October 23, 2024

IDEA PUBLIC SCHOOLS – IDEA Edinburg College Prep Cafeteria

GMS ARCHITECTS
BROWNSVILLE, TEXAS 78526
(956) 546-0110

ADDENDUM NO. 1

A. PURPOSE AND INTENT

This addendum is issued for the purpose of modifying the plans and specifications for the Idea Public Schools – IDEA Edinburg College Prep Cafeteria*.*

This addendum shall become part of the contract and all CONTRACTORS shall be bound by its content. All aspects of the specifications and drawings not covered herein shall remain the same.

The General Conditions and the Special Conditions of the specifications shall govern all parts of the work and apply in full force to this addendum.

B. SCOPE

I. CLARIFICATION:

- Subcontractor List will need to be received by 12pm on 11/1, in lieu of 48 hours after receipt of proposal.

II. SPECIFICATIONS:

- Add Section 270000 Structured Cabling-38 Pages to Construction Documents
- Add Section 275123-eSeries End Point Intercom, Paging and Messaging System to Construction Documents.

III. PLANS:

- Replace the following Civil sheets with the sheets included in this Addendum.
  - C1, C2, C3, C4, C5, C6, and C7
- Replace Sheet A1.01 with revised Sheet A1.01 (dated10/22/24).
- Replace the following Electrical sheets with the sheets included in this Addendum.
  - ES1.0, E1.0, E1.1, E1.2, E2.0, E2.1, E2.2, E2.3, E2.4 and E3.0

IV. Request for Information - Q&A

Q. Plan Sheet A1.02, Dtl. 07, Note 6, Calls for Sidewalk Canopy Structure to be Hot Dip Galvanized. Will this apply or should we Consider Red Prime and Painted to lower costs down.
A. All exposed canopy structures shall be hot-dipped galvanized.

Q. Plan Sheet C3 Shows a different Location of the Grease Trap than Sheet P1.0. Which one do we follow.?
A. Refer to Sheet C3 for Grease Trap Location.

Q. Plan Sheet A1.02, Dtl 01 shows a Canopy Detached from the Building. What should be in that Gap created? Canopy Size 8’-2” x 9’-9”

A. Refer to Sheet A1.02 for door canopy locations.

Q. Plan Sheet A1.02, Dtl 08, Existing Conditions, Should we consider costs to Relocate or Remove Completely offsite the Existing Portable Buildings Shown. Please Advice.

A. The portables have already been relocated.

SECTION 27 00 00

STRUCTURED CABLING SYSTEM

PART 1– GENERAL

1.1 PROJECT SUMMARY/OVERVIEW

A. The communication cabling contactor is to provide a complete communications cabling infrastructure system installation including but not limited to: Copper and Fiber backbone/riser system w/secondary protection, horizontal data and voice cabling with attendant terminations, mounting equipment, cable pathway and management systems, testing and other items/materials, as specified in drawings, these specifications, and contract documents.

B. The items described herein shall not be substituted without the written consent of SIGMA HN ENGINEERS (consultant).

C. Communications Cabling Contractor shall be herein after referred to as Contractor for the scope of this document.

D. Contractor shall be responsible for all written specifications and drawings that correspond to this project.

E. These specifications are intended for bidding purposes only. No part shall be copied or used for any purpose other than bidding on this project.

1.2 RELATED DOCUMENTS:

A. Drawings and general provisions of the Contract, including Uniform General Conditions, Supplementary General Conditions, Architectural Plans and Specifications, requirements of Division 1, electrical, mechanical specifications and plans, and Telecommunications plans apply to the Telecommunications section and shall be considered a part of this section. The contractor shall read all sections in their entirety and apply them as appropriate for work in this section.

B. In order to accomplish the conditions of this agreement, the contractor shall perform the specific duties listed herein.

C. Contract Documents: Drawings and specifications are to be used in conjunction with one another and to supplement one another. In general the specifications determine the nature and quality of the materials, and the drawings establish the quantity guidelines, details, and give characteristics of performance that should be adhered to in the installation of the communications system components. If there is an apparent conflict between the drawings and specifications, the items with the greater quantity or quality shall be estimated upon and installed. Clarification with the owner about these items shall be made prior to the ordering and installation.

D. Insurance: Prior to commencing work the Contractor shall procure at their own cost and expense insurance against claims for injuries to persons or damages to property by the Contractor, its agents, officers, employees, or subcontractors that may arise from or in connection with the performance of this Agreement. The policies will be available for review by the owner or consultant at any time during the agreement. These insurance policies shall be maintained and remain in full effect for the entire term of agreement.

E. Project and cost payment: Refer to general contractor contract documents and/or master specifications issued by architect.

F. Contractor will respect and protect the privacy and confidentiality of Owner, its employees, processes, products, and intellectual property to extent necessary, consistent with the legal responsibilities of the State of Texas and Owner policies.

G. Contractors shall sign a non-disclosure agreement and abide by the requirements to keep confidential all information concerning bid documents and this project

H. Use of subcontractors: Bidding contractors shall inform owner's contact and General Contractor in writing about the intention to use subcontractors and the scope of work for which they are being hired. Owner must approve the use of subcontractors in writing or owner's designated contact prior to the subcontractor's hiring and start of any work.

I. Contractor shall designate their project manager as the single point of contact and shall provide the name phone number and electronic mail information for the designated person. Project manager shall oversee all work performed to ensure compliance with specifications as outlined in bid documents (which includes all specifications and drawings) to insure a quality installation.

1.3 SCOPE OF WORK

A. Contractor to comply with the master specifications documents and following requirements for a complete project installation.

B. This section establishes a communications infrastructure to be used as signal pathways for voice and high-speed data transmission. Provide a structured cabling system as described hereafter including but not limited to: communications outlets, fiber and voice riser/backbone cable, data and voice copper horizontal cabling, cable connectors, cable protection and terminations, and equipment racks/cabinets for networking hardware and cable termination patch panels.

C. Furnish all labor, materials, tools, equipment and services for the installation described herein. All requirements and specifications will be enforced. All cable pathways and runs to individual outlets are not shown in their entirety but shall be provided as if shown in their entirety. Where not specifically noted the contractor shall determine exact routing.

D. Installation procedures for communications cable will be such that the mechanical and electrical transmission characteristics of the specified cable plant and equipment are maintained.

E. Work of this Section covers a complete installation of both permanent and channel links for a Data and Voice Communications Network utilizing copper and fiber transmission media that includes, but is not limited to the following:

1. Installation and termination of secondary fused Building Entrance Terminals (BET's) for protection of incoming Service provider or campus inter-building copper pair circuits. Interconnection to Service provider demarc shall be coordinated with communications consultant, switch provider, service provider and client's IT representative on a later date. All copper pairs entering the building from an outside distribution network will be fuse protected. Coordinate with owner/consultant for the specific type of fused protection.

2. Provide and install Innerduct rated appropriately for the installation location, verify with architect for plenum and riser rated areas.

3. Provide, install, terminate, test, and document all fiber and copper backbone and riser cable.

4. Provide, install, terminate, test, and document all fiber and copper voice and data horizontal cable.

5. Provide and place all termination devices such as but not limited to: Modular patch panels, termination blocks, information outlets, phone jacks, fiber distribution panels and fiber splice modules.

6. Provide, in quantities specified, interconnect components such as but not limited to: Copper patch cords; cross connect wire, fiber patch cables and data station cables.

7. Provide and place horizontal and vertical cable support devices such as but not limited to: Cable tray, flex tray, D-rings, J-hooks, Cable saddles, and all required mounting hardware, unless otherwise noted.

8. Provide and install all equipment mounting racks and cabinets.

9. Provide and install all rack mounted vertical and horizontal cable management panels

10. Provide and install approved fire-stopping systems in all communication pass-through spaces, conduit and cable tray wall and floor penetrations. Fire stop systems will be coordinated with General Contractor/Architect.

11. Grounding and bonding of racks, cable ladder and tray in MC and TR rooms to the grounding bus provided by Telecommunication's Contractor.

12. Provide complete documentation and demonstration of work.

13. Resolution of all punch list deficiencies within 10 working days.

14. Provide organized complete 100% Test Results of all copper and fiber cable and their components.

15. Produce final drawings of record.

16. The Owner may separately purchase and/or provide certain equipment and miscellaneous items that will be installed during the course of trim work. Such items may not be indicated in the Documents. Contractor shall cooperate with the Owner and his Suppliers.

17. The furnishing and installation of computer hardware and related networking software and equipment.

18. The furnishing and installation of multi-port routers, hubs, and UPS in MC, SR and TR's.

1.4 WORKS AND MATERIAL BY OTHERS (NIC) INCLUDE:

A. The Telecommunications Grounding Buss bars and grounding conductors connecting to main building electrode system ~~to be provided on this project by Division 26 00 00~~.

B. The dedicated electrical power panels, isolated/non-isolated, emergency circuits and utility outlets ~~to be provided by Division 26 00 00~~.

C. The furnishing, installation and finishing of plywood backboards to be provided by others. (Div.26 00 00) Plywood installation will be coordinated with the General Contractor/Architect.

D. Building mechanical ductwork, HVAC system, and environmental control sensors to be provided by others.

E. The communication pathway devices such as, but not limited to: cable tray, flex tray, conduits, conduit sleeves, and wall and floor penetrations in corridors, office spaces, and open areas ~~to be provided by Division 26 00 00~~.

1.5 STAFFING

A. Qualification: Submit an up-to-date and valid certification verifying the qualifications of the Contractor and installers to perform the work specified herein at time of bid submission.

B. Contractor shall have a complete working knowledge of low voltage cabling applications such as, but not limited to: data, voice and video network systems.

C. Contracting firm shall have installed similar systems in at least (10) other projects in the last five

years prior to this bid and be regularly engaged in the business of installation of the types of systems specified in this document. Contractor shall provide information on prior projects including, but no limited to: items such as name and location of project contacts and numbers, total square footage, total number of cables/drops, types of media, etc.

D. All installer personnel assigned to this project shall be listed in the qualification questionnaire document. Eighty percent (80)% shall have a minimum of 3 years experience in the installation of the types of systems, equipment, and cables specified in this document prior to this bid. Any personnel substitutions shall be noted in writing to SIGMA HN ENGINEERS prior to commencement of work.

E. Contractor shall submit evidence of compliance with these requirements prior to beginning work on the project.

F. Cabling installers shall be trained by manufacturer and certified for Telecommunication Cabling installations and maintenance of specified materials.

1.6 ADMINISTRATIVE REQUIREMENTS AND COORDINATION

A. Project meetings: Contractor shall provide a person (name, contact phone number and e-mail address) for coordination with Telecommunication Consultant and Owner.

B. Coordinate work of this section with Owner's telephone system specifications, telephone instruments, workstations, equipment suppliers, and installers.

C. Coordinate installation work with drop ceiling vendors to coordinate cabling installation time frame in relation to drop ceiling installation. Resolve procedures and installation sequence for both installations. The result of this coordination will be to eliminate as much as possible loss or damage to ceiling materials, associated hardware, and delays to the project. Damage by contractor to the ceiling installation will be remedied at the contractor's expense in a timely manner.

D. Exchange information and agree on details of equipment arrangements and installation interfaces.

E. Record agreements reached in meetings and distribute record to other participants, Owner and Telecommunication Consultant.

F. Adjust arrangement and locations of distribution frames, patch panels, and cross-connect blocks in equipment rooms and racks to accommodate and optimize arrangement and space requirements of any service provider equipment, telephone system, and LAN equipment. Tasks shall be coordinated with owner or his representative, and other trades' installations.

G. Where installed, confirm exact locations and method of mounting outlets in modular furniture.

Follow furniture manufacturers written instructions for cable and installing devices in modular partitions. Obtain modular furniture and power pole locations from General Contractor/Architect. Wiring locations noted in plans along walls for modular furniture are approximate and will have to be determined by contractor at time of installation. Field condition adjustments for installation may have to be made.

H. When requested by owner or owner's representative furnish extra materials that match specified products and that are factory packaged with protective covering for storage and identified with labels describing contents.

1.7 CONTRACT ADMINISTRATION

A. Change orders shall be submitted to the consultant/client representative or GC complete with price breakdown and description. No work related to any change order will commence until approved.

B. The Contractor will attend all scheduled progress meetings with Owner representative, Architect, Telecommunication Consultant and General Contractor. It is possible that all parties may not be represented at every meeting.

1.8 PERMITS AND LICENSE

A. Contractor shall supply all State, City and County Telecommunication Cabling Permits required by appropriate governing agency.

B. The Owner or their representative will verify the above and determine any additional requirements.

1.9 ALTERNATES, SUBSTITUTIONS AND CHANGE ORDERS

A. If the Contractor proposes an alternate material that is equal to or exceeds specified requirements, Contractor shall provide manufacturers specifications in writing to owner/consultant for approval prior to bid.

B. Contractor shall provide a complete cabling infrastructure according to these written specifications and drawings. If the Owner changes the scope of work to be performed by the Contractor, it shall be in writing. Contractor shall respond to these changes with a complete material list, labor, and taxes in writing presented to the Owner for approval within ten (10) working days. Contractor shall not proceed with additional scope of work without a signed approval by the Owner.

C. Owner will not pay for any additional work performed by the Contractor without signed approval of these changes. Submit a copy of signed change order upon billing.

D. A complete price breakdown itemizing all additional material and labor costs shall be submitted

to the owner/consultant with the change order.

1.10 CODES AND STANDARDS (REFERENCES):

A. Codes: Comply with applicable sections of the following for interior and exterior installations. Ensure you are using the latest and most current standards and regulations applicable.

Uniform Building Code (UBC)

International Building Code (IBC)

National Electrical Code (NEC/NFPA 70, 2008)

National Electrical Safety Code (NES IEEE C2-1997)

IEEE Std. 1100-1999 Recommended Practice for Powering and Grounding Sensitive Electronic equipment.

Local Codes, amendments, and ordinances.

B. Standards: Comply with the most recently published applicable sections of the following for installation and testing of communication cabling and connectors:

ANSI/TIA/EIA-568-B.1-2001: Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements.

ANSI/TIA/EIA-568-B.2-1-2002: Commercial Building Telecommunications Cabling Standard, Part 2: Balanced Twisted-Pair Cabling Components.

ANSI/TIA/EIA-568-B.3-2001 Part 3: Optical Fiber Cabling Components Standard.

ANSI/TIA/EIA-455-A-1991: Standard Test Procedures for Fiber Optic Cables.

ANSI/CEA S83-596-1994: Fiber Optic Premises Distribution Cable.

ANSI/TIA/EIA-526-7-1998: Optical Power Loss Measurements of Installed Single Mode Fiber Cable Plant-OFSTP-7.

ANSI/TIA/EIA-526-14-A-1998: Optical Power Loss Measurements of Installed Multi Mode Fiber Cable Plant-OFSTP-14A.

ANSI/TIA/EIA-569-A-1998: Commercial Building Standards for Telecommunications Pathways and Spaces.

ANSI/TIA/EIA-606-1993: The Administration Standard for the Telecommunications infrastructure

of Commercial Building.

ANSI/TIA/EIA-607-1994: Commercial Building Grounding and Bonding Requirements for Telecommunications.

TIA/EIA 758-April 1999: Customer-Outside Plant Telecommunications Cabling Standard.

C. Supervisors and lead installers shall have read the above documents and shall be familiar with the requirements that pertain to this installation. Installers shall be familiar with and have practical working knowledge of the requirements that pertain to this installation. The documents may be obtained from:

1. Global Engineering Documents, 15 Inverness Way East, Englewood, CO, 80112-5776, 800-854-7179, fax: 303-397-2740, http://global.his.com/

   IEEE-Institute of Electrical and Electronics Engineers, Inc., 345 East 47th Street, New York, NY, 10017-2394, 800-678-IEEE, fax: 732-981-9667, http://standards.ieee.org/

2. NFPA: 1-800-344-3555- 11 Tracy Drive, Avon, MA 02322-9908

1.11 COMMUNICATIONS ABBREVIATIONS

BICSI: Building Industry Consulting Service International

C/W: Complete With.

CBC: Coupled Bonding Conductor

Div.1: Division 1 General Specifications

~~Div.23: Division 23 Mechanical Specifications~~

Div.26: Division 26 Electrical Specifications

EMI: Electromagnetic Interference.

GC: General Contractor

HC: Horizontal Cross-Connect.

IC: Intermediate Cross-Connect.

IDC: Insulation Displacement Connector.

I/O: Information Outlet.

LAN: Local Area Network.

MC: Main Cross-Connect.

MDF: Main Cross-Connect (MC).

N/A: Not Applicable.

NIC: Not In Contract.

OTDR: Optical Time Domain Reflectometer

RCDD: Registered Communications Distribution Designer

RFI: Radio Frequency Interference.

SR: Server Room

TBB: Telecommunications Bonding Backbone.

TBBIBC: Telecommunications Bonding Backbone Interconnecting Bonding Conductor

TBC: Telecommunications Bonding Conductor.

TBD: To Be Determined

TGB: Telecommunications Ground Bus Bar.

TMBC: Telecommunications Main Bonding Conductor.

TMGB: Telecommunications Main Grounding Bus Bar.

TR: Telecommunications Room.

UTP: Unshielded Twisted Pair.

1.12 SUBMITTALS:

A. Product Data: Include Manufacturer's data on features, ratings and performance for each component specified for approval prior to purchase and installation.

B. Drawings of Record: Shall be in AutoCAD format same version used by Architect/Consultant. Upon completion, submit facility floor plan drawings to consultant and/or owner upon request. Dimensions and scale of the drawing sheets submitted shall match the size of the drawing used

for the contract documents, and shall include the following:

C. Dimensioned plan and elevation views of networking components including, but not limited to: outlet and raceway location, roughing-in diagrams and instructions for installation. Show access and workspace requirements.

1. One-line diagram of equipment/device interconnecting cabling for the data and voice systems.

2. Standard or typical installation details of installations unique to Owner's requirements.

3. Cable pathways, I/O's, rack numbering, equipment layout and numbering.

4. Submit one soft and one hard copy with project deliverables within 30 days of substantial completion.

D. Graphic symbols and component identification on detail drawing shall conform to the latest EIA/TIA 568-B, 606 and 607 conventions.

E. System labeling schedules, including electronic copies of labeling schedules, as specified below, in software and format selected/approved by Owner.

F. Samples: For workstation outlet connectors, jack assemblies, housing and faceplates for color selection and evaluation of technical specifications and requirements. Confirm with architect/interior designer/Owner representative for color before purchasing materials.

G. Product Certificates: Signed by manufacturer of cables, connectors, and terminal equipment certifying that products furnished comply with requirements.

H. Qualification Data: For firms and persons specified in "Quality Assurance" article. Provide evidence of applicable registration or certification.

I. Field Test Reports: Upon completion and testing of the installed system, test reports shall be submitted in booklet form and electronic media showing all field tests performed on, and adjustments to each/any component and all field tests performed to prove compliance with the specified performance criteria. Indicate and interpret test results in written form and verbally to Owner for compliance with performance requirements.

J. Contractor will provide maintenance data and manuals for: all products.

K. Warranty: Deliver manufacturer's sample of 15-year warranty of installed cabling system to include all components that comprise the complete cabling system.

1.13 RESUBMITTING

A. Contractor must clearly identify any resubmitted drawing sheets, documents or cut sheets either by using a color to highlight or cloud around resubmitted information. Maintain drawing numbering or page/sheet scheme consistency as per previously issued drawings/documents.

1.14 RECORDING AND COPYING TO DRAWINGS OF RECORD (AS-BUILT DRAWINGS)

A. The build-as drawings shall be developed from AutoCAD (version 2012) drawing files of Communications Design drawings to be supplied by SIGMA HN ENGINEERS or the Architect.

B. As-built drawing submittals by the Contractor shall be in the same version AutoCAD format, as used by architect and consultant. Unless otherwise specified. This requirement currently is AutoCAD 2011.

C. The As-built drawings shall incorporate all changes made to the building identified in, but not limited to: Addendum, contemplated change notices, Site Instructions or deviations resulting from site conditions. Utilize normal recognized drafting procedures that match the AutoCAD standards, architect, and consultant guidelines and methodology. The Contractors as-built submittals shall include but not be limited to:

D. All communications data/voice outlet locations complete with outlet/cable labeling.

E. Cable routing paths of communications cables to identified infrastructure pathways.

F. All rack and cabinet locations and labeling there of.

G. All plan or elevation view changes to the room layouts.

H. Wall Field and patch panel layouts and cable assignments.

1.15 PRE-INSTALLATION CONFERENCE:

A. Contractor will attend and/or arrange a scheduled pre installation conference prior to beginning any work of this section (Data and Voice cabling).

B. Requests For Information (RFI): Contractor will submit questions in writing related to work to be performed, scheduling, coordination, etc. with consultant and/or project manager/owner representative.

C. Attendance: Contractors project manager/supervisor shall attend all meetings arranged by General Contractor, Owner's representatives, and other parties affected by work ~~of this division 26 00 00~~.

D. All individuals who will be in an on-site supervisory capacity of installation personnel; project managers, supervisors and lead installers shall be required to attend the pre-installation conference. Individuals who do not attend the conference will not be permitted to supervise

the installation of, or install, terminate, or test communications cables on the project.

1.16 DELIVERY/STORAGE AND HANDLING

A. Delivery, Loss, Storage, and Protection: All materials and equipment delivered and placed in storage shall be stored with protection from the weather, humidity, and temperature variation, dirt, dust, or other contaminants.

B. Coordinate deliveries and submittals with the Prime Contractor to ensure an organized timely installation.

C. Contractor shall be responsible for all handling and control of equipment. Contractor is liable for any material loss due to delivery and storage problems.

D. No equipment materials shall be delivered to the job site more than three weeks prior to the commencement of its installation. Coordinate with Prime Contractor on location for storage of materials.

1.17 VEHICULAR ACCESS, PARKING AND DELIVERY

A. Owner shall supply a designated parking location for Contractor to park their vehicles.

B. Contractor to provide orange safety cones at front and back of vehicles parked in owner assigned space. Vehicles shall be properly identified (labeled) with company logo and registered with general contractor/owner on site.

C. Owner is not responsible for any material, tools and/or company assets damaged due to theft/pilfering by others.

D. Provide a clean work area, which includes parking lot free from cable spools, boxes, trash/rubbish etc. Work areas will be cleaned daily.

E. Coordination with Delivery Company, driver, site address, and contact person will be the responsibility of the Contractor.

F. Contractor is responsible for prompt material deliveries to meet contracted completion date.

1.18 PRODUCT STORAGE REQUIREMENTS AND SITE ACCESS

A. Owner/General Contractor will assign a location or room to store telecommunication materials.

B. Contractor is ultimately/exclusively responsible for loss and/or damage to materials.

C. Contractor will have access to this site between the hours of 7am to 5pm. Monday thru Friday.

D. Extended work hours: If the Contractor desires to work after hours or weekends, Contractor

shall provide a work schedule complete with dates, times, and individuals names to the Owner/General Contractor for approval.

E. Contractor will comply with provisions of Owner/General Contractor supplied list of job site security requirements.

1.19 PROJECT/SITE CONDITIONS

A. For all environmental recommendations, Refer to Master Architectural section.

B. For all security recommendations, Refer to Owner/General Contractor.

C. After completing system installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris and repair damaged finish, including chips, scratches, and abrasions.

D. Contractor shall provide a clean work environment, free from trash/rubbish accumulated during and after cabling installation. Work area will be cleaned daily.

E. Contractor shall keep all liquids (drinks, Sodas, etc.) off finished floors, carpets, and tiles. If any liquid damages finished surfaces, Contractor shall provide professional service to clean or repair scratched/soiled finishes at their own expense.

1.20 EMERGENCY FACILITIES AND SAFETY

A. Contractor shall provide a minimum of two persons trained and certified in CPR and present during the cabling installation project. Provide CPR certification to Owner upon request.

B. Contractor shall conduct regular scheduled safety meetings within their team and/or coordinate same with GC on site. Contractor shall comply with all safety standards set by the GC.

C. All of the Contractor’s vehicles on site shall be equipped with fire-retardant canister and first aid kit.

D. Contractor shall provide a minimum of one person equipped with a cell phone for emergency 911 calls and/or communications to local/main/central office safety staff. Designated person shall be on site at all times when work is being performed.

E. Communications contractor to coordinate other safety procedures with General Contractor and/or owner representative on site.

1.22 SCHEDULING

A. Construction schedule will be determined on a later date by General Contractor/Architect/Owner and/or communication consultant. Refer to master Architectural specifications.

1.23 ACCEPTANCE

A. Once all work has been completed, test documentation has been submitted, and Owner is satisfied that all work is in accordance with contract documents, the Owner shall notify contractor in writing of formal acceptance of the system.

B. Contractor must warrant in writing that 100% of the installation meets the requirements specified herein (Standards Compliance & Test Requirements).

C. Notification of the likelihood of a cable exceeding standardized lengths must be made prior to installation of the cable. Designer/consultants and Owners may agree to allow certain cabling runs to exceed standardized performance criteria (e.g. length). If it is decided to allow the designated cable to exceed standardized lengths, such runs shall be explicitly identified and excluded from requirements to pass standardized tests. Tests for wire mapping, open, shorts, and grounds shall be made if other tests are waived.

D. Acceptance shall be subject to completion of all work, successful post-installation testing which yields 100% PASS rating, and receipt of full documentation soft and hard copies as described herein.

PART 2– PRODUCTS

2.1 WARRANTY AND CONDITIONS:

A. Contractor shall provide a minimum one (1) year warranty on installation and workmanship.

B. All materials are to be new and unused.

C. Pre-installation inspection:

1. Visually inspect all cables, cable reels, and shipping cartons to detect possible cable damage incurred during shipping and transport. Visibly damaged goods are to be returned to the supplier and replaced at no additional cost to the Owner.

D. All Contractors must be Manufacturer Certified and employ installers capable of an installation that falls under Manufacturer’s guidelines necessary to obtain a minimum15-year Manufacturer’s Warranty.

2.2 ACCEPTABLE MANUFACTURERS:

A. Only manufactures offering certified partnered system solutions for structured cabling, that carry a full manufacturer warrantee will be accepted.

B. Products:

1. Campus Copper Backbone (indoor/outdoor rated PE rated 22AWG):
    a. COMMSCOPE

2. Copper Riser Cable, Plenum rated:
    a. COMMSCOPE

3. Horizontal Category 6 UTP, Plenum Rated, Blue in Color (Data)
    a. COMMSCOPE

4. Horizontal Category 6 UTP, Plenum Rated, White in Color (Voice)
    a. COMMSCOPE

5. Caterogy 6 Patch Panels (Recessed Rack Mountable - Data):
    a. COMMSCOPE

6. Caterogy 6 Patch Panels (Recessed Rack Mountable - Voice):
    a. COMMSCOPE

7. Category 6 UTP Patch Cords (Data 5-foot Telecommunication Rooms white for voice and blue for data)
    a. COMMSCOPE

8. Category 6 UTP Patch Cords (7-foot Workstations white for voice and blue for data)
    a. COMMSCOPE

9. Cross-Connect wire
    a. COMMSCOPE

10. Racks with vertical and horizontal cable management.
    a. COMMSCOPE

11. Horizontal and vertical cable runway
    a. COMMSCOPE

12. Above Ceiling Cable Supporting Hardware.
    a. COMMSCOPE

13. Labeling:
    a. Horizontal cabling: COMMSCOPE
    b. UTP Patch panels: COMMSCOPE
    c. Riser Cabling: COMMSCOPE
    d. Conduits/Trays: Caddy-ERICO International

14. Corridors and other areas as indicated on drawings. (No more than twenty-four-4 pair UTP Catergory 6 cables shall be installed in each J-hooK).
    a. COMMSCOPE

15. Fire Stop systems (All Wall Sleeves)
    a. Specified Technologies Inc. (SPI-Easy Path Products)

16. Grounding bus bars:
    a. Harger BICSI Pattern Telecommunications Ground Bar Kits
    b. Chatsworth BICSI & ANSI/EIA/TIA Grounding Bus-bars

17. Building Entrance Protection Terminators (BET): 110 in/out w/ five pin protection modules for all in-coming pairs
    a. Circa Enterprises Inc.
    b. Porta Systems Corp.

2.3 IDENTIFICATION PRODUCTS:

A. Cable Labels: Self-adhesive vinyl or vinyl-cloth wraparound tape markers, machine printed with alphanumeric cable designations.

B. Provide transparent plastic label holders and 4-pair marked colored labels.

C. Install colored labels according to the type of field as per TIA/EIA color code designations.

D. Use TIA/EIA designation strip color-code guidelines for voice, data, cross-connect, riser, and backbone fields.

2.4 FIRE STOP PROCEDURES:

A. Provide fire resistant intumescent materials to restore fire ratings to all wall, floor or ceiling penetrations used in the distribution and installation for this communications cabling system.

B. Seal all penetrations through fire-rated barriers created by or made for or on behalf of the contractor to prevent the passage of smoke, fire, toxic gas, sound or water through the penetrations either, before, during or after a fire.

C. Fire stop materials shall be installed per manufacturer's instructions, be UL listed for intended use, and meet current NEC and local codes for fire stop measures.

D. The fire stop material chosen shall be distinctively colored to be clearly distinguishable from other materials, adhere to itself, and remain resilient and pliable to allow for the removal and/or addition of cable without the necessity of drilling holes in the material.

E. Provide and install removable, intumescent, fire-stop pillows in an approved fashion in all openings greater than 4 inches.

F. Provide and install manufacturer-approved methods for securing pillows.

G. Coordinate fire stop material, methods of installation, installation schedule, color, etc. with general contractor and electrical contractor on site.

H. Fire Stop Labeling: The contractor shall label each fire-stopped penetration with the following typical label;

!! WARNING!!
_____ Hour Rating
FIRE STOP SEAL
DO NOT DISTURB

NAME OF CONTRATORS COMPANY: PHONE# -_____
INSTALLER - _____ DATE - _____
SUPERVISOR - _____ DATE - _____

TESTING

2.5 ACCESSORIES

A. The Contractor shall mount one hard copy, in color, 36"w x 24"h of a floor plan, clear plastic laminated, serving each communication room. Install the One-line drawings within a protective Plexiglas encasement on the wall of the mechanical room 113. The Plexiglas encasement shall be in either flip-down format or file folder format for ease accessibility.

2.6 TEST RESULTS AND AS-BUILTS:

A. Contractor shall provide test results in soft copy for each cable with the date and time of testing shown. Copies shall be provided on CD. Copies shall be in MsOffice 2007 spreadsheets.

B. Provide a minimum of two (2) hard copies of the above mentioned test results.

C. Contractor shall submit the approved and complete master "As-Built" drawing package in both

hard and soft copies to the Owner and SIGMA HN ENGINEERS. The copies shall be in the same release of AutoCAD as provided by consultant and shall comply with drawing symbols, text styles, layering standards, drawing practices, etc. as set forth in consultant supplied files.

D. Provide a minimum of two (2) hard and soft copies of the as-builts.

2.7 QUALITY CONTROL

A. Materials: All materials shall be UL and/or ETL approved and labeled in accordance with NEC for all products where labeling service normally applies.

B. Materials and equipment requiring UL 94, 149 or 1863 listing shall be so labeled. Modification of products that nullifies UL labels is not permitted.

C. All material and equipment as provided should be the standard Commercial-Off-The-Shelf (COTS) products of a manufacturer engaged in the manufacturing of such products. All shall be typical commercial designs that comply with the requirements specified. All material and equipment shall be readily available through manufacturers and/or distributors.

D. All equipment shall be standard catalogued items of the manufacturer and shall be supplied complete with any optional items required for proper installation.

E. Coordinate the features of materials and equipment so they form an integrated system. Match components and interconnections of optimum future performance and backward compatibility.

F. Expansion Capability: Unless otherwise indicated, provide spare conductor pairs in cables, positions in patch panels, cross connects, and terminal strips, and space in cable pathways and backboard layouts to accommodate 20 percent future increase in campus distribution and active workstations.

G. Backward Compatibility: The provided solution shall be backward compatible with lower category ratings such that if higher category components are used with lower category components, the basic link and channel measures shall meet or exceed the lower channel's specified parameters.

H. Component Compliance: The provided solution's components shall each meet the minimum transmission specifications listed herein such that no individual component will be less than specifications for permanent link and channel, regardless of the fact that tests for link and channel ultimately meet required specifications.

I. In the event of a breach of the representations and warranties contained herein, the Contractor, at their own expense, shall take all measures necessary to correct and make the cabling system work in compliance with the applicable manufacturer written technical recommendations and standards.

PART 3– EXECUTION

3.1 OBJECTIVE

A. The objective of this agreement is to provide a complete communications system cabling infrastructure installation for backbone, riser, cable protection, and horizontal data and voice wiring with attendant terminations, mounting equipment, materials, testing and other items as specified in drawings, these specifications, and contract documents.

B. COORDINATION AND COMPLIANCE

1. Contractor shall coordinate data/voice outlets, locations of cable tray, racks, etc. with the Architect, electrical, mechanical consultant drawings/documents before installation.

2. Contractor shall call for any inspections required by public agencies having jurisdiction in the area. Final payment of this contract will not be made until final inspections have been completed and all deficient items noted have been corrected.

3. The Contractor shall be responsible for complying with all local, state and federal laws or regulations applicable to the work to be performed, although said law; rule or regulation is not identified herein.

4. The contractor is responsible for any remaining construction materials; refuse within the area of work, and daily cleaning of the work area.

5. The Contractor will cooperate and coordinate with General Contractor and owner's representative to ensure the timely progress of all work.

6. Coordinate items or equipment components related to this project provided by the owner. Refer to section "Work and Material by Others" Items furnished by owner, installed by contractor: Communications contractor shall request of owner at the start of rough in any equipment not listed in this RFP to be installed by contractor.

7. Contractor shall be responsible for coordination with all trades, to include required scheduling of materials and/or equipment with Owner or general contractor for delivery and protection of equipment as required.

8. Refer to manufacturer's installation specifications and procedures for work to be accomplished by Contractor. The installation of cable, equipment, and materials will conform to manufacturer's specification to insure manufacturer's full warranty is in effect.

9. Contractor shall be responsible for review of all drawings of record to verify service requirements for proper installation of items.

10. The Contractor shall assume custody and responsibility for the items upon delivery and for determining that the contents are complete and in satisfactory condition for installation.

11. Salvage: Unless indicated otherwise, all items that must be removed due to interference with work of this contract remain the property of the Owner, and are to be salvaged at the Owner's discretion.

12. Remove all redundant (other) items from site at Contractor's expense.

13. Report percentage of work completed on a weekly basis.

3.2 EXAMINATION

A. Examination of building and site shall be the responsibility of the Contractor: Contractors shall examine site and building as required prior to quoting to determine any conditions affecting the work. Contact Owner for arrangements.

3.3 CABLE PLANT OVERVIEW

A. Contractor shall provide all labor and material for a complete Telecommunications Cabling Infrastructure (Fiber and Copper Cabling, Termination Hardware, Information Outlet, Testing, Labeling, and Warranty).

B. Horizontal: Copper – Blue sheath four (4) pair Category 6 cable for data and White sheath four (4) pair Category 6 cable for the second voice/data. Terminate all (blue and white) horizontal work area as indicated on plans. The 12 port patch panels shall have 110 IDC terminations on the back and modular 8-pin/8-position RJ type jacks on the front. Terminate the horizontal cabling using the T-568B wiring scheme. See communications construction drawing for typical detail.

C. Workstation I/O: See construction drawings for detail.

3.4 COMMUNICATIONS EQUIPMENT

A. Provide a minimum of two (1) freestanding heavy-duty APC Rack as shown on plans.

B. Brace and secure top of racks with appropriate hardware per manufacturer specifications. Racks will be secured to floor with a minimum of four ½" hex screws, flat washers, lock washers and anchors.

C. Attach grounding lugs to each rack, cable raceway, conduit, etc. in the work room.

3.5 VOICE TERMINATION BLOCKS

A. Provide Category 6/110 termination blocks for rack-mounted voice riser cable termination, complete with labeling strips, bracket kit, distribution rings, etc.

3.6 CABLE LADDER RACK

A. Refer to Communications drawings for location and size of each runway. Securely attach to wall studs (and racks if applicable) with support brackets, complete hardware components in accordance with manufacturers written instructions.

B. Cable runway radius Bend: Per manufacturers/NEMA specifications.

C. Use cable runway E-Bend 12" or equivalent where required: Refer to drawings.

D. Contractor shall provide all connection, supporting and grounding hardware for a complete overhead cable runway system.

3.7 CABLE SUPPORT STRAPS, POWER STRIPS AND RACK MOUNT UPS

A. Provide hook and eye type (Velcro) cable management straps for horizontal (voice/data) cables: Provide sufficient quantities to wrap all cable at minimum 6 foot intervals.

B. Use proper methods for routing and securing backbone, and riser cables in a neat, secure manner. Securely retain the cable bundle with Tak-Tape cable ties.

C. If provided mount one 6-outlet horizontal power protection strip for each rack c/w surge protection. Refer to communication drawings rack details.

D. Furnish and install rack mounted Un-interruptible Power System, (UPS) in each Rack (Minimum of 3 Kw) coordinate location, type, and rating of receptacle with Div-16. Refer to communication drawings rack detail.

3.8 COPPER PATCH CORDS

A. Copper: Provide equal amounts of blue 5 foot Category 6 patch cables for 75% of the terminated horizontal data cables in the telecommunications rooms. Patch cables shall be from the same manufacturer as the structured cabling system. Coordinate with owner/consultant prior to procurement.

B. Provide equal amounts of blue 7 foot Category 6 patch cables for 75% of the terminated horizontal cables at the work areas. Patch cables shall be from the same manufacturer as the structured cabling system. Coordinate with owner/consultant prior to procurement,

3.9 GROUNDING

A. Provide compression type ground lugs for each 19" rack or cabinet. Rack shall be grounded to wall mounted ground bus bar using #6 AWG stranded, insulated copper conductor. Furnish all required bonding material and hardware; follow NEC / ANSI/TIA/EIA -607 manuals for bonding procedures and specifications.

B. Ground all Telecommunication hardware inside all communication rooms and wall mounted cabinet areas like, but not limited to: cable ladder, conduit, equipment racks, protection units and shielded cabling with #6AWG stranded insulated cable.

C. Ground all Building Entrance Terminal equipment per manufactures specifications.

3.10 PLYWOOD BACKBOARDS

A. Provided by General Contractor ~~and/or Division 26 00 00~~, 8'H x 4'W x ¾"T vertically hung, grade AC, plywood in MC/TR rooms as indicated on plans. Paint plywood backboards with two coats of fire retardant white or light gray paint. Coordinate with Architect, Prime Contractor, ~~Division 26 00 00~~ and Owner for installation of backboard. Refer to drawings for proposed location and details.

3.11 MAIN DISTRIBUTION FRAMES AND SERVICE ENTRANCES

A. Entrance: Protection related hardware. Contractor shall coordinate location/placement of hardware to be mounted on plywood backboards with Owner and service provider before mounting hardware to insure proper layout and requirements. Coordinate with owner's representative and service provider prior to purchase and installation to verify need.

B. Provide secondary protection modules (110-in/out type) for all incoming pairs at both termination points, complete with solid-state 5 pin protector modules. Securely attach protector housing to wall mounted plywood backboard. Refer to communications drawings for proposed location.

C. Provide 12 pair cable whips between protector unit and termination block for voice cross-connection. Coordinate with service provider.

D. Ground Protection unit to ground bar with #6AWG stranded insulated wire.

E. Ground Duct Rated Cable with a B-Bond clamp and #6AWG stranded insulated cable to ground bus bar within 50 feet of entering the building.

3.12 INTERIOR COMMUNICATION PATHWAYS

A. Cables shall be neatly bundled along common paths. Maximum number of cables per bundle

shall be determined by supporting hardware manufacturer recommendations.

B. Use only pathway and spaces designed for telecommunications.

C. Provide a minimum of 20% spare capacity in all vertical/horizontal chases.

D. Mechanical and power separation. Install communications cabling:

1. Minimum of 3 feet from electrical panel boards, photocopier.

2. Minimum of 6 inches from fluorescent fixtures

3. Minimum of 6 feet from electrical motors.

3.13 CONDUITS

A. All information outlets shall have a minimum of one 1” conduit provided from the recessed deep box to the nearest “Zone” pull box or to within 18 inches of the closest cable tray. (By Div.16)

B. There shall be a maximum of two (2) 90° degree bends per conduit run, between any two adjacent pull boxes.

C. No conduit run shall exceed 100 feet between pull boxes.

D. ~~Division 26 00 00 shall p~~Provide conduit path (sleeves) where cabling passes through fire rated walls\deck\slab. Seal penetration with intumescent fire-stop material that matches the rating of the surface penetrated. Coordinate fire stopping with ~~Division 26 00 00 and~~ general contractor on site.

E. ~~Division 26 00 00 shall s~~Secure conduit sleeves with minimum 12” long “Uni-strut” or equivalent (support) channel at both sides of wall. Complete installation with “Uni-strut” or equivalent conduit retaining straps sized for the conduit being installed.

F. ~~Division 26 00 00 in c~~Coordination with architect and general contractor shall provide accessible entry and exit points in all vertical and horizontal cable chases so as to provide working space to install and maintain cable infrastructure.

G. Do not install communication cables in conduits until all bushings/couplers are installed on the ends of the conduits.

H. Contractor shall ground all incoming communication conduit/tray into the MC and TR rooms with minimum #6 AWG green insulated jacket, copper conductor.

3.14 SURFACE MOUNT RACEWAY, TELECOMMUNICATION, AND PACK POLES

A. If used system furniture vendor shall supply vertical telecommunication and power pack (power pole) between modular furniture and drop ceiling. This will ensure capacity, color matching and installation continuity for modular furniture.

B. Contractors to confirm exact locations and methods of mounting outlets in modular system furniture.

3.15 CABLE SUPPORT HANGERS AND FIBER SUPPORT HANGERS

A. Cable Saddles and J-hooks: Cable Saddles or "J"-Hook cable support systems for horizontal cabling shall be installed. Refer to drawings for requirements.

All horizontal cabling shall extending from the offices to the corridors shall be in continuous conduit complete with bushings and connecting hardware from the I/O to within 18 inches of the cable runway system (Div 26 00 00).

B. Provide threaded rod and/or # 8AWG wire for supporting hangers when hanging conduits/trays, etc. from floor deck or deck members. Refer to manufacturers' recommendation for proper installation, sizing, and loading of hangers.

C. Minimum 1/2" diameter threaded rod or equivalent and "Uni-strut" or equivalent channel shall be used for hanging cable runway from floor deck or deck members. Follow manufacturer recommendations and standards. Refer to communications drawings for details.

D. Cables shall be neatly bundled using hook and eye (Velcro) type cable straps along common paths. Maximum number of cables per bundle shall not exceed twenty-four 4 pair UTP.

E. Layout cable runs in advance to determine quantities of cable to be installed along pathways, and to insure non-interference from other trade installations.

F. Maximum-stacked height of cable installed in cable runway shall not exceed 2-1/2". Increase width of runway or provide additional runs of cable runway where required to fulfill requirements.

G. Do not support cables from or lay on ceiling suspension system. Do not use electrical, plumbing, or other pipes for support. Cable supports shall be permanently anchored to building structure or substrates. Provide attachment hardware and anchors designed for the structure to which attached, and that are suitably sized to carry the weight of the cables to be supported. Confirm with Architect and/or Prime Contractor on installation procedures for Cable Support System prior to implementation. No exceptions.

H. Secure and support exposed horizontal cable at intervals not exceeding 4ft and not more than 18 inches from cabinets, pack poles, boxes, fittings, outlets, racks, frames, and terminals. The exception is in a vertical drop into a pack pole above a drop ceiling where the distance between

supports shall not exceed 4ft.

I. Support vertical fiber optical cable with Basket weave wire/cable grips – Hubbell #022-29-X or equivalent. Support fiber riser with single weave support grip with a single offset eye. Mount/attach pulling eye to a wall or ceiling deck secured hook to support and provide strain relief to riser cable. Provide a minimum 36" loop of fiber prior to entering fire stopped floor sleeve.

J. Where pull is required coil up slack fiber cable into pull box and secure with single weave support grip. Refer to communications drawings.

3.16 CABLE CLEANER AND CABLE PULLING LUBRICANTS

A. Cable cleaners and/or lubricants shall be materials designed and manufactured for telecommunication cabling use.

3.17 HORIZONTAL CABLING REQUIREMENTS

A. Provide all necessary installation materials, hardware, tools and equipment to perform insulation displacement type terminations at all data outlets, patch panels, and voice termination materials. Furnish quantities required to terminate all UTP horizontal cables plus percentage.

B. Cabling Method: Provide cabling in acceptable spaces, cable tray, (surface and/or enclosed raceway), or conduit, cable support system. Within consoles, racks, cabinets, desks, and counters, in accessible ceilings spaces and in gypsum board partitions where open cable method may be used. Use UL or ETL listed plenum rated cable in all spaces. Conceal raceway and cabling except in unfinished spaces.

C. Utilize conduits/cable runway as indicated on the drawings. All data and voice cables will be routed in a neat and orderly fashion. No cable ties or wraps shall be used to secure the cables in the runway outside of the MC and TR's.

D. Examine pathway elements intended for cable. Check raceways and other elements for compliance with space allocations, installation tolerances, debris, hazards to cable installation, and other conditions affecting installation. Proceed with installation only after unsatisfactory conditions have been corrected.

E. Horizontal cabling when exiting runway and/or conduit shall thereafter be supported with approved materials and space supporting hardware to maintain performance characteristics.

F. Install cable using techniques, practices, and methods that are consistent with specified data cabling and the installed components and that insure specified performance levels of completed and linked signal paths, end to end.

G. Cable bundles brought into the MC/TR shall be routed and dressed in such a manner that prior to termination the cables are not subject to damage and misuse such as installers walking on the bundles that are lying on the floor.

H. Cable Pulling shall not exceed 25lbs of pulling tension typical.

I. Install Cables in continuous lengths from communications outlet to specified patch panels for data and termination blocks for voice.

J. Pull cables in smooth and regular motions using methods that prevent cable kinking.

K. Keep all items protected before and after installation with dust and moisture proof barrier materials/envelopes. If wiring is terminated on patch panels, data, voice jacks prior to painting, carpet installation, and general finish clean up, these jacks shall be placed in a protective envelope to insure dust, debris, moisture, and other foreign material do not settle onto jacks' contacts. Envelope will be removed on final trim out after other trades have finished their finish work. It shall be the contractor's responsibility to ensure the integrity of these protective measures throughout the life/installation of the project.

L. Do not bind cables tightly together with tie or other wraps. Wraps shall slip loosely around cables. Use Velcro wraps instead of cables ties for all cable bundling in the MC and TR's.

M. Pull cables without exceeding cable manufacturer's recommended pulling tensions

N. Pull cables simultaneously if more than one is being installed in the same raceway/pathway.

O. Use pulling compound or lubricant if necessary. Use compounds approved for lubricating telecommunications cabling that will not damage conductor or insulation.

P. Use pulling means; including fish tape, cable, rope, and basket weave wire/cable grips that will not damage media or raceway.

Q. Install open cabling parallel and perpendicular to surfaces or structural members following surface contours where possible. Cables shall be run above other ducts, pipes, and other installations. Provide surface mount raceway to protect all exposed cabling from damage, confirm with owner for color and manufacture style. No exception for exposed cabling runs.

R. Use no flat or under carpet communications cabling (UTC) without prior written permission of owner or communications consultant.

S. Separation of Wires: Comply with EIA/TIA-568-A rules for separating unshielded copper communication and data-processing equipment cables from potential EMI sources, including electrical power lines and equipment.

T. Maintain a minimum spacing of 18” from electrical feeders and/or branch circuit wiring.

U. Maintain a minimum spacing of 12” from auxiliary systems cabling.

V. Maintain a 1” separation where UTP cables must pass perpendicularly to electrical, plumbing, or other wiring, conduit, or piping systems. Use non-conduit bushings, if necessary to maintain separation, which allow for the addition of a reasonable number of cables in the future.

W. Maintain communications pathways away from electrical apparatus such as motor driven equipment and transformers, minimum separation distance of 10’-0” is recommended.

X. Terminate horizontal cables in consistent consecutive order. Arrangement of cables on patch panels and voice termination hardware shall be in ascending order of room numbers and outlet numbers within rooms. Numbering shall start at the left of the main door to the room and continue in a clockwise direction around the room. That is, start the wire termination on patch panels and blocks with the cables that are the lowest room number, and place them in the first patch panel and port number. In any building for example, a room 100 would be terminated first; room 101 would be terminated second, etc. The cables within the room will be terminated starting with the cables located to the left of the main door to the room and continue around the room in a clockwise direction.

Y. Provide 6” service loop for horizontal cables at I/O’s. Locate service loop neatly with in outlet box. (Typical)

Z. Maintain twists in cable pairs to within ½” of termination.

AA. Group all specialty cables such as the pay phone cables, which do not have their own termination hardware, in one group, clearly labeled as to cable number and function, in the last positions on the horizontal cabling blocks in each MC/TR.

BB. Limit cable-bending radius to 20 times the cable diameter during installation, and 15 times the cable diameter after installation.

CC. Use cable acceptable for installation as “Open cabling” in spaces used for environmental air handling (plenum) when installed in accordance with NEC Article 300-22.

DD. All Data and Voice wiring shall be terminated in TIA/EIA wiring configuration T-568-B unless Owner/Consultant indicates another termination scheme.

EE. All horizontal cables shall have an installed length less than 90 meters (295 ft.).

FF. Communications Outlet Assemblies:

1. Provide quantity to support locations specified on drawings.

2. Verify color with General Contractor/Owner prior to purchase.

3. Acceptable Manufactures: refer to approved manufacturer list.

4. Wall Information Outlet Jacks: refer to approved manufacturer list.

5. Data: Blue Category 6 T-568-B wire scheme 8-pin 8 pos modular jack.

6. Voice (second data): White 6A T-568-B wire scheme 8-pin 8 pos modular jack.

7. Lighting Control (nLight Lighting Control System): Yellow 6A T-568-B wire scheme 8-pin 8 pos modular jack.

8. Lighting Control : Furnish and install Face Plates-Single Gang 2 port faceplates at each power pack. (unless otherwise indicated in the construction documents). - Provide Blank inserts as needed.

9. Face Plates-Single Gang 2 port faceplates (unless otherwise indicated in the construction documents). - Provide Blank inserts as needed.

10. Floor Information Outlets Jacks: refer to approved manufacturer list.

GG. The cable manufacturer shall test, and provide with each 1000ft. spool/box of horizontal cabling, a factory certified test report guaranteeing each spool/box complies with the electrical performance of the specified Category cable.

HH. Modular System Furniture: Contractor shall supply voice and data termination in Modular System Furniture and/or Custom Built Furniture complete with mounting bracket. Refer to architectural drawings for locations and details if applicable.

3.18 HORIZONTAL COPPER DATA TERMINATION

A. Provide Horizontal UTP, Category 6, 4-pair, #24 AWG, 350MHz, Plenum Rated Cable: Use one manufacturer only to maintain cable/components. Warranty-shall meet or exceed latest EIA/TIA specifications.

B. Provide rack mounted Termination Patch Panel (data); Category 6 Patch Panels. They shall be RJ-45 modular jack to 110-type printed circuit board style patch panels, 48 ports as needed. Furnish units that adhere to the performance requirements of ANSI/TIA/EIA-568-B standards, utilizing the wiring termination scheme T-568-B.

C. Provide rack mounted Termination Patch Panel (nLIght lighting Control); Category 6 Patch Panels. They shall be RJ-45 modular jack to 110-type printed circuit board style patch panels, 48 ports as needed. Furnish units that adhere to the performance requirements of ANSI/TIA/EIA-568-B standards, utilizing the wiring termination scheme T-568-B.

D. Horizontal Cable: The cable jacket shall be printed with a minimum of the following information: Category specified performance marking, Manufacturer, Manufacturer's part number, cable type, listing file number, number of pairs, listing type (i.e., CMP), and sequential footage markings.

1. Cable shall be UL or ETL listed type CMP, TIA/EIA Category 6 with blue outer jacket for the first work area termination (left most jack) and white for the second cable (right most jack) to the same work area termination. Work areas that have terminations in excess of two cables the contractor shall alternate the cables colors accordingly. Refer to drawings for additional detail.

2. Conductors shall be UTP of a gauge that complies with the Category 6 standard, and have 4 Pairs of solid copper conductors.

3. All Internal conductors insulation composition shall be of Dupont® Teflon FEP Fluoropolymer resin.

4. Color-coding shall match TIA/EIA 568-B standards.

5. Cable shall be listed in the UL or ETL Verified LAN Cable Products Directory. Cable shall meet all tests for current Category 6 specifications.

3.19 HORIZONTAL COPPER VOICE TERMINATION

A. Horizontal Cables for Voice Service: Use Plenum rated UTP cables complying with Category 6 of EIA/TIA-568-B for runs between mechanical room and work room and I/O's.

1. Cable shall be UL or ETL listed type CMP, TIA/EIA Category 6 with white (second cable, right most jacks) outer jacket.

2. Conductors shall be UTP of a gauge that complies with the Category 6 standard and have 4 Pairs of solid copper conductors.

3. All Internal conductors insulation composition shall be of Dupont® Teflon FEP Fluoropolymer resin.

4. Color-coding shall match TIA/EIA 568-B standards

5. Cable shall be listed in the UL or ETL Verified LAN Cable Products Directory. Cable shall meet all tests for current Category 6 specifications.

B. Terminate horizontal voice cables into rack mounted 48 port Category 6 patch panels using the T-568B wiring scheme without damaging twisted pairs or jacket.

C. Wall Mounted Telephone Faceplates: Provide Stainless Steel faceplate with integral 8-pin, 8-position voice jack wired in accordance with the T-568-B wiring designation for the termination of Voice UTP cables specified herein.

D. Provide one voice cable to elevator'(s) voice cabling terminal(s) in this building. Coordinate with elevator installer, and client representative. Consult with General Contractor on location of terminus point and length of cable. Clearly, identify elevator-wiring locations on voice termination hardware in MC/TR's, and on documentation of record. Terminate cable in the last position on the horizontal blocks.

E. An additional 4 pair UTP Category 6 horizontal copper cable may be required for 911 emergency connectivity. Coordinate exact requirements with General Contractor and security consultant/contractor and termination location on site.

F. Contractor shall install one Voice 4-pair Category 6 UTP copper cable for each pay phone (public phone) location. Confirm exact requirements with client and network consultant on a later date. Phone, shelf, booth and furniture provided by others.

3.20 DATA PATCH CORDS

A. Copper: Provide Category 6 data patch cords in lengths and quantities as specified by Owner/consultant. Verify prior to purchase. Category 6 patch cords will be of the same manufacturer as the Category 6 horizontal data cable.

3.21 VOICE PATCH CORDS

A. Patch cords at workstations: Provided by others.

B. Others shall provide voice cross-connection at the work and mechanical rooms.

3.22 ADMINISTRATION, TESTING, AND IDENTIFICATIONS

A. These specifications will be strictly enforced. The contractor must verify that the requirements of the specifications are fully met through testing, active data throughput, and documentation as specified below. This includes confirmation of requirements by demonstration, testing and inspection. Demonstration shall be provided in final walk-through and in soft and printed test data. If part or all pairs of cable do not meet specifications contained in this document, the cable shall be replaced at contractor's cost.

B. Test Plan: provide a complete and detailed test plan for the cabling system specified herein including a complete list of test equipment for UTP and light guide components and accessories. Include procedures for certification, validation, and testing. Furnish factory reel tests for all cable. Owner will require that the Telecommunications Cabling System installed by the contractor be fully certified to meet all necessary requirements to be compliant with referenced IEEE and EIA/TIA specifications.

C. Testing Agency: Contractor will engage a qualified testing agency to perform field quality control testing. This 'agency' may be Contractor's personnel if the manufacturer of the testing equipment certifies them to conduct the required tests.

D. Correct malfunctioning units at Project site, where possible, and retest to demonstrate compliance; otherwise, remove and replace with new units and retest.

E. Contractor will complete all work and documentation according to manufacturer guidelines to insure manufacturer's warranty remains in effect. Contractor shall obtain certificates from manufacturer attesting to warranty being in effect and include certificates with other deliverables due at the completion of the project.

F. Owner reserves the right to be present during any or all of testing.

G. Standards Compliance & Test Requirements: Cabling must meet the indicated performance specifications: TIA/EIA 568-A and TIA/EIA TSB-67 Category 3, TIA 568-A Category 6 or latest.

3.23 DATA AND VOICE TESTING (COPPER)

A. Testers shall be calibrated by factory at factory recommended intervals. Produce documentation to validate compliance.

B. Testers shall be a minimum of a class 2 (level IIe), bi-directional, and Category 6 tester.

C. Testers shall be capable of reporting data at all measured points and uploading the data to a printer PC/Printer.

D. Serial number of tester shall be included with the test results.

E. Test cords shall be new factory manufactured leads.

F. No test leads shall be used for greater than 1,000 tests, or the maximum number of tests recommended by manufacturer. Follow manufacturer's recommendations. Produce documentation on manufacturer's testing procedures and recommendation. Provide documentation on conformance with manufacturer testing procedures.

G. Use test leads/patch cord factory made that are "tuned" to test the particular manufacturer's cabling system used for permanent link tests.

H. Certify that tester's software has been updated within the last 30 days prior to testing

I. Testers shall be capable of testing at a minimum to the following levels at 100 MHz and comparable measures at 250, 350 and 500 MHz:

J. Use only approved UTP/Fiber test equipment: Microtest Omni Scanner, Fluke DSP 400, or Agilent/HP Wirescope 350 OR (LATEST MODEL).

K. Tester Parameters: Comply with the following table:

A. Testing on all horizontal/riser and inter-building copper cabling shall be of the Permanent Link type. However, Contractor shall warrant performance based on Channel performance and if required provide patch cords that meet channel performance criteria.

B. The permanent link consists of up to 90 m (295 ft) of horizontal cabling and one connection at each end and may also include an optional/consolidation point connection (CP).

C. All cabling not tested strictly in accordance with these procedures shall be re-tested at no additional cost to the Owner.

D. 100% of the installed cabling must be tested. All tests must pass acceptance criteria defined in applicable EIA/TIA 568-C.2 Category 6 standard.

E. Test equipment shall be fully charged prior to each days testing.

3.24 COPPER VOICE TESTING

A. Copper Cable Procedures: Inspect all cabling for physical damage and test each conductor signal path for continuity, shorts to ground, wire mapping, line loss, and shorts. Test for faulty connector splices, and terminations. Voice cabling rated at Category 6 and Category 6 shall be tested as per data testing specifications.

B. Each pair of Riser copper cable shall be tested for standard wire mapping, continuity, opens, shorts, and grounded pairs. Record and deliver all tests in paper and electronic media.

C. Correct malfunctioning units at Project site, where possible, and retest to demonstrate compliance; otherwise, remove and replace with new units and retest. Any subsequent failures noted in the retesting of all cable plant shall be corrected as noted above

D. Contractor will complete all work and documentation according to manufacturer guidelines to insure manufacturer's warranty remains in effect. Contractor shall obtain certificates from manufacturer attesting to warranty being in effect and include certificates with other deliverables due at the completion of the project.

3.25 PATCH CORD TESTING

A. Provided patch cords shall be new, tested to manufacturer specifications listed and come with full manufacturer factory warranty.

3.26 LABELING

A. System: use a unique, four syllable alphanumeric designation for each cable, and label cable, jacks, connectors, and terminals to which it connects with the same designation. The following is an example of such a labeling system:

1. First syllable identifies and locates wiring closet or equipment room and floor where cable originates.

2. Second syllable identifies and locates cross-connect block-column or rack number in which the cable terminates.

3. Third syllable identifies the block or patch panel number.

4. Fourth syllable designates the position occupied by the cable pairs in the field. For example, the patch panel, WIC port number, or BIX termination clock connectors. Refer to drawings for this detail.

B. Label each horizontal cable at four points:

1. General: Label each cable within 4 inches of each termination where it is accessible and readable in a cabinet, junction/splice case, or outlet box, and elsewhere as indicated.

2. Distribution Racks, blocks and other terminating equipment: Label each unit and field within that unit within 4 inches from the block or patch panel termination.

3. Within Connector Fields, in Wiring Closets and Equipment Rooms: Label each connector and each discrete unit of cable-terminating and connecting hardware. Where similar jacks and plugs are used for both communication and data-processing equipment, use a different color for jacks and plugs of each service.

4. Cable Schedule: Post in prominent location in each wiring closet and equipment room. List incoming and outgoing cables and their designations, origins, and destinations.

E. Workstation: Label cables within outlet boxes between 8 and 12 inches from I/O termination.

F. Labeling of exposed cables and cables in cable runways/conduits: Three (3) feet after exiting work and mechanical room wall; and three (3) feet prior to entering wall of room that cable I/O

is located in.

G. Communications room Grounding will be marked conspicuously with permanent plastic labels at each end and location stating “Caution: telecommunication Ground- DO NOT REMOVE”. Indicate the room number of the opposite end of the wire.

H. All copies (printed and electronic) of floor plans shall show outlet locations identified by their unique identifier. Place one copy of all floor plans with I/O’s in mechanical and work room. Coordinate with owner if they require specific requirements, like: lamination and mounting height, etc.

3.27 DOCUMENTATION

A. Test reports must be submitted in hardcopy and electronic format. Hand-written test reports are not acceptable.

1. Hardcopy reports are to be submitted in labeled 3 ring binders with an attached affidavit verifying passing execution of all tests. For large installations, electronic reports with hardcopy summaries are preferred. Hardcopy summary reports shall contain the following information on each row of the report: circuit ID, test specification used, length of cable, date of test, and pass/fail result.

2. Electronic reports are to be submitted in USB storage Drive or CD-ROM format. If proprietary software is used, disk or CD shall contain any necessary software required to view test results. If the results are delivered in a standard format like Excel, Access, CSV files, etc. then software to read these files are not provided. Electronic reports must be accompanied by a Certificate signed by an authorized representative of the Contractor warranting the truth and accuracy of the electronic report. Certificate must reference traceable circuit numbers that match the electronic record.

B. Test reports shall include the following information for each cabling element tested:

1. Wiremap results that indicate the cabling has no shorts, opens, miss-wires, split, reversed, or crossed pairs, and end-to-end connectivity is achieved.

2. For Category 6 cabling: Attenuation, NEXT, PSNEXT, ACR, Power Sum ACR, Return Loss, ELFEXT, PSELFEXT, Propagation Delay, and Delay Skew data that indicate the worst case result, the frequency at which it occurs, the limit at that point, and the margin. These tests shall be performed in a swept frequency manner from 1 MHz to 500 MHz or highest relevant frequency, using a swept frequency interval that is consistent with TIA and ISO requirements. Information shall be provided for all pairs or pair combinations and in both directions when required by the appropriate standards. Any individual test that fails the relevant performance specification shall be marked as a FAIL.

3. Length (in meters), propagation delay, and delay skew relative to the relevant limit. Any

individual test that fails the relevant performance specification shall be marked as a FAIL.

4. Cable manufacturer, cable model number/type, and NVP

5. Tester manufacturer, model, serial number, hardware version, and software version.

6. Circuit ID number and project name.

7. Auto test specification used

8. Overall pass/fail indication

9. Date and time of test.

C. Test reports shall be submitted before substantial completion of the project.

3.28 TEST EQUIPMENT

A. Test equipment used under this contract shall be from manufacturers that have a minimum of 5 years experience in producing field test equipment. Manufacturers must be ISO 9001 certified.

B. All test tools of a given type shall be from the same manufacturer, and have compatible electronic results output.

C. The manufacturer of the test equipment must approve test adapter cables. Adapters from other sources are not acceptable.

D. Baseline accuracy of the test equipment must exceed TIA Level IIe (class2), as indicated by independent laboratory testing.

E. Test equipment must be capable of certifying Category 6, and 6 links/channels.

F. Test equipment must have a dynamic range of at least 100 dB to minimize measurement uncertainty.

G. Test equipment must be capable of storing full frequency sweep data for all tests and printing color graphical reports for all swept measurements.

H. Test equipment must include S-Band time domain diagnostics for NEXT and return loss (TDNXT and TDRL) for accurate and efficient troubleshooting.

I. Test equipment must be capable of running individual NEXT, return loss, etc measurements in addition to auto tests. Individual tests increase productivity when diagnosing faults.

J. Test equipment must include a library of cable types, sorted by major manufacturer.

K. Test equipment must store at least 1000 Category 6 auto tests in internal memory.

L. Test equipment must be able to internally group auto tests and cables in project folders for good records management.

M. Test equipment must include DSP technology for support of advanced measurements.

N. Test equipment must make swept frequency measurements in compliance with TIA standards.

O. The measurement reference plane of the test equipment shall start immediately at the output of the test equipment interface connector. There shall not be a time domain dead zone of any distance that excludes any part of the link from the measurement.

3.29 SUBSTANTIAL COMPLETION

A. Date for substantial completion: Coordinate with Construction schedule and client's representative at least 3 months in advance for expected communications infrastructure completion date.

3.30 SUPPORT AND WARRANTY

A. Minimum 15-year manufacturer's certified warranty for this specific project shall be submitted in writing with system documentation. Perform installation of cabling system and hardware to insure covering application assurance (workmanship). Contractor shall provide an installation that meets or exceeds the manufacturer requirements and standards for a complete cabling infrastructure.

B. Should the cabling system fail to perform its expected operation within this warranty period due to inferior or faulty material and/or workmanship, the contractor shall promptly make all required corrections without cost to the owner.

3.31 INTERFACES WITH OTHER WORK

A. Weekly Meetings and Progress Reports:

1. Contractor shall have a minimum of one representative attending all weekly-scheduled Construction meetings.

2. Contractor is responsible to present a written documentation of weekly progress and/or delays related to this project to the General contractor and consultant.

3.32 REPAIR/RESTORATION

A. Contractor is responsible for the protection of existing facilities, finishes, and equipment.

B. Contractor is responsible for the patching and repair of facilities, finishes, and equipment as related to the communications installation.

C. Any damage to building or site caused by this contractor, including grass, paving, curbs etc., shall be restored at Contractor's expense to match condition that day or day of quote opening.

D. Provide all supplementary or miscellaneous items, accessories and devices incidental to or necessary for a sound, secure and complete installation, whether or not specifically indicated in the Contract Documents.

E. Contractor shall note and record any other trades related delays to their scope of work and/or safety issues associated to this project.

3.33 LAN EQUIPMENT

A. All active electronic equipment, like Switches, PBX, etc. are supplied and installed as specified on plans.

3.34 VOICE SYSTEMS

A. All active voice equipment, are supplied and installed as specified on plans.

3.35 VIDEO AND AUDIO SYSTEMS

A. Furnish and install category 6 cabling systems as indicated in specification section AUDIOVISUAL SYSTEMS : Refer to drawings for details.

3.36 WAN EQUIPMENT AND TELCO SERVICES

A. Furnish and installed as specified on plans.

3.37 SECURITY ACCESS AND SURVEILLANCE SYSTEMS

A. All Video and Audio equipment, like IP Cameras, Recording equipment etc. are supplied and installed as specified on plans. Refer to documents/drawings for details.

3.38 LIGHTING CONTROL DEVICES (CRESTROM Lighting Controls)

A. Lighting Control cabling: Refer to drawings for details. Furnish and install category 6 cabling systems as indicated in drawings.

END OF SECTION 27 00 00

SECTION 27 51 23 - eSERIES END POINT INTERCOM, PAGING, AND EMERGENCY MESSAGING SYSTEM

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.

1.2 SUMMARY

A. The system specified is based on the Telecor eSeries Supervised Network based Communications System providing at least the features and functions outlined below. The System shall be installed and programmed by a local authorized and certified Telecor dealer.

B. Supply and install a complete supervised network-based intercom system. Field wiring shall be CAT 5E or CAT 6 cable, control wiring for power distributions and very long runs, and utilize an optional fiber backbone (when distances exceed normal Ethernet limitations). All station equipment shall utilize standard RJ-45 modular connections. All remote devices utilizing standard structured cabling shall be capable of PoE (Power over Ethernet) or power supplied within the CAT 5E or CAT 6 cable jacket. Wiring shall be capable of either being installed in conduit or cable trays, 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 100 Mbps (or optionally 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 office 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 utilizing Ethernet or VoIP communications protocol to each end-point device will not be acceptable. 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 facility's IP-PBX 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. The Communication System shall include alarm features, including a comprehensive command center and alarm-focused emergency management capabilities. In the event of an alarm condition, all nonessential system operations shall be automatically suspended. Control of the system shall be transferred to a command center console operated by the incident commander. All call-ins placed from room stations shall be re-routed automatically to the command center console.

J. The Communications System shall include software for the management of communications during an alarm condition in the facility using a GUI located at the command center. This includes activating, clearing and providing status of all alarms in the facility, including comprehensive management of lockdown and acknowledge status of each classroom designated as a Shelter-in-Place location.

1.3 DEFINITION OF TERMS

A. Installer(s): Shall refer to the person, persons, or company who or which contracts to perform the work specified herein.

1.4 SUBMITTALS

A. Submit the shop drawings, product data, and quality control submittals specified below at the same time as a package.

B. Shop Drawings: Composite wiring and/or schematic diagrams of the complete system as proposed to be installed. Drawing shall include relative position of all major components, typical connections, field components, accessories, and cable types.

C. Product Data: Include catalogue data sheets, manufacturer's default specifications, user operation guides, and bill of materials.

D. Quality control shall include the following:
   1. Name, address, and telephone number of the nearest fully equipped service organization.

2. Submit a certificate of completion of installation and service training from the system manufacturer.
3. Submit a list of comparable completed projects. Furnish the name, address, telephone number, and contact name of end user.

E. Field Test Reports: Indicate and interpret test results for compliance with performance requirements. Include record of final matching transformer-tap settings and signal ground-resistance measurement certified by Installer.

F. Maintenance Data: For equipment to be included in maintenance manuals specified in Division 1.
   a. Record of Owners equipment-programming option decisions.
   b. All instructions necessary for proper operation and manufacturer's instructions.
   c. "Proof of Performance" information.
   d. Manufacturer's maintenance information.
   e. Copies of non-proprietary computer programs and system set up disks documenting all programmable features of the installed system.

G. Record Drawings: Prior to final

H. acceptance, provide three (3) complete sets of drawings indicating all cable numbers and construction details in accordance with the actual system installation. Revise all shop drawings to represent actual installation conditions. These Record Drawings will be used during "Final Acceptance Testing".

I. System Training: Submit the following information describing the training programs and system trainers as outlined in paragraph 1.6 of this specification and in accordance with Division 1 specifications.
   a. Include with the submittal a preliminary staff development training program in outline form for review and approval by the owner's representative.
   b. Include with the submittal a current copy of the trainer's certification from the manufacturer that certifies and identifies the trainer(s) who are eligible to provide training and support for the project.
   c. Include with the submittal a current copy of trainer's needs assessment form which will be reviewed with the owner's designated representative for the system's preliminary system programming and configuration.
   d. Include with the submittal copies of all documentation used to identify for the owner those participants attending and completing the training programs.

J. A copy of the manufacturer's standard statement of warranty proving all equipment provided for the school communications network is covered with the required **five-year** warranty shall be included with the project submittal. This statement of warranty shall be provided on the manufacturer's stationary.

1.5 QUALITY ASSURANCE

A. Manufactures: Firms regularly engaged in manufacture of integrated communication systems, time keeping systems, and ancillary equipment, of types and capacities required, whose products have been in satisfactory use in similar service for no less than five years.

B. Installer's Qualifications: Firms with at least five years of successful installation experience with projects utilizing integrated communications systems and equipment similar to that required for this project.

C. All items of equipment including wire and cable shall be designed by the manufacturer to function as a complete system and shall be accompanied by the manufacturer's complete service notes and drawings detailing all interconnections.

D. The Contractor shall be an established communications and electronics Contractor that has had and currently maintains a locally run and operated business for at least five years. The Contractor shall be a duly authorized distributor of the equipment supplied with full manufacturer's warranty privileges.

E. The Contractor shall show satisfactory evidence, upon request, that they maintain a fully equipped service organization capable of furnishing adequate inspection and service to the system. The Contractor shall maintain at their facility the necessary spare parts in the proper proportion as recommended by the manufacturer to maintain and service the equipment being supplied.

F. Except where specifically noted otherwise, all equipment supplied shall be the standard product of a single manufacturer of known reputation and experience in the industry. The Contractor shall have attended the manufacturer’s installation and service school and upon request must show proof of attending such a school.

G. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.

H. Comply with NFPA 70.

I. Comply with NEMA Standard SB-40 for Emergency Communications in K-12 schools.

1.6 IN-SERVICE TRAINING

A. The contractor shall provide and implement a complete and comprehensive staff training program for all administrators, facility staff members, and teachers. This mandatory training program will provide school staff a complete understanding of how to utilize and properly operate all functions.

B. The training program shall be implemented by a staff member/trainer employed by the contractor. The trainer must be factory certified to provide training on their product.

C. All staff development training is to be coordinated through the owner's designated representative. As training sessions are completed, the trainer will provide the school's administrative staff and school district's staff a document listing all the staff and faculty members who attended, received, and completed the training program.

1.7 WARRANTY

A. Provide a **manufacturer's five-year extended limited warranty** of the school communications network equipment against defects in material and workmanship. This warranty will cover all electronic system components. Additional warranties cover clocks, speakers, and call-in switches. If any defects are found within the warranty period, the defective equipment shall be replaced at no cost (equipment only); a one-year warranty shall be provided for labor.

B. The Contractor shall, at the Owner's request, make available a service contract offering continuing factory authorized service of this system after the initial warranty period.

C. The system manufacturer shall maintain engineering and service departments capable of rendering advice regarding installation and final adjustment of the system.

1.8 MANUFACTURERS

A. Manufacturers: Full Network based solution Subject to compliance with requirements, provide a system by one of the following manufacturers which are currently in use by the owner:
   1. Telecor

PART 2 - PRODUCTS

2.1 SYSTEM REQUIREMENTS

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.

GENERAL CONSTRUCTION NOTES

1. THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING TYPE AND LOCATION OF UNDERGROUND UTILITIES AND ELECTRICAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE LOCATIONS AND SIZES HAVE BEEN TAKEN FROM FIELD WORK AND EXISTING RECORDS AND THE BEST AS-BUILT INFORMATION AVAILABLE; HOWEVER, IT IS EXPECTED THAT THERE MAY BE SOME DISCREPANCIES IN THE LOCATIONS, QUALITIES AND SIZES SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT TYPE, SIZE AND LOCATION OF ALL UTILITIES AFFECTED BY THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL ARRANGE FOR THE REPAIR AND RESTORATION OF CONTRACTOR DAMAGED UTILITIES. THE COST OF ANY REPAIR OR REPLACEMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE CURRENT LINE SPOTTING TOLL FREE NUMBER AND COORDINATE WITH ALL THE UTILITY COMPANIES FOR ACTUAL LOCATING AND UNCOVERING OF EXISTING LINES PRIOR TO EXCAVATION OPERATIONS.

2. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER OF ANY UNREPORTED OBSTACLES THAT MAY IMPEDE OR PREVENT THE PROPER CONSTRUCTION OF THIS PROJECT.

3. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE APPLICABLE STATE STATUES AND THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS (OSHA). COPIES OF THE O.S.H.A. STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE. INFORMATION AND RELATED REFERENCE MATERIALS MAY BE OBTAINED FROM O.S.H.A. AT 611 EAST 6TH STREET, ROOM 303, AUSTIN, TEXAS.

4. THE CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A SAFE, NEAT AND WORKMAN LIKE MANNER AT ALL TIMES. JOB SAFETY SHALL NOT BE COMPROMISED. ANY UNSAFE OR UNATTRACTIVE NUISANCE SHALL BE REMOVED OR OTHERWISE TAKEN CARE OF BY THE CONTRACTOR WHEN DIRECTED BY THE OWNER OR PROJECT ENGINEER.

5. EXCAVATIONS, TRENCHES AND OTHER HAZARDOUS AREAS SHALL BE ADEQUATELY PROTECTED BY BARRICADES, FENCING, LIGHTS AND/OR OTHER PROTECTIVE DEVICES AT ALL TIMES.

6. CONSTRUCTION OF THIS PROJECT WILL BE SUBJECT TO INSPECTIONS AND TESTING AS DEEMED NECESSARY OR APPROPRIATE BY THE ENGINEER AND/OR THE CITY OF EDINBURG. THE CONTRACTOR SHALL FURNISH INCIDENTAL LABOR AND EQUIPMENT TO ALLOW THE TESTING PERSONAL ACCESS TO THE WORK AND WILL COOPERATE FULLY WITH THE PERSONS CONDUCTING THE TESTING AND INSPECTION PROGRAM.

7. A PART OF THE WORK THAT IS NECESSARY OR REQUIRED TO MAKE EACH SYSTEM OR INSTALLATION SATISFACTORY AND OPERABLE FOR ITS INTENDED PURPOSE, EVEN THOUGH IT IS NOT SPECIFICALLY INCLUDED IN THE SPECIFICATIONS OR DRAWINGS, SHALL BE PERFORMED AS INCIDENTAL WORK AS IF IT WERE DESCRIBED IN THE SPECIFICATIONS AND SHOWN ON THE DRAWINGS.

8. THE DRAWINGS DO NOT ALWAYS INDICATE ALL VERTICAL BENDS AND TRANSITIONS. WHEN NECESSARY, MAKE VERTICAL TRANSITIONS BY A DEFLECTION AT THE JOINTS OR THE INSTALLATION OF FITTINGS. DO NOT DEFLECT PIPE JOINTS MORE THAN 80% OF THE MANUFACTURERS RECOMMENDATION.

9. ALL PIPING MUST BE INSTALLED WITH A MINIMUM OF 36-INCHES OF COVER UNLESS OTHERWISE NOTED ON THE PLANS.

10. ALL EXCAVATION FOR THIS PROJECT SHALL BE UNCLASSIFIED.

11. ALL UTILITIES WHICH ARE TO REMAIN AND WHICH ARE DAMAGED OR REMOVED WILL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

12. PIPE SHALL BE BACKFILLED WITH JOINTS EXPOSED FOR TESTING, BEFORE NEW JOINTS ARE COVERED. PRESSURE LINES ARE TO BE HYDROSTATICALLY TESTED AT NOT LESS THAN 150 PSIG FOR A PERIOD OF TWO HOURS. THE OWNER SHALL OBSERVE AND APPROVE OR REJECT THE TEST. REPAIRS, IF REQUIRED, SHALL BE MADE AND THE LINE SHALL BE RETESTED UNTIL APPROVED. TEST SHALL NOT BEGIN UNTIL THRUST BLOCKS HAVE AGED A MINIMUM OF 24 HOURS.

13. AS SOON AS PRACTICAL, ALL PORTIONS OF EXCAVATIONS NOT OCCUPIED BY THE PERMANENT STRUCTURE SHALL BE BACKFILLED.

14. WHERE WATER LINE INTERSECTS SANITARY SEWER SYSTEM MAINS AT LESS THAN 9.0 FEET SEPARATION, THE CONTRACTOR SHALL INSTALL A 20 FOOT SECTION OF C-900 PVC PRESSURE PIPE CENTERED ON THE POINT OF INTERSECTION.

15. CONTRACTOR SHALL REMOVE AND REINSTALL ALL SIGNS, MAILBOXES, FENCES, CULVERTS AND OTHER ITEMS IN WAY OF THE WORK.

16. CONTRACTOR SHALL REPAIR ALL OPEN CUTS OF PAVED AREAS BACK TO BETTER THAN "AS-IS" CONDITION WITH LIKE MATERIALS.

17. PROVIDE INTERIM DRAINAGE DURING CONSTRUCTION AS REQUIRED. USE PUMPS, TEMPORARY DITCHES, ETC. TO MAINTAIN A WELL DRAINED SITE FREE OF STANDING WATER AND WATER SOFTENED SOILS.

18. ANCHOR ALL UNDERGROUND PRESSURE PIPING AS NECESSARY TO PREVENT MOVEMENT UNDER PRESSURE TEST AND SERVICES.

19. ALL REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A-165, GRADE 60 ALL BARS SHALL CONFORM TO ASTM SPECIFICATION A-305.

20. ALL CONCRETE AND FORM WORK SHALL CONFORM TO CURRENT ACI CODE REQUIREMENTS.

21. THE CONTRACTOR SHALL EXERCISE EXTRA CARE TO PREVENT DAMAGE TO ALL OTHER STRUCTURES IN THE AREA INCLUDING BUILDINGS, FENCES, ROADS, PIPELINES, UTILITIES, ETC., WHETHER PUBLICLY OR PRIVATELY OWNED.

22. UNTIL ACCEPTANCE BY THE ENGINEER OF ANY OR ALL OF THE CONSTRUCTION, AS PROVIDED FOR IN THE PLANS AND SPECIFICATIONS, AND ACCEPTANCE BY THE PROPER UTILITY PROVIDER, IT SHALL BE UNDER THE CHARGE AND CARE OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE EVERY NECESSARY PRECAUTION AGAINST TO ANY PART OF THE WORK. THE CONTRACTOR SHALL REBUILD, REPAIR, RESTORE AND MAKE GOOD, AT HIS OWN EXPENSE, OF ALL THE DAMAGE TO ANY PORTION OF THE WORK BEFORE IT'S ACCEPTANCE.

23. NO OPEN TRENCHES OR EXCAVATION SHALL BE LEFT OPEN OVERNIGHT.

24. ALL WATERLINE TAPS AND WATER METERS SHALL BE INSTALLED BY CONTRACTOR. COORDINATE WITH THE CITY OF EDINBURG BEFORE COMMENCING ANY UTILITY WORK.

25. COORDINATE ALL UTILITY WORK WITH THE PLUMBING PLANS BEFORE COMMENCING ANY UTILITY WORK. REFER TO PLUMBING PLANS FOR CONTINUATION.

26. COORDINATE WITH GRADING PLANS FOR WATER LINE, STORM AND SANITARY SEWER LINES INSTALLATION.

27. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, INCLUDING THOSE FROM THE CITY OF EDINBURG, PRIOR TO START OF CONSTRUCTION.

28. THE TOP ELEVATIONS OF MANHOLES AND CLEANOUTS CONSTRUCTED IN PAVED AREAS SHALL MATCH FINISHED PAVEMENT GRADE. THE TOP ELEVATIONS OF MANHOLES AND CLEANOUTS CONSTRUCTED IN GRASSED AREAS SHALL BE SIX INCHES ABOVE FINISHED GRADE (UNLESS OTHERWISE NOTED ON PLANS).

29. CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING TO VERIFY EXISTING CONDITIONS.

30. REFER TO GEOTECH REPORT BEFORE INSTALLATION OF DRIVES AND PARKING AREAS.

31. BOTH SITE AND BUILDING CONTRACTORS TO VERIFY EXISTING SITE ELEVATIONS PRIOR TO POURING CONCRETE TO VERIFY ACCESIBILITY.

32. PERMIT NEEDED FROM CITY OF EDINBURG BUILDING DEPARTMENT AND PRE-CONSTRUCTION CONFERENCE NEEDED WITH CITY OF EDINBURG.

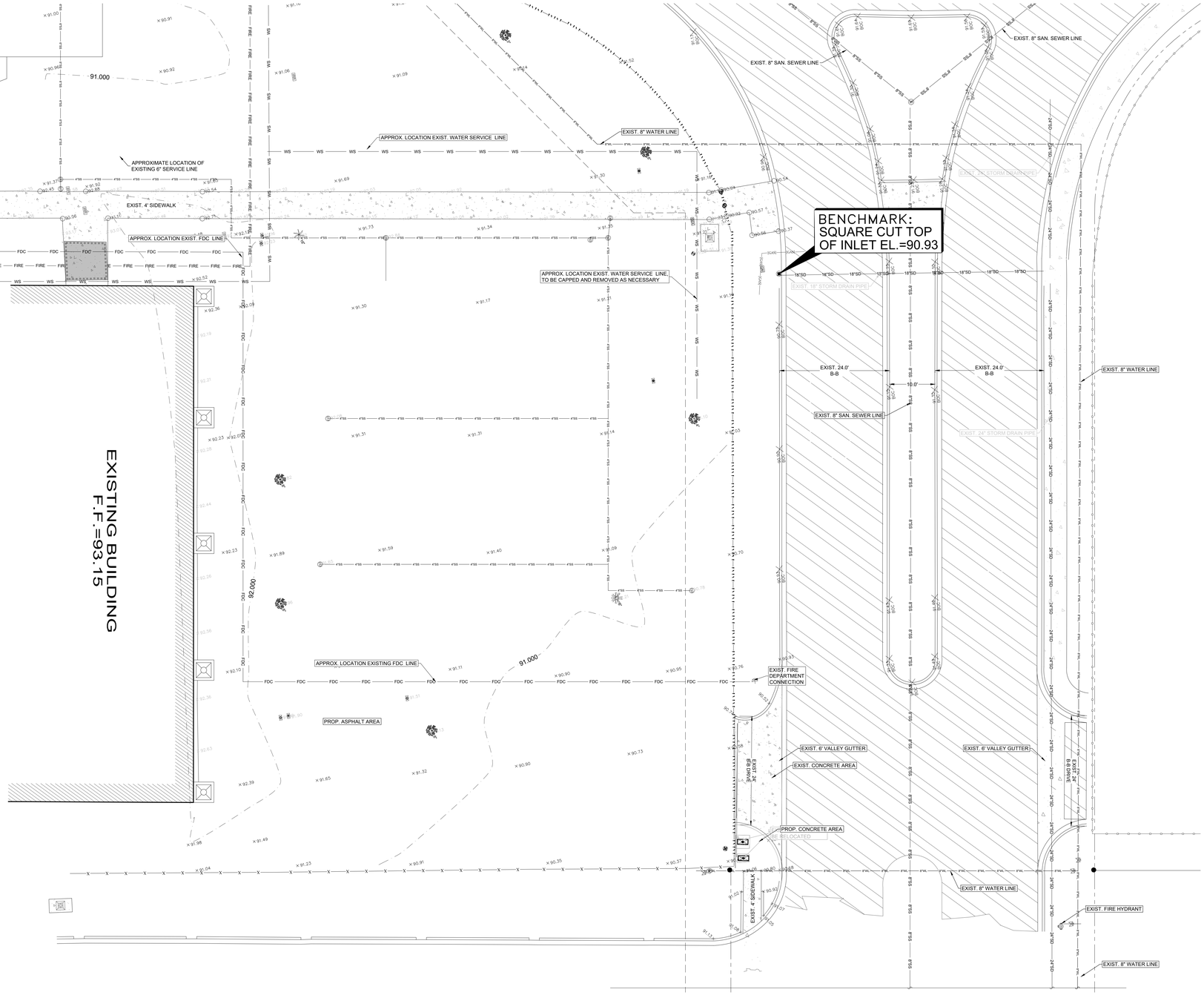
33. CONTRACTOR TO LEAVE OPENINGS IN CURB AT SIDEWALK RAMP LOCATIONS.

34. CONSULT WITH PROPERTY OWNER BEFORE RELOCATING EXISTING FENCES THAT MIGHT BE IN THE WAY OF THE CONSTRUCTION AREA AND/OR CONSTRUCTION PLANS.

LEGEND

- FOUND No.4 REBAR
- [GAS] [GAS] SPOTTED GAS LINE [APPROXIMATE LOCATION]
- EXIST. ASPHALT AREA
- CONCRETE AREA
- R.O.W. - RIGHT OF WAY
- WILD OLIVE TREE (SIZE AS NOTED)
- PALM TREE (SIZE AS NOTED)
- OAK TREE (SIZE AS NOTED)
- FIRE DEPARTMENT CONNECTION
- WM WATER METER
- WV WATER VALVE
- IRRIGATION CONTROL VALVE
- IRR IRRIGATION BOX
- CO CLEANOUT
- 2" PVC PIPE
- KP KEYPAD
- SOLAR PANEL
- LIGHT POLE
- TR TRANSFORMER
- GM GAS MARKER

SCALE: 1" = 10'



No.	REVISIONS	BY

MELDEN & HUNT inc.
CONSULTANTS • ENGINEERS • SURVEYORS
115 W. McINTYRE - EDINBURG, TX 78541
PH: (956) 381-0981 - FAX: (956) 381-1839
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TBPE FIRM # F1435

MELDEN & HUNT, INC.
TEXAS REGISTRATION F-1435
STATE OF TEXAS
KELLEY A. HELLER-VELA
97421
LICENSED PROFESSIONAL ENGINEER
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY KELLEY A. HELLER-VELA P.E. 97421
10/10/2024

ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE LAW

GMS ARCHITECTS
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IDEA-EDINBURG CAMPUS
COLLEGE PREPERATORY CAFETERIA ADDITION
EDINBURG, TEXAS

IDEA Public Schools

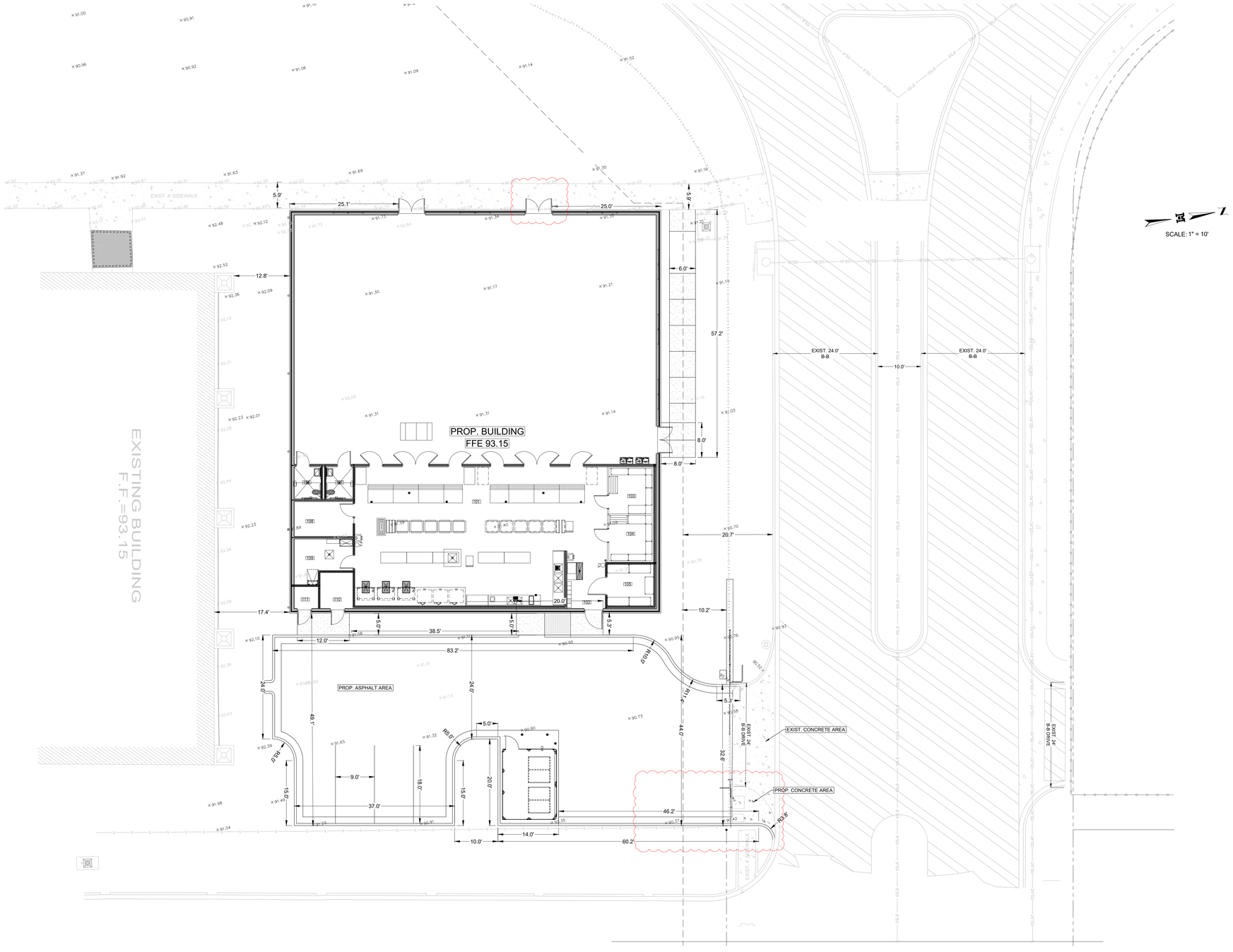
EXISTING CONDITIONS

Date:	September 2024
Scale:	As Noted
Project Engineer:	Kelley Heler-Vela
Drawn By:	CP
Job No.	IDEA EDINBURG CAFETERIA
Sheet:	C1

LEGEND

- FOUND No.4 REBAR
- SPOTTED GAS LINE [APPROXIMATE LOCATION]
- EXIST. ASPHALT AREA
- CONCRETE AREA
- R.O.W. - RIGHT OF WAY
- WILD OLIVE TREE (SIZE AS NOTED)
- PALM TREE (SIZE AS NOTED)
- OAK TREE (SIZE AS NOTED)
- FIRE DEPARTMENT CONNECTION
- WATER METER
- WATER VALVE
- IRRIGATION CONTROL VALVE
- IRRIGATION BOX
- CLEANOUT
- 2" PVC PIPE
- KEYPAD
- SOLAR PANEL
- LIGHT POLE
- TRANSFORMER
- GAS MARKER

SCALE: 1" = 10'



SCALE: 1" = 10'

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No.	REVISIONS	BY

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IDEA-EDINBURG CAMPUS
COLLEGE PREPERATORY CAFETERIA ADDITION
EDINBURG, TEXAS

IDEA Public Schools

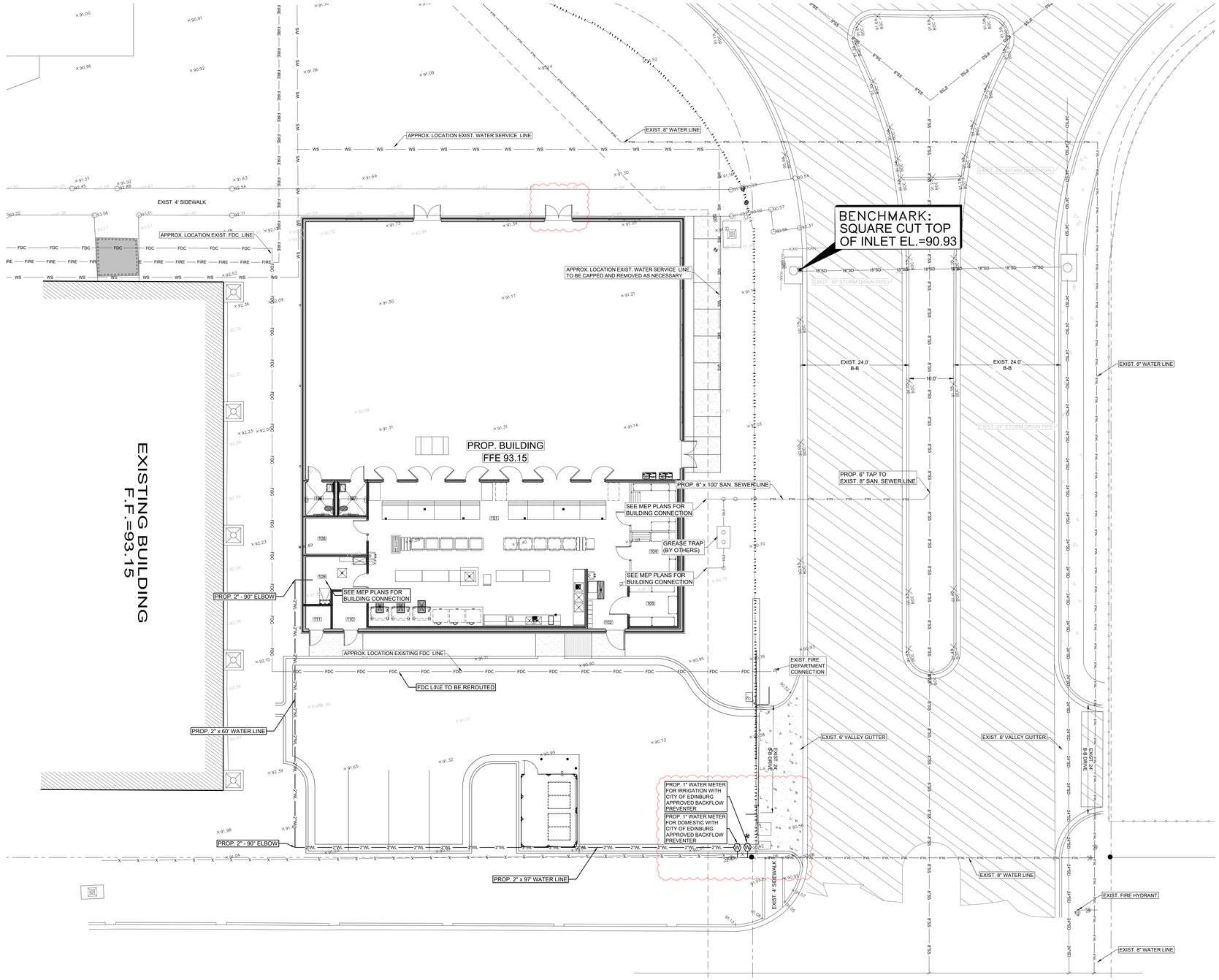
SITE PLAN

Date:	September 2024
Scale:	As Noted
Project Engineer:	Kelley Heler-Vela
Drawn By:	CP
Job No.	IDEA EDINBURG CAFETERIA
Sheet:	C2

LEGEND

- FOUND No.4 REBAR
- SPOTTED GAS LINE [APPROXIMATE LOCATION]
- EXIST. ASPHALT AREA
- CONCRETE AREA
- R.O.W. - RIGHT OF WAY
- WILD OLIVE TREE (SIZE AS NOTED)
- PALM TREE (SIZE AS NOTED)
- OAK TREE (SIZE AS NOTED)
- FIRE DEPARTMENT CONNECTION
- WATER METER
- WATER VALVE
- IRRIGATION CONTROL VALVE
- IRRIGATION BOX
- CLEANOUT
- 2" PVC PIPE
- KEYPAD
- SOLAR PANEL
- LIGHT POLE
- TRANSFORMER
- GAS MARKER

SCALE: 1" = 10'



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MELDEN & HUNT, INC.
TEXAS REGISTRATION F-1435

STATE OF TEXAS
KELLEY A. HELLER-VELA
97421
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY KELLEY A. HELLER-VELA P.E. 97421

10/10/2024

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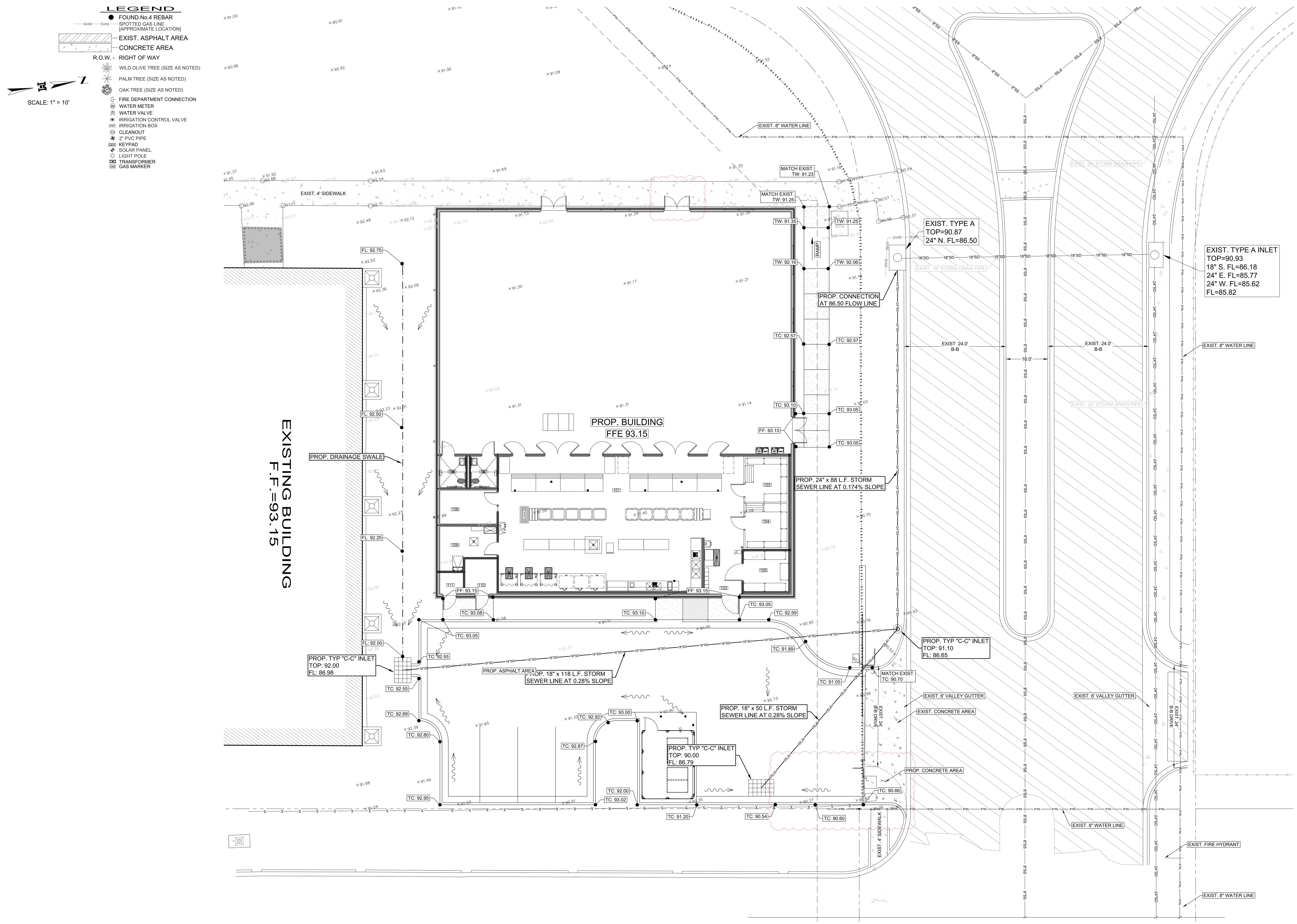
No.	REVISIONS	BY

IDEA-EDINBURG CAMPUS
COLLEGE PREPERATORY CAFETERIA ADDITION
EDINBURG, TEXAS

IDEA Public Schools

UTILITY LAYOUT

Date:	September 2024
Scale:	As Noted
Project Engineer:	Kelley Heler-Vela
Drawn By:	CP
Job No.	IDEA EDINBURG CAFETERIA
Sheet:	C3



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No.	REVISIONS	BY

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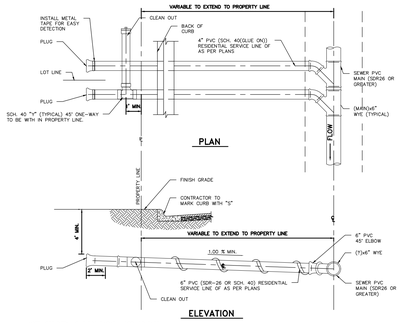
IDEA - EDINBURG CAMPUS
COLLEGE PREPARATORY CAFETERIA ADDITION
EDINBURG, TEXAS

IDEA Public Schools

GRADING & DRAINAGE PLAN

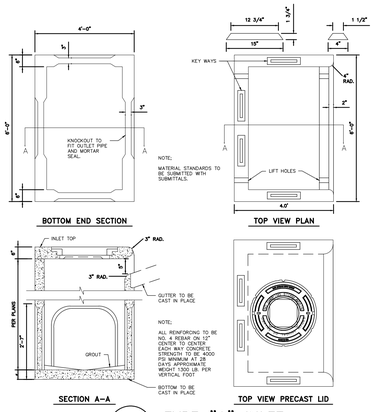
Date: September 2024
Scale: As Noted
Project Engineer: Kelley Heler-Vela
Drawn By: CP
Job No.: IDEA EDINBURG CAFETERIA
Sheet: C4



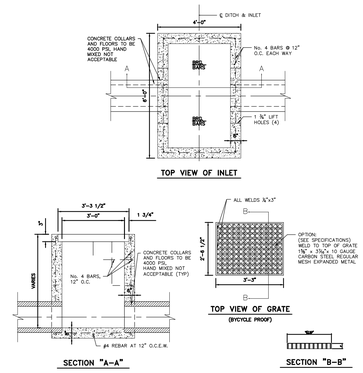
NOTE: SEE DETAIL S-5 FOR BACKFILL REQUIREMENTS.

S-2 MULTIFAMILY AND COMMERCIAL SANITARY SEWER SERVICE

(MULTIFAMILY UP TO TRIPLEX)



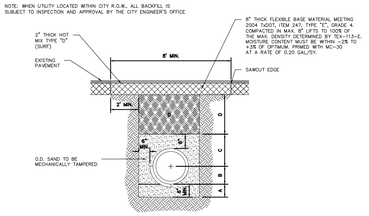
D-1 TYPE "A" INLET



D-3 TYPE "C-C" GRATED INLET

(TWO GRATES PER INLET)

NOTE: WHEN UTILITY LOCATED WITHIN CITY R.O.W., ALL BACKFILL IS SUBJECT TO INSPECTION AND APPROVAL BY THE CITY ENGINEER'S OFFICE



STANDARD PIPE BEDDING (MAIN & SERVICE LATERALS)

UNDER EXISTING/ACTIVE STREET CROSSINGS.

A. SAND BEDDING PLACED BEFORE PIPE IS LAID UP TO FLOW LINE OF PIPE. (MIN. THICKNESS = 6")

B. SAND BACK FILL PLACED AFTER PIPE IS LAID FROM BOTTOM OF PIPE TO SPRING LINE OF PIPE. (4" LIFTS, MECH. TAMPED).

C. SAND BACK FILL PLACED FROM SPRING LINE OF PIPE TO 6" ABOVE TOP OF PIPE. (6" LIFTS, MECH. TAMPED).

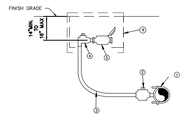
D. FILL TRENCH W/SELECT BACKFILL, W/12" LIFTS COMPACT TO 95% STD. PROCTOR.

FOUNDATION PREPARATION (WELL POINTS, GRAVEL OR CEMENT STABILIZATION, OR APPROVED SUBSTITUTE) SHALL BE REQUIRED WHEN TRENCH BOTTOM IS UNSTABLE.

BACK FILLING AT STRUCTURES SHALL BE PLACED IN UNIFORM LAYERS, MOISTENED AS REQUIRED TO APPROXIMATE OPTIMUM MOISTURE CONTENTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY. THE THICKNESS OF EACH LOOSE LAYER SHALL BE SAND, APPROVED SITE SOIL OR OTHER APPROVED SUBSTITUTE.

D-8 UTILITY CROSSING AT EXISTING / ACTIVE STREET

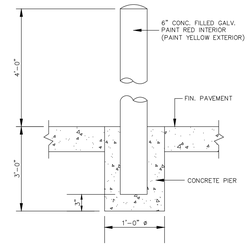
(WATER/SAN. SEWER)



1. ¾" x 2" DOUBLE STRAP BRASS SADDLE
2. 2" BALL CORP. MPX C.T.S.
3. 2" COPPER TUBING TYPE "L"
4. 2" BRASS ANGLE STOP
5. WATER METER W/ CITY OF EDINBURG
6. LARGE C.I. METER BOX WILL BE PROVIDED BY CITY OF EDINBURG.
7. METER BOX TO BE 12" BACK OF PROPERTY LINE.
8. ALL NUTS AND BOLTS MUST BE GREASED WITH FOOD GRADE GREASE.

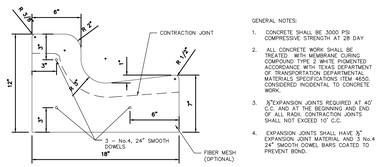
* ALL WATER METERS 4" AND ABOVE SHALL BE PLACED IN A CONCRETE METER VAULT APPROVED BY THE CITY OF EDINBURG.

W-3 WATER SERVICE



PIPE BOLLARD DETAIL

N.T.S.

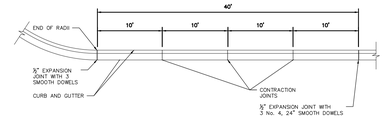


GENERAL NOTES:

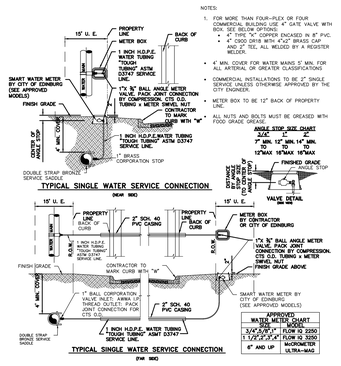
1. CONCRETE SHALL BE 3000 PSI COMPRESSIVE STRENGTH AT 28 DAY
2. ALL CONCRETE WORK SHALL BE CURED WITH A MEMBRANE CURING COMPOUND, TYPE 2 WHITE PIGMENTED ACCORDANCE WITH TEXAS DEPARTMENT OF TRANSPORTATION DEPARTMENTAL MATERIALS SPECIFICATIONS ITEM 4650, CONSIDERED INCIDENTAL TO CONCRETE WORK.
3. ½"EXPANSION JOINTS REQUIRED AT 40' C.O. AND, AT THE BEGINNING AND END OF ALL RADII. CONTRACTION JOINTS SHALL NOT EXCEED 10' O.C.
4. EXPANSION JOINTS SHALL HAVE ½" EXPANSION JOINT MATERIAL AND 5 No.4 24" SMOOTH DOWEL BARS COATED TO PREVENT BOND.

CURB AND GUTTER DETAIL

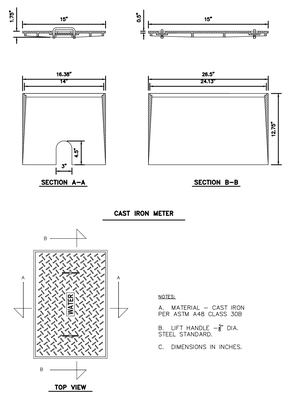
NOT TO SCALE



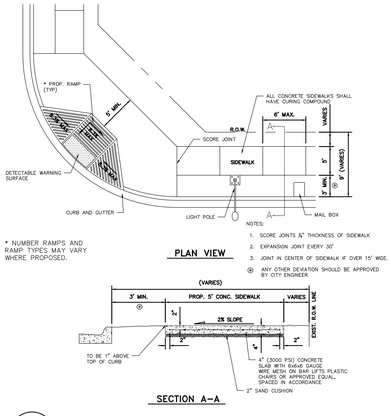
P-8 TYPICAL JOINTS



W-1A SINGLE WATER SERVICE CONNECTION



W-11 COMMERCIAL CAST IRON METER COVER



P-10 TYPICAL CONCRETE SIDEWALK DETAIL

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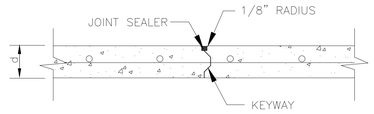
No.	REVISIONS	BY

IDEA-EDINBURG CAMPUS
COLLEGE PREPERATORY CAFETERIA ADDITION
EDINBURG, TEXAS

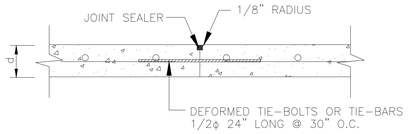
IDEA Public Schools

DETAILS

Date:	September 2024
Scale:	As Noted
Project Engineer:	Kelley Heler-Vela
Drawn By:	CP
Job No:	IDEA EDINBURG CAFETERIA
Sheet:	C5



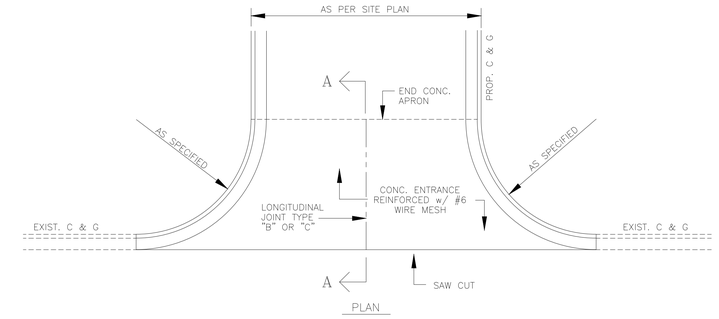
TYPE "B"
LONGITUDINAL CONSTRUCTION JOINT



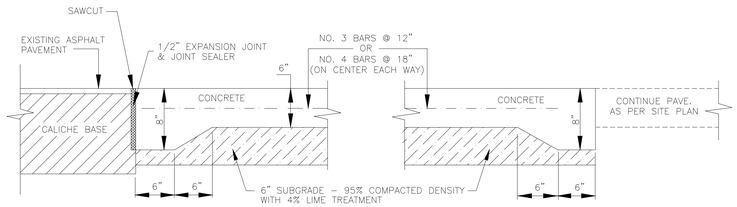
TYPE "C"
TIED BUTT LONGITUDINAL CONSTRUCTION JOINT

CONCRETE JOINT DETAILS

NOTE: 1/2" PREMOLDED EXPANSION MATERIAL SHALL BE PLACED BETWEEN ANY EXISTING CONCRETE AND CONCRETE TO BE POURED.



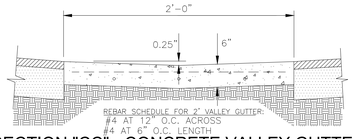
PLAN



SECTION "A-A"

DI-2
CONCRETE ENTRANCE DETAIL

N.T.S.

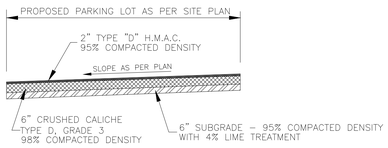


SECTION "CC" - CONCRETE VALLEY GUTTER

N.T.S.

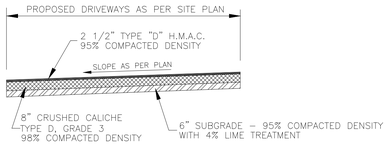
GENERAL NOTES:

1. ALL CONCRETE WORK SHALL BE TREATED WITH MEMBRANE CURING COMPOUND TYPE 2 WHITE PIGMENTED IN ACCORDANCE W/ THD 1972 SPECIFICATIONS ITEM 531. CONSIDERED INCIDENTAL TO CONCRETE WORK.
2. 1/2" EXPANSION JOINTS REQUIRED AT 70' c.c. AND AT THE BEGINNING AND END OF ALL RADII. CONTRACTION JOINTS SHALL NOT EXCEED 10' c.c.



DI-1
ASPHALT PARKING AREAS

N.T.S.

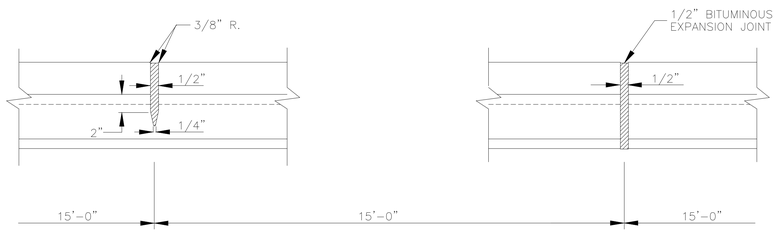


DI-2
ASPHALT DRIVEWAYS

N.T.S.

FLEXIBLE PAVEMENT NOTES:

1. REFER TO GEOTECH REPORT FOR PREPARATION ACTIVITIES.



EXPANSION JOINT DETAIL

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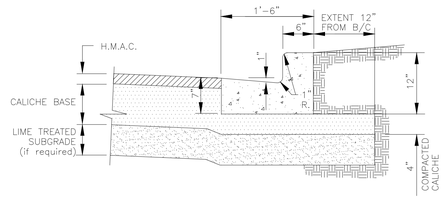
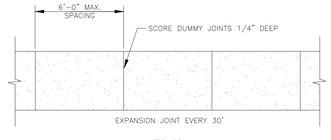
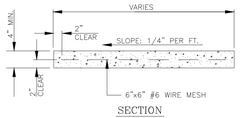


SECTION "AA" - CONCRETE CURB & GUTTER

N.T.S.



PLAN



SECTION

SIDEWALK DETAILS

N.T.S.

SIDEWALK NOTES:

MINIMUM 4'-0" WIDE SIDEWALK.

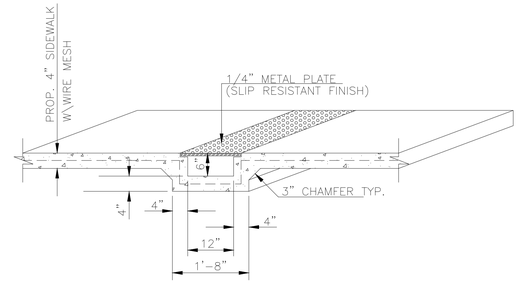
SIDEWALK GRADIENT SHALL NOT EXCEED 1:20.

SIDEWALK CONCRETE SHALL BE 5 SACK CEMENT MIX AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 psi.

CONTRACTOR SHALL VERIFY EXISTENCE AND LOCATION OF EXISTING UTILITY LINES WITH APPROPRIATE COMPANIES TO AVOID PLACING SIDEWALKS ON TOP OF LINES.

PROVIDE DROP CURBS AT INTERSECTIONS.

CONTRACTOR SHALL COMPLY WITH LATEST REGULATIONS AS SET FORTH IN AMERICANS WITH DISABILITIES ACT (ADA).



SIDEWALK CHUTE DETAIL

N.T.S.

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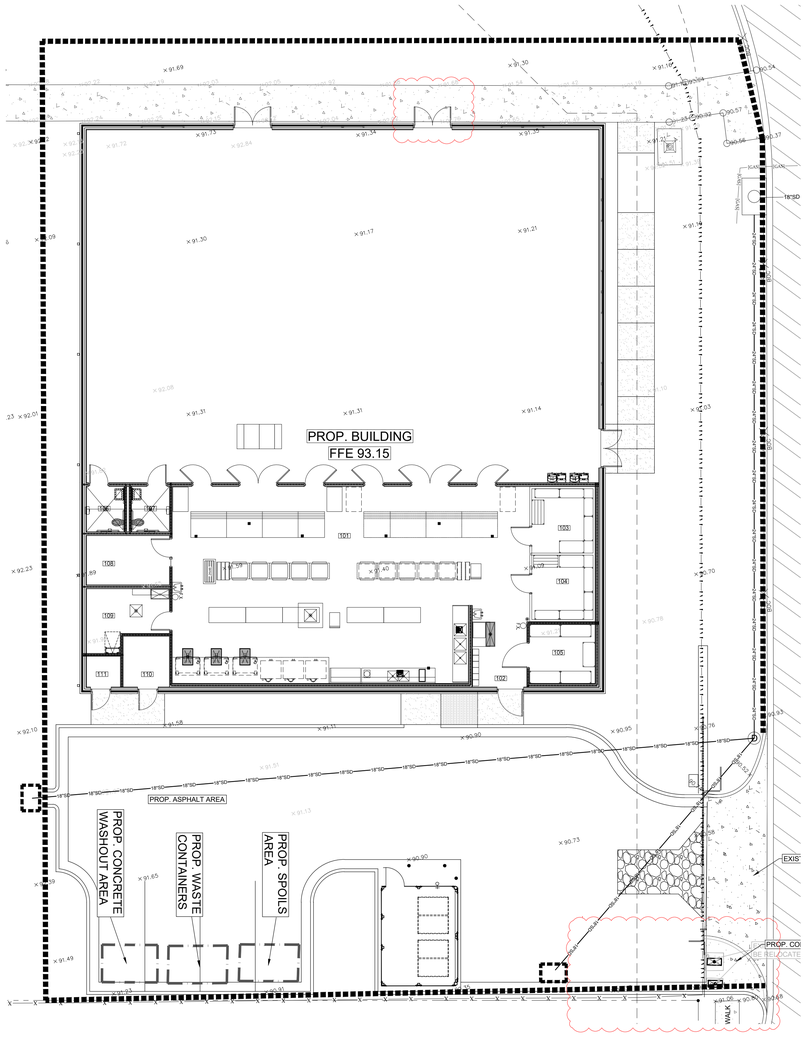
No.	REVISIONS	BY

IDEA-EDINBURG CAMPUS
COLLEGE PREPERATORY CAFETERIA ADDITION
EDINBURG, TEXAS

IDEA Public Schools

PAVING DETAILS

Date: September 2024
Scale: As Noted
Project Engineer: Kelley Heler-Vela
Drawn By: CP
Job No.: IDEA EDINBURG CAFETERIA
Sheet: C6



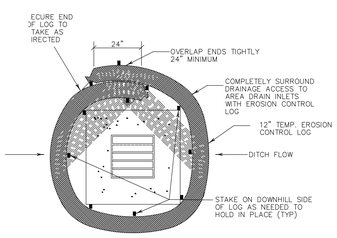
LEGEND

- TEMPORARY SEDIMENT CONTROL FENCE
- SOCK FOR INLET
- CONSTRUCTION ENTRANCE

SCALE: 1" = 10'

TEMPORARY EROSION CONTROL LOGS – 2

STW–4



DROP INLET SEDIMENT TRAP

NTS

DI–ST

PLANS SHEET LEGEND

DI–ST
DROP INLET SEDIMENT TRAP

DI–ST
CURB INLET SEDIMENT TRAP

SEDIMENT BASIN & TRAP USAGE GUIDELINES

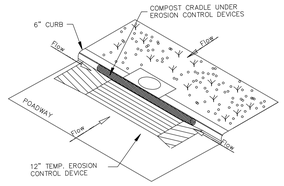
A sediment trap may be used to precipitate sediment out of runoff draining from an unstabilized area.

Traps: the drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Sediment traps should be placed in the following locations:

1. Immediately preceding drain inlets
2. Just before the drainage enters a water course
3. Just before the drainage leaves the right of way
4. Just before the drainage leaves the construction limits where drainage flows away from the project

The trap should be cleaned when the capacity has been reduced by 1/2 or the sediment has accumulated to a depth of 1', whichever is less. Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for seperately.



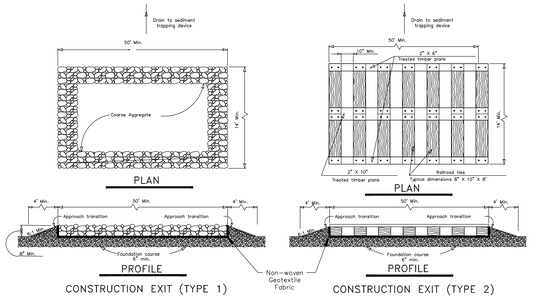
CURB INLET SEDIMENT TRAP

NTS

CI–ST

GENERAL NOTES

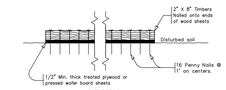
1. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED. MAXIMUM LENGTH OF LOGS SHALL BE 30' FOR 12" DIAMETER LOGS.
2. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
3. STUFF LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE DENSITY THAT WILL HOLD SHAPE WITHOUT EXCESSIVE DEFORMATION.
4. STAKES SHALL BE 2" X 2" WOOD 4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG.
5. COMPOST CRADLE MATERIAL IS INCIDENTAL AND WILL NOT BE PAID FOR SEPARATELY.



CONSTRUCTION EXIT (TYPE 1)

GENERAL NOTES

1. THE LENGTH OF TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50.
2. THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
3. THE EXIT EMBANKMENTS SHOULD BE NO STEEPER THAN 6:1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
4. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.



CONSTRUCTION EXIT (TYPE 3)

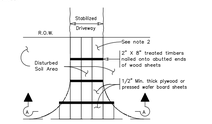
GENERAL NOTES

1. THE LENGTH OF TYPE 3 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
2. THE TYPE 3 CONSTRUCTION ACCESS/EXIT MAY BE CONSTRUCTED FROM OPEN GRADED COARSE AGGREGATE WITH A SIZE OF 2" TO 4" SPREAD AND A MIN. OF 4" THICK TO THE LIMITS SHOWN ON THE PLANS.
3. THE TREATED TIMBER PLANS SHALL BE #2 GRADE MIN. AND SHOULD BE FREE FROM LARGE AND LOOSE KNOTS.
4. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

CONSTRUCTION EXIT (TYPE 2)

GENERAL NOTES

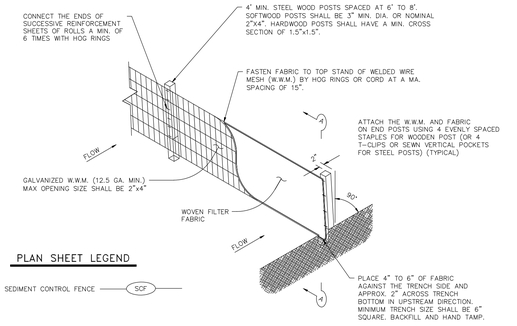
1. THE LENGTH OF TYPE 2 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50.
2. PW TREATED TIMBER PLANS SHALL BE ATTACHED TO THE RAILROAD TIES WITH 1/2 x 10" LAG BOLTS. OTHER FASTENERS MAY BE USED AS APPROVED BY THE ENGINEER.
3. THE TREATED TIMBER PLANS SHALL BE #2 GRADE MIN. AND SHOULD BE FREE FROM LARGE AND LOOSE KNOTS.
4. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6:1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
6. THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
7. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

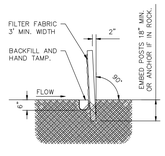


FILTER FABRIC: NON-WOVEN GEOTEXTILE FABRIC		
FABRIC WEIGHT	OZ/SY	6 MIN.
PERMITIVITY	1/SEC	0.5 MIN.
TENSILE STRENGTH	LBS	200 MIN.
APPARENT OPENING SIZE	SIEVE NO.	80–120
ELONGATION AT YIELD	%	20–100
TRAPEZOIDAL TEAR	LBS	75 MIN.

TEMPORARY EROSION CONTROL CONSTRUCTION ACCESS / EXIT

STW–5





GENERAL NOTES

1. THE GUIDELINES SHOW HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

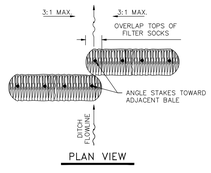
SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAX. FLOW THROUGH RATE OF 100 GPM/FT••• SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES.

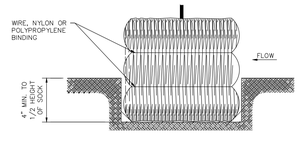
TEMPORARY SEDIMENT CONTROL FENCE – DETAILS

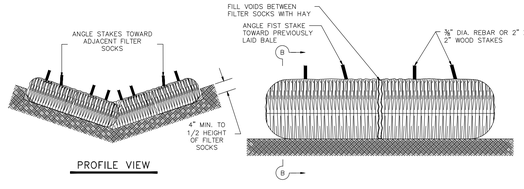
STW–2

NOTES:

1. FILTER SOCKS SHALL BE A MINIMUM OF 8" DIAMETER.
2. FILTER SHALL BE BOUND BY EITHER WIRE NYLO OR POLYPROPYLENE STRING. THE FILTER SOCKS SHALL BE COMPOSED ENTIRELY OF VEGETABLE MATTER.
3. FILTER SOCKS SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4" AND WHERE POSSIBLE 1/2 THE HEIGHT OF THE HAY SOCK.
4. FILTER SOCKS SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT SOCKS. THE SOCKS SHALL BE PLACED WITH BINDINGS PARALLEL TO THE GROUND.
5. FILTER SOCKS SHALL BE SECURELY ANCHORED IN PLACE WITH 3/8" DIA. REBAR OR 2" X 2" WOOD STAKES, DRIVEN THROUGH THE FILTER SOCKS. THE FIRST STAKE SHALL BE ANGLED TOWARDS THE PREVIOUSLY LAID SOCK TO FORCE THE HAY SOCKS TOGETHER.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTION ONLY AND MAY BE MODIFIED BY THE ENGINEER.
7. NO HAY BALES ARE ALLOWED.

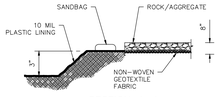






EROSION CONTROL DETAIL

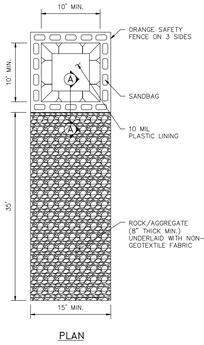
STW–1



CONCRETE TRUCK WASHOUT AREA

CTW

SYMBOL



NOTES:

1. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASHOUT THEIR TRUCKS IN THE PIT AND NOWHERE ELSE.
2. UPON THE CONCRETE SETTING UP (CURING, DRYING OUT), THE CONCRETE WASTE SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR, AFTER REMOVAL OF THE CONCRETE WASTE, THE WASHOUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
3. CONCRETE WASHOUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OPEN SWALE, DITCH, OR WATERWAY.
4. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCKS EQUIPMENT.
5. FILTER FABRIC: NON-WOVEN GEOTEXTILE FABRIC

FABRIC WEIGHT	OZ/SY	6 MIN.
PERMITIVITY	1/SEC	0.5 MIN.
TENSILE STRENGTH	LBS	200 MIN.
APPARENT OPENING SIZE	SIEVE NO.	80–120
ELONGATION AT YIELD	%	20–100
TRAPEZOIDAL TEAR	LBS	75 MIN.

CONCRETE TRUCK WASH AREA

STW–8

MELDEN & HUNT, INC.
CONSULTANTS • ENGINEERS • SURVEYORS
115 W. McINTYRE - EDINBURG, TX 78541
PH: (956) 381-0981 - FAX: (956) 381-1839
ESTABLISHED 1947 - www.meldenandhunt.com
TBPE FIRM # F-1435

MELDEN & HUNT, INC.
TEXAS REGISTRATION F-1435

STATE OF TEXAS
KELLEY A. HELLER-VELA
97421
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY KELLEY A. HELLER-VELA, P.E. 97421

10/10/2024

ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE LAW

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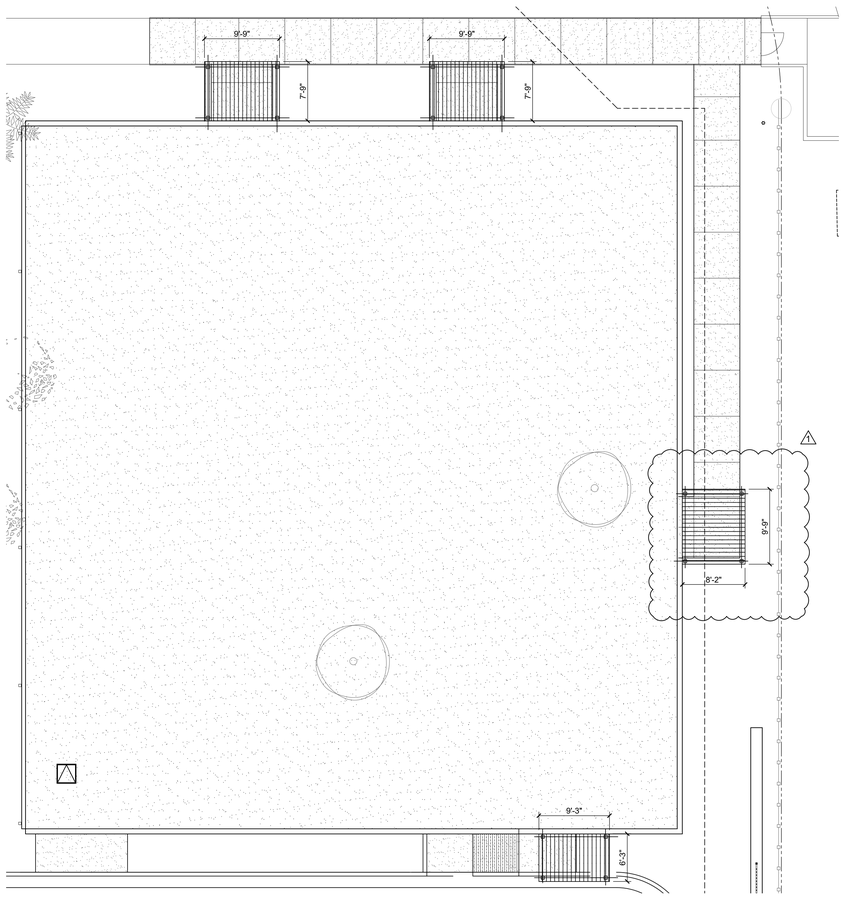
IDEA-EDINBURG CAMPUS
COLLEGE PREPERATORY CAFETERIA ADDITION
EDINBURG, TEXAS

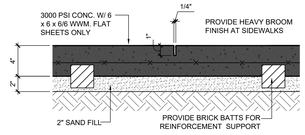
IDEA Public Schools

EROSION CONTROL

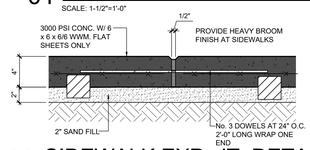
Date: September 2024
Scale: As Noted
Project Engineer: Kelley Heler-Vela
Drawn By: CP
Job No. IDEA EDINBURG CAFETERIA
Sheet: C7



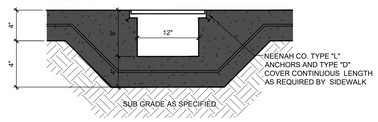
01 CANOPY PLAN
SCALE: 1/8" = 1'-0"



01 SIDEWALK CONTROL JT.
SCALE: 1-1/2"=1'-0"



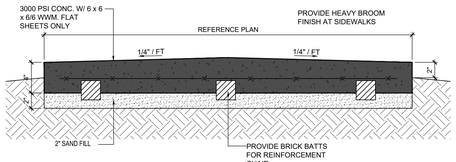
02 SIDEWALK EXP. JT. DETAIL
SCALE: 1-1/2"=1'-0"



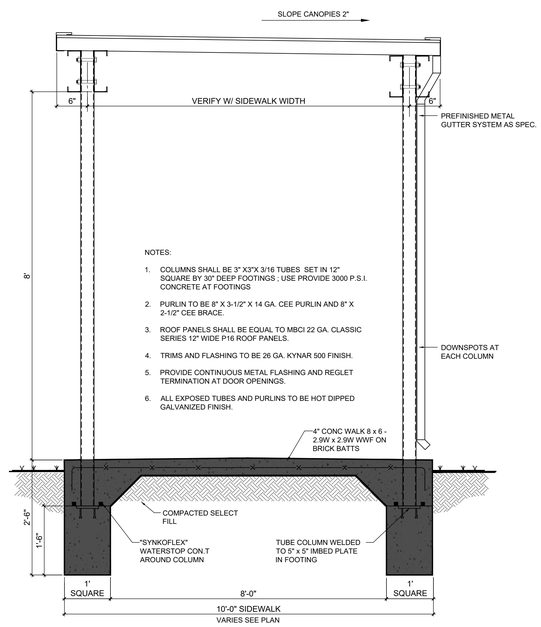
03 TRENCH DETAIL
SCALE 1 1/2" = 1'-0"

1.) CONTRACTOR TO VERIFY ALL BUILDING ROOF DRAINS & DOWN SPOUTS THAT WILL SPILL ONTO A SIDEWALK AND PROVIDE A TRENCH GUTTER AT THAT LOCATION TO ALLOW FOR RAIN WATER TO DRAIN THRU GUTTER AND NOT OVER SIDEWALK (WHICH COULD CAUSE A TRIPPING HAZARD). CONTRACTOR TO VERIFY TRENCH GUTTERS NEEDED PRIOR TO ANY POURING OF SIDEWALKS AROUND PERIMETER OF BUILDING. TYPICAL AT ALL BUILDINGS.

2.) REFER TO CIVIL DRAWINGS FOR ALL OTHER LOCATIONS OF TRENCH GUTTERS



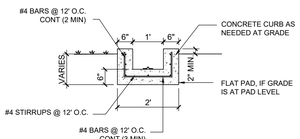
04 SIDEWALK DETAIL
SCALE: 1-1/2" = 1'-0"



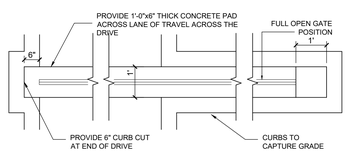
NOTES:

1. COLUMNS SHALL BE 3" X3"X 3/16 TUBES SET IN 12" SQUARE BY 30" DEEP FOOTINGS ; USE PROVIDE 3000 P.S.I. CONCRETE AT FOOTINGS
2. PURLIN TO BE 8" X 3-1/2" X 14 GA. CEE PURLIN AND 8" X 2-1/2" CEE BRACE.
3. ROOF PANELS SHALL BE EQUAL TO MBCI 22 GA. CLASSIC SERIES 12" WIDE P16 ROOF PANELS.
4. TRIMS AND FLASHING TO BE 26 GA. KYNAR 500 FINISH.
5. PROVIDE CONTINUOUS METAL FLASHING AND REGLET TERMINATION AT DOOR OPENINGS.
6. ALL EXPOSED TUBES AND PURLINS TO BE HOT DIPPED GALVANIZED FINISH.

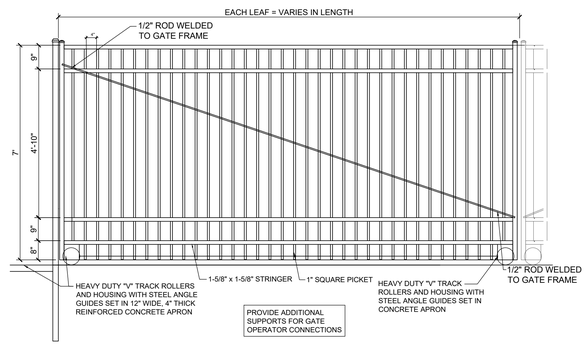
07 SECTION DETAIL
SCALE 3/4" = 1'-0"



10 ROLLING GATE SECTION
SCALE: 1/2"=1'-0"



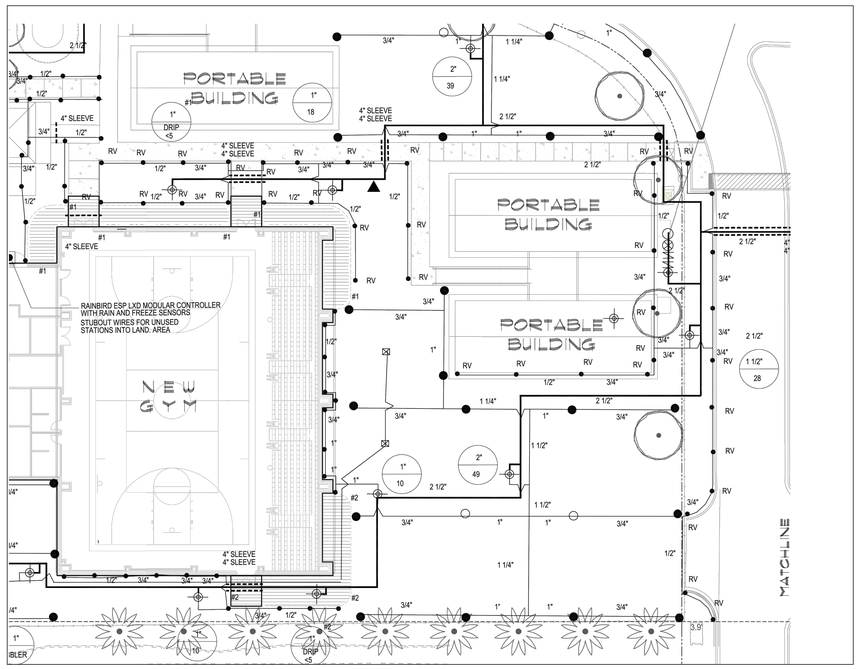
11 ROLLING GATE PAD
SCALE: 1/2"=1'-0"



09 SLIDING GATE ELEVATION
SCALE: NTS

NOTES;
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

2. ALL DIMENSIONS ARE CONSIDERED TRUE AND REFLECT MANUFACTURER'S SPECIFICATIONS.



EXISTING CONDITIONS

08 IRRIGATION PLAN
SCALE: 1" = 20'-0"

No.	REVISIONS	BY
1	10/22/2024	

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IDEA-EDINBURG CAMPUS
COLLEGE PREPERATORY CAFETERIA ADDITION
EDINBURG, TEXAS

IDEA Public Schools

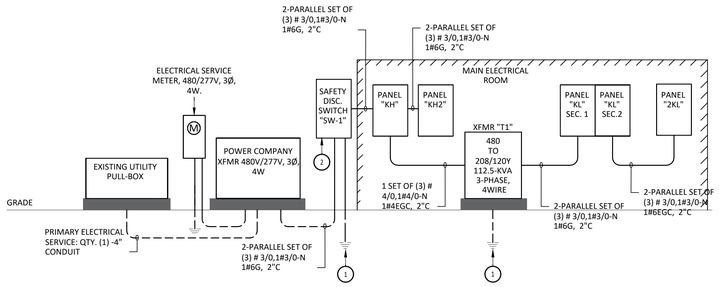
REGISTERED ARCHITECT ROAN GABRIEL GOMEZ 12-2022 STATE OF TEXAS

Date:	December 2024
Scale:	As Noted
Project Architect:	Roan G Gomez, AIA
Drawn By:	RN
Job No.	IDEA EDINBURG CAFETERIA
Sheet:	A1.02

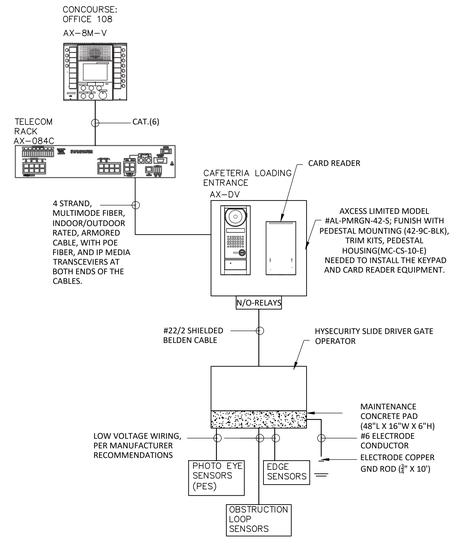
ELECTRICAL RISER KEY NOTES: (#)

1. FURNISH AND INSTALL #2 AWG ELECTRODE CONDUCTOR WITH 3/4" X 10' ELECTRODE ROD. FURNISH ELECTRODE IN 1-1/4"-PVC CONDUIT.

2. FURNISH AND INSTALL HEAVY DUTY,400AMP/400AF/3P, NEMA 3R, 480 VOLT, THREE, PHASE, 4-WIRE SAFETY DISCONNECT SWITCH.



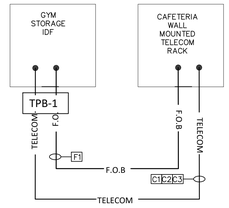
2 ELECTRICAL RISER DIAGRAM
SCALE:N.T.S.



3 ACCESS CONTROL, VIDEO INTERCOM, AND GATE CONTROL DETAIL
SCALE:N.T.S.

FIBER OPTIC - COPPER CABLING & CONDUIT SCHEDULE

MARK	TYPE	CABLE	CONDUIT
F1	FIBER	FIBER OPTIC INDOOR/OUTDOOR ARMORED CABLE WITH TIGHT BUFFER COMMSCOPE #760131924-P-012-OZ-8W-FSUBK	4"
C1	COPPER	COMMSCOPE INDOOR/OUTDOOR RATED CMR -WHITE -24 -PAIR COPPER CABLE CAT. 6 (FOR INTERCOM SYSTEM)	2"
C2	COPPER	COMMSCOPE INDOOR/OUTDOOR RATED CMR-RED-12-PAIR COPPER CABLE CAT. 6 (FOR FIRE ALARM SYSTEM)	2"
C3	COPPER	COMMSCOPE INDOOR/OUTDOOR RATED CMR -25 - PAIR-GRAY- COPPER CABLE CAT. 6 (FOR INTRUSTION DETECTION SYSTEM)	2"



4 FIBER OPTIC, COPPER CABLING AND SCHEDULE
SCALE:N.T.S.

GENERAL NOTES:

A. REFER TO SHEET MEP-1.0 FOR GENERAL NOTES.

B. ALL UNDERGROUND CONDUITS SHALL BE ROUTED BELOW THE BUILDING GRADE BEAMS.

KEY NOTES: (#)

1. APPROXIMATE LOCATION OF NEW PAD MOUNTED TRANSFORMER. REFER TO DETAILS FOR CONCRETE PAD REQUIREMENTS. REFER TO RISER DIAGRAM FOR METERING EQUIPMENT REQUIRED.

2. APPROXIMATE LOCATION OF TELECOMMUNICATION CONDUIT STUB UP. REFER TO SHEET E-1.2 FOR LOCATION.

3. APPROXIMATE LOCATION OF BUILDING WALL PENETRATION; REFER TO DETAILS FOR WALL PENETRATION REQUIREMENTS.

4. CONTRACTOR SHALL INCLUDE IN HIS BID MATERIAL AND LABOR REQUIRED TO BORE UNDER EXISTING SIDEWALKS IN ORDER TO INSTALL THE NEW TELECOMMUNICATION CONDUITS.

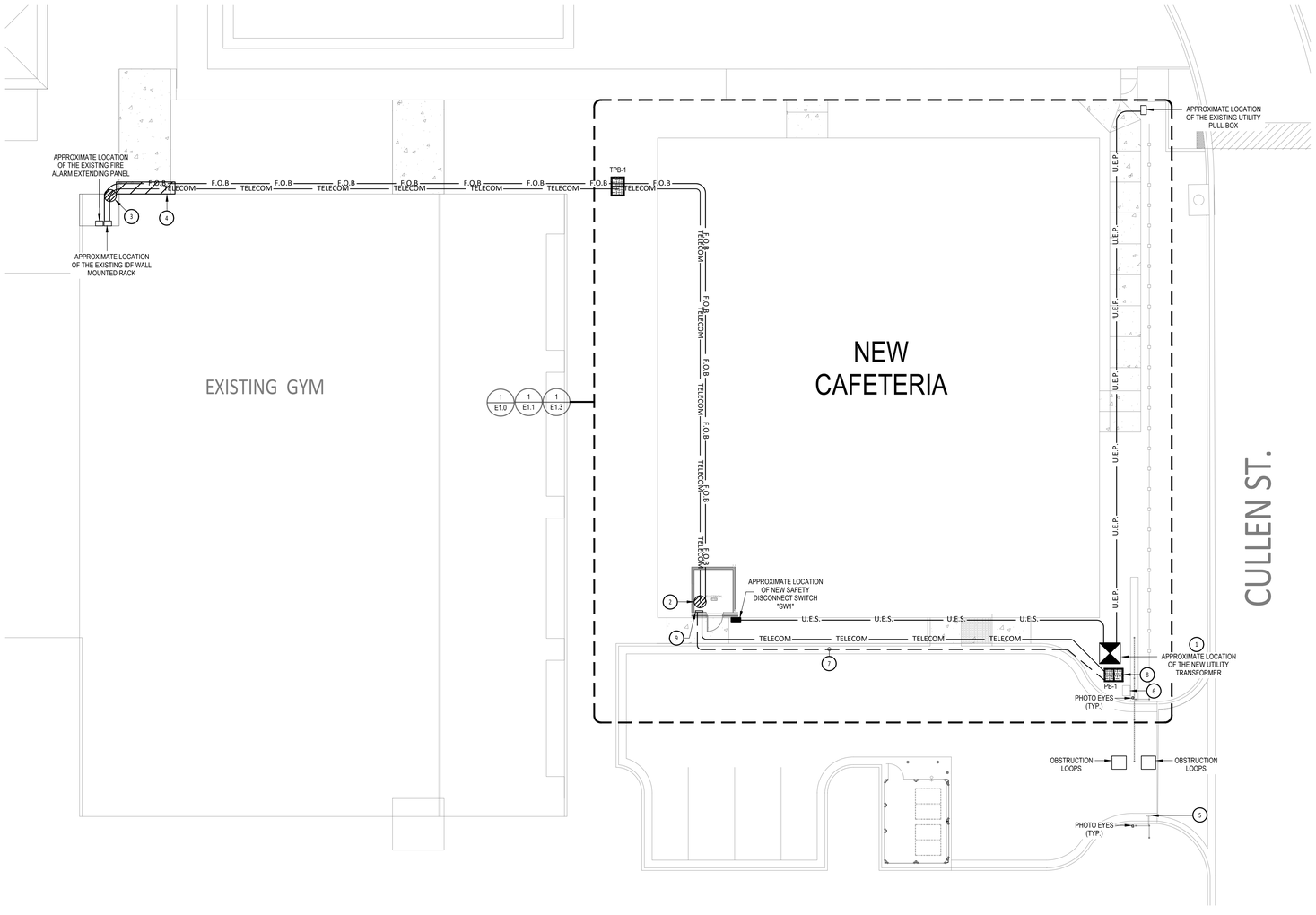
5. APPROXIMATE LOCATION FOR ACCESS CONTROL PEDESTAL MOUNTED KEYPADS. REFER TO DETAILS FOR REQUIREMENTS.

6. APPROXIMATE LOCATION FOR GATE OPERATOR. REFER TO DETAILS FOR GATE OPERATOR AND CONTROL REQUIREMENTS.

7. FURNISH AND INSTALL BRANCH CIRCUIT FOR POWER TO GATE MOTOR CONSISTING OF 3#8, 1#10 EGC, 2-INCH CONDUIT.

8. FURNISH AND INSTALL PULL-BOX. PULL-BOX SHALL BE FURNISH AND INSTALLED WITH TELECOM AND ELECTRICAL DIVIDER. EACH SECTION SHALL BE CLEARLY IDENTIFIED. REFER TO PULL-BOX INSTALLATION DETAILS FOR REQUIREMENTS.

9. FURNISH AND INSTALL QTY (1) NEMA 1, HINGED COVERED WIREWAY FOR POWER AND QTY (1) NEMA 1, HINGED COVER WIREWAY FOR TELECOMMUNICATION INFRASTRUCTURE.



SITE LEGEND

O.H.E	OVER HEAD ELECTRICAL
U.E.P.	UNDER GROUND ELECTRICAL PRIMARY. QTY. (1) 4-INCH CONDUIT WITH PULL STRINGS. (MINIMUM DEPTH TO TOP OF CONDUIT: 48 INCHES)
F.O.B	FIBER OPTIC & COPPER BACKBONE. QTY.(2) 4-INCH CONDUIT WITH PULL STRINGS. REFER TO SPECS FOR CABLING REQUIREMENTS. (MINIMUM DEPTH TO TOP OF CONDUIT: 48 INCHES)
	SITE: POWER OR LIGHTING BRANCH CIRCUIT (MINIMUM DEPTH TO TOP OF CONDUIT: 18")
TELECOM	TELECOMMUNICATIONS. QTY. (2) 4-INCH CONDUITS WITH PULL STRINGS. REFER TO SPECS FOR CABLING REQUIREMENTS. (MINIMUM DEPTH TO TOP OF CONDUIT: 36")
U.E.S.	UNDERGROUND ELECTRICAL SECONDARY SERVICE. (MINIMUM DEPTH TO TOP OF CONDUIT: 36")
	ELECTRICAL RISER POLE
	UTILITY POWER PAD MOUNTED TRANSFORMER
	TELECOMMUNICATION/ELECTRICAL PULLBOX
	SITE LIGHTING LIGHT FIXTURES
	IP- SURVEILLANCE CAMERA; REFER TO SPECS FOR REQUIREMENTS.
PP	PIN PAD DOOR CONTROL

1 ELECTRICAL SITE PLAN
SCALE: 3/32" = 1'-0"

No.	REVISIONS	BY

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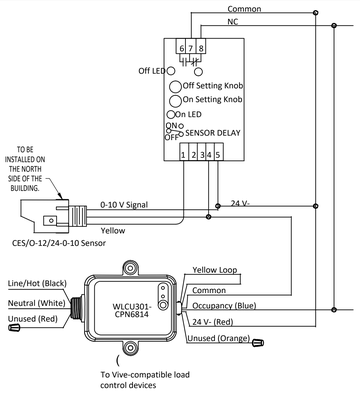
IDEA-EDINBURG CAMPUS
COLLEGE PREPARATORY CAFETERIA ADDITION
EDINBURG, TEXAS

IDEA Public Schools

STATE OF TEXAS
JOSE ANTONIO NICANOR
108783
LICENSED
ARCHITECT
10/11/2024

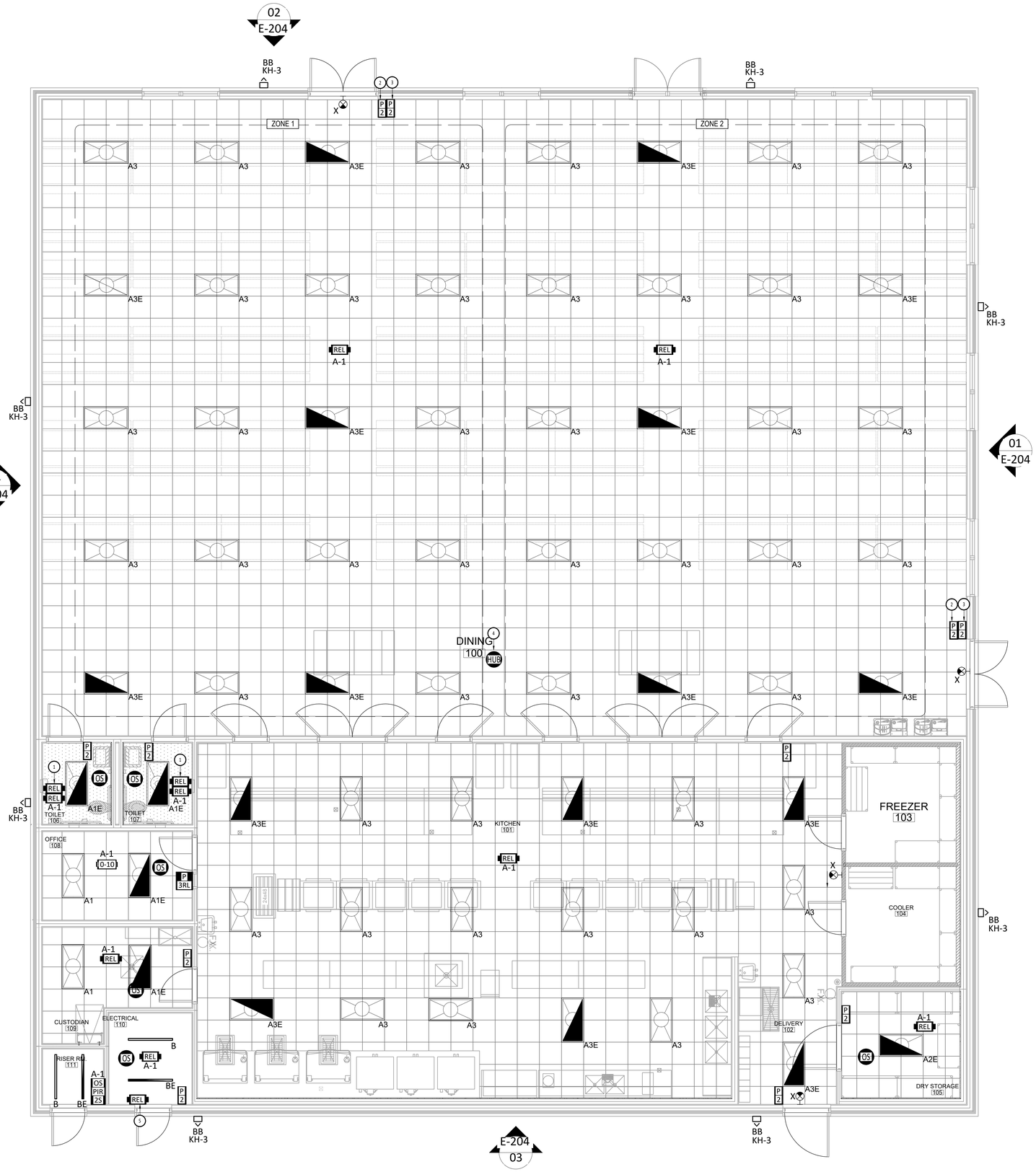
Date: October 2024
Scale: As Noted
Project Architect: Roan G Gomez, AIA
Drawn By: TN
Job No. IDEA EDINBURG CAFETERIA
Sheet: ES1.0

SIGMA HN ENGINEERS, PLLC
TBPE Firm No. F-14767
701 S. 15th Street
McAllen, Texas 78501



2 ELECTRICAL EXTERIOR LIGHTING CONTROLS

SCALE: N.T.S



1 ELECTRICAL LIGHTING PLAN

SCALE: 1/4" = 1'-0"

GENERAL NOTES:

A. REFER TO SHEET MEP-1.0 FOR GENERAL NOTES.

B. ALL LIGHT SWITCH AND POWER PACKS WILL BE INSTALLED ADJACENT TO DOOR.

C. REFER TO SHEET E2.4 FOR WALL PACK INSTALLATION DETIALS.

KEY NOTES: (4)

1. POWER PACKS TO USED TO CONTROL RESTROOMS EXHAUST FAN. FAN SHALL REMAIN ON 5 MINUTES AFTER LIGHTS ARE TURNED OFF.
2. LIGHT SWITCH WILL BE PROGRAMMED TO CONTROL ZONE 1. CONTRACTOR SHALL LABEL THE ZONE THE LIGHT SWITCH IS CONTROLLING.
3. LIGHT SWITCH WILL BE PROGRAMMED TO CONTROL ZONE 2. CONTRACTOR SHALL LABEL THE ZONE THE LIGHT SWITCH IS CONTROLLING.
4. CONTRACTOR SHALL FURNISH AND INSTALL POWER AND DATA FOR HUB DEVICE.
5. CONTRACTOR SHALL FURNISH AND INSTALL POWER-PACK TO CONTROL EXTERIOR LIGHT FIXTURES. REFER TO SHEET E-1.0 DETAIL #2 FOR FURTHER DETAILS.

LIGHTING CONTROL LEGEND

ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS. SYMBOLS ARE SHOWN SCHEMATIC AND MAY NOT BE TO SCALE.

MANUFACTURE: LUTRON | VIVE LIGHTING CONTROL SYSTEM

SYMBOL	DESCRIPTION
P 2	ON/OFF 2-BUTTON LIGHT SWITCH: PJ2-2B-GWH-L01 (CW-1-WH-PICOWBX-ADAPT)
P 3RL	0-10V DIMMING 3-BUTTON LIGHT SWITCH: PJ2-3BRL-GWH-L01 (CW-1-WH-PICOWBX-ADAPT)
REL	ON/OFF POWER PACK: RMJS-16R-DV-B
0-10	0-10V DIMMING POWER PACK: RMJS-8T-DV-B
OS OS PIR 2S	IN-WALL OCCUPANCY SENSOR SWITCH: MRF2S-8SD010-WH
OS	CEILING MOUNTED OCCUPANCY SENSOR: LFR2-OCR2B-P-WH
HUB	VIVE HUB: HJS-2-FM

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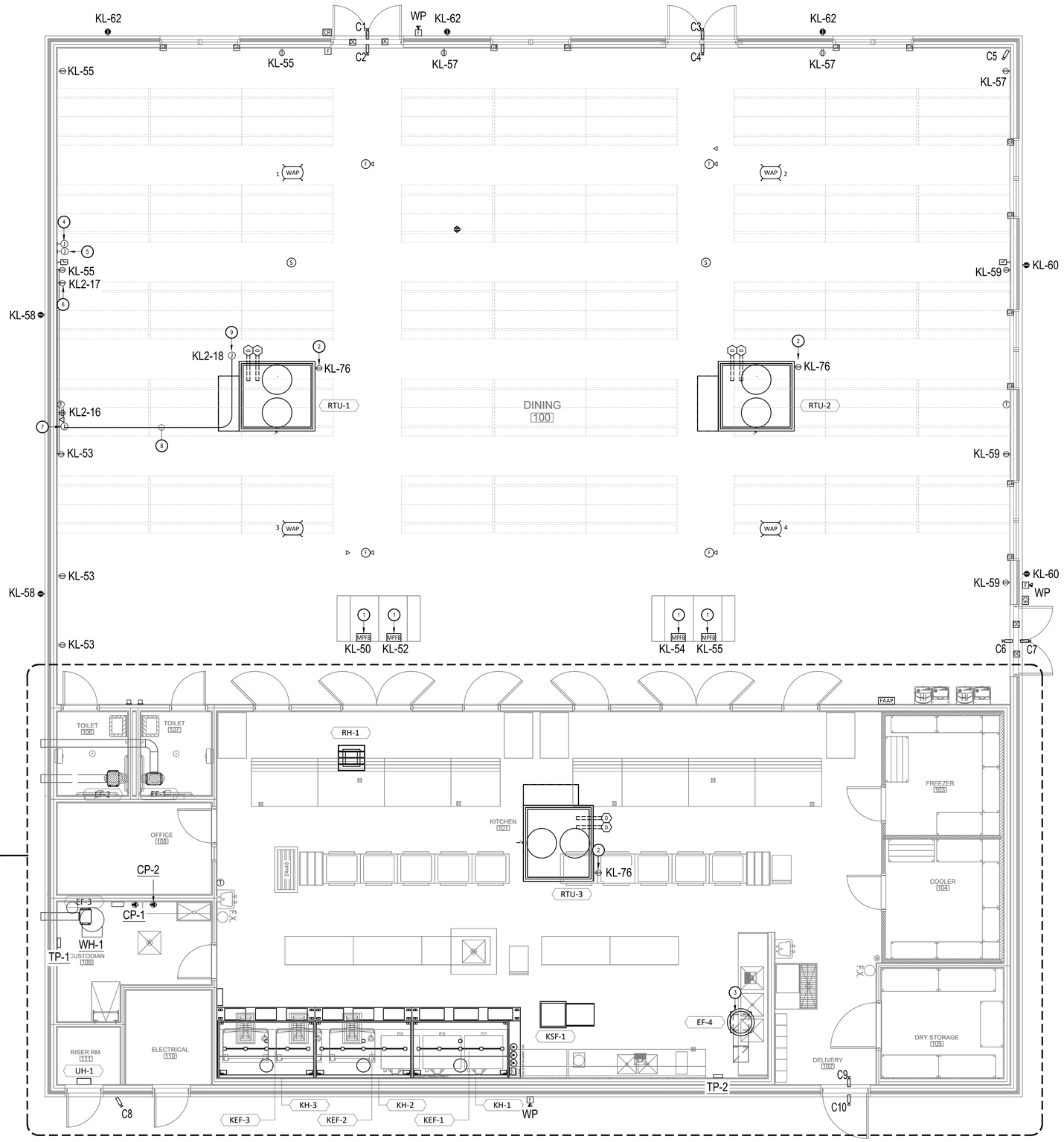
IDEA-EDINBURG CAMPUS
COLLEGE PREPARATORY CAFETERIA ADDITION
EDINBURG, TEXAS

IDEA Public Schools

STATE OF TEXAS
JOSE ANTONIO NICANOR
108783
LICENSED ARCHITECT
10/11/2024

Date: October 2024
Scale: As Noted
Project Architect: Roan G Gomez, AIA
Drawn By: TN
Job No. IDEA EDINBURG CAFETERIA
Sheet: E1.0



MECHANICAL AND PLUMBING EQUIPMENT CONNECTION SCHEDULE

ROOF TOP UNIT		
UNIT MARK	BRANCH CIRCUIT	SAFETY DISCONNECT SWITCHES
RTU-1	3#2, 1#8 EGC, 1-1/4" C	FACTORY PROVIDED
RTU-2	3#2, 1#8 EGC, 1-1/4" C	FACTORY PROVIDED
RTU-3	3#2, 1#8 EGC, 1-1/4" C	FACTORY PROVIDED
EXHAUST FAN		
UNIT MARK	BRANCH CIRCUIT	SAFETY DISCONNECT SWITCHES
EF-1	2#12,1#12 EGC,1/2" C	FACTORY PROVIDED
EF-2	2#12,1#12 EGC,1/2" C	FACTORY PROVIDED
EF-3	2#12,1#12 EGC,1/2" C	FACTORY PROVIDED
EF-4	2#12,1#12 EGC,1/2" C	FACTORY PROVIDED
WATER HEATER		
UNIT MARK	BRANCH CIRCUIT	SAFETY DISCONNECT SWITCHES
WH-1	3#1/0, 1#6 EGC, 1-1/4"C	200A/NF/3P, NEMA 1
CIRCULATING PUMP		
UNIT MARK	BRANCH CIRCUIT	SAFETY DISCONNECT SWITCHES
CP-1	2#12,1#12 EGC,1/2" C	30A/NF/1P, NEMA 1
CP-2	2#12,1#12 EGC,1/2" C	30A/NF/1P, NEMA 1
KITCHEN HOOD EQUIPMENT		
UNIT MARK	BRANCH CIRCUIT	SAFETY DISCONNECT SWITCHES
KEF-1	2#12,1#12 EGC,1/2" C	30A/NF/1P, NEMA 3R
KEF-2	2#12,1#12 EGC,1/2" C	30A/NF/1P, NEMA 3R
KEF-3	2#12,1#12 EGC,1/2" C	30A/NF/1P, NEMA 3R
UNIT HEATER		
UNIT MARK	BRANCH CIRCUIT	SAFETY DISCONNECT SWITCHES
UH-1	2#12,1#12 EGC,1/2" C	FACTORY PROVIDED
SUPPLY FAN		
UNIT MARK	BRANCH CIRCUIT	SAFETY DISCONNECT SWITCHES
KSF-1	3#12,1#12 EGC,1/2" C	FACTORY PROVIDED

GENERAL NOTES:
A. ALL DISCONNECT SWITCHES SHALL BE INSTALLED WITHIN 4-FEET THE DEVICE.
B. REFER TO PANEL SCHEDULE FOR CIRCUIT DESIGNATIONS.

GENERAL NOTES:

A. REFER TO SHEET MEP-1.0 FOR GENERAL NOTES.

B. FURNISH AND INSTALL FLUSH MOUNT ALL GFCI WEATHER PROOF WHILE-IN-USE SINGLE GANG FLUSH MOUNTED COVER ASSEMBLY EQUAL TO LEGRAND #WIUFC105 FOR ALL EXTERIOR RECEPTACLES.

KEY NOTES: (#)

1. FURNISH AND INSTALL A DEDICATED RECEPTACLE WITH ONE DATA OUTLETS FOR CASHIER STAND.
2. CONTRACTOR SHALL FIELD WIRE FACTORY MOUNTED 120-VOLT GFCI SERVICE OUTLET.
3. CONTRACTOR SHALL INTERLOCK EXHAUST FAN WITH RTU-3. REFER TO MECHANICAL PLANS FOR FURTHER DETAILS.
4. CONTRACTOR SHALL FURNISH AND INSTALL WALL MOUNTED J-BOX WITH 1" CONDUIT 48" ABOVE FINISHED FLOOR FOR USER INTERFACE. COORDINATE WITH IDEA IT DEPARTMENT FOR FINAL LOCATION INSTALLATION.
5. CONTRACTOR SHALL FURNISH AND INSTALL WALL MOUNTED J-BOX WITH 1" CONDUIT 48" ABOVE FINISHED FLOOR FOR PROJECTOR KEY SWITCH. COORDINATE WITH IDEA IT DEPARTMENT FOR FINAL LOCATION INSALLATION.
6. CONTRACTOR SHALL FURNISH AND INSTALL J-BOX FOR POWER ABOVE CEILING FOR SCREEN MOTOR. COORDINATE WITH IDEA IT DEPARTMENT FOR PROJECTOR SCREEN MOTOR LOCATION.
7. CONTRACTOR SHALL FURNISH AND INSTALL A WALL MOUNTED 4" SQUARE BOX WITH MUD RINGS.
8. CONTRACTOR SHALL FURNISH AND INSTALL 1-1/2" CONDUIT FOR MULITMEDIA CABLING.
9. CONTRACTOR SHALL FURNISH AND INSTALL CEILING MOUNTED J-BOX FOR PROJECT.

1 ELECTRICAL POWER AND SPECIAL SYSTEM PLAN
SCALE: 1/4" = 1'-0"

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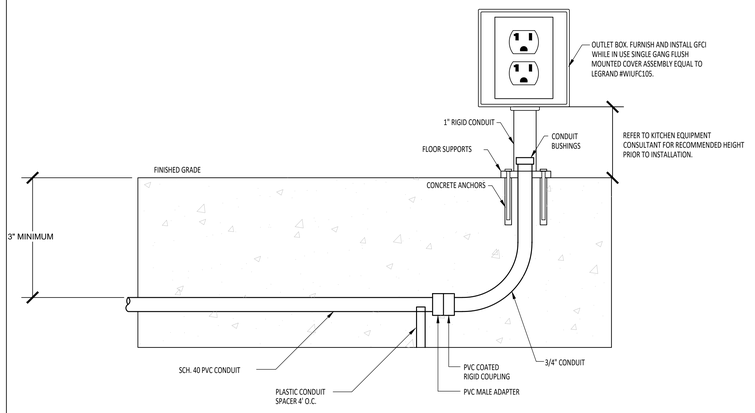
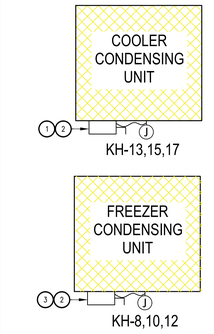
KITCHEN EQUIPMENT ELECTRICAL CONNECTION SCHEDULE

ITEM	DESCRIPTION	VOLTAGE	PHASE	KW	MOCP	CONNECTION REQUIRED	BRANCH CIRCUIT
1	TILTING SKILLET BRASING PAN	480	3	16.0	30	30A/NF/3P, 316 SS DISC. SWITCH	3#10, 1#10 EGC, 1/2"C
2	COMBI OVEN STEAMER	480	3	24.0	40	60A/NF/3P, 316 SS DISC. SWITCH	3#8, 1#10 EGC, 3/4"C
3	DOUBLE STACK CONVECTION OVEN	480	3	24.9	40	60A/NF/3P, 316 SS DISC. SWITCH	3#8, 1#10 EGC, 3/4"C
4	HOT WATER DISPENSER	208	1	5.0	30	NEMA 6-30R	2#10, 1#10 EGC, 1/2"C
5	KITCHEN EXHAUST HOOD	120	1	1.9	20	30A/NF/3P, 316 SS DISC. SWITCH	2#12, 1#12 EGC, 3/4" C
8	FOOD SLICER	120	1	0.5	20	NEMA 5-15R	2#12, 1#12 EGC, 3/4" C
9	FOOD PROCESSOR	120	1	1.4	20	NEMA 5-15R	2#12, 1#12 EGC, 3/4" C
13	ICE MACHINE	120	1	1.4	20	NEMA 5-15R	2#12, 1#12 EGC, 3/4" C
18	ROLL THRU REFRIGERATOR	120	1	1.4	20	NEMA 5-15R	2#12, 1#12 EGC, 3/4" C
19	ROLL THRU HEATED CABINET	208	1	1.6	20	NEMA L14-20R	2#12, 1#12 EGC, 3/4" C
22	70" X 37" HOT FOOD SERVING UNIT	120	1	1.8	20	NEMA 5-20R	2#12, 1#12 EGC, 3/4" C
23	70" X 37" FROST TOP SERVING UNIT	120	1	1.9	20	NEMA 5-20R	2#12, 1#12 EGC, 3/4" C
23.1	54" X 37" WORK TABLE / CABINET (SERVING LINE)	120	1	0.3	20	NEMA 5-15R	2#12, 1#12 EGC, 3/4" C
27	WALK-IN REFRIGERATOR -CONDENSING UNIT	208	3	2.8	20	30A/NF/3P, NEMA 4X SS DISC. SWITCH	3#12, 1#12 EGC, 3/4"C
28	WALK-IN FREEZER - CONDENSING UNIT	208	3	3.9	20	30A/NF/3P, NEMA 4X SS DISC. SWITCH	3#12, 1#12 EGC, 3/4"C
39	AIR CURTAIN	208	1	0.2	30	30A/NF/3P, 316 SS DISC. SWITCH	2#10, 1#10 EGC, 1/2"C
39.1	AIR CURTAIN	208	1	0.2	30	30A/NF/3P, 316 SS DISC. SWITCH	2#10, 1#10 EGC, 1/2"C
41	MILK COOLER	120	1	0.6	20	NEMA 5-15R	2#12, 1#12 EGC, 3/4" C
42	COOLER BLOWER COIL	120	1	1.2	20	30A/NF/3P, NEMA 4X SS DISC. SWITCH	2#12, 1#12 EGC, 3/4" C
43	FREEZER BLOWER COIL	208	1	2.0	20	30A/NF/3P, NEMA 4X SS DISC. SWITCH	2#12, 1#12 EGC, 3/4" C

* FOR ALL EQUIPMENT PLEASE REFER TO KITCHEN CONSULTANT/ARCHITECTURE PLANS FOR EXACT MODEL #'S



2 EQUIPMENT DUPLEX OUTLET DETAIL
SCALE:N.T.S



3 COOLER/FREEZER CONDENSING UNIT ENLARGEMENT
SCALE:N.T.S

KEY NOTES: (#)

1. FURNISH AND INSTALL SAFETY DISCONNECT SWITCH CONSISTING OF 30A/NF/3-POLE, NEMA 4X FOR COOLER CONDENSING UNIT.
2. FURNISH AND INSTALL 1-1/2" CONDUIT FOR CONTROL WIRING BETWEEN COOLER AND FREEZER CONDENSING UNITS AND BLOWERS TO SYSTEM CONTROLLER. CONTROL CABLING SHALL BE PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
3. FURNISH AND INSTALL SAFETY DISCONNECT SWITCH CONSISTING OF 30A/NF/3-POLE, NEMA 4X FOR FREEZER CONDENSING UNIT.

GENERAL NOTES:

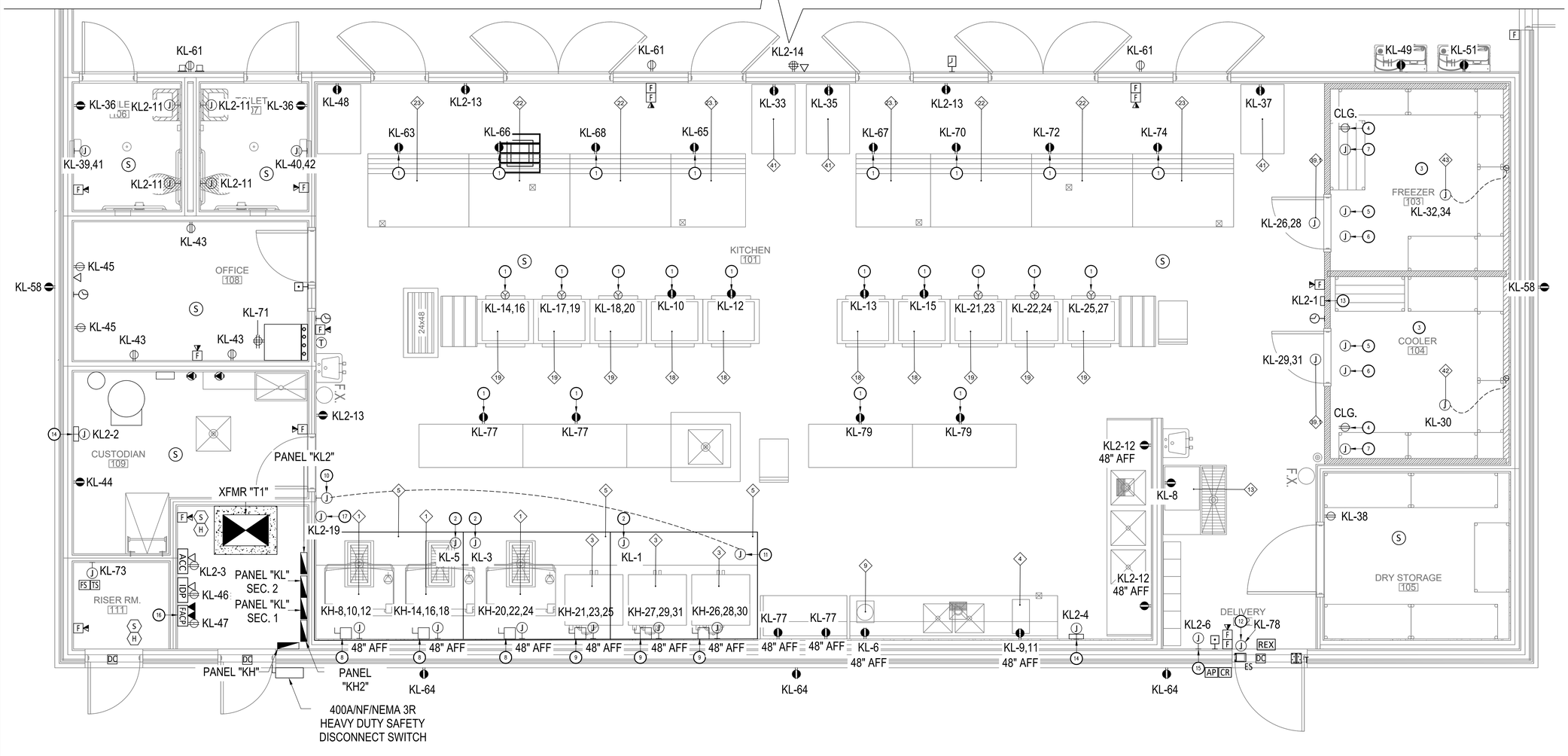
A. REFER TO SHEET MEP-1.0 FOR GENERAL NOTES.

B. FURNISH AND INSTALL FLUSH MOUNT ALL GFCI WEATHER PROOF WHILE-IN-USE SINGLE GANG FLUSH MOUNTED COVER ASSEMBLY EQUAL TO LEGRAND #WIUFC105 FOR ALL EXTERIOR RECEPTACLES.

KEY NOTES: (#)

1. FURNISH AND INSTALL RECEPTACLES USING DETAIL #3 ON SHEET E-1.2. REFER TO KITCHEN EQUIPMENT SCHEDULE FOR NEMA TYPE REQUIRED.
2. CONNECT KITCHEN HOOD LIGHTS; BRANCH CIRCUIT WILL CONSIST OF 2#12, 1#12 EGC, 1/2" CONDUIT.
3. REFER TO DETAIL #3 SHEET E-1.2 FOR WALK-IN COOLER/FREEZER REFRIGERATION. REFER TO ARCHITECT PLANS WITH THE EXACT LOCATION.
4. FURNISH AND INSTALL POWER FOR TEMPERATURE ALARM CONSISTING OF BRANCH CIRCUIT 2#12, 1#12 EGC, 1/2 INCH CONDUIT.
5. FURNISH AND INSTALL POWER FOR DOOR HEATER AND LIGHTS CONSISTING OF BRANCH CIRCUIT 2#12, 1#12 EGC, 1/2 INCH CONDUIT.
6. FURNISH AND INSTALL POWER FOR PRESSURE RELIEF PORT CONSISTING OF BRANCH CIRCUIT 2#12, 1#12 EGC, 1/2 INCH CONDUIT.
7. FURNISH AND INSTALL POWER FOR COOLER/FREEZER LIGHTS CONSISTING OF BRANCH CIRCUIT 2#12, 1#12 EGC, 1/2 INCH CONDUIT.
8. FURNISH AND INSTALL 100-A/NF/3P, 316 SS DISC. SWITCH. THE BREAKERS FEEDING THESE DISCONNECTS WILL BE A SHUNT-TRIP TYPE BREAKER. INTERFACE WITH EXHAUST HOOD.
9. FURNISH AND INSTALL 30-A/NF/3P, 316 SS DISC. SWITCH. THE BREAKERS FEEDING THESE DISCONNECTS WILL BE A SHUNT-TRIP TYPE BREAKER. INTERFACE WITH EXHAUST HOOD.
10. FURNISH AND INSTALL JUNCTION BOX (48" AFF) FOR KITCHEN REMOTE FIRE SUPPRESSION SYSTEM PULL-STATION. FIRE SUPPRESION TO BE CONNECTED WITH BUILDING FIRE ALARM SYSTEM. COORDINATE LOCATION WITH OWNER PRIOR TO INSTALLATION.
11. FURNISH AND INSTALL JUNCTION BOX FOR FIRE SUPPRESSION SYSTEM. FIRE SUPPRESSION TO BE CONNECTED WITH BUILDING FIRE ALARM SYSTEM.
12. CONTRACTOR SHALL FURNISH AND INSTALL POWER FOR ELECTRIC STRIKE TRANSFORMER (PART # PT-1210N AIPHONE). BRANCH CIRCUIT WILL CONSIST OF 2#12,1#12 EGC, 1/2" CONDUIT. J-BOX SHALL BE ACCESSIBLE ABOVE CEILING.
13. FURNISH AND INSTALL AIPHONE C-123LW CHIME-COM SYSTEM. POWER SUPPLY SKK-620 SHALL BE INSTALLED AND ACCESSIBLE ABOVE CEILING.
14. CONTRACTOR SHALL FURNISH AND INSTALL POWER FOR TRAP PRIMER. BRANCH CIRCUIT WILL CONSIST OF 2#12,1#12 EGC, 1/2" CONDUIT. COORDINATE WITH PLUMBING DRAWINGS FOR TRAP PRIMER LOCATION.
15. CONTRACTOR SHALL FURNISH AND INSTALL POWER FOR GREASE TRAP SERVICE ALERT PANEL. BRANCH CIRCUIT WILL CONSIST OF 2#12,1#12 EGC, 1/2" CONDUIT. COORDINATE WITH PLUMBING DRAWINGS FOR GREASE TRAP SERVICE ALERT PANEL LOCATION.
16. FURNISH AND INSTALL FIRE ALARM CONTROL PANEL. CONTRACTOR SHALL INTERFACE NEW FIRE ALARM CONTROL PANEL WITH THE EXISTING FIRE ALARM IN THE GYM BUILDING. USE 2" CONDUIT FOR CABLING. PROVIDE TWO TELEPHONE LINES FOR FIRE ALARM CONTROL PANEL.
17. CONTRACTOR SHALL FURNISH AND INSTALL A DEDICATED CIRCUIT FOR HOOD CONTROL PANEL. REFER TO PANEL SCHEDULES FOR FURTHER INFORMATION.

CONTINUES ON SHEET E-1.1



1 ELECTRICAL POWER AND SPECIAL SYSTEM PLAN - KITCHEN ENLARGEMENT
SCALE: 3/8" = 1'-0"

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LICENSED
PROFESSIONAL ENGINEER
10-11-2024

Date:	October 2024
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Project Architect:	Roan G Gomez, AIA
Drawn By:	TN
Job No.	IDEA EDINBURG CAFETERIA
Sheet:	E1.2

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PANELBOARD "KH"

VOLTAGE: 480Y/277 VOLT 3 PHASE 4 WIRE — LOCATION: ELECTRICAL ROOM WITH NEMA 1 DOOR-IN-DOOR CONSTRUCTION

400A **MAIN CIRCUIT BREAKER** — MOUNTING: SURFACE

BUSES: MAIN -400 A; NEUTRAL - 100% ; EQUIPMENT GROUND; TG3-100-480-3Y-SD-B-M4E-F-HPI — Isc = 22KA RMS SYM AVAILABLE

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
4000			INTERIOR LIGHTING	20/1	1	A	2	225/3	XFMR "T-1" FEEDING PNL KL	0	6300	30334
224			EXTERIOR LIGHTING	20/1	3	B	4	-	"	0	5220	33867
0			SPARE	20/1	5	C	6	-	"	0	5940	30631
0			SPARE	20/1	7	A	8	30/3	TILTING BRAISING PAN	0		5333
0			SPARE	20/1	9	B	10	-	"	0		5333
0			SPARE	20/1	11	C	12	-	"	0		5333
0			SPARE	20/1	13	A	14	30/3	TILTING BRAISING PAN	0		5333
0			SPARE	20/1	15	B	16	-	"	0		5333
0			SPARE	20/1	17	C	18	-	"	0		5333
0			SPARE	20/1	19	A	20	30/3	TILTING BRAISING PAN	0		5333
0	8333		CONVECTION OVEN DOUBLE-DECK	40/3	21	B	22	-	"	0		5333
0	8333		"	-	23	C	24	-	"	0		5333
0	8333		"	-	25	A	26	40/3	CONVECTION OVEN DOUBLE-DECK	0		8333
0	8333		CONVECTION OVEN DOUBLE-DECK	40/3	27	B	28	-	"	0		8333
0	8333		"	-	29	C	30	-	"	0		8333
0	8333		"	-	31	A	32	400/3	PANELBOARD KH2	4000	0	46050
0			SPARE	20/2	33	B	34	-	"	0	0	46050
0			"	-	35	C	36	-	"	0	0	44400
0	1591		KSF-1 FAN	20/3	37	A	38	60/3	SURGE PROTECTION DEVICE (SPD)	0		
0	1591		"	-	39	B	40	-	"	0		
0	1591		"	-	41	C	42	-	"	0		

VA:L (LIGHTING)	8224	CONNECTED		10280	DEMAND
VA:R (RECEPTACLES)	17460	CONNECTED		13730	DEMAND
VA:O (OTHER)	359099	CONNECTED		359099	DEMAND
VA: TOTAL	384783	CONNECTED		383109	DEMAND
AMPS: TOTAL	463	CONNECTED		461	DEMAND

L	R	O	TOTAL			
8000	6300	#####	VA CONNECTED TO A PHASE	133273	VA =	481 AMPS CONNECTED TO A PHASE @ 277 VOLTS
224	5220	#####	VA CONNECTED TO B PHASE	127950	VA =	462 AMPS CONNECTED TO B PHASE @ 277 VOLTS
0	5940	#####	VA CONNECTED TO C PHASE	123560	VA =	446 AMPS CONNECTED TO C PHASE @ 277 VOLTS
8224	17460	#####	**TOTAL**	384783	VA	

PANELBOARD "KH2"

VOLTAGE: 480Y/277 VOLT 3 PHASE 4 WIRE — LOCATION: ELECTRICAL ROOM WITH NEMA 1 DOOR-IN-DOOR CONSTRUCTION

400A **MAIN CIRCUIT BREAKER** — MOUNTING: SURFACE

BUSES: MAIN -400 A; NEUTRAL - 100% ; EQUIPMENT GROUND; — Isc = 22KA RMS SYM AVAILABLE

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
4000		14800	RTU-1-CAF	90/3	1	A	2	90/3	RTU-3-KIT	0		14800
0		14800	"	-	3	B	4	-	"	0		14800
0		14800	"	-	5	C	6	-	"	0		14800
0		14800	RTU-2-CAF	90/3	7	A	8	90/3	SPARE	0		
0		14800	"	-	9	B	10	-	"	0		
0		14800	"	-	11	C	12	-	"	0		
0		1650	UNIT HEATER	20/2	13	A	14	20/1	SPARE	0		
0		1650	"	-	15	B	16	20/1	SPARE	0		
0			SPARE	20/1	17	C	18	20/1	SPARE	0		
0			SPARE	20/1	19	A	20	20/1	SPARE	0		
0			SPARE	20/1	21	B	22	20/1	SPARE	0		
0			SPARE	20/1	23	C	24	20/1	SPARE	0		
0			SPACE	-	25	A	26	-	SPACE	0		
0			SPACE	-	27	B	28	-	SPACE	0		
0			SPACE	-	29	C	30	-	SPACE	0		
0			SPACE	-	31	A	32	-	SPACE	0		
0			SPACE	-	33	B	34	-	SPACE	0		
0			SPACE	-	35	C	36	-	SPACE	0		
0			SPACE	-	37	A	38	-	SPACE	0		
0			SPACE	-	39	B	40	-	SPACE	0		
0			SPACE	-	41	C	42	-	SPACE	0		

VA:L (LIGHTING)	4000	CONNECTED		5000	DEMAND
VA:R (RECEPTACLES)	0	CONNECTED		0	DEMAND
VA:O (OTHER)	136500	CONNECTED		136500	DEMAND
VA: TOTAL	140500	CONNECTED		141500	DEMAND
AMPS: TOTAL	169	CONNECTED		170	DEMAND

L	R	O	TOTAL			
4000	0	46050	VA CONNECTED TO A PHASE	50050	VA =	181 AMPS CONNECTED TO A PHASE @ 277 VOLTS
0	0	46050	VA CONNECTED TO B PHASE	46050	VA =	166 AMPS CONNECTED TO B PHASE @ 277 VOLTS
0	0	44400	VA CONNECTED TO C PHASE	44400	VA =	160 AMPS CONNECTED TO C PHASE @ 277 VOLTS
4000	0	#####	**TOTAL**	140500	VA	

PANELBOARD KL

VOLTAGE: 208Y/120 VOLT 3 PHASE 4 WIRE — LOCATION: ROOM

400 A **MAIN CIRCUIT BREAKER** | FURNISH WITH SHUNT TRIP BREAKER ; INTERFACE WITH FIRE ALARM AND HOOD — MOUNTING: SURFACE

BUSES: MAIN - 400 A; NEUTRAL - 100%; EQUIPMENT GROUND; TG3-100-208-3Y-SD-B-M4E-F-HPI — Isc = 22K A RMS SYM AVAILABLE

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	0	1920	HOOD LIGHTS	20/1	1	A	2	20/1	KEF-1	0	0	1920
0	0	1920	HOOD LIGHTS	20/1	3	B	4	20/1	KEF-2	0	0	1920
0	0	1920	HOOD LIGHTS	20/1	5	C	6	20/1	FOOD PROCESSOR	0	0	1440
0	0	1920	KEF-3	20/1	7	A	8	20/1	ICE MACHINE	0	0	1380
0	0	2500	HOT WATER DISPENSER	30/2	9	B	10	20/1	ROLL THRU REFRIGERATOR	0	0	1392
0	0	2500	"	-	11	C	12	20/1	ROLL THRU REFRIGERATOR	0	0	1392
0	0	1392	ROLL THRU REFRIGERATOR	20/1	13	A	14	20/2	ROLL THRU HEATED CABINET	0	0	811
0	0	1392	ROLL THRU REFRIGERATOR	20/1	15	B	16	-	"	0	0	811
0	0	811	ROLL THRU HEATED CABINET	20/2	17	C	18	20/2	ROLL THRU HEATED CABINET	0	0	811
0	0	811	"	-	19	A	20	-	"	0	0	811
0	0	811	ROLL THRU HEATED CABINET	20/2	21	B	22	20/2	ROLL THRU HEATED CABINET	0	0	811
0	0	811	"	-	23	C	24	-	"	0	0	811
0	0	811	ROLL THRU HEATED CABINET	20/2	25	A	26	20/2	AIR CURTAIN	0	0	125
0	0	811	"	-	27	B	28	-	"	0	0	125
0	0	125	AIR CURTAIN	20/2	29	C	30	20/1	COOLER BLOWER COIL (PLACEHOLDER)	0	0	1200
0	0	125	"	-	31	A	32	20/2	FREEZER BLOWER COIL (PLACEHOLDER)	0	0	988
0	180		MILK COOLER	20/1	33	B	34	-	"	0	0	494
0	180		MILK COOLER	20/1	35	C	36	20/1	TOILET GFCI RECEPTACLES	0	360	
0	180		MILK COOLER	20/1	37	A	38	20/1	DRY STORAGE RECEP.	0	180	
0	0	745	TOILET 106 HAND BLOWER	20/2	39	B	40	20/2	TOILET 107 HAND BLOWER	0	0	745
0	0	745	"	-	41	C	42	-	"	0	0	745
0	540		OFFICE 108 RECEP.	20/1	43	A	44	20/1	CUSTODIAN GFCI RECEP.	0	180	
0	360		OFFICE 108 RECEP.	20/1	45	B	46	20/1	INTRUSION DETECTION PANEL	0	180	
0	180		FIRE ALARM EXTENDING PANEL	20/1	47	C	48	20/1	MILK COOLER	0	180	
0	180		WATER FOUNTAINS	20/1	49	A	50	20/1	POINT OF SALES FLOOR BOX	0	720	
0	180		WATER FOUNTAINS	20/1	51	B	52	20/1	POINT OF SALES FLOOR BOX	0	720	
0	540		DINNING 100 GENERAL PURPOSE RECEP.	20/1	53	C	54	20/1	POINT OF SALES FLOOR BOX	0	720	
0	540		DINNING 100 GENERAL PURPOSE RECEP.	20/1	55	A	56	20/1	POINT OF SALES FLOOR BOX	0	720	
0	540		DINNING 100 GENERAL PURPOSE RECEP.	20/1	57	B	58	20/1	EXTERIOR GFCI RECEPTACLE SOUTH WALL	0	540	
0	540		DINNING 100 GENERAL PURPOSE RECEP.	20/1	59	C	60	20/1	EXTERIOR GFCI RECEPTACLE NORTH WALL	0	540	
0	540		DINNING 100 GENERAL PURPOSE RECEP.	20/1	61	A	62	20/1	EXTERIOR GFCI RECEPTACLE WEST WALL	0	540	
0	0	1900	FROST TOP SERVING UNIT	20/1	63	B	64	20/1	EXTERIOR GFCI RECEPTACLE EAST WALL	0	540	
0	0	1900	FROST TOP SERVING UNIT	20/1	65	C	66	20/1	HOT TOP SERVING UNIT	0	0	1750
0	0	1900	FROST TOP SERVING UNIT	20/1	67	A	68	20/1	HOT TOP SERVING UNIT	0	0	1750
0	0	1900	FROST TOP SERVING UNIT	20/1	69	B	70	20/1	HOT TOP SERVING UNIT	0	0	1750
0	720		IDF WALL MOUNTED RACK	20/1	71	C	72	20/1	HOT TOP SERVING UNIT	0	0	1750
0	180		FIRE TAMPER SWITCH	20/1	73	A	74	20/1	HOT TOP SERVING UNIT	0	0	1750
0	360		GFCI GEN RECEP.	20/1	75	B	76	20/1	RTU UNIT GFCI RECEPS.	0	540	
0	360		GFCI GEN RECEP.	20/1	77	C	78	20/1	DOOR ELECTRIC STRIKE	0	180	
0	0		SPD	60/3	79	A	80	400/3	PANEL KL2	0	1800	11920
0	0		"	-	81	B	82	-	"	0	1080	13840
0	0		"	-	83	C	84	-	"	0	1440	11920

VA:L (LIGHTING)	0	CONNECTED		0	DEMAND
VA:R (RECEPTACLES)	17460	CONNECTED		13730	DEMAND
VA:O (OTHER)	94832	CONNECTED		94832	DEMAND
VA: TOTAL	112292	CONNECTED		108562	DEMAND
AMPS: TOTAL	312	CONNECTED		301	DEMAND

L	R	O	TOTAL			
0	6300	30334	VA CONNECTED TO A PHASE	36634	VA =	305 AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	5220	33867	VA CONNECTED TO B PHASE	39087	VA =	326 AMPS CONNECTED TO B PHASE @ 120 VOLTS
0	5940	30631	VA CONNECTED TO C PHASE	36571	VA =	305 AMPS CONNECTED TO C PHASE @ 120 VOLTS
0	17460	94832	**TOTAL**	112292	VA	

NEW PANELBOARD "KL2"

VOLTAGE: 208Y/120 VOLT 3 PHASE 4 WIRE — LOCATION: ELECTRICAL ROOM 110 NEMA 1 WITH -DOOR-IN-DOOR CONSTRUCTION

400 A **MAIN CIRCUIT BREAKER** — MOUNTING: SURFACE

BUSES: MAIN - 400 A; NEUTRAL - 100%; EQUIPMENT GROUND; — Isc = 18K A RMS SYM AVAILABLE

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	180		AIPHONE MASTER POWER SUPPLY	20/1	1	A	2	20/1	TRAP PRIMER	0	180	
0	180		ACCESS CONTROL PANEL	20/1	3	B	4	20/1	TRAP PRIMER	0	180	
0	0	10000	WH-1	150/3	5	C	6	20/1	GREASE TRAP SERVICE ALERT PANEL	0	180	
0	0	10000	"	-	7	A	8	20/1	CIRCULATING PUMP	0	0	1920
0	0	10000	"	-	9	B	10	20/1	CIRCULATING PUMP	0	0	1920
0	720		SENSOR FIXTURE TRANSFORMERS	20/1	11	C	12	20/1	GFCI RECEP.	0	360	
0	540		GFCI GEN RECEP.	20/1	13	A	14	20/1	FUTURE IT WALL MOUNTED RACK	0	720	
0	0	1920	EF-4	20/1	15	B	16	20/1	QUAD RECEPTACLE	0	720	
0	0	1920	PROJECTOR SCREEN MOTOR	20/1	17	C	18	20/1	PROJECTOR	0	180	
0	180		FUME HOOD CONTROL PANEL	20/1	19	A	20	20/1	SPARE	0	0	
0	0		SPARE	20/1	21	B	22	20/1	SPARE	0	0	
0	0		SPARE	20/1	23	C	24	20/1	SPARE	0	0	
0	0		SPARE	20/1	25	A	26	20/1	SPARE	0	0	
0	0		SPARE	20/1	27	B	28	20/1	SPARE	0	0	
0	0		SPACE	-	29	C	30	-	SPACE	0	0	
0	0		SPACE	-	31	A	32	-	SPACE	0	0	
0	0		SPACE	-	33	B	34	-	SPACE	0	0	
0	0		SPACE	-	35	C	36	-	SPACE	0	0	
0	0		SPACE	-	37	A	38	-	SPACE	0	0	
0	0		SPACE	-	39	B	40	-	SPACE	0	0	
0	0		SPACE	-	41	C	42	-	SPACE	0	0	

VA:L (LIGHTING)	0	CONNECTED		0	DEMAND
VA:R (RECEPTACLES)	4320	CONNECTED		4320	DEMAND
VA:O (OTHER)	37680	CONNECTED		37680	DEMAND
VA: TOTAL	42000	CONNECTED		42000	DEMAND
AMPS: TOTAL	117	CONNECTED		117	DEMAND

L	R	O	TOTAL			
0	1800	11920	VA CONNECTED TO A PHASE	13720	VA =	114 AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	1080	13840	VA CONNECTED TO B PHASE	14920	VA =	124 AMPS CONNECTED TO B PHASE @ 120 VOLTS
0	1440	11920	VA CONNECTED TO C PHASE	13360	VA =	111 AMPS CONNECTED TO C PHASE @ 120 VOLTS
0	4320	37680	**TOTAL**	42000	VA	

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURE	MODEL NUMBER	TEMPERATURE (K)	LUMENS (LM)	WATTS (W)	VOLTAGE (V)	MOUNTING	ADDITIONAL COMMENTS & REQUIREMENTS
A1	H.E WILLIAMS	FT 24 4,239 80CRI 50K AF DIM UNV FURNISH LIGHT FIXTURES IN THE RESTROOMS WITH FLANGE KITS	4,000	4,239	152	277	CEILING MOUNTED	
A1E	H.E WILLIAMS	FT 24 4,239 80CRI 50K AF DIM UNV EM/10W FURNISH LIGHT FIXTURES IN THE RESTROOMS WITH FLANGE KITS	4,000	4,239	152	277	CEILING MOUNTED	
A2E	H.E WILLIAMS	FT 24 6054 80CRI 50K AF DIM UNV EM/10W	4,000	6,054	39	277	CEILING MOUNTED	
A3	H.E WILLIAMS	FT 24 7275 80CRI 50K AF DIM UNV	4,000	7,275	48	277	CEILING MOUNTED	
A3E	H.E WILLIAMS	FT 24 7275 80CRI 50K AF DIM UNV EM/10W	4,000	7,275	48	277	CEILING MOUNTED	
B	H.E WILLIAMS	FS-4-3,400-80-4000KVBY-2-DIM-UNV	4,000	3,400	22.7	277	CEILING MOUNTED	
BE	H.E WILLIAMS	FS-4-3,400-80-4000KVBY-2-DIM-UNV EM/10WLP	4,000	3,400	22.7	277	CEILING MOUNTED	
BB	BEACON LIGHTING	QSP2-160-35-5K7-2-UNV-PSS	5,000	5,602	37.7	277	WALL MOUNTED	
X	MULE LIGHTING	CEL-X-B-RC-BA-U-SD REFER TO PLANS FOR NUMBER OF FACES REQUIREMENTS REFER TO PLANS FOR ARROW DIRECTION REQUIREMENTS	-	-	5	277	REFER TO PLANS FOR MOUNTING REQUIREMENTS	

1 ELECTRICAL PANEL & LIGHT FIXTURE SCHEDULE

SCALE: N.T.S.

Oct 16, 2024 – 5:30pm C:\Dropbox\2024\24026 IDEA Edinburg Cafeteria\CADD\E-2.0.dwg

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EDINBURG, TEXAS

IDEA Public Schools

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108783
REGISTERED
PROFESSIONAL
ENGINEER
10/11/2024

Date: October 2024
Scale: As Noted
Project Architect: Roan G Gomez, AIA
Drawn By: TN
Job No. IDEA EDINBURG CAFETERIA
Sheet: E2.0

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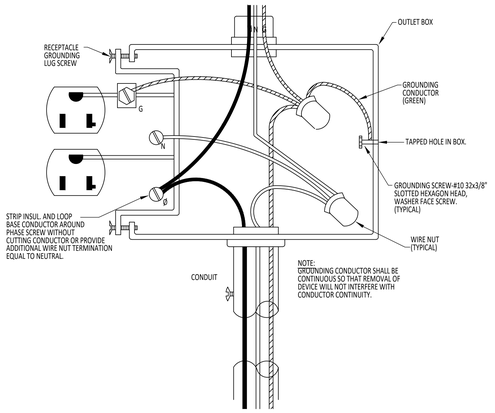
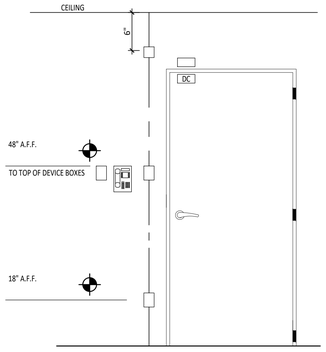


1 TYPICAL RECEPTACLE GROUNDING DETAIL
SCALE:N.T.S.

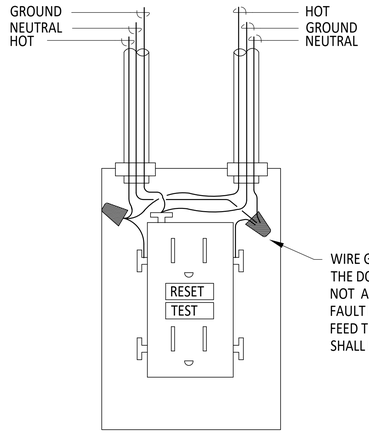
GENERAL NOTES:

A. VIEW IS OF INTERIOR LOOKING OUT. IMAGE MAY BE MIRRORED.

B. WHEN POSSIBLE KEEP WALL DEVICES ALIGNED NEXT TO DOOR.



2 GENERAL DEVICE DETAIL
SCALE: 2

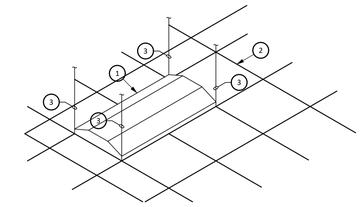


WIRE GFCI DEVICE SUCH THAT THE DOWNSTREAM DEVICES ARE NOT AFFECTED BY GROUND FAULT INTERRUPTION. IE. NON FEED THRU. EACH GFCI DEVICE SHALL BE SELF PROTECTING ONLY.

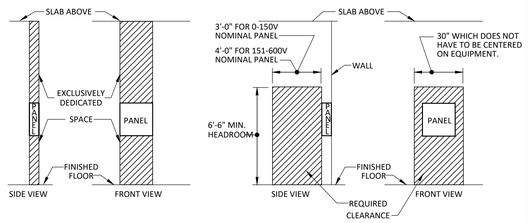
3 GFCI RECEPTACLE-WIRING DIAGRAM
SCALE:N.T.S

KEYNOTES:

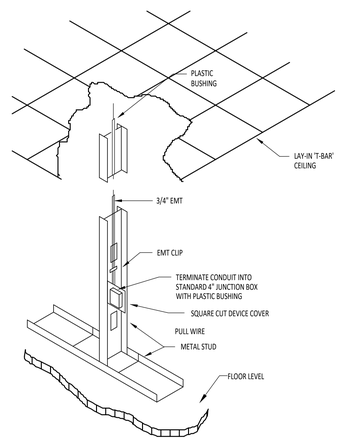
1. TYPICAL LIGHT FIXTURE.
2. LAY-IN OR GYPSUM BOARD CEILING MOUNTING DETAIL. IMAGE MAY BE MIRRORED.
3. TIE WIRE, CONNECT TO ALL FOUR CORNERS OF THE LIGHT FIXTURE TO STRUCTURE ABOVE, INDEPENDENT OF CEILING SUPPORTS, IE. T-BARS.



4 TYPICAL LAY-IN FIXTURE SUPPORT
SCALE:N.T.S.



5 WIRING METHOD FOR ISOLATED GROUNG
SCALE:N.T.S.



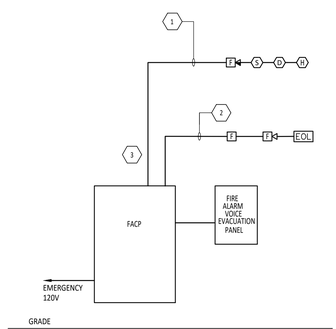
6 DATA OUTLET INSTALLATION DETAIL
SCALE:N.T.S.

KEYED NOTES:

1 #18/2 TW/SHLD FPLP, 3/4"C, TYPICAL.

2 #14/2 TW/SHLD, 3/4"C, TYPICAL.

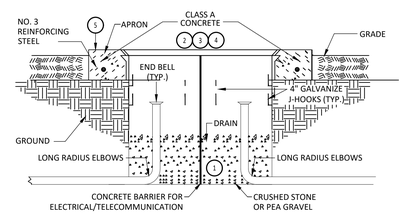
3 #18 SINGLE TWISTED SHIELDED PAIR FOR INITIATING DEVICES, #14 SINGLE TWISTED PAIR FOR STROBE DEVICES AND #14/2 FOR RELAY CIRCUITS, TYPICAL.



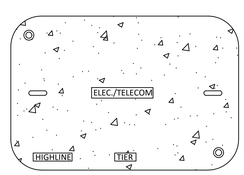
7 FIRE ALARM RISER DIAGRAM
SCALE:N.T.S.

PULLBOX KEY NOTES: (4)

1. PLACE GRAVEL "UNDER" THE BOX. NOT "IN" THE BOX. GRAVEL SHOULD NOT ENCROACH ON THE INTERIOR VOLUME OF THE BOX.FURNISH AND INSTALL 18"OF DEPTH BELOW JUNCTION BOX.
2. MAINTAIN SUFFICIENT SPACE BETWEEN ALL CONDUITS SO AS TO ALLOW FOR PROPER INSTALLATION OF BUSHINGS.
3. ALL CONDUITS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.
4. ALL CONDUITS INSTALLED IN THE ELECTRICAL BOX SHALL BE SEALED AFTER COMPLETION OF CONDUCTOR INSTALLATION AND ANY REQUIRED PULL TESTS. SILICONE SHALL NOT BE USED AS SEALANT.
5. FURNISH AND INSTALL 4" HEIGHT CONCRETE APRON. HEIGHT SHALL BE ABOVE GRADE.



HIGHLINE PRODUCTS
MODEL PHA243618
24-1/8" WD. x 37-1/2" LG. x 18" H.



8 ELECTRIC & TELECOMMUNICATION PULL-BOX
SCALE:N.T.S.

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EDINBURG, TEXAS

IDEA Public Schools

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LICENSED PROFESSIONAL ENGINEER
10-16-2024

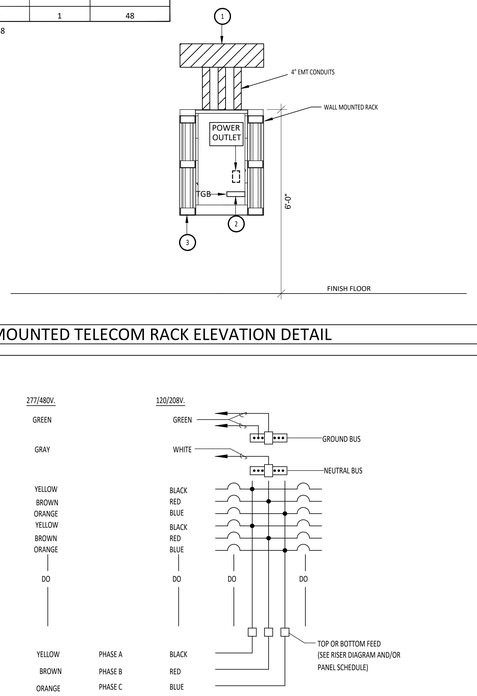
Date: October 2024
Scale: As Noted
Project Architect: Roan G Gomez, AIA
Drawn By: TN
Job No. IDEA EDINBURG CAFETERIA
Sheet: E2.1

KEY NOTES: (7)

1. FURNISH AND INSTALL WIREWAY ABOVE CEILING 48"X12"WX12"H, HINGED NEMA 1 ENCLOSURE WITH QTY (3) 4" CONDUIT EMT CONDUIT SLEEVES WITH CONDUIT BUSHINGS FOR CAMERA, ACCESS CONTROL AND DATA CABLING.
2. APPROXIMATE LOCATION OF TELECOMMUNICATIONS GROUNDING BAR. FURNISH AND INSTALL #6AWG BONDING CONDUCTOR TO WALL MOUNTED CABINET.
3. FURNISH AND INSTALL VERTICAL RACK WALL MOUNT EQUAL TO PANDUIT PZWMC2630- BLACK WITH THE FOLLOWING:
   a. 24-PORT PATCH PANEL EQUAL TO COMMSCOPE CPP-UDDM-1U-24 PATCH PANEL
   b. FIBER ENCLOSURE – COMMSCOPE 760248904 | WB2-EMT-BK-1P-PNL
   c. SINGLE MODE FIBER ADAPTER CASSETTES LC – COMMSCOPE 760221747- PNL-CS-12LCW-PT
   d. SINGLE MODE LC FIBER OPTIC CONNECTORS – COMMSCOPE 760117895-SFC-LCF-09-8X QWIK II™ LC
   e. SINGLE MODE 1-METER PATCH CABLES: COMMSCOPE FEWLCLC42-JXM001

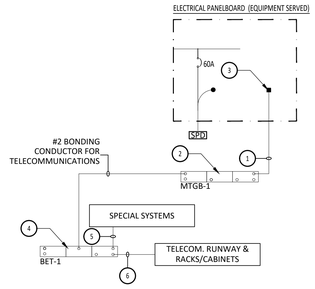
TELECOMMUNICATION EQUIPMENT IDENTIFICATION			
ROW	RACK/ CABINET	UNIT SPACE NO. (1-42)	PORT NO. (1-48)
1	2	1	48

EXAMPLE: R-A-1-1-48



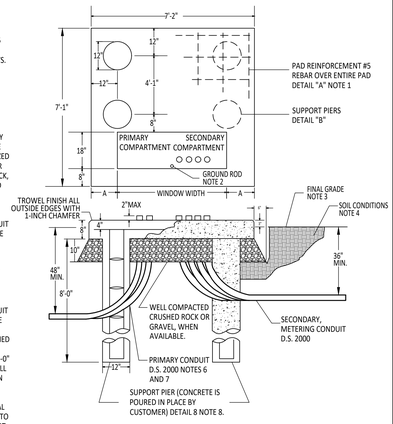
ELECTRICAL GROUNDING/BONDING KEY NOTES: (6)

1. FURNISH AND INSTALL #1/0 ELECTRODE CONDUCTOR TO BUILDING'S ELECTRICAL SERVICE. TEST TO EQUAL TO OR LESS THAN 0.1 OHMS.
2. NEMA RATED TMGB 1/4" x 4" x 20" WITH STAND OFF INSULATORS, BOND GROUND CONDUCTORS TO TMGB WITH TWO HOLE/TWO SCREW LUG, OR EXOTHERMIC WELD. MOUNT GROUNDING BUS BAR ADJACENT TO MAIN ELECTRICAL PANEL.
3. ELECTRICAL PANEL EQUIPMENT/ELECTRODE CONDUCTOR BUSSBAR.
4. TELECOMMUNICATION GROUNDING/BONDING BUS BAR. REFER TO ELECTGRICAL PLANS FOR CONNECTION TO ELECTROD CONDUCTOR.
5. FURNISH AND INSTALL INTER-SYSTEMS BONDING CONDUCTOR FOR SPECIAL SYSTEM PANELS AND EQUIPMENT RACKS/CABINETS (ie. CAMERA SURVEILLANCE AND ACCESS CONTROL, ETC.)
6. BONDING COPPER CONDUCTOR (SIZE #6 AWG) FROM BUSBAR TO THE EQUIPMENT RACKS, ALONG ENTIRE LENGHT OF ROW, BOND EACH RACK TO BONDING CONDUCTOR WITH A #6 AWG STRANDED BONDING COPPER CONDUCTOR. (TYP.)



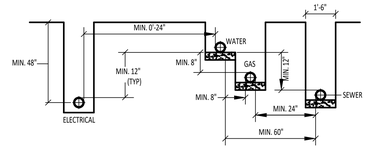
GENERAL NOTES:

1. SLAB REINFORCEMENT SHALL BE #5 REBARS. ON CENTER (OC) SPACING TO FOLLOW DIMENSIONS SHOWN ON THE DRAWING WITH 4" COVER. REINFORCING BARS SHALL CONFORM TO ASTM A515 GRADE 60. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI/AFTER 28 DAYS.
2. FOR GROUND ROD PLACEMENT REFER TO DS 2235, 2236 OR 2237.
3. FINAL GRADE SHALL BE ESTABLISHED BEFORE INSTALLATION OF PAD.
4. CONCRETE PAD WITH PIERS IS TO BE INSTALLED ONLY WHEN HIGH VOLUME CLAY OR SAND TYPE SOILS ARE ENCOUNTERED. THESE SOIL TYPES ARE CHARACTERIZED BY EXTREME SURFACE CONDITION VARIATIONS OVER TIME. WHERE SOIL IS FOUND TO BE TOTALLY BEDROCK, SHALE, OR HARDPAN. ELIMINATE DRILLED PIERS AND REFER TO DS 2020 OR 2021.
5. THE NUMBER AND PLACEMENT OF SECONDARY CONDUITS TO BE DETERMINED BY ENGINEER. CONDUIT MAY EXTEND IN ANY DIRECTION AS REQUIRED BY THE CUSTOMER.
6. PRIMARY CONDUIT MEMBER, SIZE, LOCATION, AND DIRECTION TO BE SPECIFIED BY ENGINEER. CONDUIT CAN BE FLEXIBLE. TYPE EB, OR SCHEDULE 40 PVC CONDUIT WITH 90 DEGREE, 48-INCH RADIUS.
7. BURIAL DEPTH FOR DIRECT BURIED CABLE OR CONDUIT IS DEFINED AS THE DISTANCE BETWEEN FINAL GRADE AND THE TOP OF THE CABLE OR CONDUIT. UNLESS OTHERWISE DESIGNATED BY ENGINEER, DIRECT BURIED PRIMARY SUPPLY CABLES OR CONDUITS SHALL BE INSTALLED AT A BURIAL DEPTH OF NOT LESS THAN 4'-0" AND SECONDARY SUPPLY CABLES OR CONDUITS SHALL BE INSTALLED AT A BURIAL DEPTH OF NOT LESS THAN 3'-0" THESE INITIAL DEPTHS ARE TO ALLOW FOR CHANGES TO SURFACE CONDITIONS. LOCAL AGREEMENTS AND CODES MAY REQUIRE ADDITIONAL DEPTH. IF THERE ARE KNOWN, EXTENSIVE CHANGES TO THE FINAL GRADE SUCH THAT THESE DEPTHS ARE NOT MAINTAINED, CORRECTIVE ACTION SHALL BE TAKEN.
8. PIERS SHALL BE 12" MINIMUM DIAMETER, 8' DEEP WITH 4-#4 VERTICAL REBAR AND #3 TIES AT 12" ON CENTER (OC), AND PROVIDE A MINIMUM 3" COVER. THE #4 BEND BARS SHOULD BE 12" LONG IN THE HORIZONTAL DIRECTION.
9. PIER REBAR BENT IN THE HORIZONTAL DIRECTION SO THAT IT MAY TIE IN WITH PAD REBAR.



KVA SIZE	WINDOW WIDTH	A
75-500	48"	19"
750-2500	60"	13"

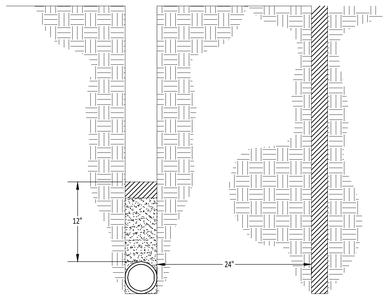
CONCRETE PAD AND PIERS FOR THREE PHASE PAD-MOUNTED TRANSFORMER



NOTE
*CLEAR TRENCH OF ALL ROCKS AND DEBRIS BEFORE ADDING SAND CUSHION.
*MAINTAIN ALL MINIMUM 48 INCHES UNDISTURBED EARTH BETWEEN PARALLEL WATER AND SEWER LINES.
*COMPACT TRENCH FILL TO 95% PROCTOR DENSITY.

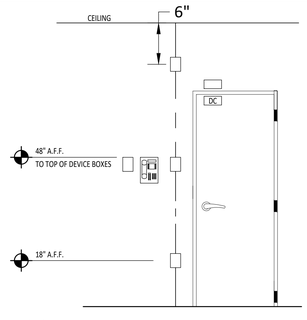
1 WALL MOUNTED TELECOM RACK ELEVATION DETAIL
SCALE:N.T.S.

2 TELECOMM. EQUIPMENT GROUNDING & BOUNDING RISER DIAGRAM
SCALE:N.T.S.



CROSS HATCHED AREA INDICATES MINIMUM REQUIRED LOCATION FOR FOREIGN UTILITY: WATER, SEWER, GAS, TELEPHONE, OR CABLE T.V.; (12" VERTICALLY AND 24" HORIZONTALLY)

3 TRANSFORMER PAD DETAIL
SCALE:N.T.S.



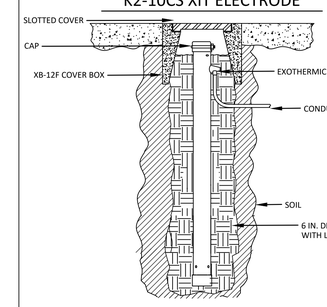
NOTES:
- VIEW IS OF INTERIOR LOOKING OUT. IMAGE MAY BE MIRRORED.
- WHEN POSSIBLE KEEP WALL DEVICES ALIGNED NEXT TO DOOR.

4 TRENCH DETAIL
SCALE:N.T.S.

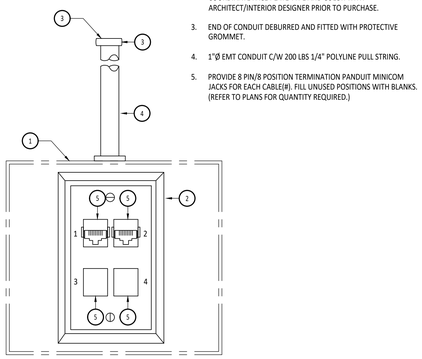
GENERAL NOTES:

STRAIGHT SHAFT MODEL: INFORMATION & SPECIFICATIONS

A. MANUFACTURER: LYNCOLE XIT GROUNDING, 3547 VOYAGER ST., TORRANCE, CA 90503, PHONE 800-962-2610. WWW.LYNCOLE.COM
B. SHAFT CONFIGURATION: STRAIGHT. STANDARD LENGTHS: 10', 12', & 20', OR CUSTOM.
C. UL AND CSA LISTING: 467.
D. LYNCONITE II BACKFILL MEETS ANSI/NSF ENVIROMENTAL STANDARD 60.
E. MATERIAL: TYPE K COPPER 0.083" NOMINAL WALL THICKNESS.
F. CONSTRUCTION: HOLLOW TUBE, 2.125" O.D., FILLED WITH NON-HAZARDOUS SALTS (CALSOLYTE).
G. WEIGHT: 3.5 LBS PER LINEAL FOOT.
H. GROUND WIRE TERMINATION: EXOTHERMIC CONNECTION TO CONDUCTORS FROM #2 SOLID AWG TO 750 MCM. U-BOLT WITH PRESSURE PLATE PROVIDED AS TEST POINT.
I. MINIMUM LIFE EXPECTANCY: 50 YEARS. WARRANTY: 30 YEARS.
J. STRAIGHT SHAFT MODEL NO: K2-10CS, K2-12CS, K2-20CS.
K. GSA CONTRACT PRICING AVAILABLE.



5 TYPICAL PANEL COLOR CODE DETAIL
SCALE:N.T.S.



6 ELECTRICAL. PRIMARY FOREIGN UTILITY CLEARANCE REQ.
SCALE:N.T.S.

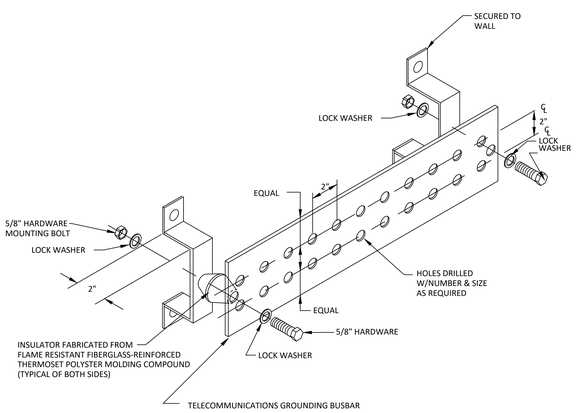
7 GENERAL DEVICE DETAIL
SCALE:N.T.S.

8 XIT GROUNDING SYSTEM
SCALE:N.T.S.

KEY NOTES: (#)

1. RECESSED DOUBLE GANG J-BOX (5"W X 5"L X 2 1/8"D) WITH 1"Ø CONDUIT, PULL STRING COMPLETE WITH AN INTERIOR WALL SINGLE GANG OR DUAL MUDRING SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
2. COMMUNICATION CABLING, OUTLETS, FACE PLATES AND JACKS SUPPLIED/INSTALLED BY TELECOMMUNICATIONS CONTRACTOR. COORDINATE FACE PLATE TYPE AND COLOR WITH ARCHITECT/INTERIOR DESIGNER PRIOR TO PURCHASE.
3. END OF CONDUIT DEBURRED AND FITTED WITH PROTECTIVE GROMMET.
4. 1"Ø EMT CONDUIT C/W 200 LBS 1/4" POLYLINE PULL STRING.
5. PROVIDE 8 PIN/8 POSITION TERMINATION PANDUIT MINICOM JACKS FOR EACH CABLE(#). FILL UNUSED POSITIONS WITH BLANKS. (REFER TO PLANS FOR QUANTITY REQUIRED.)

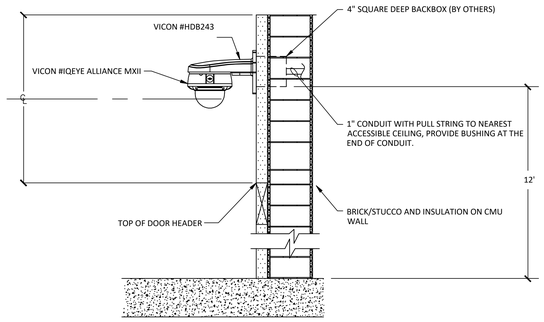
9 TYPICAL DATA-TELEPHONE OUTLET DETAIL
SCALE:N.T.S.



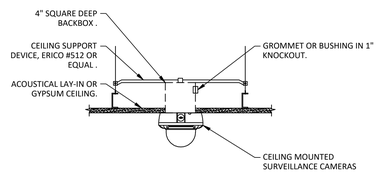
10 WALL MOUNTED TGB DETAIL
SCALE:N.T.S.

PROJECT REQUIREMENTS AND GENERAL NOTES:

A. THE CAMERA SURVEILLANCE SYSTEM/SOFTWARE/SHALL BE OWNER PROVIDED; CONTRACTOR SHALL INSTALL MOUNTING AND INSTALLATION HARDWARE



11 CAMERA MOUNTING DETAILS
SCALE:N.T.S.



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IDEA-EDINBURG CAMPUS
COLLEGE PREPARATORY CAFETERIA ADDITION
EDINBURG, TEXAS

IDEA Public Schools

STATE OF TEXAS
JOSE ANTONIO NICANOR
108783
REGISTERED
ARCHITECT

Date: October 2024
Scale: As Noted
Project Architect: Roan G Gomez, AIA
Drawn By: TN
Job No: IDEA EDINBURG CAFETERIA
Sheet: E2.2

SIGMA HN ENGINEERS, PLLC
TBPE Firm No. F-14767
701 S. 15th Street
McAllen, Texas 78501

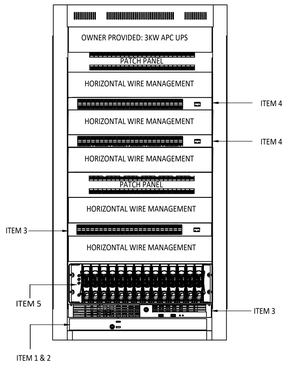
CAMERA SURVEILLANCE -REQUIREMENTS:

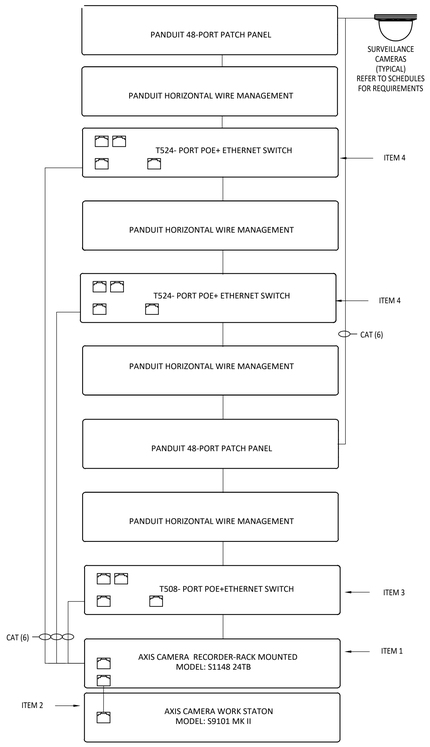
A. CONTRACTOR SHALL FURNISH AND INSTALL VIDEO MANAGEMENT SYSTEM EQUAL TO EXACQ VISION AND INCLUDE ALL CAMERA SOFTWARE LICENSING.

B. THE VIDEO MANAGEMENT SYSTEM SHALL INTERFACE WITH THE BEST-ACCESS SECURITY MANAGEMENT SYSTEM.

C. THE EXACQVISION SOFTWARE SHALL INTERFACE WITH EXISTING ENTERPRISE TIER.

D. ALL CAMERA SURVEILLANCE INFRASTRUCTURE SHALL BE INSTALLED IN THE WALL MOUNTED PANDUIT TELECOMMUNICATION RACK; REFER TO RACK EQUIPMENT DETAILS FOR MORE INFORMATION.





CAMERA SURVEILLANCE RACK EQUIPMENT				
ITEM ID#	MANUFACTURE	MODEL #	DESCRIPTION	QUANTITY
1	GENETEC	SV-2040E-R12-96T-12-410	SERVER GENETEC STREAMVAULT	1
2	GENETEC	SWV-105E-M1-EMB-I7	WORKSTATION GENETEC STREAMVAULT	1
3	AXIS	T8508	AXIS T8508 POE+ NETWORK SWITCH 8-PORT	1
4	AXIS	T8524	AXIS T8524 POE+ NETWORK SWITCH	1
5	-	-	OWNER PROVIDED EQUIPMENT; REFER TO "MDF EQUIPMENT CONNECTION SCHEDULE"	-
6	LOGITECH	920-007897	MK235 WIRELESS KEYBOARD AND MOUSE COMBO	1
7	VIEWSONIC	CDE5500-L	55-INCH VIEW SONIC MONITOR	1

SURVEILLANCE CAMERA SCHEDULE				
CAMERA ID	MANUFACTURER	MODEL#	SENSOR SIZE	INSTALLATION HEIGHT
C1	AXIS	IQM65NR-A4	1/2.8" CMOS	WALL, 10-FEET
C2	AXIS	IQM65NR-A4	1/2.8" CMOS	WALL, 10-FEET
C3	AXIS	IQM65NR-A4	1/2.8" CMOS	WALL, 10-FEET
C4	AXIS	IQM65NR-A4	1/2.8" CMOS	WALL, 10-FEET
C5	AXIS	P3245-V	1/2.8" CMOS	RECESSED TO CEILING GRID
C6	AXIS	IQM65NR-A4	1/2.8" CMOS	WALL, 10-FEET
C7	AXIS	IQM65NR-A4	1/2.8" CMOS	WALL, 10-FEET
C8	AXIS	IQM65NR-A4	1/2.8" CMOS	WALL, 10-FEET
C9	AXIS	IQM65NR-A4	1/2.8" CMOS	WALL, 10-FEET
C10	AXIS	IQM65NR-A4	1/2.8" CMOS	WALL, 10-FEET

SURVEILLANCE CABLING AND CONDUIT SCHEDULE				
CAMERA ID	TYPE	MANUF. MODEL NUMBER	CONDUIT SIZE	CABLE SIZE
C1	COPPER	IQM65NR-A4	1 INCH CONDUIT (SURVEILLANCE CAMERA)	QTY. (2) 4 PAIR CAT 6,
C2	COPPER	IQM65NR-A4	1 INCH CONDUIT (SURVEILLANCE CAMERA)	QTY. (2) 4 PAIR CAT 6,
C3	COPPER	IQM65NR-A4	1 INCH CONDUIT (SURVEILLANCE CAMERA)	QTY. (2) 4 PAIR CAT 6,
C4	COPPER	IQM65NR-A4	1 INCH CONDUIT (SURVEILLANCE CAMERA)	QTY. (2) 4 PAIR CAT 6,
C5	COPPER	P3245-V	1 INCH CONDUIT (SURVEILLANCE CAMERA)	QTY. (2) 4 PAIR CAT 6,
C6	COPPER	IQM65NR-A4	1 INCH CONDUIT (SURVEILLANCE CAMERA)	QTY. (2) 4 PAIR CAT 6,
C7	COPPER	IQM65NR-A4	1 INCH CONDUIT (SURVEILLANCE CAMERA)	QTY. (2) 4 PAIR CAT 6,
C8	COPPER	IQM65NR-A4	1 INCH CONDUIT (SURVEILLANCE CAMERA)	QTY. (2) 4 PAIR CAT 6,
C9	COPPER	IQM65NR-A4	1 INCH CONDUIT (SURVEILLANCE CAMERA)	QTY. (2) 4 PAIR CAT 6,
C10	COPPER	IQM65NR-A4	1 INCH CONDUIT (SURVEILLANCE CAMERA)	QTY. (2) 4 PAIR CAT 6,

1 SURVEILLANCE CAMERA SYSTEM EQUIPMENT RACK SCHEDULE & DETAILS

SCALE:N.T.S.

2 EQUIPMENT IDENTIFICATION LABEL DETAIL

SCALE:N.T.S.

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IDEA Public Schools

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10/11/2024

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Project Architect:	Roan G Gomez, AIA
Drawn By:	TN
Job No.	IDEA EDINBURG CAFETERIA
Sheet:	E2.3

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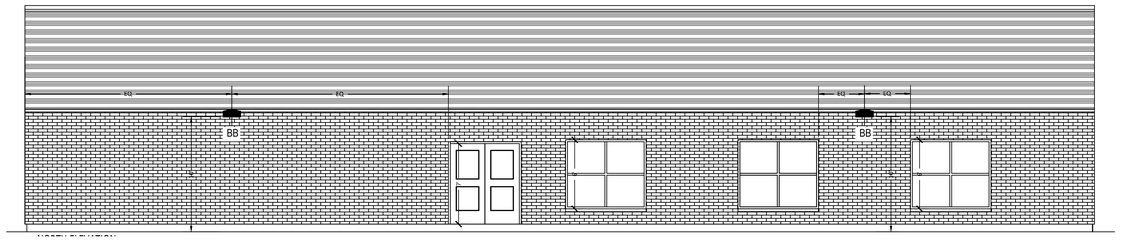
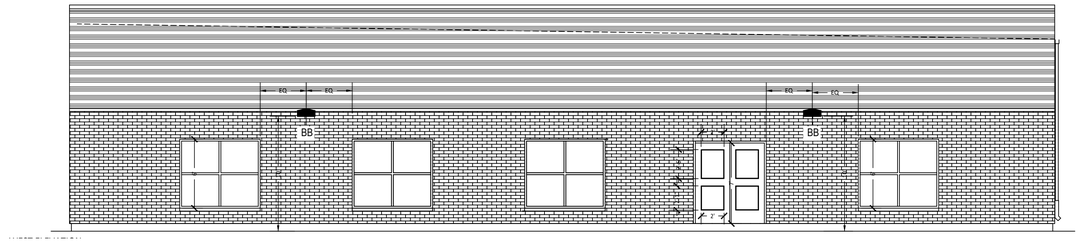
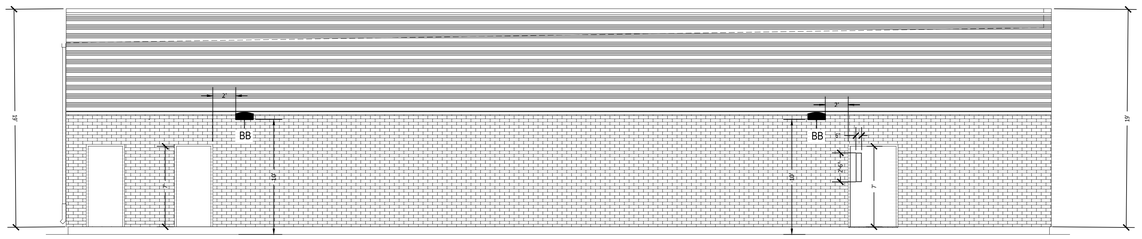


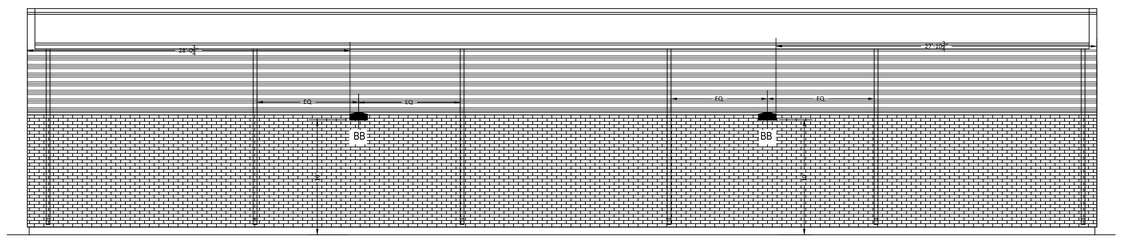
1 ELECTRICAL LIGHTING ELEVATIONS - NORTH
SCALE: 3/16" = 1'-0"



2 ELECTRICAL LIGHTING ELEVATIONS - WEST
SCALE: 3/16" = 1'-0"



3 ELECTRICAL LIGHTING ELEVATIONS - EAST
SCALE: 3/16" = 1'-0"



4 ELECTRICAL LIGHTING ELEVATIONS - SOUTH
SCALE: 3/16" = 1'-0"

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ELECTRICAL GENERAL LEGEND

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SYMBOL	DESCRIPTION	MNTG. HT. UNO (SEE NOTE 1)
	POWER	
	DUPLEX RECEPTACLE - 20A/125V/1P/3W/G	15" AFF
	DUPLEX RECEPTACLE, 20A, GROUND FAULT INTERCEPTOR; C = CEILING MOUNTED.	15" AFF
	DUPLEX RECEPTACLE, 20A, INSULATED GROUND DEVICE WITH ISOLATED GROUNDING CONDUCTOR; CLG = CEILING MOUNTED.	15" AFF
	QUADPLEX RECEPTACLE, 20A, GROUND FAULT INTERCEPTOR; CLG = CEILING MOUNTED.	AS REQD.
	QUADPLEX RECEPTACLE, 20A, INSULATED GROUND DEVICE WITH INSULATED GROUNDING CONDUCTOR; CLG = CEILING MOUNTED.	AS REQD.
E	DUPLEX RECEPTACLE ON EMERGENCY CIRCUIT	AS REQD.
	SPECIAL PURPOSE RECEPTACLE; MOTOR OR EQUIPMENT CONNECTION	AS REQD.
J	JUNCTION BOX - SIZE & MOUNTING AS REQUIRED	15" AFF
MPFB	AUDIO, VIDEO, DATA, AND POWER FLOOR BOX WIRING DIVICE. FURNISH AND INSTALL EQUAL LEGRAND #RBF11; FURNISH WITH THE FOLLOWING: QTY.(2) IG DUPLEX RECEPTACLES AND 6 PORT-DATA WIRING DEVICE PLATE TO ACCOMODATE CATEGORY 6A CABELING.FLOOR BOX CONVER TO MATCH FINISH FLOOR TYPE (IE. CARPET, TILE, WOOD, ETC.)	FLOOR
FB	FURNITURE FEED POKE THRU BOX FOR POWER. FURNISH AND INTALL EQUAL TO LEGRAND 6ATCFF WITH THE FOLLOWING: 5BLH OUTER COMPARTMENT 1 17SCHA &18HA CENTER COMPARTMENT 5BLH OUTER COMPARTMENT 1	SECOND FLOOR
30/-/3	DISCONNECT SWITCH - 30/-/3 INDICATES 30A, 3-POLE, NONFUSED; 30/30/3 INDICATES 30A, 3-POLE, 30A FUSE	AS REQD.
CB 30/3	CIRCUIT BREAKER DISCONNECT SWITCH - THERMAL MAGNETIC CB IN NEMA 1 ENCL; AMPS/POLES AS INDICATED	AS REQD.
30/30/3	DISCONNECT SWITCH - 30/30/3 INDICATES 30A, 3-POLE, 30A FUSE	AS REQD.
2	MOTOR STARTER FVNR UNO; NUMBER INDICATES NEMA SIZE	AS REQD.
CB	COMBINATION MOTOR CONTROLLER/DISCONNECT SWITCH	AS REQD.
	PANELBOARD	-
	MOTOR	-
~	SINGLE LINE CONTINUATION	-
GAAP	GENERATOR ANNUNCIATOR PANEL	-
X,X,X	THREE SINGLE POLE DEVICE CIRCUIT NUMBERS	-
X/X/X	MULTI-POLE DEVICE CIRCUIT NUMBERS	-
	TELEPHONE OUTLET	-
	DATA OUTLET	-
	TELEPHONE/DATA OUTLET	-
	TRANSFORMER	-

SYMBOL	DESCRIPTION	MNTG. HT. UNO (SEE NOTE 1)
	FIRE ALARM	
F	FIRE ALARM AUDIBLE/VISUAL SIGNAL	CEILING MOUNTED
F	FIRE ALARM PULL STATION	48" AFF
F	FIRE ALARM AUDIBLE/VISUAL SIGNAL; WP = WEATHER PROOF; S = WITH INTEGRAL VOICE ACTIVATED SPEAKER.	80" AFF
F	FIRE ALARM AUDIBLE SIGNAL; WP = WEATHER PROOF; S = WITH INTEGRAL VOICE ACTIVATED SPEAKER.	80" AFF
F	FIRE ALARM VISUAL SIGNAL; WP = WEATHER PROOF; S = WITH INTEGRAL VOICE ACTIVATED SPEAKER.	80" AFF
FS	FIRE ALARM SPRINKLER FLOW SWITCH	-
TS	FIRE ALARM SPRINKLER TAMPER SWITCH	-
S	FIRE ALARM SMOKE DETECTOR CEILING OR WALL MOUNTED	80" AFF
H	HEAT DETECTOR CEILING OR WALL MOUNTED	-
D	DUCT SMOKE DETECTOR	AS REQD.
FACP	FIRE ALARM CONTROL PANEL	AS REQD.
FAAP	FIRE ALARM ANNUNCIATOR PANEL	AS REQD.
FAEP	FIRE ALARM EXTENDING PANEL	AS REQD.
IDP	INSTRUSION DETECTION PANEL	AS REQD.
	SWITCH	-
3	3 WAY LIGHT SWITCH	-
GB	GLASS BREAK SENSOR	AS REQD.
DS	DOOR STATUS SWITCH	AS REQD.
ADO	AUTOMATIC DOOR OPERATOR	AS REQD.
R	FIRE ALARM CONTROL RELAY	-

GENERAL ABBREVIATIONS

ABS	ABOVE BACK SPLASH
AFF	ABOVE FINISHED FLOOR
BFC	BELOW FINISHED CEILING
C	CONDUIT
CB	CIRCUIT BREAKER
CLG	CEILING
EC	EMPTY CONDUIT
EP	ELECTRICAL PRIMARY
EX	EXISTING
F	FUSE
G	GROUND (EQUIPMENT)
GFI	GROUND FAULT INTERRUPTER
HCC	HORIZONTAL CROSS CONNECT
IC	INTERRUPTING CAPACITY
ICC	INTERMEDIATE CROSS CONNECT
IG	ISOLATED GROUND
MTD	MOUNT OR MOUNTED
NC (N.C.)	NORMALLY CLOSED
NF	NONFUSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO (N.O.)	NORMALLY OPEN
PNL	PANEL
RCPT(S)	RECEPTACLE(S)
SO (S.O.)	SPACE ONLY
SP	SPARE
SPD	SURGE PROTECTION DEVICE
ST (S.T.)	SHUNT TRIP
SW	SWITCH
TYP	TYPICAL
UF	UNDERFLOOR
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

NOTES:
1. 48" AFF INDICATES TO TOP OF DEVICE; 15" AFF INDICATES TO BOTTOM OF DEVICE; ALL OTHER MOUNTING HEIGHTS REFER TO CENTERLINE OF DEVICE.

SPECIAL SYSTEMS LEGEND

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SYMBOL	DESCRIPTION
AP	AIPHONE DOOR (C-D)
CR	CARD READER HID GLOBAL #40NKS
ES	ELECTRIC STRIKE (#EL-9S)
T	POWER TRANSFER DEVICE (REFER TO HARDWARE SPEC FOR REQUIREMENTS)
DC	DOOR CONTACT
REX	REQUEST TO EXIT CONTROL. MOUNT ABOVE DOOR AS REQUIRED.
IDS	INTRUSION DETECTION PANEL
ACC	ACCESS CONTROL PANEL
INT	INTERCOM SYSTEM PANEL
AV	AUDIO AND VIDEO WALL WIRING DEVICE. FURNISH AND INSTALL LEGRAND EFSB4 WITH QTY.(3) 1-INCH CONDUITS WITH PULL STRINGS FROM BOX TO ACCESSIBLE ABOVE CEILING.
	DIGITAL CLOCKS - SINGLE FACE, IP BASED, COMBO SPEAKERS
	DIGITAL CLOCKS - DOUBLE FACE, IP BASED, VN ALERT SYSTEM
GB	GLASSBREAK SENSOR
S	INTRUSION DETECTION SIREN
	TELEPHONE BOARD
J	SPECIAL SYSTEM SUPPORT SYSTEM (J-HOOKS) FURNISH SIZE AS NOTED ON PLANS
#	DATA OUTLET. WALL MOUNTED, #=NUMBER OF DROPS; D=DATA, V=VOICE; FURNISH QTY.(2) DATA DROPS.
#	TELEPHONE OUTLET. WALL MOUNTED, #=NUMBER OF DROPS; D=DATA, V=VOICE; FURNISH QTY.(2) DATA DROPS.
S	INTERCOM SPEAKER
WP	INTERCOM SPEAKER; WP = WEATHER PROOF
	INTERCOM PUSH BUTTON SWITCH
	CEILING MOUNTED PROJECTOR MOUNT HARDWARE, CEILING MOUNTED RECESSED AUDIO AND VIDEO DEVICES, AND CEILING MOUNTED RECESSED RECEPTACLE.
WAP X	WIRELESS ACCESS POINTS; X DENOTES WAP ID#; FURNISH WITH QTY.(2) DATA DROP
X DENOTES CAMERA # / X DENOTES CAMERA TYPE / X DENOTES CAMERA #	SURVEILLANCE CAMERAS (UNLESS OTHER WISE NOTED, ALL CAMERAS ARE FIXED) PTZ= (PAN-TILT-ZOOM) REFER TO MOUNTING DETAILS FOR MOUNTING HARDWARE REQUIREMENTS; FOR EXTERIOR CAMERAS, FURNISH AND INSTALL 1-INCH WITH PULL STRING FROM THE CAMERA TO A 1-FOOT OF EMT CONDUIT WITH CONDUIT BUSHINGS ACCESSIBLE ABOVE INTERIOR CEILINGS.
AV RACK	AUDIO/VIDEO CONFERANCE TRAINING RACK

1 ELECTRICAL GENERAL LEGEND
SCALE: N.T.S.

Oct 16, 2024 – 5:31pm C:\Dropbox\2024\24026 IDEA Edinburg Cafeteria\CADD\E-3.0.dwg

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