, or decision to terminate an existing business relationship to comply with federal, state, or local law, policy, or regulations or a directive by a regulatory agency, or for any traditional business reason that is specific to the customer or potential customer and not based solely on an entity's or association's status as a firearm entity or firearm trade association." See TEX. GOV'T CODE § 2274.001(3) of SB 19.

Does vendor agree? YES _____ **Initials of Authorized Representative of vendor**

CERTIFICATION REGARDING CERTAIN FOREIGN-OWNED COMPANIES IN CONNECTION WITH CRITICAL INFRASTRUCTURE

Vendor is prohibited from entering into a contract or other agreement relating to critical infrastructure that would grant to the company direct or remote access to or control of critical infrastructure in this state, excluding access specifically allowed by the *vendor* for product warranty and support purposes. Company, certifies that neither it nor its parent company nor any affiliate of company or its parent company, is (1) owned by or the majority of stock or other ownership interest of the company is held or controlled by individuals who are citizens of China, Iran, North Korea, Russia, or a designated country; (2) a company or other entity, including governmental entity, that is owned or controlled by citizens of or is directly controlled by the government of China, Iran, North Korea, Russia, or a designated country; or (3) headquartered in China, Iran, North Korea, Russia, or a designated country. For purposes of this contract, "critical infrastructure" means "a communication infrastructure system, cybersecurity system, electric grid, hazardous waste treatment system, or water treatment facility." See TEX. GOV'T CODE § 2274.0101(2) of SB 1226 (87th leg.). The company verifies and certifies that company will not grant direct or remote access to or control of critical infrastructure, except for product warranty and support purposes, to prohibited individuals, companies, or entities, including governmental entities, owned, controlled, or headquartered in China, Iran, North Korea, Russia, or a designated country, as determined by the Governor.

Does vendor agree? YES _____ **Initials of Authorized Representative of vendor**

San Angelo Independent School District

Purchasing Department

Vendor agrees to comply with all federal, state, and local laws, rules, regulations and ordinances, as applicable. It is further acknowledged that vendor certifies compliance with all provisions, laws, acts, regulations, etc. as specifically noted above.

Vendor's Name/Company Name: _____

Address, City, State, and Zip Code: _____

Phone Number: _____ Fax Number: _____

Printed Name of Authorized Representative: _____

Title of Authorized Representative: _____

Email _____

Address: _____

Signature of Authorized Representative: _____

Date: _____

FORMS CHECKLIST

- _____ Completed – Form A - Non-Collusion Statement, 1 Page
- _____ Completed – Form B - Felony Conviction Notice, 1 Page
- _____ Completed – Form C - Bidders Certification, 1 Page
- _____ Completed – Form D - Debarment and Suspension Certification, 1 Page
- _____ Completed – Form E - Deviation/Compliance, 1 Page
- _____ Complete if Applicable - Form F - No Bid Notification, 1 Page
- _____ Completed – Certification Packet, 6 pages
- _____ Completed – W-9 – Request for Taxpayer Identification Number

**Request for Taxpayer
Identification Number and Certification**

Go to www.irs.gov/FormW9 for instructions and the latest information.

**Give form to the
requester. Do not
send to the IRS.**

Before you begin. For guidance related to the purpose of Form W-9, see *Purpose of Form*, below.

Print or type. See Specific Instructions on page 3.	1 Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.)	
	2 Business name/disregarded entity name, if different from above.	
	3a Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only one of the following seven boxes. ☐ Individual/sole proprietor ☐ C corporation ☐ S corporation ☐ Partnership ☐ Trust/estate ☐ LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner. ☐ Other (see instructions) _____	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any) _____ (Applies to accounts maintained outside the United States.)
	3b If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions ☐	
	5 Address (number, street, and apt. or suite no.). See instructions.	Requester's name and address (optional)
	6 City, state, and ZIP code	
	7 List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number											
				-				-			
or											
Employer identification number											
					-						

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and, generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	Signature of U.S. person	Date
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General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they

must obtain your correct taxpayer identification number (TIN), which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid).
- Form 1099-DIV (dividends, including those from stocks or mutual funds).
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds).
- Form 1099-NEC (nonemployee compensation).
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers).
- Form 1099-S (proceeds from real estate transactions).
- Form 1099-K (merchant card and third-party network transactions).
- Form 1098 (home mortgage interest), 1098-E (student loan interest), and 1098-T (tuition).
- Form 1099-C (canceled debt).
- Form 1099-A (acquisition or abandonment of secured property).

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

Caution: If you don't return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding*, later.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued);
2. Certify that you are not subject to backup withholding; or
3. Claim exemption from backup withholding if you are a U.S. exempt payee; and
4. Certify to your non-foreign status for purposes of withholding under chapter 3 or 4 of the Code (if applicable); and
5. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting is correct. See *What Is FATCA Reporting*, later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding. Payments made to foreign persons, including certain distributions, allocations of income, or transfers of sales proceeds, may be subject to withholding under chapter 3 or chapter 4 of the Code (sections 1441–1474). Under those rules, if a Form W-9 or other certification of non-foreign status has not been received, a withholding agent, transferee, or partnership (payor) generally applies presumption rules that may require the payor to withhold applicable tax from the recipient, owner, transferor, or partner (payee). See Pub. 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*.

The following persons must provide Form W-9 to the payor for purposes of establishing its non-foreign status.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the disregarded entity.
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the grantor trust.
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust and not the beneficiaries of the trust.

See Pub. 515 for more information on providing a Form W-9 or a certification of non-foreign status to avoid withholding.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person (under Regulations section 1.1441-1(b)(2)(iv) or other applicable section for chapter 3 or 4 purposes), do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515). If you are a qualified foreign pension fund under Regulations section 1.897(l)-1(d), or a partnership that is wholly owned by qualified foreign pension funds, that is treated as a non-foreign person for purposes of section 1445 withholding, do not use Form W-9. Instead, use Form W-8EXP (or other certification of non-foreign status).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a saving clause. Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if their stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first Protocol) and is relying on this exception to claim an exemption from tax on their scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called “backup withholding.” Payments that may be subject to backup withholding include, but are not limited to, interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third-party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester;
2. You do not certify your TIN when required (see the instructions for Part II for details);
3. The IRS tells the requester that you furnished an incorrect TIN;
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only); or
5. You do not certify to the requester that you are not subject to backup withholding, as described in item 4 under “*By signing the filled-out form*” above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

See also *Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding*, earlier.

What Is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all U.S. account holders that are specified U.S. persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you are no longer tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account, for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

• **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note for ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040 you filed with your application.

• **Sole proprietor.** Enter your individual name as shown on your Form 1040 on line 1. Enter your business, trade, or “doing business as” (DBA) name on line 2.

• **Partnership, C corporation, S corporation, or LLC, other than a disregarded entity.** Enter the entity’s name as shown on the entity’s tax return on line 1 and any business, trade, or DBA name on line 2.

• **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. Enter any business, trade, or DBA name on line 2.

• **Disregarded entity.** In general, a business entity that has a single owner, including an LLC, and is not a corporation, is disregarded as an entity separate from its owner (a disregarded entity). See Regulations section 301.7701-2(c)(2). A disregarded entity should check the appropriate box for the tax classification of its owner. Enter the owner’s name on line 1. The name of the owner entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For

example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner’s name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity’s name on line 2. If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, enter it on line 2.

Line 3a

Check the appropriate box on line 3a for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3a.

IF the entity/individual on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation.
• Individual or • Sole proprietorship	Individual/sole proprietor.
• LLC classified as a partnership for U.S. federal tax purposes or • LLC that has filed Form 8832 or 2553 electing to be taxed as a corporation	Limited liability company and enter the appropriate tax classification: P = Partnership, C = C corporation, or S = S corporation.
• Partnership	Partnership.
• Trust/estate	Trust/estate.

Line 3b

Check this box if you are a partnership (including an LLC classified as a partnership for U.S. federal tax purposes), trust, or estate that has any foreign partners, owners, or beneficiaries, and you are providing this form to a partnership, trust, or estate, in which you have an ownership interest. You must check the box on line 3b if you receive a Form W-8 (or documentary evidence) from any partner, owner, or beneficiary establishing foreign status or if you receive a Form W-9 from any partner, owner, or beneficiary that has checked the box on line 3b.

Note: A partnership that provides a Form W-9 and checks box 3b may be required to complete Schedules K-2 and K-3 (Form 1065). For more information, see the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

If you are required to complete line 3b but fail to do so, you may not receive the information necessary to file a correct information return with the IRS or furnish a correct payee statement to your partners or beneficiaries. See, for example, sections 6698, 6722, and 6724 for penalties that may apply.

Line 4 Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third-party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys’ fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space on line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2).

- 2—The United States or any of its agencies or instrumentalities.
- 3—A state, the District of Columbia, a U.S. commonwealth or territory, or any of their political subdivisions or instrumentalities.
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities.
- 5—A corporation.
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or territory.
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission.
- 8—A real estate investment trust.
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940.
- 10—A common trust fund operated by a bank under section 584(a).
- 11—A financial institution as defined under section 581.
- 12—A middleman known in the investment community as a nominee or custodian.
- 13—A trust exempt from tax under section 664 or described in section 4947.

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
• Interest and dividend payments	All exempt payees except for 7.
• Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
• Barter exchange transactions and patronage dividends	Exempt payees 1 through 4.
• Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5. ²
• Payments made in settlement of payment card or third-party network transactions	Exempt payees 1 through 4.

¹ See Form 1099-MISC, Miscellaneous Information, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) entered on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37).

B—The United States or any of its agencies or instrumentalities.

C—A state, the District of Columbia, a U.S. commonwealth or territory, or any of their political subdivisions or instrumentalities.

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i).

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i).

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state.

G—A real estate investment trust.

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940.

I—A common trust fund as defined in section 584(a).

J—A bank as defined in section 581.

K—A broker.

L—A trust exempt from tax under section 664 or described in section 4947(a)(1).

M—A tax-exempt trust under a section 403(b) plan or section 457(g) plan.

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, enter "NEW" at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have, and are not eligible to get, an SSN, your TIN is your IRS ITIN. Enter it in the entry space for the Social security number. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.SSA.gov. You may also get this form by calling 800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/EIN. Go to www.irs.gov/Forms to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to www.irs.gov/OrderForms to place an order and have Form W-7 and/or Form SS-4 mailed to you within 15 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and enter "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, you will generally have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon. See also *Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding*, earlier, for when you may instead be subject to withholding under chapter 3 or 4 of the Code.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third-party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account ¹
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor ²
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee ¹
b. So-called trust account that is not a legal or valid trust under state law	The actual owner ¹
6. Sole proprietorship or disregarded entity owned by an individual	The owner ³
7. Grantor trust filing under Optional Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))**	The grantor*

For this type of account:	Give name and EIN of:
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity ⁴
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing Form 1041 or under the Optional Filing Method 2, requiring Form 1099 (see Regulations section 1.671-4(b)(2)(i)(B))**	The trust

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name on line 1, and enter your business or DBA name, if any, on line 2. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.)

* **Note:** The grantor must also provide a Form W-9 to the trustee of the trust.

** For more information on optional filing methods for grantor trusts, see the Instructions for Form 1041.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information, such as your name, SSN, or other identifying information, without your permission to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax return preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity, or a questionable credit report, contact the IRS Identity Theft Hotline at 800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 877-777-4778 or TTY/TDD 800-829-4059.

Protect yourself from suspicious emails or phishing schemes.

Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 800-366-4484. You can forward suspicious emails to the Federal Trade Commission at spam@uce.gov or report them at www.ftc.gov/complaint. You can contact the FTC at www.ftc.gov/idtheft or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see www.IdentityTheft.gov and Pub. 5027.

Go to www.irs.gov/IdentityTheft to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and territories for use in administering their laws. The information may also be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payors must generally withhold a percentage of taxable interest, dividends, and certain other payments to a payee who does not give a TIN to the payor. Certain penalties may also apply for providing false or fraudulent information.