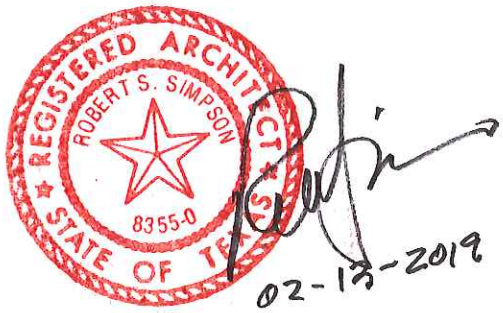
Boultinghouse Simpson Gates ARCHITECTS

3301 N. McColl Rd.
McAllen, Texas 78501

>>>>>>>>>>>>>>>>>>>>ADDENDUM #1<<<<<<<<<<<<<<<<<<<<

Wednesday, February 13, 2019



South Texas College
Nursing and Allied Health –
Student Success Center Conversion

STC PROJECT NUMBER #18-19-1043
McAllen, Texas
Boultinghouse Simpson Gates Project No. 1828

Addendum #1 to the drawings and specifications dated January 31st, 2019 for the South Texas College Nursing and Allied Health Center for Learning Excellence Conversion.

This addendum shall become part of the bidding and contract documents, and shall amend, modify and supersede the original documents. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

Item	Description

General:

1-1 The Name of the project shall be referred to as Nursing and Allied Health Campus-Student Success Center Renovation.

1-2 The South Texas College Project Number for the project shall be 18-19-1043.

1-3 For the purposes of pricing, the modular 20 oz. Mannington carpet shall be a color from the Gametime III line.

Architectural:

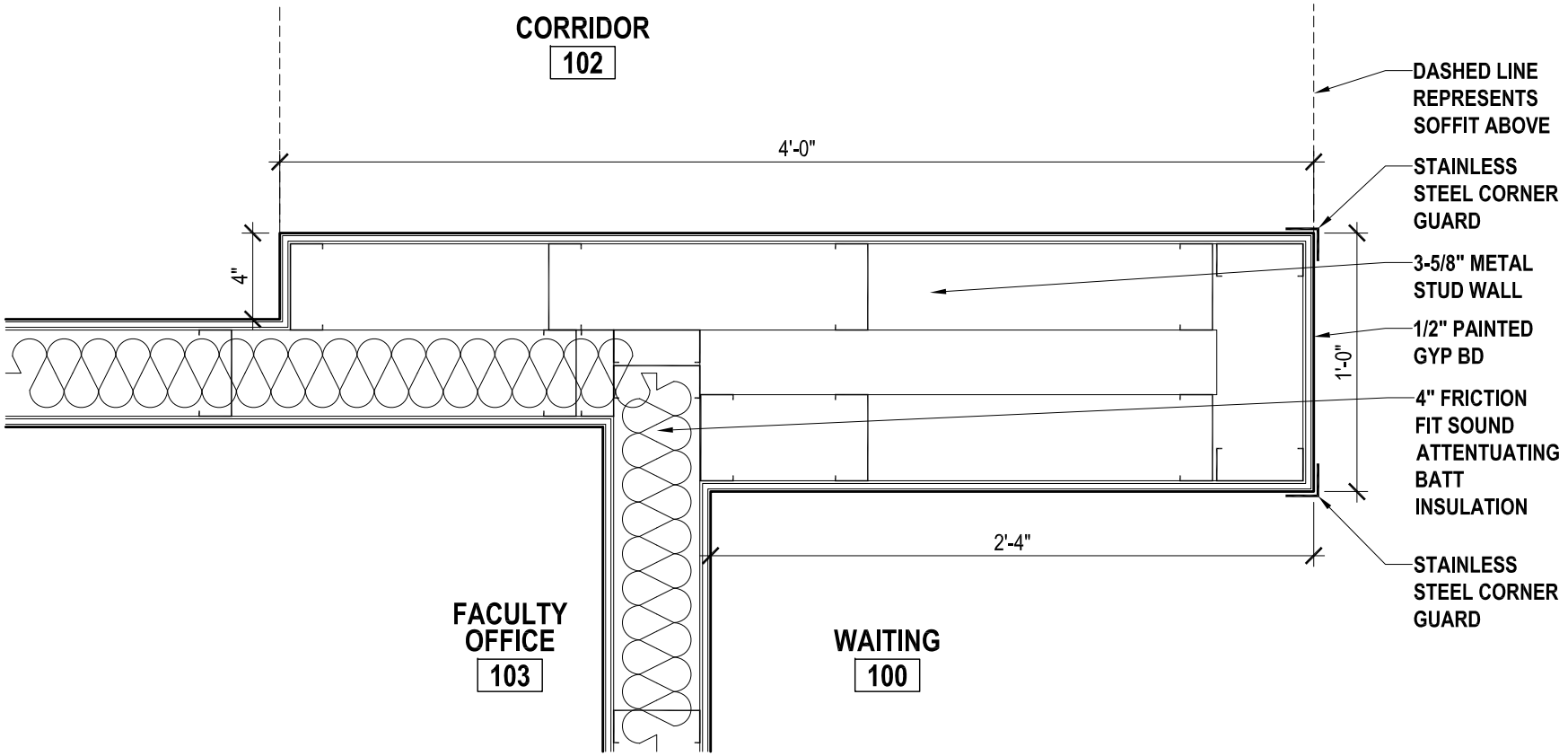
1-4 Sheet A2.00

-See attachment #ADD1-1 for new detail C4/A2.00.
-See attachment #ADD1-2 for new wall type schedule.
-See attachment #ADD1-3 for fire extinguisher cabinet location.
-See attachment #ADD1-3 for wall type plan.

Mechanical Electrical Plumbing:

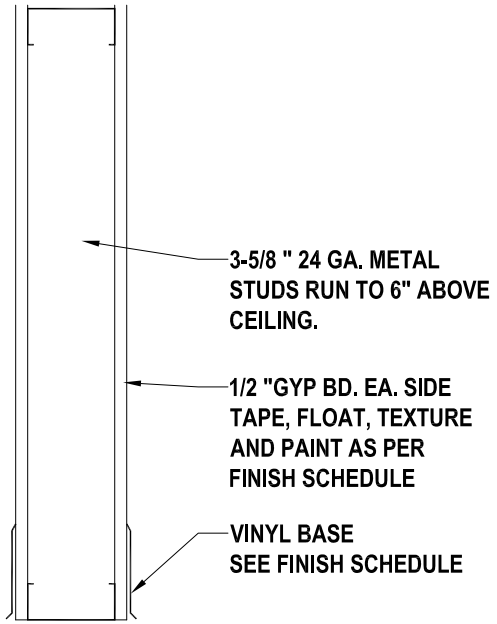
See attached MEP Addendum items provided by Ethos Engineering.

END OF STC NAH SSC CONVERSION ADDENDUM #1



ATTACHMENT

ADD1-1



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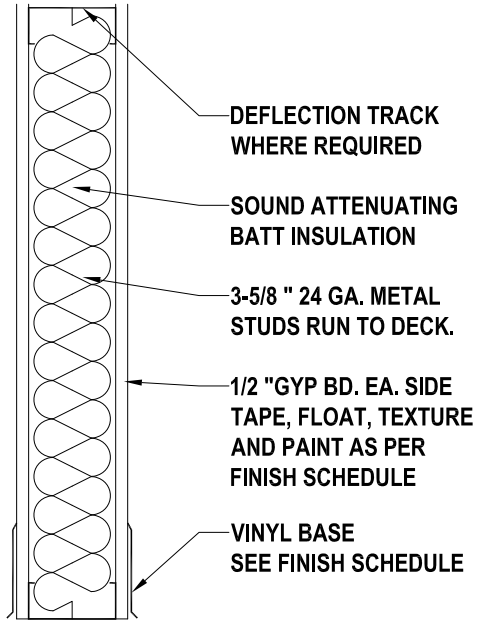

TYPE B

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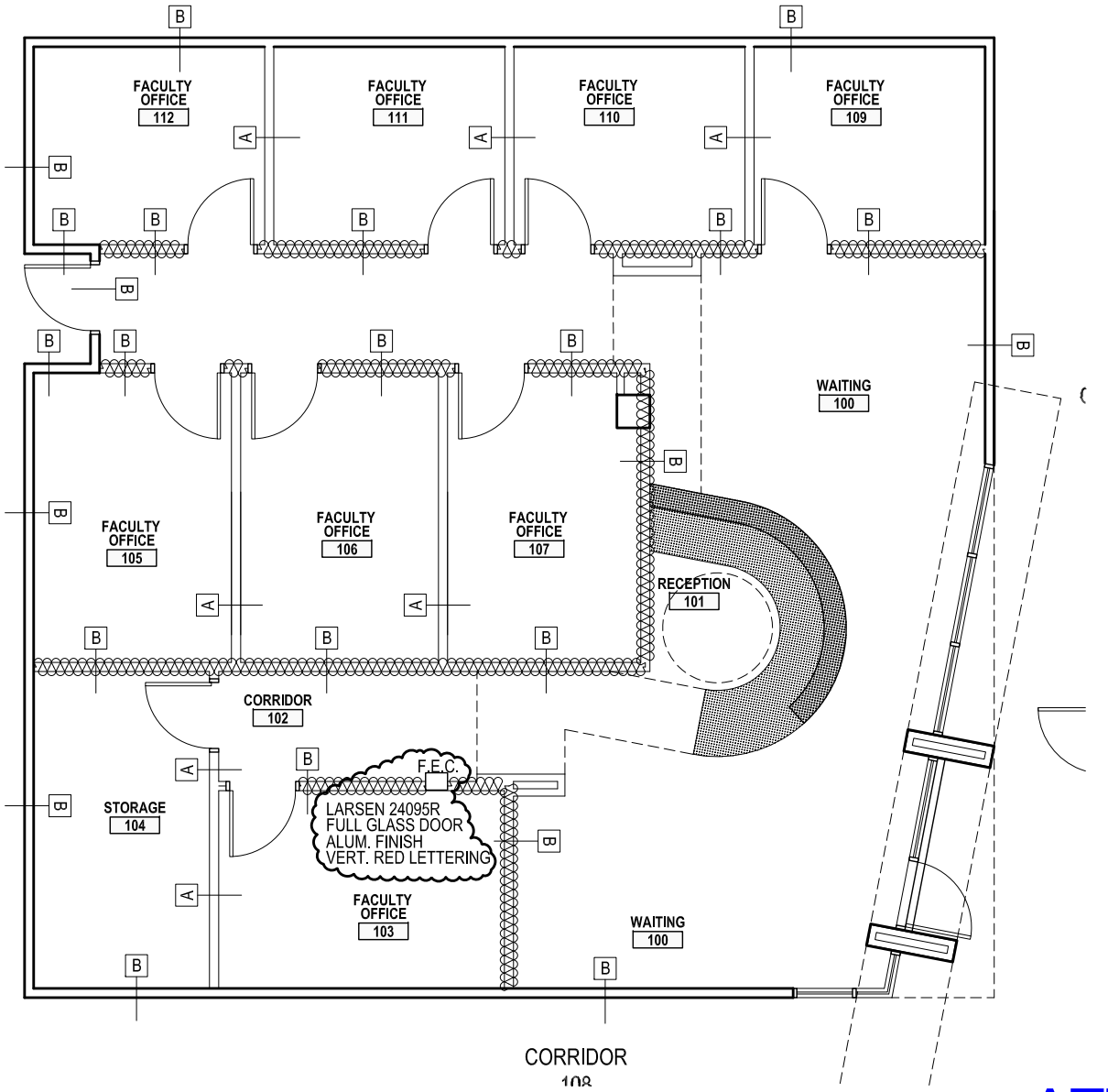
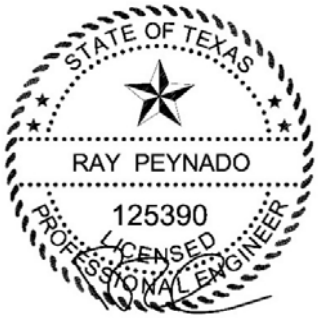
ADD1-2



ATTACHMENT

ADD1-3

119 W. Van Buren Ave. Ste. 101
Harlingen, TX 78550
Off: (956) 230-3435
Fax: (956) 720-0830
www.ethoseng.net



February 12, 2018
NAH Campus CLE Conversion
South Texas College

ADDENDUM NO. 1

A. PURPOSE AND INTENT

This addendum is issued for the purpose of modifying the plans and specifications for the project referenced above.
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. SPECIFICATIONS:

1. Section 260010 – Summary of Electrical Work:
    a. Add attached specifications.

2. Section 260519 – Low Voltage Electrical Power Conductors and Cables:
    a. Add attached specifications.

3. Section 260526 – Grounding and Bonding for Electrical Systems:
    a. Add attached specifications.

4. Section 260529 – Hangers and Supports for Electrical Systems:
    a. Add attached specifications.

II. DRAWINGS:

1. Sheet E3.10:
    a. Revised Lighting Plan. See attached sheet.

2. Sheet E3.20:
    a. Revised Electrical Plan. See attached sheet.

3. Sheet E4.10:
    a. Revised Luminaire Schedule. See attached sheet.

SECTION 260010 - SUMMARY OF ELECTRICAL WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1 Specification Sections and other Division 26 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The following Summary of Work is intended as an aid to achieve an understanding of the various elements of work included in the project, as is not intended to be all-inclusive. Detailed descriptions of work and requirements are given in drawings and specifications.

B. Scope of Work:

1. General: The “South Texas College - NAH Campus CLE Conversion STC Building” consists of an existing building remodel approximately 1,926 ft2.
2. Electrical: Provide all materials and labor associated with complete operational electrical distribution system. Major items of work include, but are not limited to:

(a) Electrical service: Existing distribution panelboards to remain with modifications.

(b) Demolition: Provide as noted on drawings.

(c) Lighting systems: Interior lighting system shall consist of LED type.

(d) Power systems: Provide miscellaneous duplex receptacles and connections for H.V.A.C. equipment.

(e) Fire Alarm System: Expand/Modify existing addressable control capabilities to accommodate new indicating and initiating devices. Indicating devices shall be provided to comply with TDLR.

(f) Commissioning: Provide for the lighting equipment and lighting controls as required per IECC 2015.

(g) Communication and data processing equipment: Provide rough-ins only. Cabling, connectors, patch panels, racks, etc. by owner.

1.3 ALLOWANCES

A. Electrical: See Division 1 for electrical allowances.

1.4 COORDINATION

A. All electrical work shall be done under sub-contract to a General Contractor, who ultimately responsible for the entire project. Electrical Contractor shall coordinate all work through General Contractor, even in areas where only electrical work is to take place.

B. All questions, requests for information, submittals, and correspondence from the Electrical Contractor shall be submitted via the General Contractor, who will forward to the Architect, who will then forward to the Engineer.

C. Electrical Contractor shall not make any changes to design without written authorization from the Engineer. If changes are requested by the Owner, Architect, General Contractor, Suppliers, Manufacturers, or any others, Contractor should issue a written RFI for response by the Engineer.

D. Electrical Contractor shall issue seven (7) days written notice prior to any activities that require the presence of the Engineer at the job-site. This applies to all inspections required by specifications, and particularly to those where work will be covered (underground raceways, electrical raceways above ceiling).

E. Cooperate fully with other contractors so that work under those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

F. Fully coordinate with Mechanical Contractor for providing power to HVAC equipment.

G. Fully coordinate with the Millwork contractors for the wiring devices installation.

H. Issue written notification of the following tasks and allow five (5) days for Engineer to respond and schedule an inspection as required:

1. Upon completion of installing all raceways, labeling all j-boxes and prior to suspended ceiling installation.
2. Upon completion of pulling all wiring, making all terminations, labeling and color-coding wires at the panelboards/switchboards and prior to installing their covers.
3. When ready to request manufacturer’s start-up of each piece of equipment.
4. When ready to conduct complete Fire Alarm demonstration.
5. When ready for Substantial Completion Inspection.
6. When ready for Final Inspection.

Failure to issue written notification may result in work having to be redone to allow for proper inspection. It is this contractor’s responsibility to make sure Engineer receives notification.

1.5 CONTRACTOR USE OF PREMISES

A. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

1. Owner Occupancy: Allow for Owner occupancy and use by the public.
2. Driveways and Entrances: Keep driveways and entrances serving the premises, clear and available to the Owner, the Owner's employees, and emergency vehicles at all time. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. Site Safety: Take every precaution to ensure the site does not present a threat to the safety of occupants and/or workers. Minimal safety requirements include, but are not limited to the following:

1. Temporary fencing around construction areas.

2. Yellow caution tape and construction barricades along open trenches during the day. Trenches shall be covered at night and warning lights provided on construction barricades.
3. Temporary fencing around equipment while site work is in progress.

C. Work shall take place with minimal disruption to Owner's operations in areas surrounding the job site.

1.6 SUBMITTALS -Special Requirements

A. Manufacturer's standard dimensioned drawings, performance and product data shall be edited to delete reference to equipment, features, or information, which is not applicable to the equipment being supplied for this project. Including Bill or List of Materials.

B. Faxes and copies of faxes are not acceptable.

C. Electrical Submittals shall be submitted electronically. **Please organize the files as noted below** (PDF format - searchable). Files would need to be properly identified (cover letter, stamped, etc.) from the general contractor.

1. **Miscellaneous Electrical – Submittal #1**
    a. 260519 Low-Voltage Electrical Power Conductors and Cables
    b. 260526 Grounding and Bonding for Electrical Systems
    c. 260529 Hangers and Supports for Electrical Systems
    d. 260533 Raceways and Boxes for Electrical Systems
    e. 260553 Identification for Electrical Systems
    f. 260544 Sleeves and Sleeve Seals for Electrical Raceways and Cabling
    g. 262726 Wiring Devices

2. Electrical Gear **Submittal #4**
    a. 262816 Enclosed Switches and Circuit Breakers

3. Light Fixtures **Submittal #5**
    a. 265116 Interior Lighting
    b. 265219 Emergency and Exit Lighting
    c. 260923 Light Control Devices

4. Special Systems: **Submittal #6**
    a. 267210 Fire Alarm System

5. Electrical Commissioning **Submittal #7**
    a. 260800 Commissioning for Electrical Systems

E. Individual submittals shall not be reviewed until a complete package is received.

F. Allow two weeks for initial submittal review by Engineer, from the day it is received at the Engineer's office.

G. Allow one week for review of resubmittals by Engineer.

H. All submittal review comments shall be forwarded by Engineer to Architect, who will then distribute as per Division 1.

1.7 SCHEDULE OF VALUES -Special Requirements

A. Electrical Contractor shall submit a Schedule of Values reflecting the total value of Electrical Work in the Contract and broken down into the following items as a minimum, with a line item for Materials/Equipment and another for Labor.

ELECTRICAL

1. Electrical gear.
4. Raceways including wiring.
5. Light fixtures
6. Wiring devices.
7. Fire alarm system
8. Commissioning
9. Allowances.
10. Miscellaneous.
11. Administrative and project management.

1.8 CODE COMPLIANCE:

The design for this project is based on:

1. Occupational Safety and Health Act (OSHA)
2. National Electric Code (NEC)
3. National Fire Code
4. International Building Code
5. UL 916
6. Local ordinances

END OF SECTION 260010

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

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. Section Includes:

1. Building wires and cables rated 600 V and less.
2. Connectors, splices, and terminations rated 600 V and less.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: Member Company of NETA or an NRTL.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

A. Manufacturer:

1. Senator Wire & Cable Company.
2. Southwire Company.
3. Encore Wire

B. Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658.

C. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type THHN/THWN-2, Type XHHW-2 and Type SO.

D. Multiconductor Cable: Comply with NEMA WC 70/ICEA S-95-658 for metal-clad cable, Type MC and Type SO with ground wire.

2.2 CONNECTORS AND SPLICES

A. Manufacturers:

1. AFC Cable Systems, Inc.
2. AMP Incorporated/Tyco International.
3. Hubbell/Anderson.
4. O-Z/Gedney; EGS Electrical Group LLC.
5. 3M Company; Electrical Products Division.

B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

2.3 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Exposed Branch Circuits: Type THHN/THWN-2, single conductors in raceway.

B. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN/THWN-2, single conductors in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.

C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, which will not damage cables or raceway.

E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

F. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."

3.4 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

1. Use oxide inhibitor in each splice, termination, and tap for aluminum conductors.

C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

3.5 IDENTIFICATION

A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

3.6 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.7 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 078413 "Penetration Firestopping."

3.8 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. After installing conductors and cables and before electrical circuitry has been energized, test conductors for compliance with requirements.

2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
3. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each splice in conductors No. 3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner. Correct deficiencies determined during the scan.

    a. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each splice 11 months after date of Substantial Completion.
    b. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
    c. Record of Infrared Scanning: Prepare a certified report that identifies splices checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

B. Test and Inspection Reports: Prepare a written report to record the following:

1. Procedures used.
2. Results that comply with requirements.
3. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

C. Cables will be considered defective if they do not pass tests and inspections.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes grounding and bonding systems and equipment.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Field quality-control reports.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

A. Insulated Conductors: tinned-copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Tinned Conductors: ASTM B 33.
4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

C. Grounding Bus: Predrilled rectangular bars of annealed copper, 1/4 by 4 inches in cross section, with 9/32-inch holes spaced 1-1/8 inches apart. Stand-off insulators for mounting shall comply with UL 891 for use in switchboards, 600 V and shall be Lexan or PVC, impulse tested at 5000 V.

2.2 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy.

C. Bus-Bar Connectors: Mechanical type, cast silicon bronze, solderless **exothermic**-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 10 AWG and smaller, and stranded conductors for No. 8 AWG and larger unless otherwise indicated.

B. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.

3.2 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:

1. Branch circuits.
2. Lighting circuits.
3. Receptacle circuits.
4. Single-phase motor and appliance branch circuits.
5. Three-phase motor and appliance branch circuits.
6. Flexible raceway runs.
7. Metal-clad cable runs.
8. Busway Supply Circuits: Install insulated equipment grounding conductor from grounding bus in the distribution panel to equipment grounding bar terminal on busway.

3.3 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.

3.4 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, at individual ground rods. Make tests at ground rods before any conductors are connected.

    a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
    b. Perform tests by fall-of-potential method according to IEEE 81.

4. Prepare dimensioned Drawings locating each, ground rod and ground-rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location, and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.

B. Grounding system will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

D. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity of 500 kVA and less: 10 ohms.
2. Power and Lighting Equipment or System with Capacity of 500 to 1000 kVA: 5 ohms.
3. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 ohms.

4. Power Distribution Units or Panelboards Serving Electronic Equipment: 3 ohm(s).
5. Manhole Grounds: 10 ohms.

E. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Hangers and supports for electrical equipment and systems.
2. Construction requirements for concrete bases.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:

a. Hangers.
b. Steel slotted support systems.
c. Trapeze hangers.
d. Clamps.
e. Turnbuckles.
f. Sockets.
g. Eye nuts.
h. Saddles.
i. Brackets.

2. Include rated capacities and furnished specialties and accessories.

B. Shop Drawings: For fabrication and installation details for electrical hangers and support systems.

1. Trapeze hangers. Include product data for components.
2. Steel slotted-channel systems.
3. Nonmetallic slotted-channel systems.
4. Equipment supports.

1.4 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Suspended ceiling components.
2. Structural members to which hangers and supports will be attached.
3. Size and location of initial access modules for acoustical tile.
4. Items penetrating finished ceiling, including the following:

    a. Lighting fixtures.
    b. Air outlets and inlets.
    c. Speakers.
    d. Sprinklers.
    e. Access panels.
    f. Projectors.

B. Welding certificates.

1.5 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M.
2. AWS D1.2/D1.2M.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame Rating: Class 1.
2. Self-extinguishing according to ASTM D 635.

2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4 factory-fabricated components for field assembly.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Allied Tube & Conduit.
    b. Cooper B-Line, Inc.; a division of Cooper Industries.
    c. ERICO International Corporation.
    d. GS Metals Corp.
    e. Thomas & Betts Corporation.
    f. Unistrut; Tyco International, Ltd.
    g. Wesanco, Inc.

2. Material: Plain steel.
3. Channel Width: 1-1/4 inches.

4. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
5. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
6. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
7. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
8. Channel Dimensions: Selected for applicable load criteria.

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

C. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for nonarmored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be made of malleable iron.

D. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M steel plates, shapes, and bars; black and galvanized.

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

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
    a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
        1) Hilti Inc.
        2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
        3) MKT Fastening, LLC.
        4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.

2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
    a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
        1) Cooper B-Line, Inc.; a division of Cooper Industries.
        2) Empire Tool and Manufacturing Co., Inc.
        3) Hilti Inc.
        4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
        5) MKT Fastening, LLC
3. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
    a. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element.
    b. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.

c. Toggle Bolts: All-steel springhead type.
d. Hanger Rods: Threaded steel.
e. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
f. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
g. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
h. Toggle Bolts: All-steel springhead type.
i. Hanger Rods: Threaded steel

2.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

B. Materials: Comply with requirements in Section 055000 "Metal Fabrications" for steel shapes and plates.

PART 3 - EXECUTION

3.1 APPLICATION

A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems unless requirements in this Section are stricter.

B. Comply with requirements for raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."

C. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMTs and RMCs as scheduled in NECA 1, where its Table 1 lists maximum spacings that are less than those stated in] NFPA 70. Minimum rod size shall be 1/4 inch in diameter.

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

1. Secure raceways and cables to these supports with two-bolt conduit clamps.

E. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

3.2 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this article.

B. Raceway Support Methods: In addition to methods described in NECA 1, EMTs, and RMCs may be supported by openings through structure members, according to NFPA 70.

C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.

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

1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.
3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners.
5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.
6. To Steel: Spring-tension clamps.
7. To Light Steel: Sheet metal screws.
8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.

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

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Comply with installation requirements in Architectural Section "Metal Fabrications" for site-fabricated metal supports.

B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

C. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 PAINTING

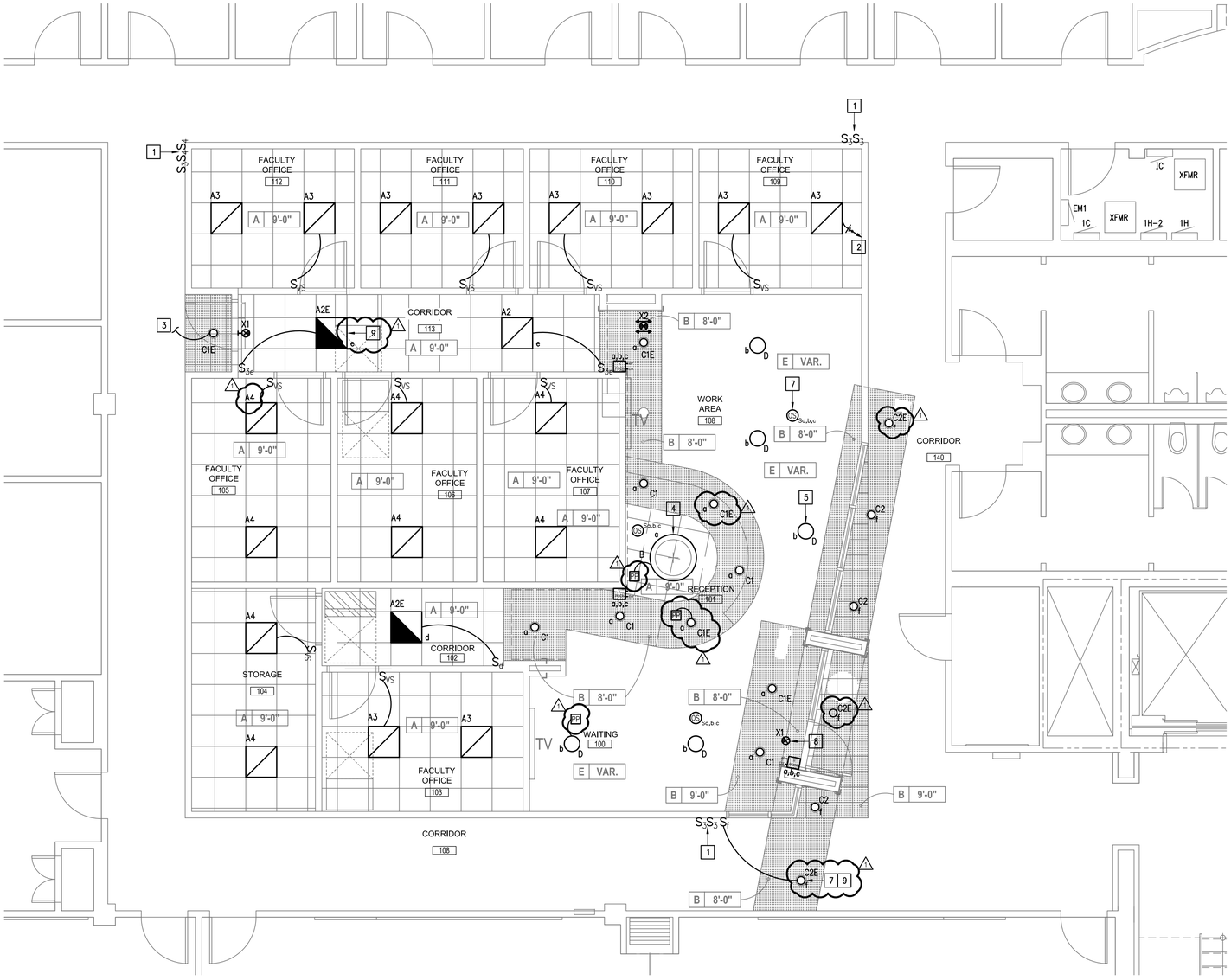
A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.

B. Touchup: Comply with requirements in Sections "Exterior Painting", "Interior Painting" and "High-Performance Coatings" for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.

C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 260529



PROPOSED LIGHTING FLOOR PLAN

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

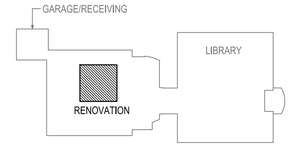
L1

GENERAL NOTES:

1. LIGHTING BRANCH CIRCUITS SHALL BE 3/4" – 2#12 & #12G. 20A/277V HOMERUNS EXCEEDING 200FT THE WIRE SIZE SHALL BE #10 & #8 FOR 275'. CONNECT TO EXISTING ROOM LIGHTING CIRCUIT.
2. INTERIOR LIGHTING CONTROLS SHALL BE BY VACANCY SENSORS.
3. MULTIPLE OCCUPANCY SENSORS CONTROLLING A SINGLE OR MULTIPLE SWITCH SCHEME AND POWER PACKS SHALL BE CONNECTED WITH CLASS II #18 WIRING IN 1/2" RACEWAY.
4. PROVIDE 0–10V SIGNAL WIRING TO EACH DIMMED LIGHT FIXTURE DRIVER AND WALL SWITCH.
5. PAINT ALL EXPOSED RACEWAYS, HANGERS, BOXES, SUPPORTS AND ACCESSORIES IN INTERIOR AND EXTERIOR EXPOSED AREAS. COORDINATE PAINT TYPE, COLOR AND SCOPE OF WORK WITH ARCHITECT.
6. ALL RACEWAYS IN EXPOSED CEILING AREAS SHALL BE CONCEALED TO MAXIMUM EXTENT POSSIBLE. CONCEAL RACEWAYS ABOVE SUSPENDED CEILING CLOUDS WHERE POSSIBLE. HORIZONTAL RACEWAY RUNS SHALL BE ROUTED BETWEEN STRUCTURAL STEEL Z–PURLINS.

KEYED NOTES:

1. EXISTING CORRIDOR LIGHTING SWITCHES AT NEW LOCATION. EXTEND RACEWAYS AND WIRING AS REQUIRED.
2. CONNECT TO A EXISTING LIGHTING CIRCUIT. IT IS THE INTENT TO RETAIN AND REUSE THE EXISTING LIGHTING CIRCUIT SERVING THE AREA IN SCOPE OF TO CONNECT ALL NEW LIGHT FIXTURES UNLESS NOTED OTHERWISE.
3. CONNECT TO EXISTING CORRIDOR LIGHTING.
4. SUSPEND LIGHT FIXTURE TYPE 'B' AT 8'–0"AFF TO BOTTOM OF FIXTURE.
5. SUSPEND LIGHT FIXTURE TYPE 'D' AT 12'–0"AFF TO BOTTOM OF FIXTURE.
6. PROVIDE THREADED ROD SUSPEND DEVICE TYPICAL. BOTTOM OF DEVICE SHALL MATCH HVAC DIFFUSERS.
7. CONNECT LIGHT FIXTURES TO EXISTING CORRIDOR LIGHTING CIRCUIT. VERIFY LOAD PRIOR TO ANY NEW CONNECTION.
8. CONNECT EXIT LIGHT TO EXISTING EXIT LIGHTING CIRCUIT. VERIFY LOAD PRIOR TO ANY NEW CONNECTION.
9. CONNECT EMERGENCY BATTERY PACK TO BE CHARGING AT ALL TIMES (UNSWITCHED). LIGHT FIXTURE SHALL BE OPERATED BY THE CORRESPONDING SWITCH – TYPICAL.



KEYPLAN

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STATE OF TEXAS
RAY PEYNADO
125390
LICENSED PROFESSIONAL ENGINEER

1.30.2019

SHEET TITLE: PROPOSED LIGHTING FLOOR PLAN
PROJECT NAME: NAH CAMPUS CLE CONVERSION STC PROJECT #18-19-1037
OWNER: SOUTH TEXAS COLLEGE
PROJECT ADDRESS: 1101 E VERMONT McALLEN, TEXAS 78503

ISSUE DATE: JANUARY 30, 2019

PROJECT NO: 1828

REVISIONS

1	ADDENDUM 2/12/19
-	-
-	-
-	-
-	-
-	-
-	-

SHEET NUMBER: E3.10

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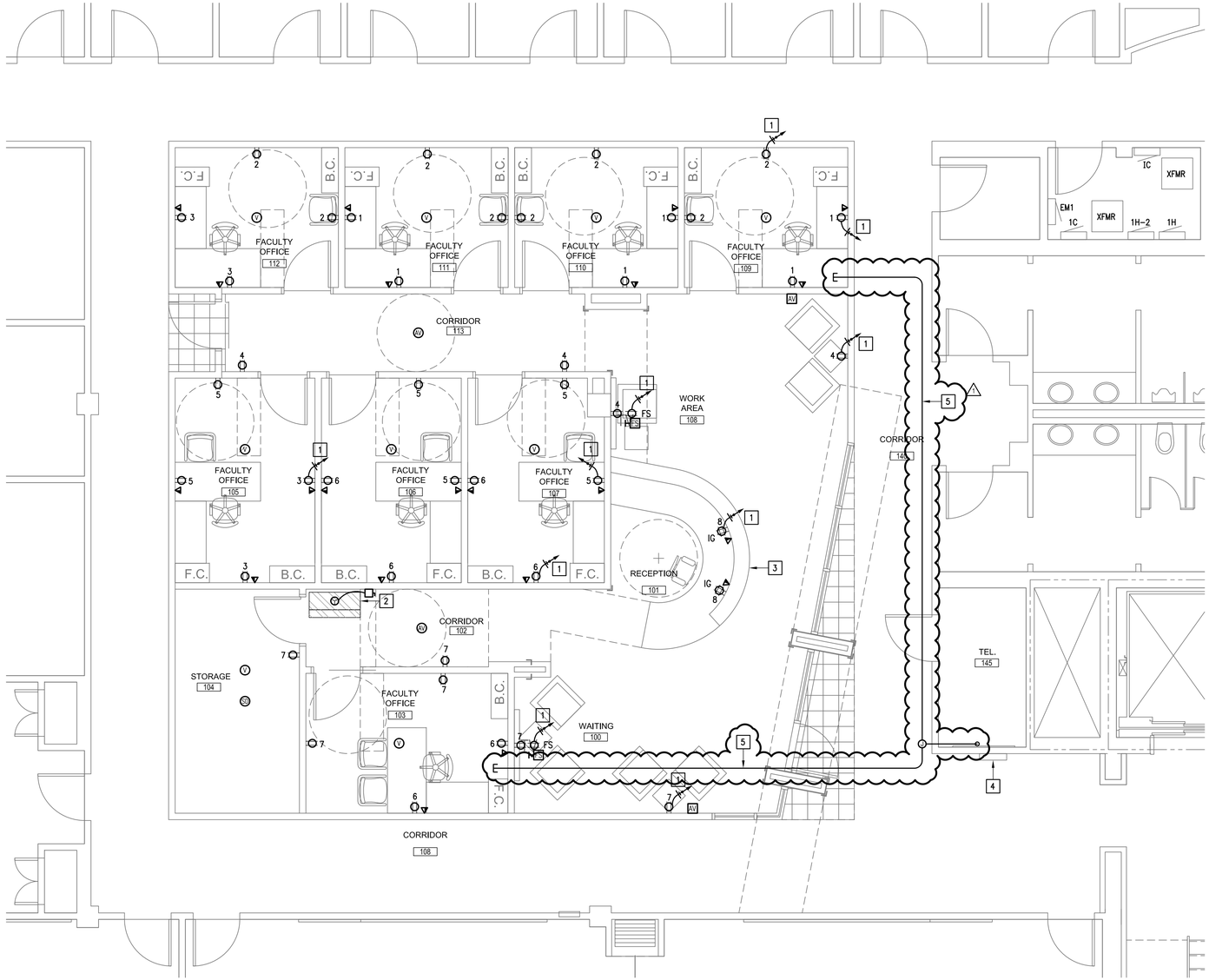


PROPOSED ELECTRICAL FLOOR PLAN

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

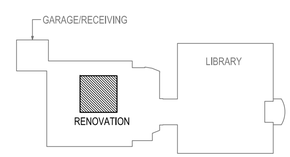
E1

GENERAL NOTES:

1. ELECTRICAL BRANCH CIRCUIT HOMERUNS SHALL BE 3/4" – 2#12 & #12G. 20A/120V HOMERUNS EXCEEDING 100FT, THE WIRE SIZE SHALL BE #10 & #8 FOR 175'.
2. HOMERUNS – INSTALL NO MORE THAN THREE PER RACEWAY (INCLUDING LIGHTING BRANCH CIRCUITS); 3 INSULATED "HOT", 3 INSULATED "NEUTRAL AND 1 SHARED "GROUND".
3. PROVIDE ALL ELECTRICAL RECEPTACLES INSTALLED WITH THE GROUND OPENING IN THE "UP" POSITION.
4. EACH 20A/1P BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL.
4. PAINT ALL EXPOSED RACEWAYS, HANGERS, BOXES, SUPPORTS AND ACCESSORIES IN INTERIOR AND EXTERIOR EXPOSED AREAS. COORDINATE PAINT TYPE, COLOR AND SCOPE OF WORK WITH ARCHITECT.
5. ALL RACEWAYS IN EXPOSED CEILING AREAS SHALL BE CONCEALED TO MAXIMUM EXTENT POSSIBLE. CONCEAL RACEWAYS ABOVE SUSPENDED CEILING CLOUDS WHERE POSSIBLE. HORIZONTAL RACEWAY RUNS SHALL BE ROUTED BETWEEN STRUCTURAL STEEL Z-PURLINS.

KEYED NOTES:

1. CONNECT TO EXISTING PANELS "1C" & "1C". IT IS THE INTENT TO RETAIN AND REUSE EXISTING CIRCUITS SERVING THE AREA IN SCOPE OF WORK THAT ARE NO LONGER IN USE DUE TO DEMOLITION.
2. CONNECT NEW VAV TO EXISTING PANEL 1H-2 (CUTLER HAMMER TYPE PRL-2A). PROVIDE A 20A/1P BREAKER IN AVAILABLE SPACE. PROVIDE A 30A, 2PNF, 600V, S/N, NEMA 1 DISCONNECT ABOVE CEILING WALL MOUNTED ADJACENT TO VAV.
3. MOUNT WIRING DEVICES TO MILLWORK FACES. ALL RACEWAYS TO BE CONCEALED WITHIN MILLWORK WALL CAVITY. REFER TO ARCHITECTURAL MILLWORK DETAILS AND ELEVATIONS FOR WIRING DEVICES EXACT LOCATION AND MOUNTING HEIGHTS. COORDINATE INSTALLATION WITH MILLWORK CONTRACTOR PRIOR TO ANY ROUGH-IN – TYPICAL.
4. APPROXIMATE LOCATION OF EXISTING CERBERUS PYROTRONICS MXL-IQ FIRE ALARM CONTROL PANEL.
5. PROVIDE 2-3" RACEWAYS ABOVE CEILING WITH PULLWIRE FOR SPECIAL SYSTEMS CABLING. ROUTE FROM AN ACCESSIBLE LOCATION ABOVE THE CEILING IN OFFICE AND TERMINATE AT TELEPHONE BOARD.



KEYPLAN

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1.30.2019

SHEET TITLE: PROPOSED ELECTRICAL FLOOR PLAN
PROJECT NAME: NAH CAMPUS CLE CONVERSION STC PROJECT #18-19-1037
OWNER: SOUTH TEXAS COLLEGE
PROJECT ADDRESS: 1101 E VERMONT McALLEN, TEXAS 78503

ISSUE DATE: JANUARY 30, 2019

PROJECT NO: 1828

REVISIONS

1	ADDENDUM 2/12/19
-	-
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-	-
-	-
-	-
-	-

SHEET NUMBER: E3.20

TYPE A2,A2E,A3,A3E,A4 & A4E
LIGHT FIXTURE IMAGE

01 SCALE : NOT TO SCALE

TYPE B
LIGHT FIXTURE IMAGE

02 SCALE : NOT TO SCALE

TYPE C1, C1E, C2 & C2E
LIGHT FIXTURE IMAGE

03 SCALE : NOT TO SCALE

TYPE D
LIGHT FIXTURE IMAGE

04 SCALE : NOT TO SCALE

TYPE X1 & X2
LIGHT FIXTURE IMAGE

05 SCALE : NOT TO SCALE

WALL SWITCH STATION
TYPE nPODM DX

06 SCALE : NOT TO SCALE

POWER PACK
TYPE nPP16 D

07 SCALE : NOT TO SCALE

WALL SWITCH SENSOR
TYPE WSX D

08 SCALE : NOT TO SCALE

LUMINAIRE SCHEDULE

CALLOUT	LAMP	DESCRIPTION	DRIVER	MOUNTING	MODEL	INPUT WATTS	VOLTS	NOTE	LUMEN MAINT.	LUMENS / LAMP
A2	LED	2'x2' FLAT PANEL	0-10V	SURFACE	LITHONIA: EPANL 2X2 2000LM 40K ZT MVOLT	20	MULTIPLE		LM-70	2030
A2E	LED	2'x2' FLAT PANEL	0-10V	SURFACE	LITHONIA: EPANL 2X2 2000LM 40K ZT MVOLT EL14L	20	MULTIPLE	PROVIDE WITH AN EMERGENCY BATTERY PACK.	LM-70	2030
A3	LED	2'x2' FLAT PANEL	0-10V	SURFACE	LITHONIA: EPANL 2X2 3400LM 40K ZT MVOLT	33	MULTIPLE		LM-70	3364
A4	LED	2'x2' FLAT PANEL	0-10V	SURFACE	LITHONIA: EPANL 2X2 4800LM 40K ZT MVOLT	36	MULTIPLE		LM-70	4578
B	LED	DECORATIVE PENDANT	0-10V	CABLE	DELRAY: 6713 S W40 BDIM-W11 SR	51	277V 1P 2W			3780
C1	LED	6" DOWNLIGHT	0-10V	RECESSED	LITHONIA: LDN6 40/10 L06 AR LSS MVOLT GZ10 TRW	35	277V 1P 2W	PROVIDE WITH 24" BAR HANGERS, A WHITE PAINTED FLANGE AND AN EMERGENCY BATTERY PACK.	LM-70	1000
C1E	LED	6" DOWNLIGHT	0-10V	RECESSED	LITHONIA: LDN6 40/10 L06 AR LSS MVOLT GZ10 TRW ELSD	35	277V 1P 2W	PROVIDE WITH 24" BAR HANGERS, A WHITE PAINTED FLANGE AND AN EMERGENCY BATTERY PACK.	LM-70	1000
C2	LED	6" DOWNLIGHT	0-10V	RECESSED	LITHONIA: LDN6 40/05 L06 AR LSS MVOLT GZ10 TRW	35	277V 1P 2W	PROVIDE WITH 24" BAR HANGERS, A WHITE PAINTED FLANGE AND AN EMERGENCY BATTERY PACK.	LM-70	500
C2E	LED	6" DOWNLIGHT	0-10V	RECESSED	LITHONIA: LDN6 40/05 L06 AR LSS MVOLT GZ10 TRW EL7L	35	277V 1P 2W	PROVIDE WITH 24" BAR HANGERS, A WHITE PAINTED FLANGE AND AN EMERGENCY BATTERY PACK.	LM-70	500
D	LED	6" CYLINDER	0-10V	PENDANT	GOTHAM: ICO CYL 40/35 6AR _ 70D MVOLT EZB PM X CYSX	55	277V 1P 2W	STANDARD COLOR FINISH TO BE SELECTED AT A LATER DATE.	LM-70	3500
X1	LED	SINGLE SIDED EXIT SIGN		WALL	LITHONIA: LE S W 1 R EL N SD MULE LIGHTING: MD-B-1-R-BA-SD	2	277V 1P 2W	PROVIDE WITH A UNIVERSAL MOUNTING CANOPY, LIGHT EMITTING DIODES, & A NI-CAD BATTERY PACK.		0
X2	LED	DOUBLE SIDED EXIT SIGN		WALL/CEILING	LITHONIA: LE S W 2 R EL N SD MULE LIGHTING: MD-B-2-R-BA-SD	2	277V 1P 2W	PROVIDE WITH A UNIVERSAL MOUNTING CANOPY, LIGHT EMITTING DIODES, & A NI-CAD BATTERY PACK.		0

GENERAL NOTES:
1. OTHER LIGHT FIXTURE MANUFACTURERS THAN THOSE LISTED ON THIS SCHEDULE ARE REQUIRED TO OBTAIN PRIOR APPROVAL BY SUBMITTING CUT SHEETS OF THEIR SUBSTITUTIONS AT LEAST (10) DAYS PRIOR TO BID. CUT SHEETS SHALL INDICATE/HIGHLIGHT PHOTOMETRIC CURVE, EFFICIENCY & CONSTRUCTION FOR DIRECT COMPARISON WITH SPECIFIED FIXTURES.
2. EXTRA MATERIALS: SEE SPECIFCATIONS.
3. EMERGENCY BATTERY PACKS SHALL BE COMPLETE FACTORY INSTALLED WITH NI-CAD BATTERY, CHARGER INDICATING LIGHT, ELECTRONIC CIRCUITRY, 1400 LUMENS OUTPUT, 90 MINUTES DURATION & FIVE FULL YEARS WARRANTY.
4. FURNISH ALL 2' X 2' LAY-IN LIGHT FIXTURES WITH INTEGRAL CEILING CLIPS.

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SHEET TITLE
PROPOSED LUMINAIRE SCHEDULE & IMAGES
PROJECT NAME
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OWNER
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PROJECT ADDRESS
1101 E VERMONT McALLEN, TEXAS 78503

ISSUE DATE
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1	ADDENDUM 2/12/19
-	-
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SHEET NUMBER
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