



730 Howe Avenue, Suite 450  
Sacramento, CA 95825  
Phone: 916.921.2112  
Fax: 916.921.2212

March 14, 2019

**Henry + Associates Project No. 18-32-046**

DSA File No. 39-50

DSA Application No. 02-117209

**ADDENDUM NO. 01**  
**Relocatable Buildings Houston School**  
Lodi Unified School District  
Lodi, California



Henry + Associates

1. ALL WORKMANSHIP, MATERIALS, APPLIANCES AND EQUIPMENT which may be included in the following items shall be the same relative quality as described for similar work set forth in the original or main specifications of which these Addendum items shall be considered a part.
2. ADDENDUM DRAWINGS (included in the back of this Addendum).  
The following Addendum drawings modify or supplement the issued bid documents:

AD1.01	REVISION TO SHEET E001
AD1.02	REVISION TO SHEET E130
AD1.03	REVISION TO SHEET E310
AD1.04	REVISION TO SHEET E500

3. PROJECT MANUAL:

- A. Add the following specifications section 27 20 00, DATA COMMUNICATIONS included at the back of this addendum.

4. DRAWINGS:

- A. Replace sheet E001 with Addendum Drawing AD1.01.
- B. Replace sheet E130 with Addendum Drawing AD1.02.
- C. Replace sheet E310 with Addendum Drawing AD1.03.
- D. Replace sheet E500 with Addendum Drawing AD1.04.

5. OTHER:

- A. Pre-Bid Meeting sign in sheet is attached at the back of this addendum.

\* \* \* END OF ADDENDUM \* \* \*

**SECTION 27 20 00**  
**DATA COMMUNICATIONS**

**PART 1 – GENERAL**

**1.01 Introduction**

The following specifications are intended to assist in the development of a telecommunications system for accommodating present and future technologies within the Lodi Unified School District. They provide a set of instructions and materials needed to install a telecommunications system within parameters set by industry standards. The requirements for the structured cabling systems within the facilities are continued in this document.

**1.02 Work Included**

- Contractor shall design and provide all materials in order to install a complete and functional data/telecommunications and cable television infrastructure.
- Only ONE Contractor shall be responsible for providing a complete and functional infrastructure, including necessary components and documentation.
- Documentation will include MS Visio drawings showing room drop locations, cable runs, and conduit pathways. Data, voice, and coax cables are all part of the same infrastructure and shall all be installed, terminated, labeled, and documented by only one contractor (no exceptions).

**1.03 Contractor Qualifications**

- Must be a Panduit Certified Installer and have an Anixter account in good standing.
- Must possess a valid C-7 California State contractor's license. This license must have been issued 2 years prior to the date of the bid. No other license classification is acceptable.
- Must be able to prove to the satisfaction of LUSD that they have significant experience in the installation of fiber optic systems.
  - Proper installation of fiber optic cable
  - Fiber termination
  - Interconnecting equipment
  - Test procedures with appropriate documentation.
- Must prove employees have been trained in the proper handling and cleanup of small quantities of lead paint. Contractor must contact Technology Services, prior to any work starting for an updated list of sites that require drilling work to be handled by a dedicated asbestos vendor. In the event Contractor encounters asbestos, stop work and notify district.
- Must be in trade of installing telecommunication systems, continuously, for a period of at least 3 years prior to the date of this bid.
- Must submit at least one project reference for each of the three years prior to the date of this bid.
- Must provide a minimum of 3 references supporting a claim of experience for a similar project within 2 years prior to this bid. These project references shall contain the starting and ending contract price, the project foreman or superintendent's name, and the name, address, and telephone number of a project contact.
- Must also provide a list of key installation personnel, their hire dates and a resume of their experience. Key installation personnel shall include at least one foreman and two journey level installers or technicians. By submitting the names of these personnel, contractor is committing them to the execution of the project outlined in this specification.

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### **1.04 Requirements**

Drawings and General Provisions of the contract, including General and Supplementary Conditions and Division 1 Specifications Sections shall apply to work specified, in this Section.

#### **Rules and Regulations**

All work and materials shall be in full accordance with the latest rules and regulations of the following:

- EIA/TIA Standards
- BICSI Standards
- NEC Standards
- Title 24 (California Code of Regulation)
- All Local Codes
- LUSD Standards
- NFPA Standards
- ADA Requirements
- Safety, Health and Environmental Standards

#### **Permits, Fees, and Inspections**

Contractor shall be responsible for all fees and permits required to any governmental agency having jurisdiction over the work of this section. Contractor shall arrange inspections required by any local ordinances during construction. Upon completion of the work, satisfactory evidence shall be furnished to LUSD to show that all work has been installed in accordance with the code(s).

#### **Examination of Site**

Contractor shall be held to have visited the site and been satisfied with the conditions under which the work is to be performed. Contractor shall check existing conditions that may affect the work. If the contractor retains services of other firms, those firms shall investigate existing systems and determine labor and other materials required to add devices or modify systems. No allowance shall subsequently be made on the contractor's behalf, for any extra expense resulting from a failure or neglect to discover conditions affecting the work.

#### **Cleaning and Cleanup**

All work areas shall be cleaned to remove all dust, dirt, grease, paint, or other marks. All electrical equipment shall be left in a clean condition inside and out, satisfactory to LUSD. Buildings and premises will be kept free from accumulated waste materials, rubbish and debris resulting from work. Upon completion of work: tools, appliances, surplus and waste materials, rubbish and/or debris will be removed and/or legally disposed of offsite.

#### **Interruption of Services**

- The underground route may run through areas of existing underground irrigation, signal, power, gas, water and sewer.
- Contractor must take precautions to avoid damaging/killing the root systems of existing trees. Contractor shall hand-dig as necessary to prevent disruption to existing systems, and make all repairs as required if damage occurred, at no additional cost to LUSD.
- LUSD will make every effort to assist contractor in locating existing underground routes. However, contractor will be required to pothole and inspect as needed. Contractor is responsible for USA surveys (Underground Service Alert).
- Power and signal services to existing buildings and related circuits are to remain in operation and shall not be interrupted, except by specific written approval from LUSD.
- If it is deemed necessary to shutdown circuits for the installation of new work, such shutdowns

shall be scheduled with LUSD who may at its choosing, have a representative present during shutdown. Shutdowns shall be scheduled "after hours" or on weekends when an interruption would not cause a disturbance to school activities. Any accidental interruption of service to circuits or equipment as a result of work performed by the contractor shall be restored immediately in a manner acceptable to LUSD, at the contractor's expense.

### **Cooperation and Coordination**

Contractor shall be solely responsible for instituting and maintaining safe working conditions for the project area under construction. Noise, dust, and other nuisance control measures will be implemented as effectively as possible. Work will be executed at a time when the space required by this installation is accessible. Adequate barrier and trench covers will be provided, and no equipment will be left unattended, ensuring the safety of students and staff.

### **Inspection**

Contractor shall cooperate with the LUSD Designer/Inspector and provide assistance at all times for inspection of the work performed under this contract. Work that will be contained behind or under access covers, ground covering, or similar impediments shall be left exposed until inspected by LUSD. Contractor shall remove covers, operate devices, or perform any reasonable work that, in the opinion of LUSD, will be necessary to determine the quality and adequacy of the work.

### **Manufacturers Direction**

Contractor shall follow manufacturer's directions that cover points not included in the drawings or specifications.

### **Workmanship**

Contractor shall take all precautions necessary to protect existing structures. Structures or items to remain that are damaged during the course of work, shall be repaired or replaced by the contractor. Good workmanship shall be evident by the proper installation of all materials and equipment. Equipment shall be level, plumb and true with the structure and other equipment. All materials shall be firmly secured in place, adequately supported and permanent.

### **Contractor's Supervision**

Contractor shall personally, or through an authorized and competent representative, constantly supervise the work from its commencement to its completion and acceptance. Contractor shall have the same foreman and workers on the job from its commencement to its completion, as much as possible. LUSD shall be notified of any personnel changes and supplied with the proper documents for any new personnel (I.e. lead certificates). All non-LUSD personnel shall be identified either by an ID tag or uniform with a company logo when on school grounds.

### **Scheduling of Work**

Due to its nature, this work will have to proceed with a definite sequence of operations to minimize outages and continue facilities to all areas. The site will remain in operation during the work, and the contractor shall make every effort to maintain required services.

### **Guarantees**

- Acceptance of the contract for this work includes this guarantee: Contractor guarantees that he has performed the work in accordance with the contract documents. Contractor also agrees to replace or repair, as new, any defective work, materials, or parts which appears within 4 years of final payment. LUSD will make the final determination of whether any defects are the responsibility of the contractor to replace or repair.
- Warranties, guarantees and certificates shall be provided for equipment and materials furnished and installed, as of the date of final payment and be delivered to LUSD. A set of "As Built" Visio drawings and test results for all installed cabling shall be provided to LUSD, before the project

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will be considered complete.

- Panduit Pan-Net Performance Guarantee - Contractor shall provide a 25 year application performance warranty for all Panduit Pan-Net copper cable and connectivity products. The system must be installed to meet all TIA/EIA commercial building wiring standards and installed per appropriate Panduit instruction sheets. If any Panduit product fails to perform as stated above, Panduit will provide new components at no charge.

### 1.05 Submittals and Substitutions

LUSD has evaluated and approved all the approved items listed in the LUSD Parts List. Substitutions to this list are possible but must be approved before a bid is accepted. Substitutions must be submitted to LUSD 10 working days before a bid is due and will either be approved or rejected 5 working days before a bid is due. The substitution documentation shall include the comparative specification listing for the approved product and the proposed product, including a complete listing of the characteristics of the equipment in the specification.

Within 10 working days after the date of the award of the contract, contractor shall submit to 3 copies of a complete submission to LUSD for review. The submission shall consist of 5 major sections, with each section separated with index tabs:

1. Section 1 shall be the Index, which will include the project title, address, name of the firm submitting the proposal and name of the architect. Each page in the submission shall be numbered chronologically and summarized in the index.
2. Section 2 shall include a copy of the contractor's valid C-7 California State Contractor's License, documentation outlined in Section 1.02 and a list of instrumentation to be used for system testing.
3. Section 3 shall contain the pre-approved substitution submittal and the written approval from LUSD. If no substitutions are planned, it will be noted in this section as well.
4. Section 4 shall contain samples of proposed cable markers and labeling.
5. Section 5 shall contain a complete and detailed satellite cable count, workstation count, bill-of-materials and Visio drawing showing proposed work ("As Planned"). Any contractor failing to include all of the required information shall be deemed non-responsive and may be disqualified, at the discretion of LUSD.

## PART 2 – PRODUCTS AND PROCEDURES

### 2.01 Approved LUSD Parts List

An approved parts list is detailed in "Enclosure C" of this document. Preferred education pricing provided for this list is available through Anixter Inc. (1-800-ANIXTER, reference Lodi Unified).

All products must be selected from the "LUSD Parts List," unless substitutions have been approved by LUSD.

### 2.02 Labeling

- Shall follow the "LUSD Labeling Format" specified in Enclosure B, with the exception of workstation cables (i.e. patch cords).
- Shall never be hand-written.
- Shall be machine printed on clear or opaque tape, stenciled onto adhesive labels, or type written onto adhesive labels.
- Shall have font that is at least 1/8" in height, block characters, and legible.
- Shall have text that is of a color contrasting with the label so that it may be easily read. If labeling tape is utilized, the font color shall contrast with the background.
- Patch panels shall exhibit workstation numbers, in a sequential order, for all

workstations served by the new IDF.

- Shall be completed before testing commences. Labeling discrepancies found during inspection will void all test results.

### 2.03 Copper Backbone Cable

**Description:** The backbone cabling used to connect new IDF to the existing MDF, used for voice/data.

- Shall be Category 5e and installation must be in compliance with all EIA/TIA standards.
- Cable must be rated for the environment that it will be installed in, such as plenum, riser or outdoor rated.
- Only Cat 5e 110 punch blocks will be allowed for terminations. Backbone pairs shall be terminated at the top left of the blocks installed in the IDF.
- Each copper backbone cable shall be machine labeled and printed EIA/TIA 606 Section 8 compliant at each end with its respective IDF number/letter. All binder groups shall be tied off with their respective identifying ribbon at every breakout point.

### 2.04 Wi-Fi Cable

**Description:** Cabling between Wi-Fi jacks and IDF/MDF's.

- Shall be blue Category 6A - 802.3bt Type 4 and installation must be in compliance with all EIA/TIA standards.
- Each blue cable shall be terminated at both ends with white Panduit Cat 6A RJ45 jacks.
- Panduit Executive style faceplate shall be used at access point location.
- Wireless access points shall be in every classroom, common areas, and exterior for full campus coverage.

### 2.05 Workstation Cable

**Description:** Cabling between workstations and IDF/MDF's.

- Installation must be in compliance with all EIA/TIA standards.
- Each standard classroom must have a minimum of two workstations:
  - One workstation (the teacher's) consists of 2 purple Cat 6A cables and 1 grey Cat 6A cable.
  - The second workstation (the student's) consists of 4 purple Cat 6A cables.
  - Each purple cable shall be terminated at both ends with a beige Panduit Cat 6A RJ45 jacks.
  - Each gray cable shall be terminated, with slack loop at IDF/MDF location with a Cat 6A black RJ45 for VOIP and 110 punch block for non-VOIP. District will identify where to use VOIP and where to non-VOIP. Workstation terminates with a black Panduit, Cat 6A RJ45 jack.
- Panduit LDP series or Panduit T-70 series (both Cat 6A compliant) raceway shall be used on interior walls where raceway is required for station drops.
- Copper station cabling may run outside of conduits and above T-Bar suspended ceilings when available. Cables installed in this fashion must follow these guidelines:
  - Run horizontally in bundles and tie down neatly without the use of zip-ties.
  - Be well clear of any light fixtures or other electrical appliances that may affect data transmissions.
  - Have their own support system, such as J-Hooks or a cable tray
  - Cable tray shall be a minimum of 12"x4" wire mesh and UL listed.

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- Cannot be supported by other items in the ceiling such as conduit, ducts and ceiling grids.

### 2.06 Fiber Inner Duct

**Description:** Ducting specifically manufactured to enclose and protect fiber optic cable.

- Must be used for all fiber installations, with exceptions where conduits are too small to run inner duct.
- LUSD will be notified, in writing, that conduits might be too small to run inner duct. LUSD must approve, in writing, any fiber run not in inner duct.

### 2.07 Fiber Distribution

**Description:** The backbone cabling used to connect new IDF to the existing MDF.

- Only 50 um-multimode fiber (OM3) shall be used and installation must comply with all EIA/TIA standards.
- Provide 6-strand fiber between the existing MDF and new IDF.
- SC style connectors shall be used for all fiber termination.
- All fiber strands shall be terminated and labeled at both ends with its respective IDF identifier.
- All fiber interconnect devices shall be labeled with their respective IDF identifier.
- At each location where the fiber cable is exposed to human intrusion, it shall be marked with warning tags. These tags shall be yellow or orange in color, and shall contain the warning: "CAUTION FIBER OPTIC CABLE." The text shall be black, block characters and at least 3/16" high. A warning tag shall be permanently affixed to each exposed cable or bundle of cables.

### 2.08 Main Distribution Facility (MDF)

- existing

### 2.09 Intermediate Distribution Facility (IDF)

**Description:** A location in a building that interconnects and manages the telecommunications wiring between the MDF and workstation devices.

- Must be in compliance with all EIA/TIA standards.
- Must have fire treated ¾" plywood inside the cabinet.
- Cabinet must have a dedicated power outlet mounted inside.
- Must have lockable 48" tall, 19-inch, front and rear swing cabinets in unsecured locations.
- Cabinet shall be load tested with no less than 200 pounds and up to rated shear strength.
- Cabinets must adhere to ADA requirements. See Enclosure G
- A Panduit wire manager must be mounted in-between every patch panel (must use one wire management panel for every patch panel).
- A 3-foot slack loop shall be required at IDF for all cables.

### 2.10 Backboard



**Description:** Generally, refers to the plywood sheeting lining the back of equipment cabinets.

- Must have fire treated ¾" plywood.
- Dimensions shall be no larger than the cabinet/IDF installed in a classroom.
- Shall be no thinner than 5/8."

## 2.11 Grounding and Bonding

**Description:** Generally, refers to the grounding and bonding requirements for telecommunications rooms, including data cabinets, racks, and ladder racking systems. Strictly adhere to all Building Industry Consulting Service International (BICSI), Telecommunications Industry Association (TIA) recommended installation, best practices, codes, and standards when installing the grounding and telecommunications bonding infrastructure.

## 2.12 Testing and Documentation

**Testing:** Contractor shall test each fiber strand and each pair of twisted pair copper cable after labeling is 100% complete. LUSD reserves the right to have a representative present during testing.

- ☐ **Fiber Optics Cable:** Each strand shall undergo bi-directional testing for signal attenuation losses.
  - Test Equipment:
    - Multi-mode: Fluke DSP 4000 for equivalent.
    - Single-mode: Laser Precision TD2000 OTDR with appropriate modules, or equivalent.
  - Tests:
    - Multi-mode: Bi-directional signal attenuation at 850 and 1300 nm.
  - Test Criteria:
    - Signal loss less than the link loss budget as determined by the tables below.

SC Connector Pair	0.5dB
<b>Multi-Mode Cable</b>	
Wavelength (nm)	Maximum Attenuation (dB/km)
850	3.5
1300	1.5

Example: A link with 3 connectors and a total length of 500m should have a maximum attenuation of 3.25dB at 850nm and 2.25dB at 1300nm

- ☐ **Workstation Cable:** Each workstation cable shall be tested from the Jack Panel to the data outlet after labeling is completed.
  - Test Equipment: Fluke DSP-4000 or equivalent.
  - Tests: Conform to EIA/TIA Standards for Category 6A.
  - Test Criteria: Tested to Category 6A for permanent link compliance.
- ☐ **Wi-Fi Cable:** Each Wi-Fi cable shall be tested from the Jack Panel to the data outlet after labeling is completed.
  - Test Equipment: Fluke DSP-4000 or equivalent.
  - Tests: Conform to EIA/TIA Standards for Category 6A and 802.3bt Type 4.
  - Test Criteria: Tested to Category 6A for permanent link compliance.

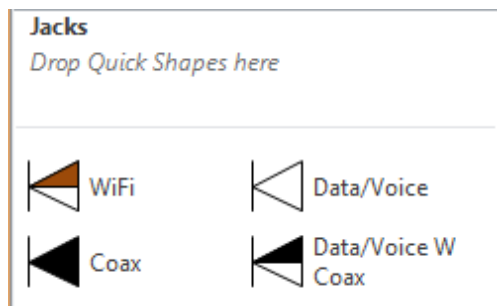
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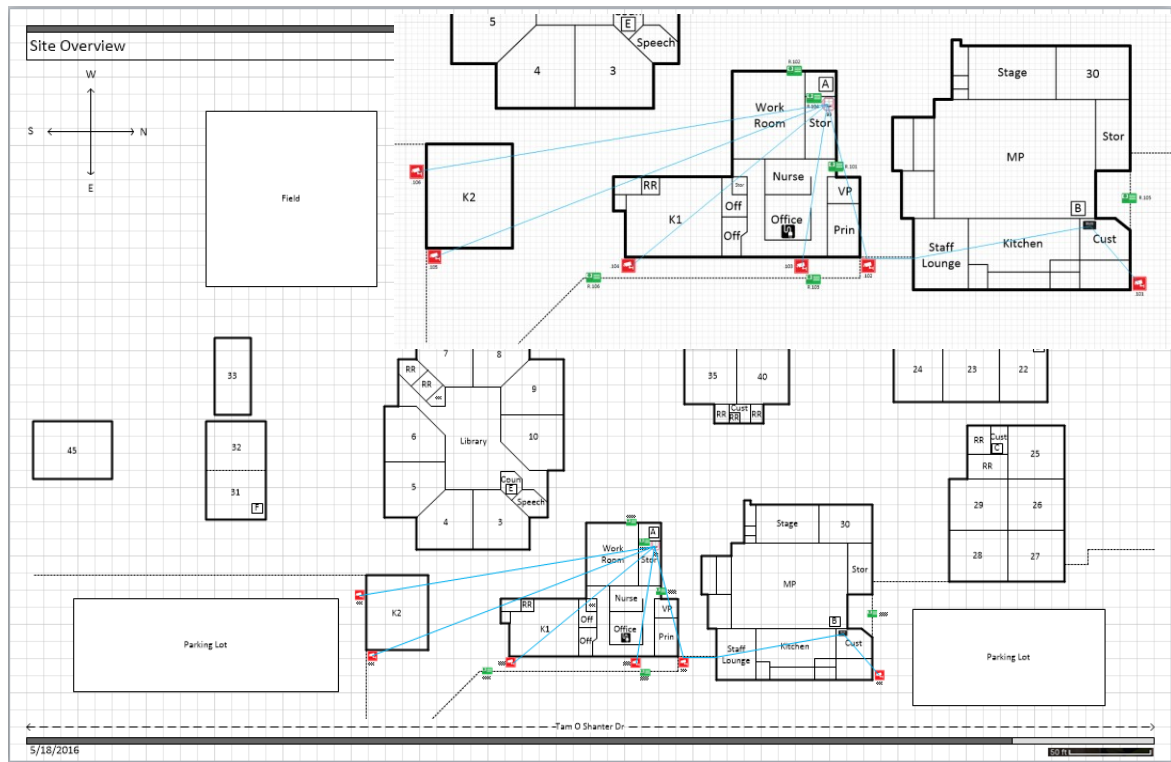
**Documentation:** Contractor shall provide documentation to include test results and Visio "As- Built" drawings in both soft and hard copy format.

- ☐ **Fiber Test Results:** Shall be entered onto the attached form "Fiber Test Results."
  - Only original signed copies will be acceptable.
  - Hand written results are not acceptable.
  - Copies of test results are not acceptable.
  - Test results shall be in PDF format.
- ☐ **Workstation/Wi-Fi Test Results:** Shall be provided in the form of printouts from the test equipment, as well as computer file copies on CD including the software needed to read the results.
  - Only original signed copies will be acceptable.
  - Hand written results are not acceptable.
  - Copies of test results are not acceptable.
  - Test results shall be in PDF format.
- ☐ **As-Built Drawings:** Contractor shall produce drawings while adhering to the following guidelines:
  - Always use icons from the Visio stencils provided by LUSD. Not all available icons are shown below.



- Depiction of backbone cable routing.
- Submit before final inspection for punch list. Incorrect Visio drawings are punch list items and are to be corrected before re-inspection.
- Additional copies corresponding to the appropriate IDF/MDF, shall be posted in the MDF's and IDF's.

Sample of LUSD Visio drawing



Sample of LUSD Visio Backbone

### 2.13 Acceptance

Acceptance of the Data Communications System, by LUSD, shall be based on the results of testing, functionality, and the receipt of documentation.

- ☐ With regard to testing, all fiber segments and workstation data cables must meet the testing criteria established in Section 2.12 above.
- ☐ With regard to functionality, contractor must demonstrate to LUSD that Gigabit Ethernet data signals can be successfully transmitted bi-directionally, from the MDF/IDF to and from a number of individual data outlets.
  - ☐ No more than 5% of the data jacks will be tested.
    - ☐ If any locations fail, an additional 5% will be tested until no more links fail.
- ☐ With regard to documentation, all required documentation shall be submitted to LUSD

## PART 3 – EXECUTION

### 3.01 Division of Work

Contractor shall design and install the data communications system as described in the preceding documentation. Installation shall result in a functional system. The scope of work shall include:

- All necessary conduit and raceway with a Visio drawing showing proposed cable routes, existing conduit to be used, new conduit being installed, equipment racks and approximate drop location. (Note: The EIA/TIA specifies at least 2 drops per workstation location, back to the IDF/MDF).
- Necessary trenching, backfill, replacement of landscape material, repair of damage to utilities

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or structures, replacement of asphalt and base, and replacement or repair to concrete work resulting from conduit or raceway installation.

- Provide and install all equipment.
- Test and document system upon completion. Copies of all other forms and enclosures shall be included.
- Supply and install all necessary materials resulting in a safe, complete and functional system. The scope of work shall be reviewed by no less than 1 person for completeness from the following departments: Facilities & Planning, Maintenance & Operations.

### PART 4 – CONDUIT

#### 4.01 Underground

- Contractor will use PVC schedule 40 underground, with rigid 90-degree elbows and tracer tape placed 6" to 12" over the top of the PVC portions. Elbows shall have a radius of at least 10 times the diameter of the conduit used.
- See NEC for appropriate depths and pull box sizes.
- Should be next to existing underground where possible.
- All new underground conduits shall be (2) 2" plus (1) 2" spare, PVC to support data/voice/intercom/PA. All new underground conduits shall be 2" PVC to support fire alarm.
- Areas near tree roots and other underground utilities will need to be hand dug. LUSD will identify those areas. Pull boxes are to have traffic lid covers (that say Data). The bottom will be grooved with drains installed. LUSD will provide diagrams upon request.

#### 4.02 Aboveground

- All roof penetrations shall be approved by LUSD, before actual penetration is made.
- All exterior conduit that is accessible shall be in rigid conduit.
- A pull rope will be installed in all new and existing conduits used, including underground and interior conduit.
- Firewall penetrations will extend through the wall a minimum of 12 inches.
  - Shall be sealed around the outside with firecaulk.
  - Shall be sealed around the inside with firecaulk duct seal (the depth shall be 50% diameter of the conduit).
  - No innerduct shall be installed in a firewall penetration.
- Conduit size to be determined by EIA/TIA Standards leaving room for future expansion.
- LB's shall not be used in new and existing conduit for data applications.
- Data/Voice conduits shall service LUSD's voice and managed IP network only.

#### 4.03 Portable Classrooms

- All conduits to be installed on the exterior of a portable will be approved by LUSD personnel before installation.
- The center beam of a portable shall not be penetrated.

### PART 5 – CONCRETE

- ALL concrete and asphalt repair shall be included in the scope of work and will be replaced from joint to joint (no patching, except when done temporarily for safety).
- Soft patch may not be used as a permanent patch for asphalt or concrete.

## PART 6 – Change Orders

ALL change orders shall be routed to the department originating the project. Departments are typically Facilities & Planning and Technology Services and will be approved or disapproved on a case by case basis.

Approved change order form will be added to the scope of work and completed as a part of the contract.

## PART 7 – Departure from Specifications

During unusual or unique situations, a departure from specifications (DFS) may be granted for specific locations and/or equipment. Approval is granted or denied in writing by Technology Services. See section 1.05 for materials substitutions.

The contractor will keep all forms on file until the warranty on the installation expires.

## PART 8 – Asbestos and Lead Containing Paint Waiver

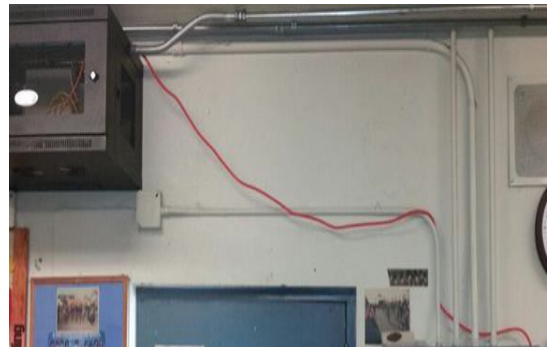
Asbestos work must be performed by M&O approved certified remediation company. Contractor must contact LUSD's Maintenance and Operations (M&O) department for a current list of Asbestos Hazard Emergency Response Act (AHERA) sites, requiring work to be performed by a remediation company.

All District sites will be considered to be a lead containing paint facility unless the area of work has been sampled and determined to be otherwise. All work including but not limited to cutting and/or hole drilling will be performed by a lead awareness trained individual that is also trained in HW collection and disposal activities. Otherwise the contractor must employ the services of an environmental company approved by M&O and certified to perform these duties. All environmental activity will be reported to the Maintenance & Operation Structural Supervisor at (209) 331-7193 prior to the commencement of work.

## PART 9 POWER

All cabinets will have a dedicated circuit/breaker and power sources must be mounted per NEC requirements.

During the initial walk with Technology Services, power sources will be identified. If power source is not available, Technology Services will work with M&O to coordinate the installation of power source. **Powering cabinets with extension cords is not permissible.**



### 9.01 Miscellaneous

- All wires must be labeled w/ wire-wrap style labels within 3 inches of the jacks.
- Jacks should be labeled and tested at both ends of each smallest segment according to Specifications. This type of passive cross connect is no longer allowed.

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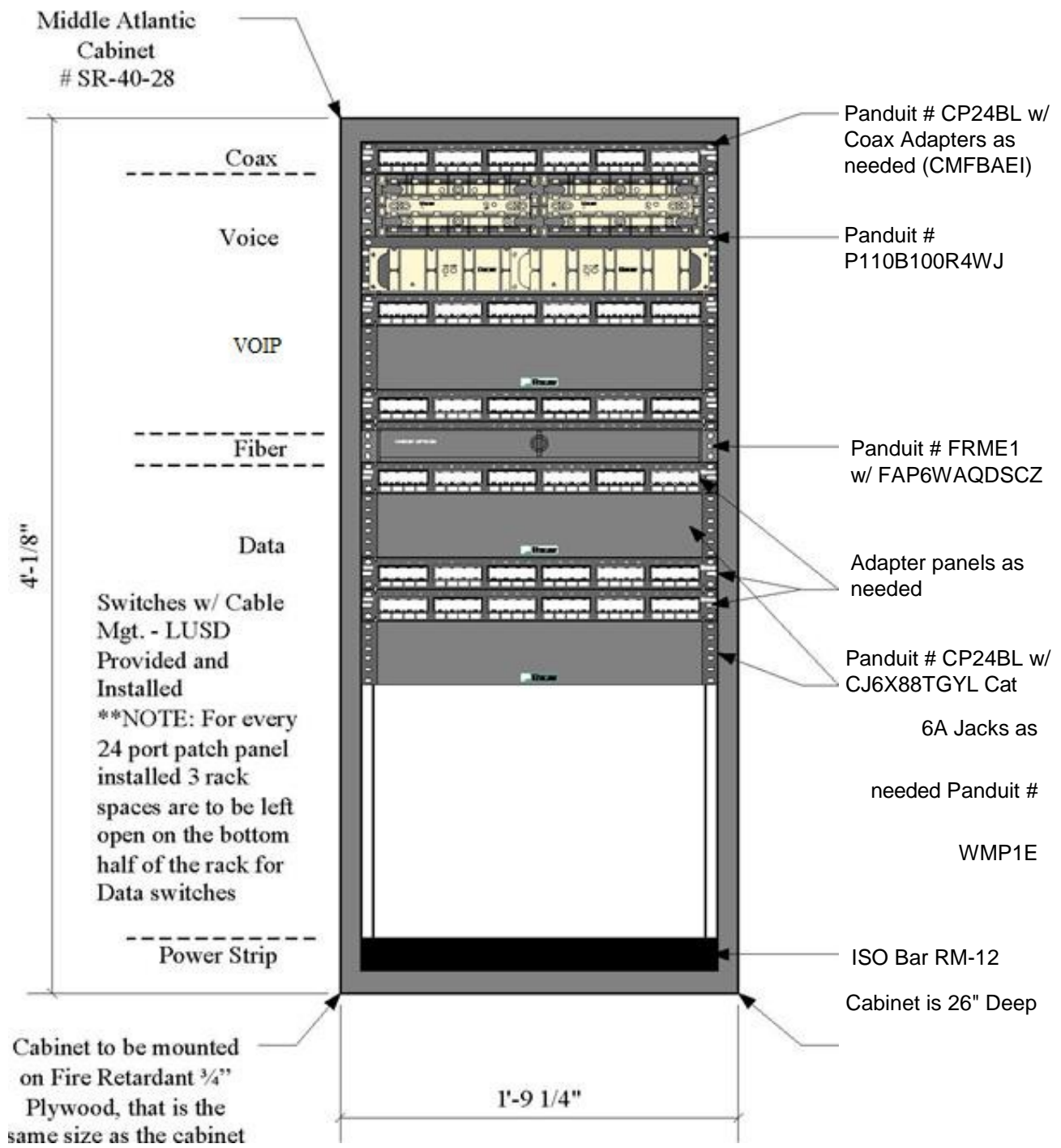
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- As of July 1<sup>st</sup>, 2016, single gang boxes are not permitted in IDFs.
- This photo depicts what **not** to use anymore.
  - Jacks are now placed in a 24 port patch panel
    - Panduit part #CP24BLY



### Enclosure A - LUSD IDF Layout

The Intended layout of ALL 19-inch racks and/or patch panels need to be verified and approved by the LUSD wiring inspector of the I.S. Department before any racks, jacks, or patch panels are mounted.



**ENCLOSURE B – LUSD LABELING FORMAT**

The LUSD labeling format is a 4-part identifier that indicates the campus, type of jack, IDF location, room, and jack. Below is a key to determine the jack information and name new locations.

**WW-XX-YY-ZZ**

CAMPUS AND VOICE OR DATA	MDF OR IDF DESIGNATION	ROOM # OR ABBREVIATION	JACK # (TWO DIGITS)
Data = Even # (Purple) Voice = Odd # (Grey) Video = C (Coax) Card Readers = CR Camera = VS NVR = NVR	MDF = A IDF-B = B IDF-C = C etc.	West Admin Office = WA East Admin Office = EA Library = Lib 15 = 15 M2 = M2 etc. Determined by Campus Architect or IT Staff.	01 (1 <sup>st</sup> Jack in Room) 02 (2 <sup>nd</sup> Jack in Room) 03 (3 <sup>rd</sup> Jack in Room) etc. Starts in corner of room and counts clockwise. New jacks increase from last jack.
See Next Page for Voice and Data numbers for each campus.			

VOICE EXAMPLE: The first voice jack in room M1 = "09-G-M1-01"

DATA EXAMPLE: The first data jack in room M2 = "10-G-M2-01"

DATA EXAMPLE: The first data jack in room E1 = "10-F-E1-01"

VOICE EXAMPLE: The first voice jack in room E1 = "09-F-E1-01"

DATA EXAMPLE: The first data jack in the West Admin Office = "10-A-

WA-01" CARD READER EXAMPLE: IDF Alpha ID + "CR" + IP

address node # = DCR101

VIDEO SURVEILLANCE CAMERA EXAMPLE: IDF Alpha ID + "VS" + IP address node

# = BVS101 NVR SECURITY EXAMPLE: IDF Alpha ID + "NVR" + IP address node # =

ANVR101

\*Dashes do not need to be included. However, the jack number must be two numeric characters

Example: "10GM201" instead of "10GM21"

**MDF/IDF'S & WORKSTATIONS** ALL JACKS ARE TO BE IDENTIFIED WITH THE  
APPROPRIATE NUMBERING SCHEME.

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All numbers must be legibly written on the jacks (or 110 punch panels, etc.) with a black permanent marker and then labeled.

Site Location	Site Numbers	
	Data	Voice
Houston	44	43

### ENCLOSURE C – APPROVED LUSD PARTS LIST

CABINET and GROUNDING			
Manufacturer	Part Number	Description	Location
Middle Atlantic	SR-40-28	40 space, black, 90" tall swinging cabinet	MDF/IDF
Middle Atlantic	Lace-44LP	Vertical Lacing Bar	MDF/IDF
Middle Atlantic	QFAN	Accessory Quiet fan for cabinet	MDF/IDF
Panduit	RGW-100-1Y	Paint piercing grounding washer kit	MDF/IDF
Panduit	RGS134-1Y	Rack Grounding Strip Kit	MDF/IDF
Panduit	RGEJ624PHY	Equipment Jumper Grounding Kit, 24" jumpers	MDF/IDF

FIBER PRODUCTS			
Manufacturer	Part Number	Description	Location
Panduit	FRME4	Holds up to 12 FAP or FMP adapter panels	MDF
Panduit	FREM3	Holds up to 9 FAP or FMP adapter panels	MDF
Panduit	FREM2U	Holds up to 6 FAP or FMP adapter panels	MDF
Panduit	FRME1U	Holds up to 3 FAP or FMP adapter panels	IDF
Panduit	FAP3WAQDSC	OM4 SC FAP loaded with 3 SC duplex coupler	MDF/IDF
General Cable	BL0061PNU	OM4 6F 50um MM TB OFNP	Backbone
General Cable	AP0061PNU	OS2 6F SM TB OFNP	Backbone
General Cable	BL0061PNU	OM4 6F 50um MM TB OFNP	Backbone
General Cable	BL0061ANU.BK	OM4 6F 50um MM TB OFNP I/O	Backbone
General Cable	AP0061ANU.BK	OS2 6F SM TB OFNP I/O	Backbone



DATA COMMUNICATIONS

27 20 00  
18-32-046

General Cable	BL0064M1A-DWB	OM4 6F 50um MM LT SINGLE JKT	Backbone
General Cagle	AQ0064M1A-DWB	OS2 6F SM LT SINGLE JKT	Backbone

WIRE MANAGMENT			
Manufacturer	Part Number	Description	Location
Panduit	WMP1E (NM2)	Wire Management to be mounted between every 24-port patch panel	MDF/IDF
Panduit	WMPSE (NM1)	Wire Management to be mounted between every switch like component	MDF/IDF

TWISTED PAIR PRODUCTS			
Manufacturer	Part Number	Description	Location
Panduit	CP24BL	24 Port Mini-Com patch panel	MDF/IDF
Panduit	CP48BLY	48 Port Mini-Com patch panel (Metal panel)	MDF/IDF/WS
Panduit	CPPL24WBLY	24 Port Mini-Com modular patch panel (Plastic)	MDF/IDF/WS
Panduit	FP6X88MTG	TX6A™ Category 6A UTP Field-Term RJ45 Plug	MDF/IDF/WS
Panduit	CJ6X88TGIG	GRAY CAT6A MOD JACK (for Server Locations)	MDF/IDF
Panduit	CJ6X88TGYL	Yellow 6A Mini-Com Jack (Access Control)	Access Control System
Panduit	CJ6X88TGWH	White 6A Min-com Jack (user Station)	WS
Panduit	CJ6X88TGBU	Blue Cat 6A Mini Com Jack (for VoIP)	MDF/IDF/WS
Panduit	CJ6X88TGGR	Green Cat 6A Mini Com Jack (for Intercom)	MDF/IDF/WS
Panduit	CJ6X88TGEI	Electric Ivory Cat 6A Mini Com Jack	WS
Panduit	UTP6XXYL	Non- Shielded Yellow 6A Patch Cord, XX is length	MDF/IDF/WS
Panduit	UTP28X*YL	Cat.6A, 28AWG, Yellow, * = length: 1,3,5,7,19,14 feet	MDF/IDF/WS
Panduit	P110B100R4WJ	19" Rack Mount Panel w 2 100pr 110 punch- down blocks and jumper troughs	MDF/IDF
Panduit	P110CB4-X	4pr 110 Connecting Clips 10pk	MDF/IDF
Panduit	P110CB5-X	5pr 110 Connecting Clips 10pk	MDF/IDF
General Cable	7133825	Purple CAT 6A CMR (for Data at workstations)	Horizontal
General Cable	7133819	Blue CAT 6A CMR (for Server drops, closets) – Wi-Fi	Horizontal

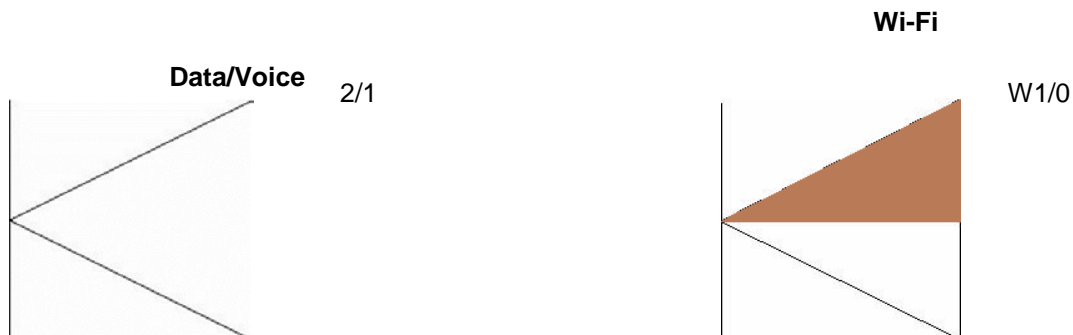
## DATA COMMUNICATIONS

27 20 00  
18-32-046

General Cable	7131823	Green CAT 6A CMP (for Intercom drops, closets)	Horizontal
General Cable	7131823	Green CAT 6A CMP (for Server drops, closets)	Horizontal
General Cable	7133767 (7133803)	Gray CAT 6 CMR 4 Pair wire (for Voice)	Horizontal
Commscope	CM-00424SMX-CF6A-02	SystiMax, Black CAT 6A OSP (Voice and Data)	Horizontal
General Cable	2131550E	Cat.5e, 25 pair CMP, White	MDF/IDF
General Cable	2133269E	Cat.5e, 25 pair CMP, Gray	MDF/IDF
Superior Essex	04-097-31	CAT 5 25 Pair OSP	MDF/IDF

RACEWAY PRODUCTS			
Manufacturer	Part Number	Description	Location
Panduit	LD-5	Raceway for Data/Wi-Fi/Access Control System	Wi-Fi/ACS
Panduit	LDP-10	Raceway for Data/Voice/Coax	WorkStation
Panduit	T-70	Raceway for Comp. Lab That will accept communications and power	WorkStation
Panduit	CMBEI-X	Mini-Com Blank Ivory	WorkStation
Panduit	CFPSE4EI	Executive Faceplate Sloped	WorkStation
Panduit	JBX3510EI-A	Single gang Junction box	WorkStation

## ENCLOSURE D - LUSD TELECOMMUNICATIONS JACK LEGEND



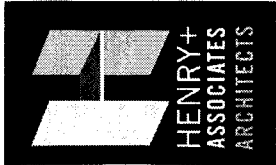
This example has “2” for two data and “1” for one voice.

**Data only** would be d/0 with “d” as the number of data jacks.

**Voice only** would be 0/v with “v” as the number of voice jacks.

Category 6A cabling/jacks are indicated by a “W” preceding the number (or jack count)

**END OF SECTION**



730 Howe Avenue, Suite 450  
 Sacramento, CA 95825  
 Phone: 916.921.2112  
 Fax: 916.921.2212

March 13, 2019

Sign-In Sheet  
 Mandatory Pre-Bid Meeting  
 Relocatable Buildings Houston School  
 Lodi Unified School District

Name	Company	Phone/Fax	Email
1 STEPHEN WATSON	HAPPY + ASSOC.	916.792.3027	stephen@happy-architecture.com
2 SOHN CURTIN	Operating Engin Local 3	209-420-8014	iscurtin@ocps.org
3 Brad Halvey	Schreder and Brandt	530 899 1104	calcolyn@schrederandbrandt.com
4 Kevin Simpson	MEET	(209) 238-9898	Kevin@modexelec.com
5 Cathy Munoz	DIEDE	109.369.8255	estimating@diiedeconstruction.com
6 Hunter Ketherling	McFadden	204 478 7407	Dustink@mcFadden construction.com
7 AMEEK OMAR	BACO CONSTRUCTORS, INC.	916-253-9373	MFOth@3065co.com
8 TERRY BAKER	Babe Const	916-385-7777	Bestimating@BabeConstructionInc.com
9 BOB VERMEULEN	MENGERTH CONST.	(209) 524-2465	charlie@mengertth.com

March 13, 2019  
 Sign-In Sheet  
**Mandatory** Pre-Bid Meeting  
 Relocatable Buildings Houston School  
 Lodi Unified School District

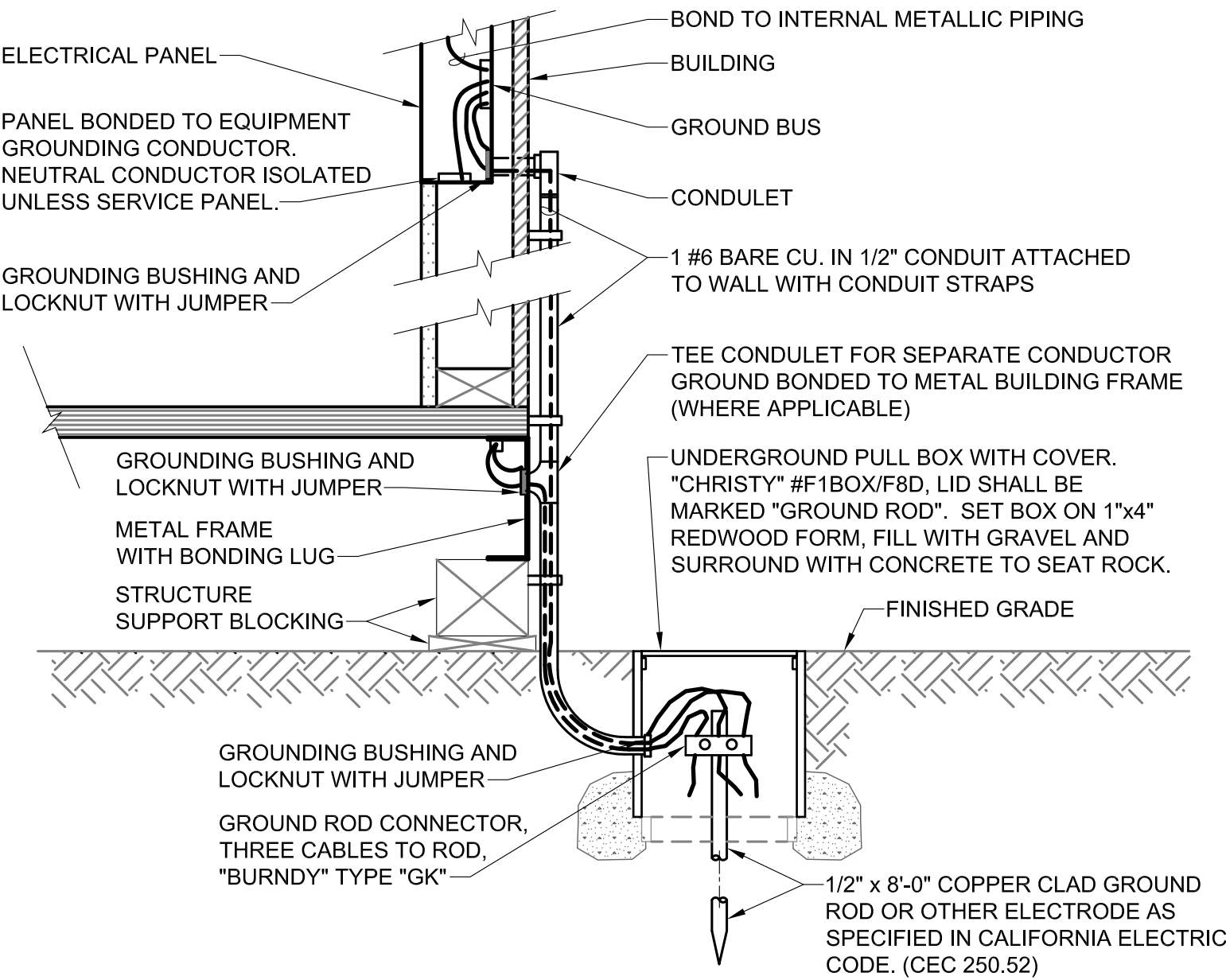
10	Russ Steffeler	LUSD	(209) 663-9216	RSteffeler@lodiusd.net
11	M. Mace Kavin	LUSD	209-224-6053	M.Kavin@lodiusd.net
12	Katie Madzier	LUSD	209 331-7225	KMADZIER@LODIUSD.NET
13	Jeff Culbertson	LUSD	209 810-8901	sculbertson@lodiusd.net
14	Joe Patty	LUSD	209 712 6363	JPatty@LODIUSD.Net
15	Vickie Brum	LUSD	209 331-7223	vbrum@lodiusd.net
16				
17				
18				
19				
20				
21				



ELECTRICAL SHEET INDEX		
No. OF SHEETS	DRAWING No.	DRAWING DESCRIPTIONS
1	E001	ELECTRICAL SHEET INDEX, SYMBOL LIST, AND ABBREVIATIONS
2	E100	SITE PLAN - ELECTRICAL DEMOLITION - SERNA AND WOODBRIDGE SCHOOLS
3	E110	SITE PLAN - ELECTRICAL DEMOLITION
4	E120	SITE PLAN - ELECTRICAL
5	E130	PARTIAL SITE PLAN - ELECTRICAL
6	E140	PARTIAL SITE PLAN - FIRE ALARM
7	E300	ONE LINE DIAGRAM - POWER
8	E310	ONE LINE DIAGRAM - SIGNAL
9	E400	FIRE ALARM NOTES, MATRIX, AND DETIALS
10	E410	FIRE ALARM SCHEDULE, RISER DIAGRAM, AND CALCS
11	E500	ELECTRICAL DETAILS

GENERAL GROUNDING NOTES:

- SIZE OF CONDUCTORS SHALL COMPLY WITH CEC 250.66.
- BOND SEPARATE CONDUCTORS FROM GROUND ROD TO METAL BUILDING FRAME, WHERE APPLICABLE, (CEC 250-81) IN ADDITION TO THE DETAIL SHOWN ON DRAWING. BOND THE ELECTRICAL GROUND TO METAL WATER PIPE EMBEDDED AT LEAST 10 FEET INTO SOIL IF AVAILABLE (CEC 250.52).
- ALL MODULES OF METAL FRAME BUILDINGS, WHERE APPLICABLE, SHALL BE ELECTRICALLY BONDED TOGETHER, (BOLTING ONLY IS NOT ACCEPTABLE).
- CHECK RESISTANCE TO GROUND. IF RESISTANCE EXCEEDS 25 OHMS, INSTALL ADDITIONAL GROUND RODS (CEC 250.53) AS REQUIRED.
- THE SITE INSPECTOR SHALL VERIFY THE GROUNDING TESTS.



1

E001

GROUNDING DETAIL

NO SCALE

ELECTRICAL SYMBOL LIST	
	JUNCTION BOX - SIZE AS REQUIRED BY CODE
	QUADPLEX CONVENIENCE OUTLET - NEMA 5-20R
	COMBINATION TELE/DATA OUTLET FLUSH IN WALL +18" A.F.F., 4-11/16" SQUARE BOX, 2-1/8" DEEP WITH 4 DEVICE RING AND PLATE, 3 JACKS AND ONE BLANK (REFER TO DATA JACKS COLOR SCHEDULE).
	DATA OUTLET - FLUSH IN WALL +18" A.F.F. NUMBER IN PARENTHESIS INDICATES NUMBER OF DATA JACKS (REFER TO DATA JACKS COLOR SCHEDULE).
	FIRE ALARM HEAT DETECTOR - CEILING MOUNTED. "AC" = ABOVE CEILING
	FIRE ALARM SMOKE DETECTOR - CEILING MOUNTED. "X" = "I", "R", "T" TO INDICATE "IONIZATION", "BEAM RECEIVER", "BEAM TRANSMITTER" TYPE DETECTOR RESPECTIVELY. THE DEFAULT TYPE IS "PHOTOELECTRIC" INDICATED BY NO LETTER.
	FIRE ALARM AUDIBLE DEVICE, +90" A.F.F. UNLESS OTHERWISE NOTED. DEFAULT DEVICE IS A HORN.
	FIRE ALARM AUDIO / VISUAL DEVICE, +80" A.F.F. DEFAULT AUDIO DEVICE IS A HORN. "YY" INDICATES STROBE CANDELA RATING.
	VISUAL FIRE ALARM DEVICE +80" A.F.F. - WALL MOUNTED (LAMP, SIGNAL LIGHT, INDICATOR LAMP, STROBE), "YY" = CANDELA RATING
	FIRE ALARM RELAY MODULE
	FIRE ALARM CONTROL MODULE
	FIRE ALARM MONITOR MODULE
	END OF LINE RESISTOR
	MASTER FIRE ALARM CONTROL PANEL
	REMOTE FIRE ALARM POWER SUPPLY
	INTERIOR IP SPEAKER AND SPEAKER OUTLET -PROVIDE IP SPEAKER PER THE OWNER'S REQUIREMENTS. COORDINATE EXACT MODEL BEFORE BID. COORDINATE LOCATION PRIOR TO ROUGH IN (REFER TO DATA JACKS COLOR SCHEDULE).
	EXTERIOR IP SPEAKER AND SPEAKER OUTLET - PROVIDE IP SPEAKER PER THE OWNER'S REQUIREMENTS. COORDINATE EXACT MODEL BEFORE BID. MATCH EXISTING ON THE SITE. COORDINATE LOCATION PRIOR TO ROUGH IN.
	CLOCK - MATCH EXISTING ON THE SITE. COORDINATE EXACT LOCATION PRIOR TO ROUGH IN.
	CONDUIT RUN CONCEALED IN CEILINGS OR WALLS. NUMBER OF HASH MARKS DENOTES QUANTITY OF WIRES. CURVED HASH MARK DENOTES QUANTITY OF #12 GREEN GROUND WIRES. CONDUCTORS OTHER THAN #12 ARE INDICATED ON PLANS. NO HASH MARKS DENOTES 2 #12 AWG AND 1 #12 GREEN GROUND IN 1/2" CONDUIT. TYPICAL FOR ALL CONDUITS.
	FLEXIBLE CONDUIT CONCEALED. NUMBER OF HASH MARKS DENOTES QUANTITY OF WIRES. CURVED HASH MARK DENOTES QUANTITY OF #12 GREEN GROUND WIRES. CONDUCTORS OTHER THAN #12 ARE INDICATED ON PLANS. NO HASH MARKS DENOTES 2 #12 AWG AND 1 #12 GREEN GROUND IN 1/2" MINIMUM DIAMETER CONDUIT.
	CONDUIT RUN UNDERFLOOR OR UNDERGROUND MINIMUM 1" DIAMETER.
	CONDUIT HOMERUN TO PANELBOARD, SWITCHBOARD OR TERMINAL CABINET
	CONDUIT STUB WITH INSULATED BUSHING
	EXISTING CONDUIT AND WIRING
	PANELBOARD - SURFACE MOUNTED
	PANELBOARD - FLUSH MOUNTED
	EXISTING PANELBOARD - SURFACE MOUNTED
	EXISTING PANELBOARD - FLUSH MOUNTED
	TERMINAL CABINET
	SWITCHBOARD, DISTRIBUTION PANEL, OR MOTOR CONTROL CENTER
	DRAWING SHEET NUMBERED NOTE DESIGNATION - APPLIES TO NUMBERED NOTE ON SAME SHEET
	DRAWING PLAN OR DETAIL DESIGNATION - "1" OR "A" DENOTES PLAN OR DETAIL NUMBER, "E-1" DENOTES SHEET NUMBER
SYMBOL LIST NOTES:	
<ol style="list-style-type: none"><li>EXISTING ELECTRICAL EQUIPMENT, OUTLETS, AND DEVICES ARE SHOWN THE SAME AS NEW, EXCEPT LIGHTLY AND ACCOMPANIED BY (E). SUCH ELECTRICAL EQUIPMENT, OUTLETS, AND DEVICES ARE TO REMAIN AS IS, UNLESS OTHERWISE NOTED ON PLAN OR SPECIFICATION.</li><li>ELECTRICAL OUTLET BOXES MOUNTED ON OPPOSITE SIDES OF FIRE-RATED WALLS OR PARTITIONS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES PER CBC 2013, WHETHER SHOWN ON THE PLANS OR NOT.</li><li>VERIFY ON SITE THAT ALL PANELBOARDS HAVE MINIMUM WORKING SPACES PER CODE AND THAT THE DEDICATED PANELBOARD SPACES ARE CLEAR OF ALL DUCTS, PIPING AND EQUIPMENT FOREIGN TO THE PANEL BOARDS. NOTIFY THE ENGINEER FOR CORRECTIVE ACTION IN THE EVENT THAT FOREIGN OBJECTS IMPEDE THE DEDICATED PANELBOARD AREAS.</li><li>WHERE CONDUIT STUB IS INDICATED, PROVIDE CONDUIT WITH BUSHING AT THE END OF CONDUIT AND PULL ROPE INTO ACCESSIBLE CEILING AREA.</li></ol>	

ABBREVIATIONS			
A	AMPERES	LT.	LIGHT
AC	ALTERNATING CURRENT	LV	LOW VOLTAGE
A.F.F.	ABOVE FINISHED FLOOR	MAX.	MAXIMUM
A.I.C.	AMPERE INTERRUPTING CAPACITY	MDF	MAIN DISTRIBUTION FRAME
AMP	AMPERE	MFR.	MANUFACTURER
AWG	AMERICAN WIRE GAUGE	MIN.	MINIMUM
BKR	BREAKER	MTD.	MOUNTED
C.	CONDUIT	N	NEUTRAL
C.B.	CIRCUIT BREAKER	(N)	NEW
CD	CANDELA	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
CKT	CIRCUIT	N.I.C.	NOT IN CONTRACT
C.O.	CONDUIT ONLY, WITH PULL WIRE	NL	NIGHT LIGHT
C.T.	CURRENT TRANSFORMER	NM	NON-METALLIC CABLE
DC	DIRECT CURRENT	PFB	PROVISIONS FOR FUTURE CIRCUIT BREAKER
(E)	EXISTING	PH	PHASE
EL	EVENING LIGHT	(R)	REMOVE
EM	EMERGENCY	(RE)	RELOCATE EXISTING
(ER)	EXISTING RELOCATED	RCPT.	RECEPTACLE
EMT	ELECTRICAL METALLIC CONDUIT	S.M.S	SHEET METAL SCREW
(F)	FUTURE	SWBD	SWITCHBOARD
FACP	FIRE ALARM CONTROL PANEL	SYS	SYSTEM
FAPS	FIRE ALARM POWER SUPPLY	TV	TELEVISION
FATC	FIRE ALARM TERMINAL CABINET	TYP.	TYPICAL
GA.	GAUGE	UG	UNDERGROUND
GND	GROUND	UL	UNDERWRITERS LABORATORY
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	V	VOLT
HP	HORSEPOWER	VA	VOLT-AMPERES
HVAC	HEATING, VENTILATING AND AIR CONDITIONING	W	WIRE, WATT
HZ.	HERTZ (CYCLES/SEC)	WP	WEATHER PROTECTED
Isc	SHORT CIRCUIT AMPERES	XFMR	TRANSFORMER
ISO	ISOLATED		
K	THOUSAND		
KV	KILO VOLT		
KVA	KILO VOLT AMPERE		
KW	KILO WATT		
KWH	KILO WATT HOUR		

MFP Component Anchorage Note

All mechanical, plumbing, and electrical components shall be anchored and installed per the details on the DSA approved construction documents. Where no detail is indicated, the following components shall be anchored or braced to meet the force and displacement requirements prescribed in the 2016 CBC, Sections 1616A.1.18 through 1616A.1.26 and ASCE 7-10 Chapter 13, 26 and 30.

- All permanent equipment and components.
- Temporary or movable equipment that is permanently attached (e.g. hard wired) to the building utility services such as electricity, gas or water.
- Movable equipment which is stationed in one place for more than 8 hours and heavier than 400 pounds or has a center of mass located 4 feet or more above the adjacent floor or roof level that directly support the component are required to be anchored with temporary attachments.

The following mechanical and electrical components shall be positively attached to the structure, but the attachment need not be detailed on the plans. These components shall have flexible connections provided between the component and associated ductwork, piping, and conduit.

- Components weighing less than 400 pounds and have a center of mass located 4 feet or less above the adjacent floor or roof level that directly support the component.
- Components weighing less than 20 pounds, or in the case of distributed systems, less than 5 pounds per foot, which are suspended from a roof or floor or hung from a wall.

For those elements that do not require details on the approved drawings, the installation shall be subject to the approval of the design professional in general responsible charge or structural engineer delegated responsibility and the DSA District Structural Engineer. The project inspector will verify that all components and equipment have been anchored in accordance with above requirements.

Piping, Ductwork, and Electrical Distribution System Bracing Note

Piping, ductwork, and electrical distribution systems shall be braced to comply with the forces and displacements prescribed in ASCE 7-10 Section 13.3 as defined in ASCE 7-10 Section 13.6.5.6, 13.6.7, 13.6.8, and 2016 CBC, Sections 1616A.1.24, 1616A.1.25 and 1616A.1.26.

The method of showing bracing and attachments to the structure for the identified distribution system are as noted below. When bracing and attachments are based on a preapproved installation guide (e.g., SMACNA or OSHPD OPM), copies of the bracing system installation guide or manual shall be available on the jobsite prior to the start of and during the hanging and bracing of the distribution systems. The Structural Engineer of Record shall verify the adequacy of the structure to support the hanger and brace loads.

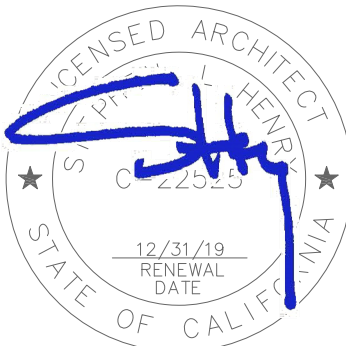
Mechanical Piping (MP), Mechanical Ducts (MD), Plumbing Piping (PP), Electrical Distribution Systems (E):

MP ☐ MD ☐ PP ☒ E ☒ - Option 1: Detailed on the approved drawings with project specific notes and details.

September 13, 2016

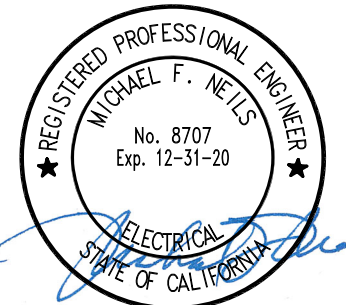
FILE NO. 39-50 APP NO. 02-117209

730 Howe Avenue, Suite 450  
Sacramento, CA 95825  
Phone: 916.921.2112  
Fax: 916.921.2212



INCREMENT 01  
RELOCATABLES BUILDINGS  
HOUSTON SCHOOL  
ELECTRICAL SHEET  
INDEX, SYMBOL LIST  
AND ABBREVIATIONS

CONSULTANT

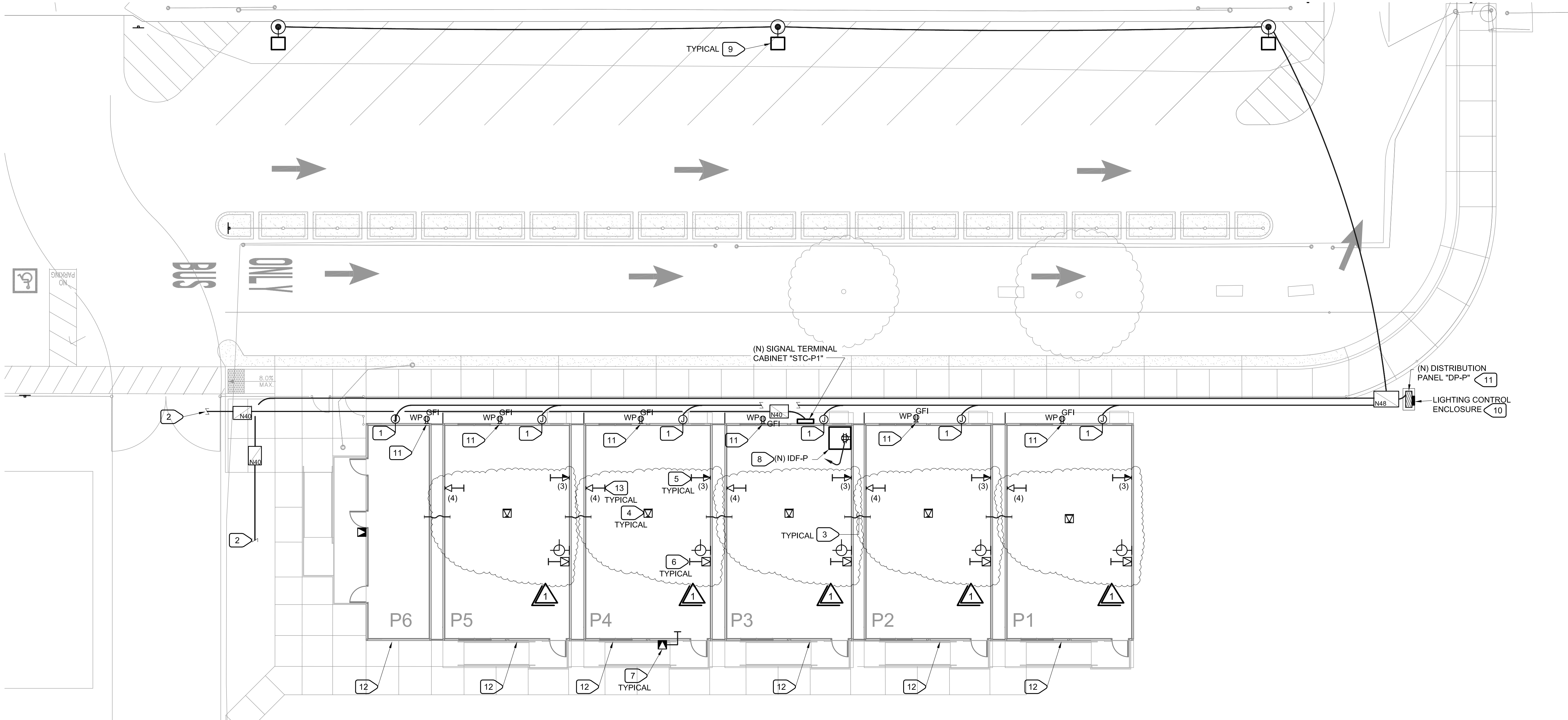


PROJECT NO. 18-32-046	REVISIONS ADD #1	BY
DATE 02/25/2019	03/14/2019	
DRAWN SG		
CHECKED SG		
SCALE NONE		
CADFILE		
UPDATED		

SHEET NO.

**E001**  
ADDENDUM DRAWING  
AD1.01 OF 102 SHEETS

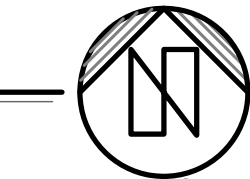




NOTE: COORDINATE EXACT DEVICES LOCATION WITH THE ARCHITECT BEFORE ROUGH IN.

## PARTIAL SITE PLAN - ELECTRICAL

SCALE: 1" = 10'-0"



### DATA OUTLETS - COLOR CODING

<input checked="" type="checkbox"/>	(1) WHITE JACK FOR WAP
<input checked="" type="checkbox"/>	(1) GREEN JACK FOR VOIP SPEAKER
<input checked="" type="checkbox"/>	(4) BEIGE JACKS FOR STUDENT COMPUTERS
<input checked="" type="checkbox"/>	(2) BEIGE JACKS AND (1) BLUE JACK FOR TEACHER LOCATION (COMPUTER + VOICE)

### SIGNAL CABLE SCHEDULE

TYPE	CABLE DESCRIPTION AND USE	MANUFACTURER & CATALOG NO.	REMARK NOTE No.
A	CAT 6A CABLE, (4) PAIR, TWISTED, UNSHIELDED, 23AWG - DATA AND VOICE CABLE	REFER TO SPECIFICATIONS	1
E	6 STRAND OM3 MULTIMODE, FIBER OPTIC CABLE	REFER TO SPECIFICATIONS	
F	25 PAIR CAT5 CABLE	REFER TO SPECIFICATIONS	

#### SIGNAL CABLE SCHEDULE REMARK NOTES:

- 1 FOR JACKET COLORS REFER TO SPECIFICATIONS

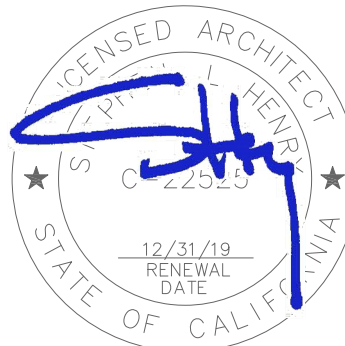
### NUMBERED NOTES:

- CONNECT PANEL PROVIDED WITH PORTABLE. FIELD VERIFY EXACT REQUIREMENTS.
- REFER TO SITE PLAN FOR CONTINUATION.
- PROVIDE (2) 2"C FOR DATA AND COMMUNICATIONS, AND (2) 1"C FOR FIRE ALARM AND FUTURE INTRUSION ALARM. SPAN SPACE BETWEEN CLASSROOM USING SEALTIGHT FLEX CONDUITS. FLEX CONDUITS TO ALLOW 4" OF HORIZONTAL MOVEMENT IN ANY DIRECTION.
- DATA OUTLET, PROVIDE FOR WIRELESS ACCESS POINT, MOUNT AT CEILING. RUN 1A CABLE FROM JACK TO IDF-P.
- DATA OUTLET AT TEACHER LOCATION. STUB 3/4"C INTO ACCESSIBLE ATTIC SPACE. RUN 3A CABLES FROM JACKS TO IDF-P.
- DATA OUTLET FOR IP SPEAKER / CLOCK. MOUNT HIGH ON WALL. COORDINATE WITH THE ARCHITECT BEFORE ROUGH IN. PROVIDE SPEAKER AND CLOCK TO MATCH (E) ON SITE. STUB 3/4"C INTO ACCESSIBLE ATTIC SPACE. RUN 1A FROM JACK TO IDF-P.
- DATA OUTLET FOR EXTERIOR IP SPEAKER. PROVIDE SPEAKER TO MATCH (E) ON SITE. STUB 3/4"C INTO ACCESSIBLE ATTIC SPACE. RUN 1A FROM JACK TO IDF-P.
- MOUNT IDF ENCLOSURE HIGH ON THE WALL, SUCH THAT TOP OF ENCLOSURE IS 2" BELOW CEILING. REFER TO 7/E500 FOR MOUNTING. PROVIDE FOURPLEX RECEPTACLE INSIDE IDF ENCLOSURE. PROVIDE 20/1 CKT. BRKR. IN BUILDING PANEL, AND CONNECT RECEPTACLE TO THAT CKT. BRKR. USING 1/2"C-2#12, 1#12G. COORDINATE EXACT LOCATION OF IDF WITH THE ARCHITECT BEFORE ROUGH IN.
- PROVIDE GARDCO ECF-S-32L-530-NW-G2-AR-208-CE30. PROVIDE 20" HIGH SQUARE STEEL POLE. THE ARCHITECT TO CHOSE COLOR FROM STANDARD FINISHES. MOUNT POLE PER DETAIL 5/E500.
- PROVIDE ASTRONOMICAL LIGHTING CONTROL HOUSED IN LOCKABLE NEMA 3R ENCLOSURE. THE CONTROL SHALL CONSIST OF MIN. SUNRISE/SUNSET ON/OFF, 100 HOUR BATTERY BACKUP, 28 ON/OFF PROGRAMMABLE EVENTS; PROVIDE INTERMATIC ET8415CR, OR SIMILAR. MOUNT ON SIDE OF DISTRIBUTION PANEL "DP-P".
- PROVIDE GFI RECEPTACLE IN WEATHER PROTECTED, WHILE-IN-USE ENCLOSURE AND MOUNT ON EXTERIOR WALL FOR HVAC UNIT MAINTENANCE (MAX. 25' FROM THE HVAC UNIT). PROVIDE (N) 20/1 CKT. BRKR. AND CONNECT RECEPTACLE TO THAT CKT. BRKR. USING 1/2"C-2#12, 1#12G.
- PROVIDE GROUNDING FOR EACH (N) BUILDING AS SHOWN ON 1/E001.
- DATA OUTLET FOR STUDENTS COMPUTERS. STUB 1"C INTO ACCESSIBLE ATTIC SPACE. RUN 4A FROM JACKS TO IDF-P.

**M. NEILS ENGINEERING, INC.**  
Electrical Engineers | Lighting Designers  
100 Howe Ave., Suite 235N  
Sacramento, CA 95825-6217  
Tel: (916) 923-4400 Fax: (916) 923-4410  
PROJECT #: 18120.21

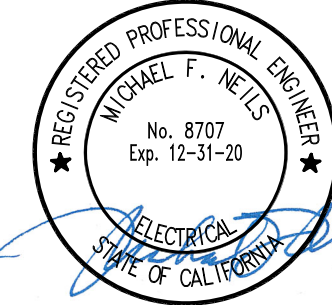
FILE NO. 39-50 APP NO. 02-117209

730 Howe Avenue, Suite 450  
Sacramento, CA 95825  
Phone: 916.921.2112  
Fax: 916.921.2212



## INCREMENT 01 RELOCATABLES BUILDINGS HOUSTON SCHOOL PARTIAL SITE PLAN - ELECTRICAL

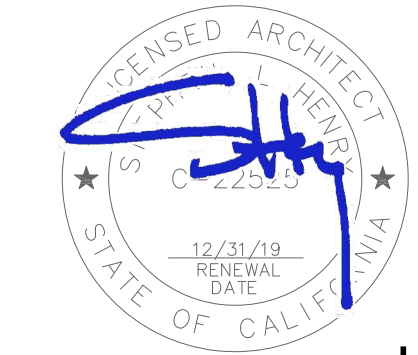
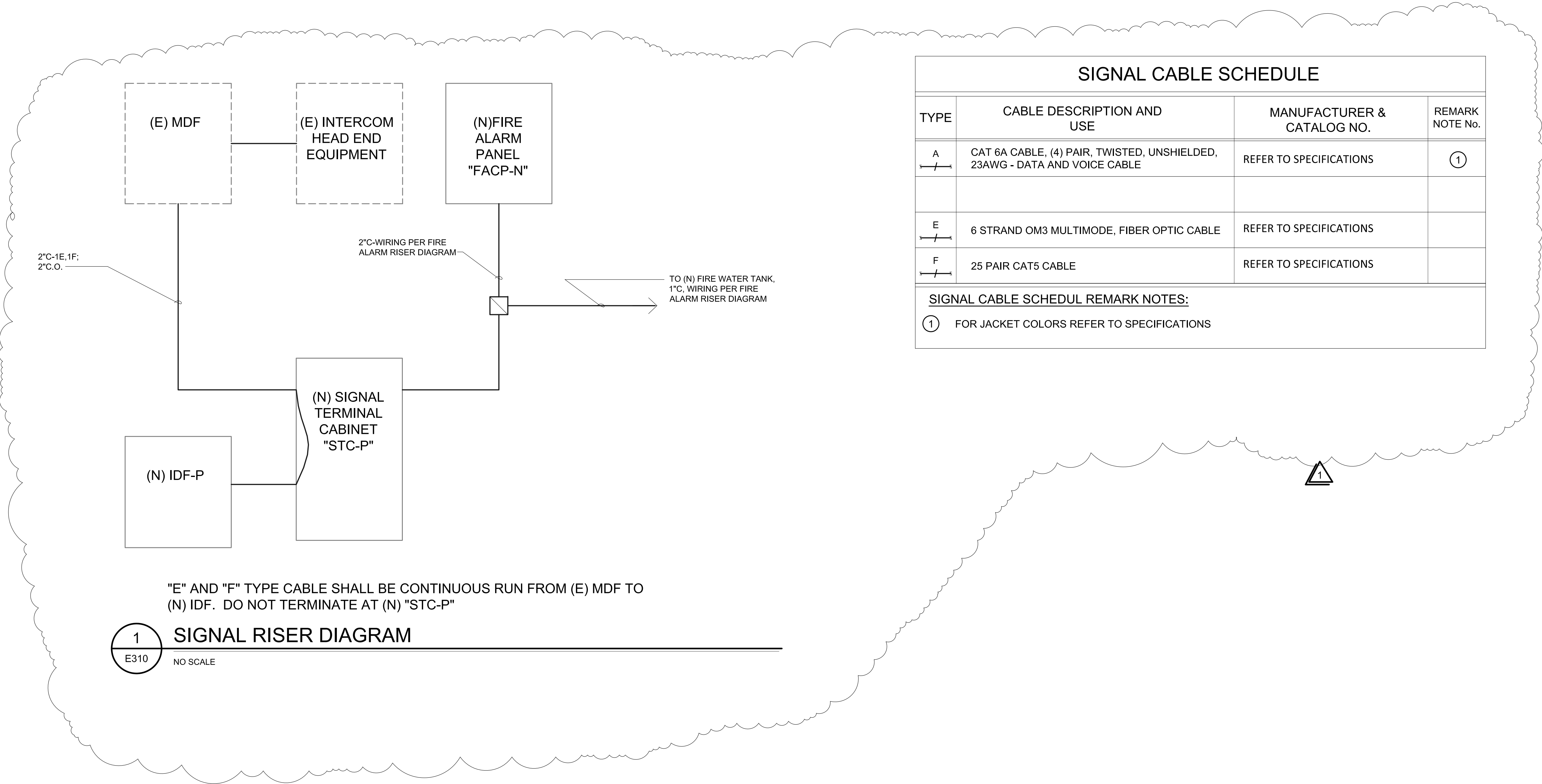
CONSULTANT



PROJECT NO.	REVISIONS	BY
18-32-046	ADD #1	1
DATE	02/25/2019	03/14/2019
DRAWN	SG	
CHECKED	SG	
SCALE	1" = 10'-0"	
CADFILE		
UPDATED		

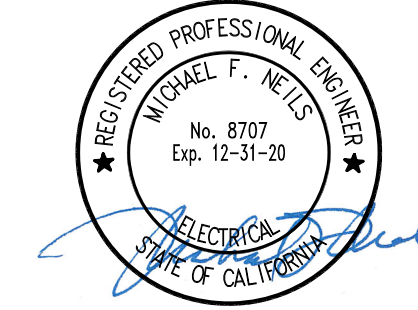
SHEET NO.

**E130**  
ADDENDUM DRAWING  
AD1.02 OF 102 SHEETS



INCREMENT 01  
RELOCATABLES BUILDINGS  
HOUSTON SCHOOL

ONE-LINE DIAGRAM - SIGNAL



PROJECT NO. 18-32-046	REVISIONS ADD #1	BY 1
DATE 02/25/2019	03/14/2019	
DRAWN SG		
CHECKED SG		
SCALE NONE		
CADFILE		
UPDATED		

SHEET NO.  
**E310**  
ADDENDUM DRAWING  
AD1.03 OF 102 SHEETS

FILE NO. 39-50 APP NO. 02-117209

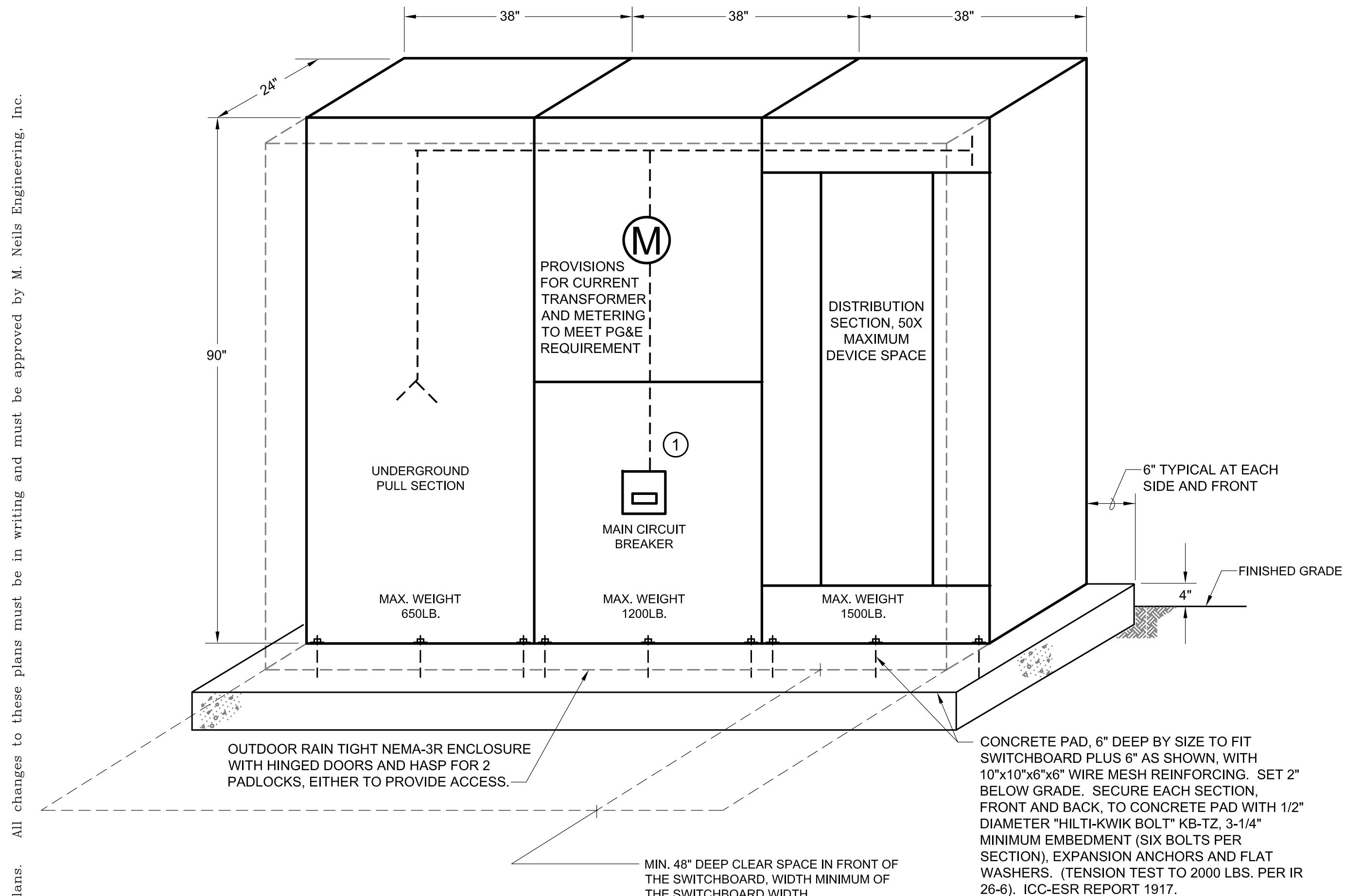
730 Howe Avenue, Suite 450  
Sacramento, CA 95825  
Phone: 916.921.2112  
Fax: 916.921.2212



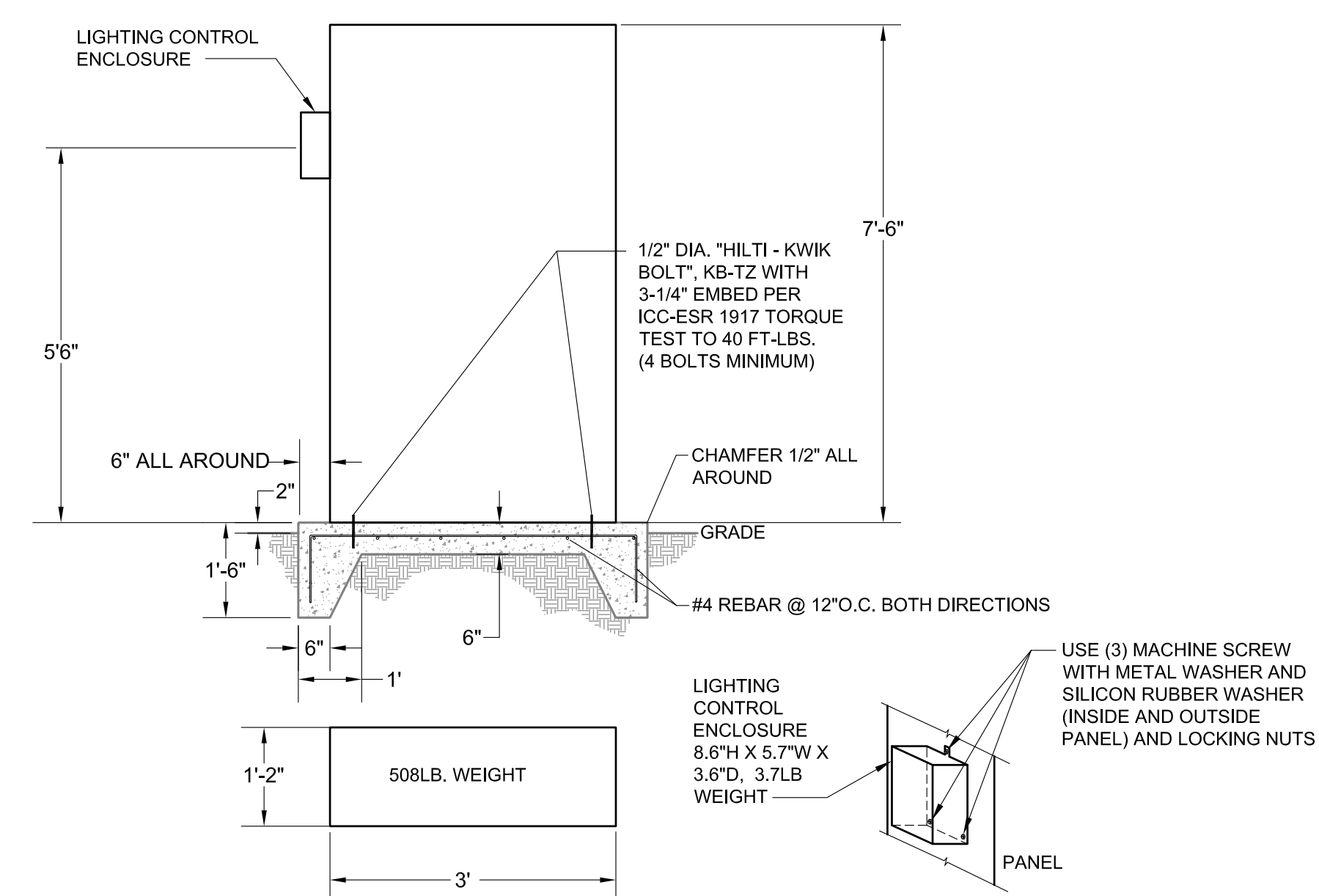


UNAUTHORIZED CHANGES & USES: M. Neils Engineering, Inc. preparing these plans will not be responsible for, or liable for unauthorized changes to or uses to these plans. All changes to these plans must be in writing and must be approved by M. Neils Engineering, Inc.

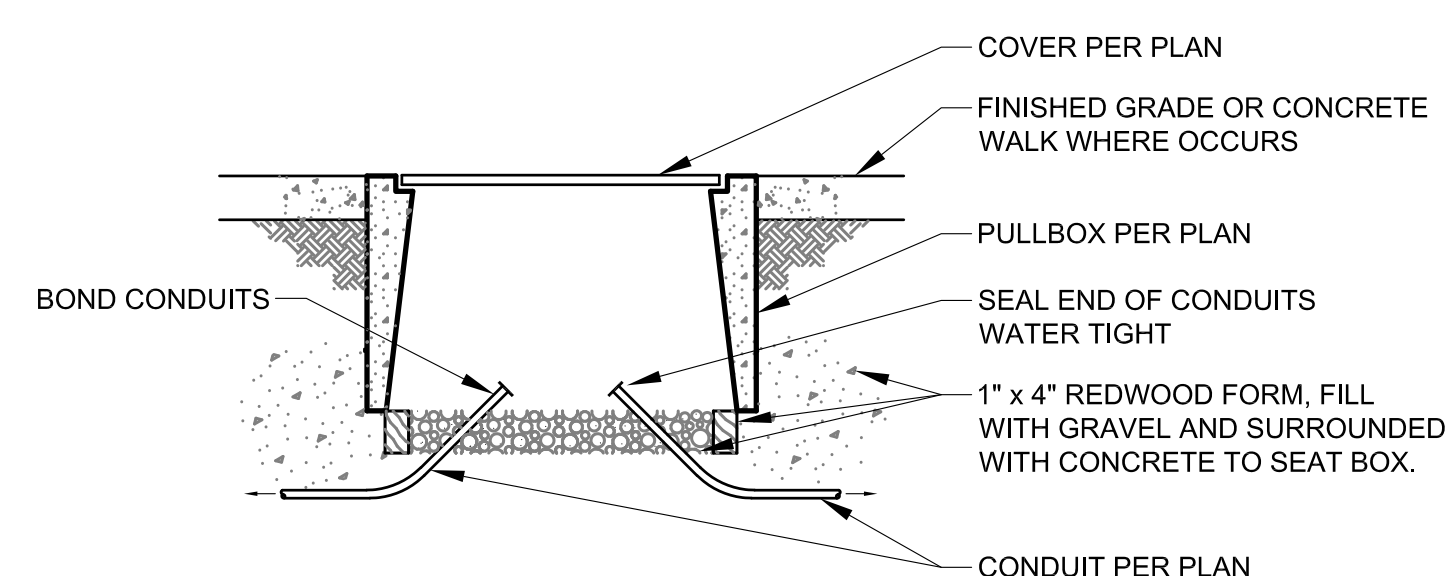
NOF 13, 2019 - 3:43PM



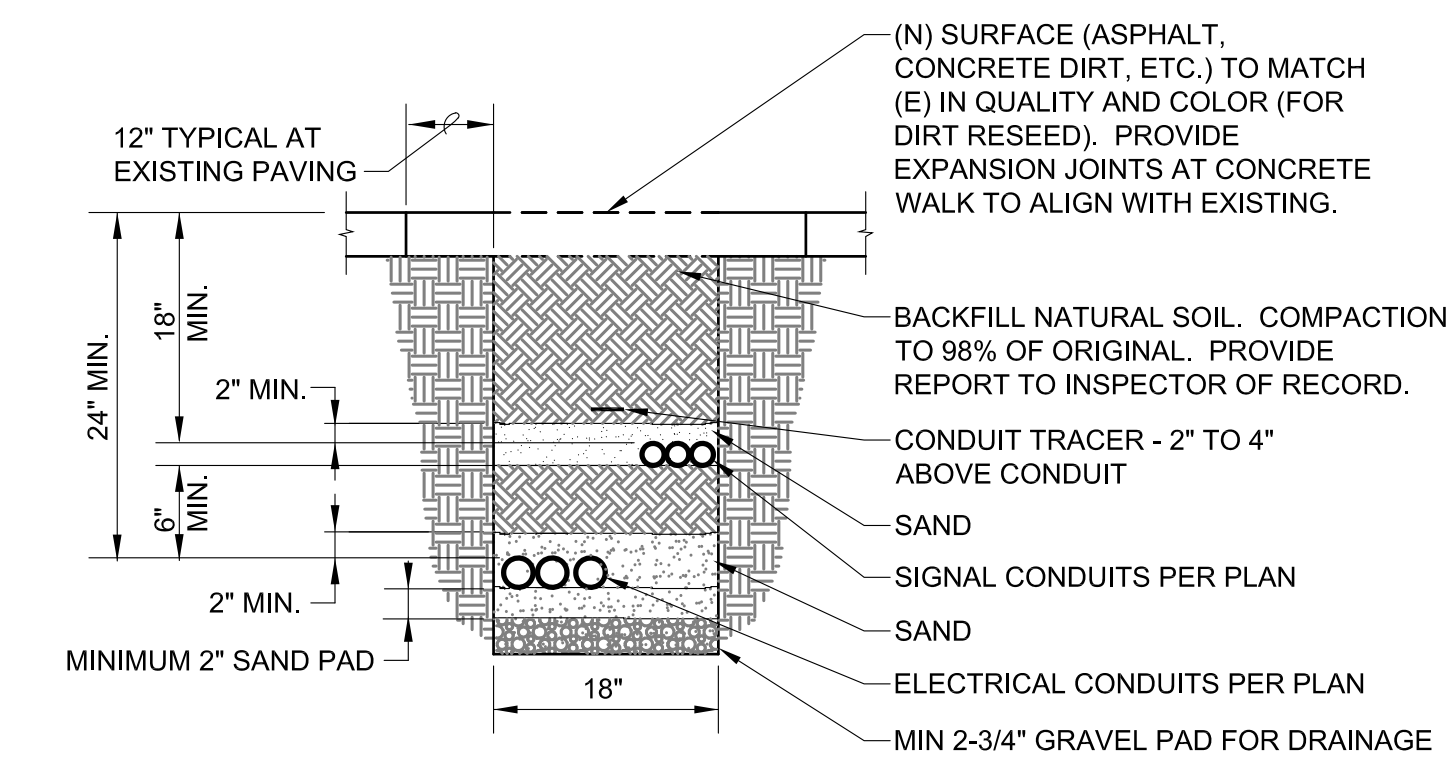
1 MAIN SWITCHBOARD "MS-N" DETAIL  
E500 NO SCALE



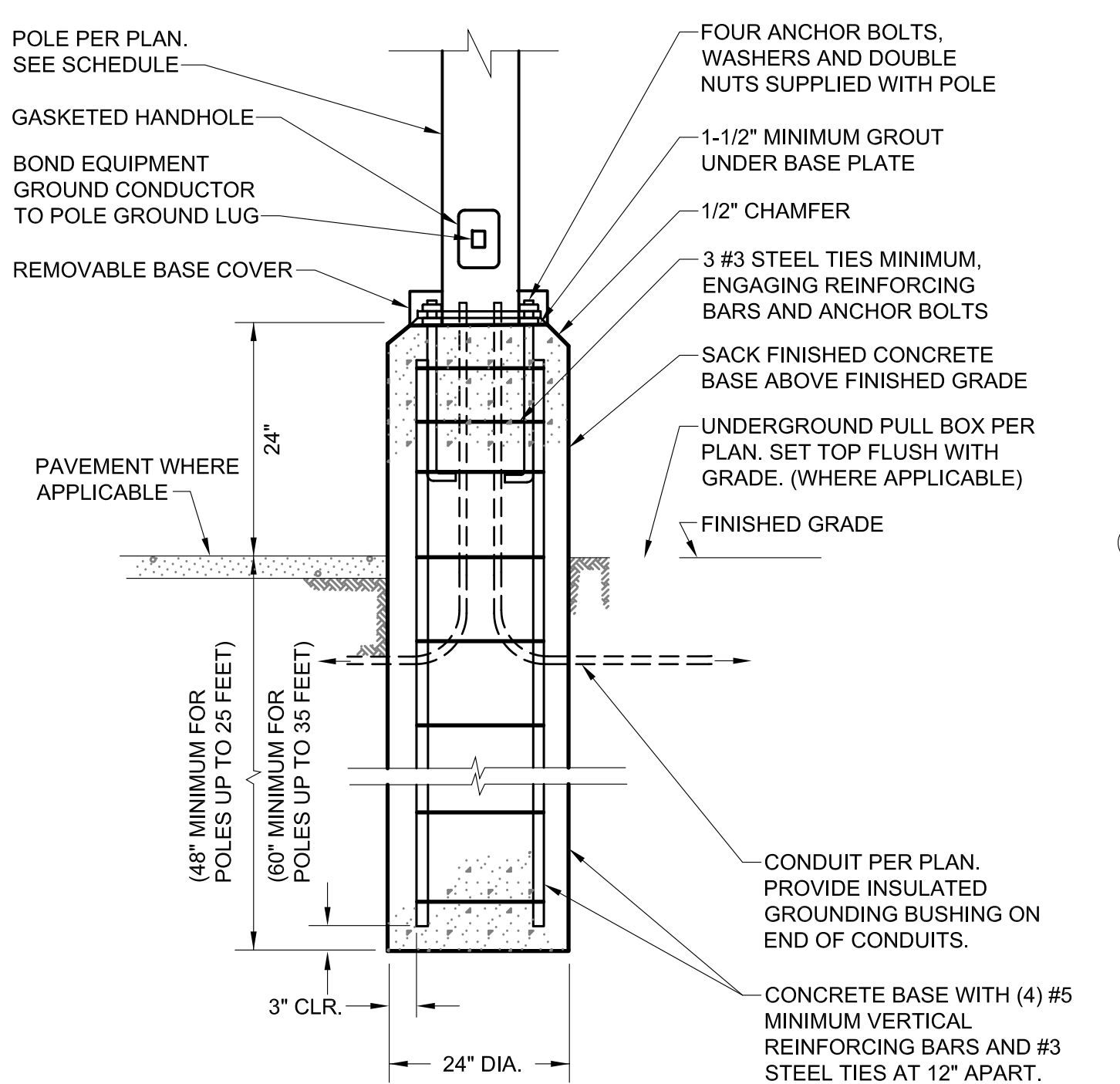
2 DISTRIBUTION PANEL "DP-P"  
E500 NO SCALE



3 UNDERGROUND PULL BOX  
E500 NO SCALE

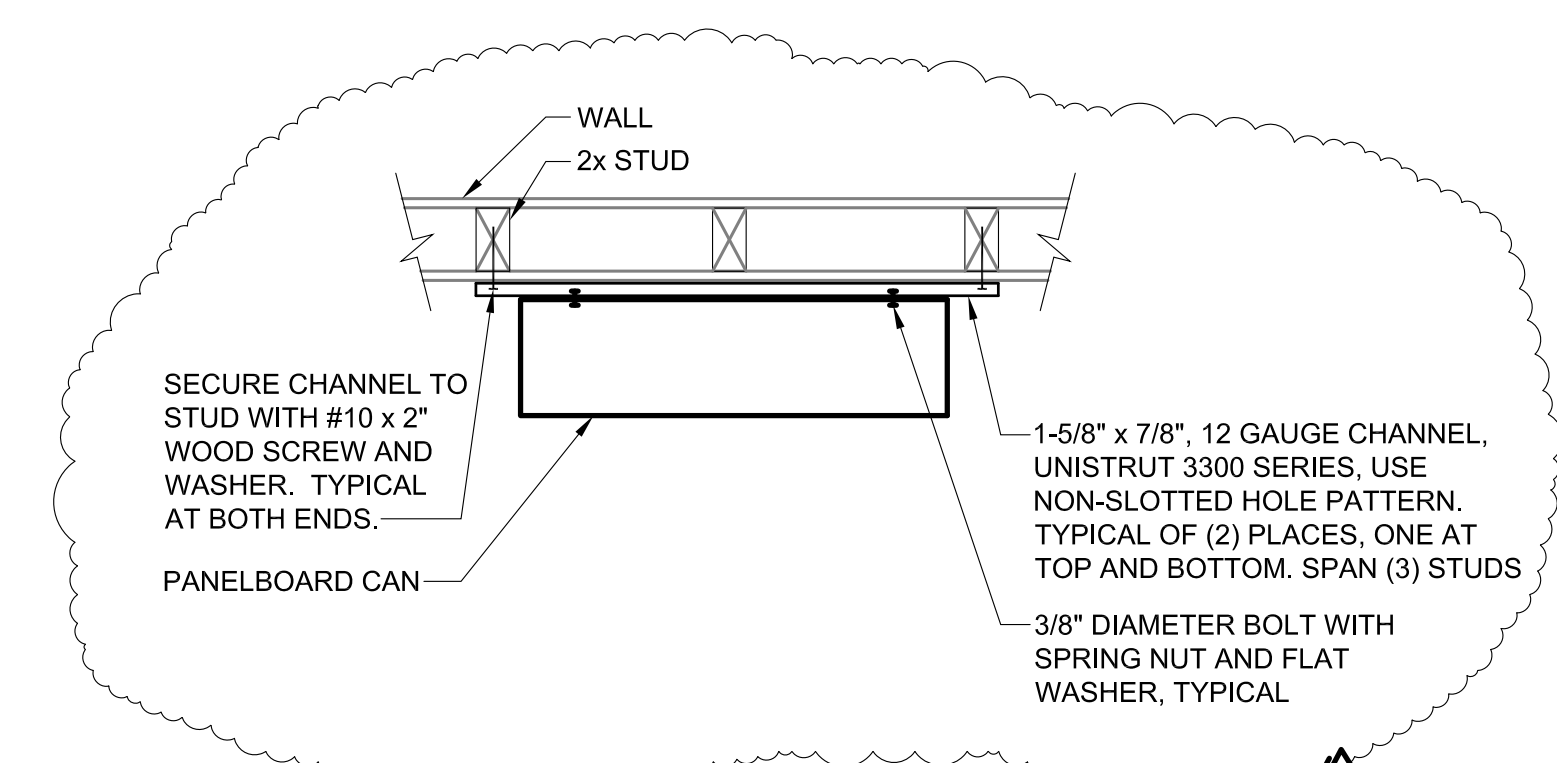


4 CONDUIT TRENCHING DETAIL  
E500 NO SCALE



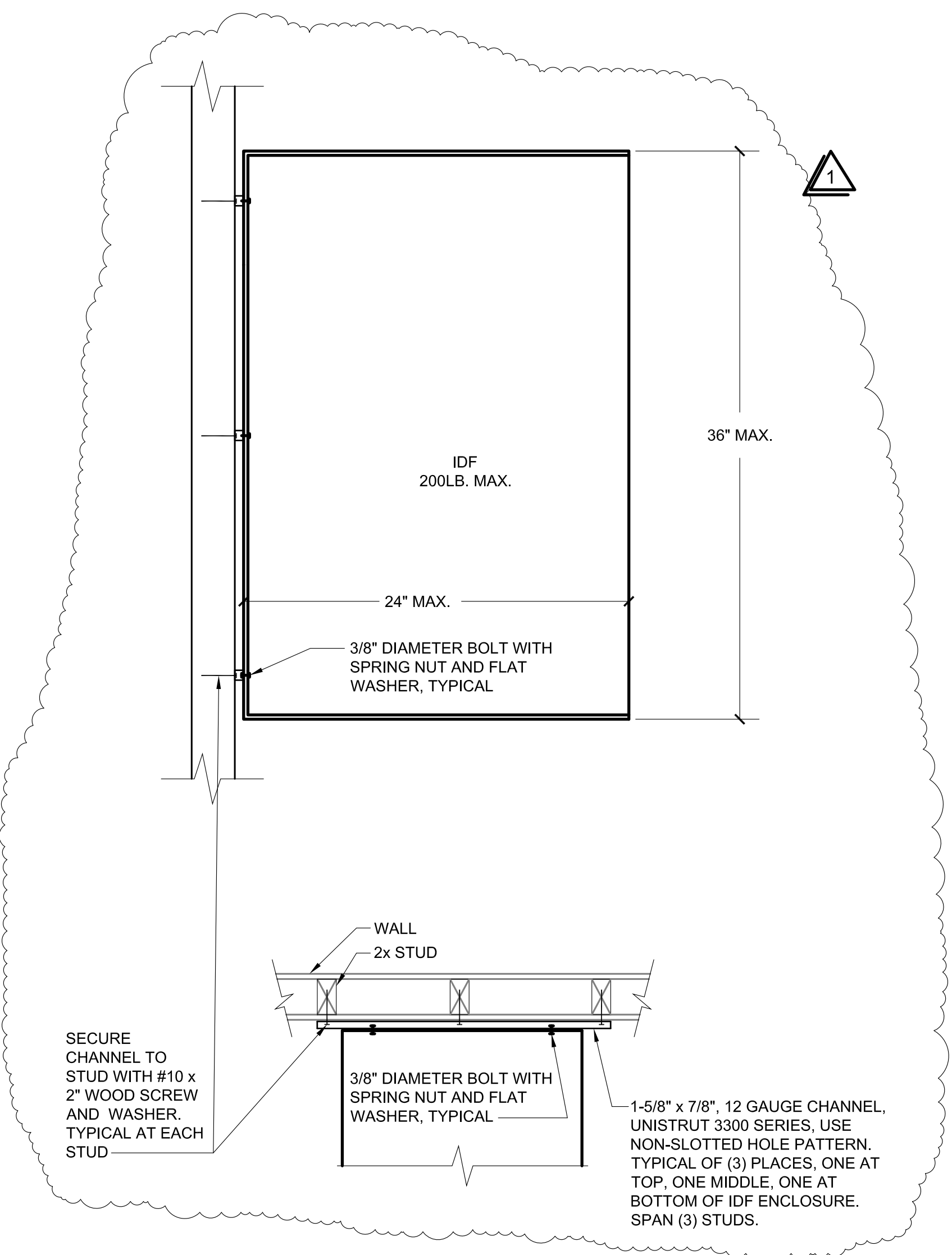
(CALCULATED DIMENSIONS AND MATERIALS BASED ON 100 MPH WIND)

5 POLE BASE MOUNTING DETAIL  
E500 NO SCALE



FIRE ALARM CONTROL PANEL DIMENSION: 36"H X 22"W X 6"D  
FIRE ALARM CONTROL PANEL WEIGHT: LESS THAN 130LB.  
FIRE ALARM POWER SUPPLY DIMENSION: 15"H X 14.5"W X 4"D  
FIRE ALARM CONTROL PANEL WEIGHT: LESS THAN 50LB.  
SIGNAL TERMINAL CABINET DIMENSION: 36"H X 24"W X 8"D  
SIGNAL TERMINAL CABINET WEIGHT: LESS THAN 100LB.

6 FIRE ALARM CONTROL PANEL, FIRE ALARM POWER SUPPLY, SIGNAL TERMINAL CABINET - MOUNTING DETAIL  
E500 NO SCALE



7 IDF ENCLOSURE - MOUNTING DETAIL  
E500 NO SCALE

**M. NEILS ENGINEERING, INC.**  
Electrical Engineers | Lighting Designers  
100 Howe Ave., Suite 235N  
Sacramento, CA 95825-6217  
www.mneilsengineering.com  
Tel: (916) 923-4400 Fax: (916) 923-4410  
PROJECT #: 18120.21

FILE NO. 39-50 APP NO. 02-117209

730 Howe Avenue, Suite 450  
Sacramento, CA 95825  
Phone: 916.921.2112  
Fax: 916.921.2212

HENRY+ASSOCIATES ARCHITECTS

INCREMENT 01  
RELOCATABLES BUILDINGS  
HOUSTON SCHOOL

ELECTRICAL DETAILS

CONSULTANT

PROJECT NO.	REVISIONS	BY
18-32-046	ADD #1	1
DATE	02/25/2019	03/14/2019
DRAWN	SG	
CHECKED	SG	
SCALE	NONE	
CADFILE		
UPDATED		
SHEET NO.		
E500 ADDENDUM DRAWING AD104 OF 102 SHEETS		