

June 9, 2016

ADDENDUM NO. 3

TO THE CONTRACT DOCUMENTS

FOR

CAJON HIGH SCHOOL - THEATER RENOVATION

FOR THE

SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT
777 North F Street
San Bernardino, CA 92410

DSA No. 04-114799 File No. 36-H7

NOTICE TO BIDDERS

This Addendum forms a part of the Contract and modifies the original documents dated April 2016. It is intended that all work affected by the following modifications shall conform with related provisions and general conditions of the contract of the original drawings and specifications. Modify the following items wherever appearing in any drawing or sections of the specifications. Acknowledge receipt of Addendum No. 3 in the space provided on the Bid Form. Failure to do so may subject bidder to disqualification³

CHANGES TO THE SPECIFICATIONS

- Item No. 3.1 Reference Section 11 61 33 - Stage Equipment and Curtain Systems:
 3.1.1 Paragraph 3.01.A, add the following pre-approved rigging contractors:
- 6. PGS Services
 PO Box 8566
 Mission Hills, CA 91346
 (818) 782-6732
 - 7. Janson Industries
 1200 Garfield Ave., S.W.
 Canton, OH, 44706
 (800) 548-8982
- Item No. 3.2 Reference Section 27 41 00 - Autonomous Public Address System:
 3.2.1 Add attached Section 27 41 00 in its entirety.
- Item No. 3.3 Reference Section 27 41 17 - Theater Audiovisual System:
 3.3.1 Add attached Section 27 41 17 in its entirety.

CHANGES TO THE DRAWINGS

- Item No. 3.4 Reference Sheet A-7.0:
 3.4.1 Details 15, 19 and 20, revise P-Lam countertop to be solid surface.
- Item No. 3.5 Reference Sheet P-0.2:
 3.5.1 Add DF-1 per attached Sketch PSK-3.1.

RUHNAURUHNAUCLARKE
ARCHITECTS PLANNERS

- Item No. 3.6 Reference Sheet E-0.3:
 3.6.1 Revise Fixture P/3 per attached Sketch ESK-3.1.
- Item No. 3.7 Reference Sheet E-0.4:
 3.7.1 Add transformer at Bldg E single line diagram per attached Sketch ESK-3.2.
- Item No. 3.8 Reference Sheet E-1.1:
 3.8.1 Revise site plan per attached Sketch ESK-3.3.
- Item No. 3.9 Reference Sheet E-2.0:
 3.9.1 Revise Sheet Notes 5 through 9 per attached Sketch ESK-3.4.
- Item No. 3.10 Reference Sheet E-2.1:
 3.10.1 Revise sheet per clouded areas of attached revised Sheet E-2.1.
- Item No. 3.11 Reference Sheet E-2.2:
 3.11.1 Revise sheet per clouded areas of attached revised Sheet E-2.2.
- Item No. 3.12 Reference Sheet E-5.1:
 3.12.1 Revise sheet per clouded areas of attached revised Sheet E-5.1.
- Item No. 3.13 Reference New Audio/Video Plans:
 3.13.1 Add attached Sketches AV1, AV2, AV3 and AV4 indicating the audio/video plans.

ATTACHMENTS

Specifications 27 41 00, 27 41 17
Sketches PSK-3.1, ESK-3.1 thru ESK-3.4, AV1 thru AV4
Sheets E-2.1, E-2.2, E-5.1

END OF ADDENDUM NO. 3

Roger Clarke, Principal
#C-21340



SECTION 27 41 00

AUTONOMOUS PUBLIC ADDRESS SYSTEM

PART 1 – GENERAL

1.01 SCOPE OF WORK:

- A. All applicable portions of Section 26 00 00 shall apply to this section as though written herein completely.
- B. The work under this section includes all labor, materials, equipment, and accessories required to furnish and install a complete integrated Sound Reinforcement System as indicated on the drawings and as specified herein.
- C. The scope of this contract includes design and construction of the public address system to meet the performance criteria indicated herein and on the plans. It is the contractor's responsibility to provide a system that functions and performs as described herein and on the plans. The equipment listed in these specifications is intended to aid in the description of the functions and performance required and is not a complete list of components to be provided under this contract. Provide all items required for the system to be complete and operable.

1.02 RELATED WORK:

- A. The work described by this part includes the furnishing of all materials, equipment, supplies, labor and the performing of all operations necessary for the installation of complete and operating systems.
- B. All conduits, outlet boxes, back boxes, junction boxes, terminal cabinets and backboards are furnished and installed by others and not part of this section. The wiring, cables, equipment, devices, etc., shall be furnished and installed complete under this section. Conduit and junction box sizes shall be determined by the Installing Communications Contractor for the particular wire and cable fills required for the systems installed. (Conduit sizes shall comply with the National Electrical Code). The entire responsibility of the system, including the installation, operation, function, testing and maintenance for one (1) year after final acceptance under this section shall be the responsibility of the communications contractor.
- C. The Installing Communications Contractor shall furnish and install all equipment, cables, devices, and other materials even though not specifically mentioned herein, which are necessary for the proper integration of the system so that the system shall perform the functions listed herein in compliance with all specified requirements.
- D. Coordinate all work and equipment with systems being provided under Section 27 4110 Theatrical Audio Visual System.

1.03 GENERAL REQUIREMENTS

- A. The Installing Communications Contractor shall hold a valid State of California C-10 License, shall have completed at least 12 projects of equal scope, shall have been in business of furnishing and installing communication systems of this type for at least five

years, and capable of being bonded to assure the owner of performance and satisfactory service during the guarantee period.

- B. The Installing Communications Contractor shall hold all other licenses required by the legally constituted authorities having jurisdiction over the work.
- C. The Installing Communications Contractor shall be a factory authorized distributor and warrantee station for the brand of equipment specified and shall maintain a fully equipped service organization capable of furnishing adequate repair service to the equipment. The Installing Communication Contractor shall maintain a spare set of all major parts for the system at all times. All circuit boards, amplifiers and control sub systems shall be 100% backed up with stock at contractor's shop.

1.04 QUALITY ASSURANCE:

- A. All mechanical, electrical and general information set forth on the respective data sheets for each specified item shall be considered to be part of these specifications and binding herein. Any proposed equal item offered shall be substantiated fully to prove equality. The Architect reserves the right to require a complete sample of any proposed equal item and may, if necessary, request a sample tested by an independent testing laboratory to prove equality. The decision of the Architect regarding equality of proposed equal items will be final.
- B. Electrical Component Standard: Provide work complying with applicable requirements of NFPA 70 "National Electrical Code" including, but not limited to:
 - 1. Article 250, Grounding.
 - 2. Article 300, Part A. Wiring Method.
 - 3. Article 310, Conductors for General Wiring.
 - 4. Article 725, Remote Control, Signaling Circuits.
 - 5. Article 800, Communication Systems.
- C. EIA Compliance: Comply with the following Electronics Industries Association Standards:
 - 1. Sound Systems, EIA-160.
 - 2. Loudspeakers, Dynamic Magnetic Structures, and Impedance, EIA-299-A.
 - 3. Racks, Panels, and Associated Equipment, EIA-310-A.
 - 4. Amplifiers for Sound Equipment, SE-101-A.
 - 5. Speakers for Sound Equipment, SE-103.

1.05 SUBMITTAL AND MANUALS

- A. Comply with all requirements of the General Conditions, Supplementary Conditions and applicable sections of Divisions 1 and 28 of these specifications.
- B. Additional requirements of this section are:
 - 1. Within thirty-five (35) calendar days after the date of award of the Contract, the Contractor shall submit to the Architect for review, eight copies of a complete submittal.

2. The submittal shall consist of five major sections with each section separated with index tabs. Each page in the submission shall be numbered chronologically and shall be summarized in the index.
 3. The first section shall be the "Index" which shall include the project title and address, name of the firm submitting the proposal and name of the Architect.
 4. The second section shall include a copy of the Installing Communication Contractors valid C-10 California State Contractors License, letters of factory authorization and guaranteed service, list of 20 projects of equal scope and list of proposed instrumentation to be used by the Contractor.
 5. The third section shall contain a block diagram showing interconnection of all components in the system.
 6. The fourth section shall contain an original factory data sheet for every piece of equipment provided.
- C. The Contractor shall provide two copies of an "Operating and Servicing Manual" for the system. The manuals shall be bound in flexible binders. All data shall be printed material or typewritten. Each manual shall include the following: Instructions necessary for the proper operation and servicing of the system; complete as-built installation drawings of the system; a wiring destination schedule for each circuit leaving for each piece of equipment; a schematic diagram of major components with all transistor and IC complements and replacement number.

PART 2 - PRODUCTS

2.01 GENERAL

- A. The sound reinforcing systems shall provide clear, natural sound uniformly distributed throughout the designated areas. When at maximum level, the system shall operate without audible distortion, rattles and buzzes. All switching shall be silent and without pops and transients.
- B. System(s) shall have the specified dynamic range without audible clipping or distortion to accommodate all types of program material. Electronic equalization shall be employed to insure smooth frequency response and high acoustical gain before feedback.
- C. The system shall include speakers as indicated on the drawings. Each speaker shall include vented pre-manufactured cabinets suitable for mounting as indicated on plans. All components and support systems shall physically fit in the space provided per architectural drawings. Excessive sound radiation to side and back walls shall be avoided.
- D. The sound pressure level produced at all seats shall be at least 90 dB when measured with a "C" scale filter. There shall be at least 26 dB of amplifier head room. When driven to maximum output, clipping shall first occur in the power amplifier. Low-frequency units and power amps shall be sized to match the sound Pressure level of the horns allowing for the difference in efficiency relative to the high frequency drivers.
- E. The system shall interface with the video distribution system 21 4117 Theatrical Audiovisual System as indicated herein and on the plans.

2.02 SYSTEM PERFORMANCE CRITERIA

- A. The completed system shall provide the following features and functions:
1. All audio signals sounded over the system speakers to also be simultaneously broadcast over an assistive listening system for the hearing impaired which is integral to the system.
 2. A mode of operation in which the system microphones are mixed and sounded over the speaker clusters at the front of the house.
 3. A mode of operation in which the audio output from an MP3 player integral to the system is decoded and reproduced over the speaker clusters at the front of the house.
 4. A mode of operation in which in which a user not familiar with the system can remotely turn the system on and use pre-designated microphone(s) for simple sound reinforcement (such as a lecture) including volume control.
 5. System shall include a ceiling mounted speaker and volume control to monitor the system audio output from the control room..
 6. System shall include controls and switches which readily identify the various modes of operation and will cause the appropriate components to turn on and adjust to the proper levels for each mode.
 7. System shall mute upon contact closure from fire alarm system or campus paging system.

2.03 RACK AND EQUIPMENT

- A. Provide wall mounted equipment rack equal to Middle Atlantic #DWR series or equal with the following features:
1. Hinged/locking plexiglass front door and center section with vented side panels
 2. Two (2) thermostatically speed-controlled ventilation fans with whisper quiet operation and wire guards. Include power outlets and cords to connect fans.
 3. Cable management and lacer strips.
 4. Vertical copper ground bus bar.
 5. Custom power sequencing system including controllers and 20amp power modules connected to control three (3) 120 volt branch circuits so that rack equipment is sequentially turned on with amplifiers turned on last. Provide surge suppressor for each power module.
 6. Provide flush mount key switch with LED status lights for mounting external to the rack so that system can be remotely turned on. Provide locking plexiglass security covers over components not requiring user adjustment.
 7. Blank panels and fillers.
 8. Textured black enamel finish.
 9. Nominal rack size shall be as required to contain all equipment furnished under this section and all equipment furnished under Section 27 4110
- B. Equipment
1. Electrovoice #CPS2.12 series or equal 2-channel power amplifier matched to perform with the specified speakers and deliver the specified sound pressure

levels. Each speaker enclosure shall be driven by one dedicated amplifier channel

2. Electrovoice NetMax N8000 or equal digital matrix controller and processing system including appropriate modules, cards and controller to achieve the specified modes of operation.
3. Electrovoice #DC-One series or equal digital speaker controller with signal processing parametric equalization, compression limiters, low and hi pass filters.
4. Williams Sound #PPA-T45 series or equal assistive listening system for the hearing impaired consisting of a base station, emitter, and earbud receivers. Provide quantity of earbud receivers based on 4% times the occupancy load of 419. System shall comply with the requirements of CBC 1104 B.2. Provide remote emitter(s) to ensure proper coverage.
5. Wireless microphone system including four (4) Audio Technica #ATW-R2100a series or equal narrow band 2-channel UHF wireless system receivers, four (4) #ATW-T210a body-pack transmitters, and four (4) #ATW-T220a cardioid dynamic microphones. Provide suitcase-type carrying case for portable equipment. Also provide #AEW-DA series UHF antenna distribution amplifier and #ATW series remote antennas to ensure proper reception of signals from transmitters.
6. Rack-mounted automatic mixer to receive all wired and wireless mic inputs and audio signals from video system specified in Section 27 4110. Output of mixer shall deliver stereophonic sound to speakers at front of house.

2.04 SPEAKERS

- A. Provide two (2) horn-loaded speaker assemblies in a pre-manufactured trapezoidal enclosure. Enclosures shall be rated suitable by the manufacturer for flying by means of built-in inserts and fasteners. Full range enclosures shall each contain a rotatable horn and 12-inch transducer with coverage patterns as required for optimum performance. Provide interconnecting brackets and rigging kits to hold speaker at the proper position. Enclosures and grille cloths shall be painted black. Provide switchable internal crossover network in each enclosure. Electrovoice #EVH series.
- B. Furnish four (4) Electro-Voice N/D967 microphones, four (4) Electrovoice #N/D478 microphones, eight (8) 8-foot cords, four (4) 25 foot cords, four (4) Atlas MS12C floor microphone stands, four (4) Atlas DS5 desk stands.
- C. Microphone and sound receptacles shall be Switchcraft of proper configuration mounted in a wall outlet with stainless steel plate or a floor box as indicated on the Drawings. Plates shall be engraved with proper identification.

2.05 CABLES

- A. Microphone cable shall be West Penn #291 2-conductor #22AWG shielded or equal.
- B. Speaker cable shall be U.L. listed for Class 1 circuits as defined by NEC Article 725. West Penn #77295 #14AWG shielded or equal.
- C. Audio-video cables connecting rack components to each other and to the video projector shall be as manufactured by West Penn, Belden, Monster, or equal as required to meet the system operational and performance criteria indicated herein and to comply with manufacturers' recommendations.

PART 3 - EXECUTION

3.01 CONNECTIONS

All connections throughout the system shall be soldered, crimped by means of AMP lugs, fastened with screw type terminals, made by spring tension clip "punch block" terminals or made by standard plugs and receptacles. Each wire twisted pair or cable shall be tagged throughout the site with EZ Markers with the room number it serves. All conductors in terminal cabinets shall be carefully formed and harnessed in a workmanlike manner.

3.02 SPEAKER AIMING

The location and aiming angles of the speakers shall be as required for optimum coverage. Speakers shall be adjustable to plus or minus 5 degrees for precise field adjustments for uniformity of coverage.

3.03 INSTALLATION

- A. The wiring of the system shall be executed in accordance with the drawings and the equipment manufacturer's wiring diagrams. Should any variations in these requirements occur, the contractor shall notify the architect before making any changes. It shall be the responsibility of the factory authorized distributor of the specified equipment to install the equipment and guarantee the system to operate as per plans and specifications.
- B. Furnish all conductors, equipment plugs, terminal strips, etc., And labor to install a complete and operable system.
- C. The labor employed by the contractor shall be regularly employed in the installation and repair of communication systems and shall be acceptable to the owner and architect to engage in the installation and service of this system. The systems shall be installed in accordance with NFPA 70 and other applicable codes.
- D. Impedance and Level Matching: Carefully match input and output impedance's and signal levels at signal interfaces. Provide matching networks where required.
- E. Control Circuit Wiring:
 - 1. Install control circuits in accordance with NFPA 70 and as indicated. Provide number of conductors as recommended by system manufacturer to provide control functions indicated or specified.
 - 2. The contractor shall provide necessary transient protection on the AC power feed, all station lines leaving or entering the building, and all central office trunks. All protection shall be as recommended by the equipment supplier and referenced to earth ground.
- F. Grounding:
 - 1. Provide equipment grounding connections for Integrated Electronic Communications Network systems as indicated. Tighten connections to comply with tightening torques specified in UL Standard 486A to assure permanent and effective grounds.
 - 2. Ground equipment, conductor, and cable shields to eliminate shock hazard and to minimize to the greatest extent possible, ground loops, common mode returns,

noise pickup, cross talk, and other impairments. Provide 5-ohm ground at main equipment location. Measure, record, and report ground resistance.

3. The contractor shall provide all necessary transient protection on the AC power feed and on all station lines leaving or entering the building.
4. The contractor shall note in his system drawings, the type and location of these protection devices as well as all wiring information.
5. The contractor shall furnish and install a dedicated, isolated earth ground from the central equipment rack and bond to the incoming electrical service ground buss bar.

G. Wiring Within Enclosures:

1. Provide adequate length of conductors. Bundle, lace, and train the conductors to terminal points with no excess. Provide and use lacing bars. The cables within the rack or cabinets shall be carefully cabled and laced with no. 12 Cord waxed linen lacing twine or ty-raps. All cables shall be numbered for identification.
2. Provide physical isolation from each other for speaker-microphone, line-level, speaker-level, and power wiring. Run in separate raceways, or where exposed or in same enclosure, provide 12 inch minimum separation between conductors to speaker-microphones and adjacent parallel power and telephone wiring. Provide physical separation as recommended by equipment manufacturer for other Integrated Electronic Communications Network system conductors.
3. Splices, Taps, and Terminations: Make splices, taps and terminations on numbered terminal punch blocks in junction, pull, and outlet boxes, terminal cabinets and equipment enclosures. Splices of conductors in underground pull boxes is not permitted.
4. Identification of Conductors and Cables: Use color coding of conductors and apply wire and cable marking tape to designate wires and cables so all media are identified in coordination with system wiring diagrams.

3.04 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Provide services of a duly factory authorized service representative for this project location to supervise the field assembly and connection of components and the pre-testing, testing, and adjustment of the system.
- B. Inspection: Make observations to verify that units and controls are properly labeled, and interconnecting wires and terminals are identified. Provide a list of final tap settings of paging speaker line matching transformers.
- C. Testing:
 1. Provide all instruments for testing and demonstrating in the presence of the owner's inspector that the system is operating as stated in the factory data sheets. Check all circuits and wiring to verify they are free of shorts and grounds. Perform all tests stated in each separate system specification.
 2. Rectify deficiencies indicated by tests and completely re-test work affected by such deficiencies at Contractor's expense. Verify by the system test that the total system meets the Specifications and complies with applicable standards.

3. The owner reserves the right to make independent tests of all equipment furnished to determine whether or not the equipment complies with the requirements specified herein and to accept or reject any or all of the equipment on the basis of the results thereby obtained.

3.05 CLEANING AND PROTECTION

- A. The contractor shall thoroughly clean all equipment and materials. All exposed parts of the equipment, cabinets, and other equipment shall be left in a clean condition, unblemished and free of all dirt, dust, smudges, spots, fingerprints, etc., The contractor shall remove all debris and rubbish occasioned by the electronic systems work from the site. The contractor shall thoroughly clean all buildings of any dirt, debris, rubbish, marks, etc., Caused by the performance of this work.

3.06 IN SERVICE TRAINING

Provide a minimum of two (2) four hour periods to instruct district personnel in proper operation of systems. The first instructional period shall be held prior to final acceptance of the systems. The second instructional period shall be within a period of one year after final acceptance of the systems, upon request of the District.

3.07 WARRANTY

- A. The entire system shall be warranted free of mechanical or electrical defects for a period of one (1) year after final acceptance of the installation. Any material showing mechanical or electrical defects shall be replaced promptly at no expense to the purchaser.
- B. The contractor shall maintain a competent service organization and shall, if requested, submit a service maintenance agreement to the owner after the end of the guarantee period.
- C. A typewritten notice shall be posted at the equipment rack which shall indicate the firm, address and telephone number to call when service is necessary. The notice shall be mounted in a neatly finished metal frame with a clear plastic window and securely attached to the inside of the door.

END OF SECTION

SECTION 27 41 17

THEATER AUDIOVISUAL SYSTEM

PART 1 - GENERAL

1.01 SCOPE

- A. Work Included: All labor, materials, appliances tools, equipment, facilities transportation and services necessary for and incidental to performing all operations in connection with furnishing, delivery and installation of the work of this Section, complete as shown on the drawings and/or specified herein. Work includes, but is not necessarily limited to the following:
1. Examine all other sections for work related to those other sections and required to be included as work under Division 26.
 2. General provisions and requirements for electrical work.
 3. The scope of this contract includes design and construction of the video distribution system to meet the performance criteria indicated herein and on the plans. It is the contractor's responsibility to provide a system that functions and performs as described herein and on the plans. The equipment listed in these specifications is intended to aid in the description of the functions and performance required and is not a complete list of components to be provided under this contract. Provide all items required for the system to be complete and operable.
1. Install and connect a District-furnished high definition video projector in the Auditorium at location indicated on plans. Connect to source equipment specified herein so projector will display images from:
 - a. A DVD player in the control booth.

1.02 RELATED WORK:

- A. The work described by this part includes the furnishing of all materials, equipment, supplies, labor and the performing of all operations necessary for the installation of complete and operating systems.
- B. All conduits, outlet boxes, back boxes, junction boxes, terminal cabinets and backboards are furnished and installed by others and not part of this section. The wiring, cables, equipment, devices, etc., shall be furnished and installed complete under this section. Conduit and junction box sizes shall be determined by the Installing Communications Contractor for the particular wire and cable fills required for the systems installed. (Conduit sizes shall comply with the National Electrical Code). The entire responsibility of the system, including the installation, operation, function, testing and maintenance for one (1) year after final acceptance under this section shall be the responsibility of the communications contractor.

- C. The Installing Communications Contractor shall furnish and install all equipment, cables, devices, and other materials even though not specifically mentioned herein, which are necessary for the proper integration of the system so that the system shall perform the functions listed herein in compliance with all specified requirements.
- D. Coordinate all work and equipment with systems being provided under Section 27 4100 Autonomous Public Address System.

1.03 SUBMITTALS (ADDITIONAL REQUIREMENTS)

- A. Submit detailed wiring diagrams of the proposed system showing component interconnection and descriptive literature for all component parts and cabinets..
- B. Submit product data sheets for components of the system including rough-in requirements.
- C. Submit installer and manufacturer's qualifications.
- D. After system is installed and prior to Owner's acceptance, the Contractor shall provide clear graphics, electronic diagrams and descriptions of the system's functions fully integrated into the manuals provided under Section 27 4100.
 - 1. Include a functional block diagram of the system showing interconnection of components and connections to the audio equipment.
 - 2. Include individual manufacturer's Owner's manuals for each respective component of the system.

1.03 CONTRACTOR QUALIFICATION

- A. The Installing Contractor shall be a California licensed C7 or 10 premise wiring contractor.
- B. The Contractor shall have been engaged in the business of supplying and installing the specified type of system for at least five years. The Contractor shall maintain a fully equipped service organization to provide adequate repair service to the proposed system.
- C. Contractor shall have successfully completed at least five (5) projects with similar size and similar scope of work using similar video projection system within the past 5 years.

1.03 EQUIPMENT QUALIFICATION

- A. The specification is based on the equipment of manufacturers who have been approved by the District and the manufacturers herein named shall be considered as meeting the requirements of this specification. For all items which are identified by part number and manufacturer the Performance specifications which are published in the most recent manufacturer's data sheets available at the time of bidding this project shall be applicable to the present work as though fully written out herein.
- B. All equipment shall conform to all federal, state and local applicable codes and ordinances, and shall be listed by Underwriters Laboratories.

PART 2 - PRODUCTS

2.02 SYSTEM PERFORMANCE CRITERIA

- A. The completed system shall provide the following features and functions:
 - 1. A mode of operation in which the computer screen images from a laptop computer on the stage are projected onto the house projection screen by the video projector with audio playback over the house speakers.
 - 2. A mode of operation in which the computer screen images from a laptop computer in the control booth are projected onto the house projection screen by the video projector with audio playback over the house speakers.

2.01 EQUIPMENT

- A. Provide Extron or equal Cat 5 transmitters and HDMI input jacks mounted in flush outlet box at the stage and at control booth for connection to portable computers.
- B. Provide rack mounted equipment by Extron or equal to receive and process video and audio signals to achieve specified functions.
- C. Provide power supplies for all devices.

2.02 EQUIPMENT RACK

- A. Mount rack mounted equipment in rack furnished under Section 27 4100.

2.03 CABLES AND CONNECTORS

- A. Category 5e cables shall be Belden Data Twist 350 series or equal.
- B. Wall plates and connectors shall be as manufactured by Extron or equal.
- C. Cable connectors shall be Souncraft, Extron, or equal.

PART 3 – EXECUTION

3.01 GENERAL

- A. Provide interconnection of components to achieve the functions indicated herein and on the plans. Provide power supply connections to system components.

3.02 TESTING AND TRAINING

- A. Demonstrate proper operation of all equipment to the Project Inspector.
- B. Provide two (2) 4-hour instructional sessions taught by qualified personnel on the proper use of the system. First session shall be given to District Maintenance and Operations personnel. Second session shall be given to teaching staff.

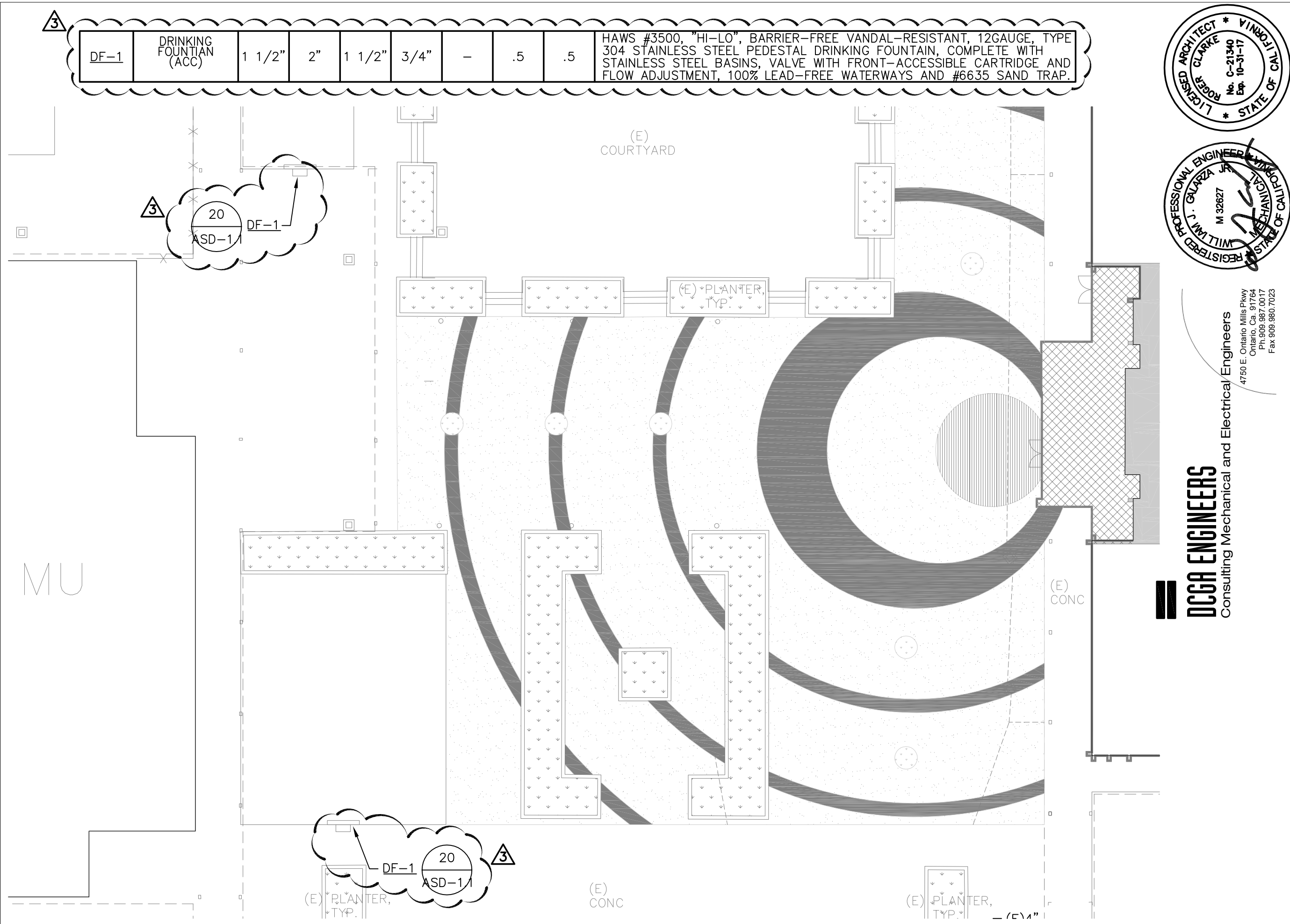
3.03 INSTALLATION

- A. Contractor shall furnish all equipment, labor, system setup, and other services necessary for the proper installation of the products/system as indicated on the drawings and specified herein. System setup information shall include each component's proper mounting and alignment and properly verified signal pathways and operation. Proper operational and network support control functions shall be verified.
- B. Install projector in accordance with manufacturer's handling and installation instructions.

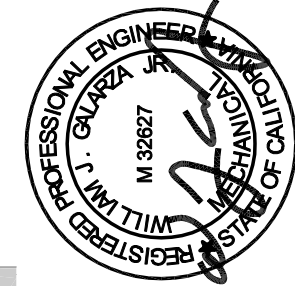
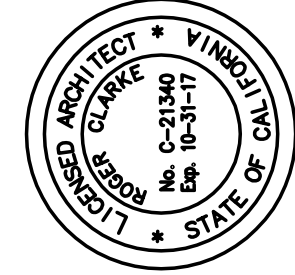
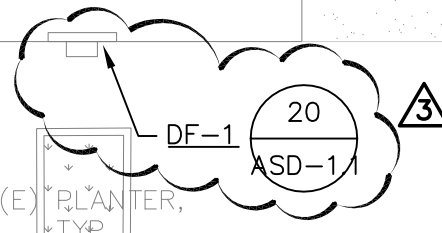
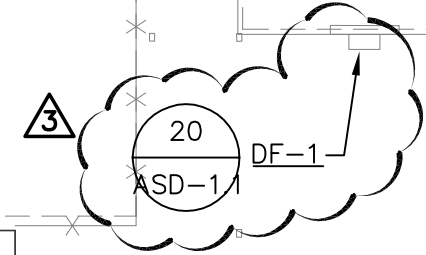
3.04 PROTECTION AND CLEANING

- A. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
- B. Repair or replace damaged components before Substantial Completion of the project.
- C. Remove temporary tags, coverings, and construction debris from interior and exterior surfaces of the equipment. Remove construction debris from equipment area and dispose of properly.

END OF SECTION








DF-1	DRINKING FOUNTAIN (ACC)	1 1/2"	2"	1 1/2"	3/4"	-	.5	.5	HAWS #3500, "HI-LO", BARRIER-FREE VANDAL-RESISTANT, 12GAUGE, TYPE 304 STAINLESS STEEL PEDESTAL DRINKING FOUNTAIN, COMPLETE WITH STAINLESS STEEL BASINS, VALVE WITH FRONT-ACCESSIBLE CARTRIDGE AND FLOW ADJUSTMENT, 100% LEAD-FREE WATERWAYS AND #6635 SAND TRAP.
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4750 E. Ontario Mills Pkwy
Ontario, Ca. 91764
Ph 909.987.0017
Fax 909.980.7023

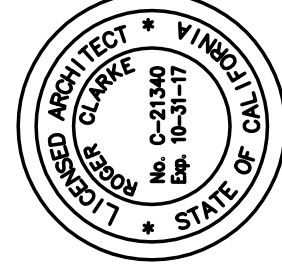
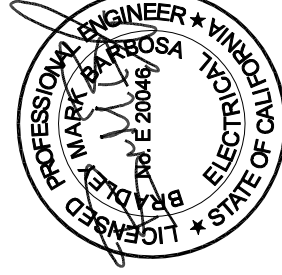
DCGA ENGINEERS
Consulting Mechanical and Electrical/Engineers

Project		CAJON HIGH SCHOOL THEATRE RENOVATION SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT	
Title	PLUMBING SITE PLAN P-0.2	Sheet No.	PSK-3.1
Architects	Planners	Date	06/08/2016
Ruhnau RuhnauClarke	3775 Tenth Street Riverside, CA 92501-3669 • T 951 684 4664 E 951 684 6276 5751 Palmer Way, Suite C Carlsbad, CA 92010-7249 • T 760 438 5899 F 760.931.8194	DSA A#	04-114799
		DSA F#	36-H7
		Scale	1" = 20'-0"
		ADD #3	


	4" TRACK LIGHTING.	WHITE	(2) 7W LED PAR 20	MOUNT TRACK 12" FROM WALL PROVIDE LED SCREW-IN LAMPS.	HALO #L65X-MB-CURRENT LIMITED-LC901CB-120-MB (TRACK) #L762-MB, L1962 BARNDOORS (FIXTURE) #SORAA SP-11-25D-827 (LAMP)
	4" RECESSED LED DOWNLIGHT (750 LUMENS MINIMUM)	BLACK			GOTHAM-EVO #EVO-35-07-4AR-MWD-LS-120 OR APPROVED EQUAL
	LED ILLUMINATED WALKWAY EDGE DELINEATION SYSTEM.	BLACK	24W/FT LED	PROVIDE ALL NECESSARY HARDWARE AS REQUIRED FOR COMPLETE OPERATING SYSTEM. CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DRAWING A-9.1 FOR TYPE OF PROFILE REQUIRED (CARPET TO EDGE, CARPET OR WALL)	TIVOCI #SATT-CC/CW/CE-35-06-* #JT-60-1-5-12-D (TRANSFORMERS) OR APPROVED EQUAL. 
	LED AREA LIGHT ON ROUND EXTRUDED ALUMINUM POLE (4100 LUMENS MINIMUM)	ALUMINUM GRAY	40W LED	PROVIDE COMPLETE WITH POLE & CONCRETE BASE.	SYSTEMALUX #STELO-S.4120W-UNV-14 S.4129 (MOUNTING FLANGE) OR PRE-APPROVED EQUAL



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Project CAJON HIGH SCHOOL THEATRE RENOVATION
SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

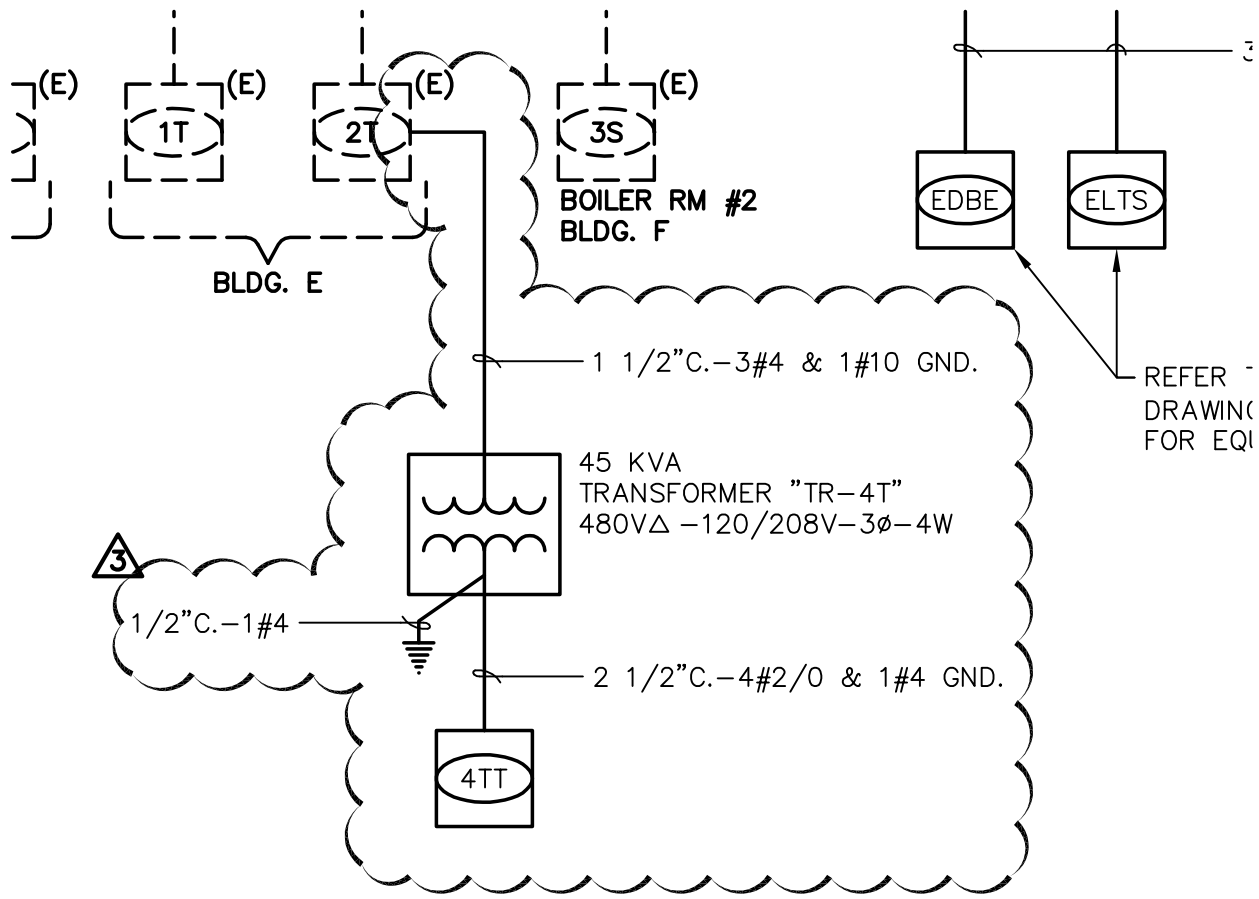
Architects Planners  Ruhnau Ruhnau Clarke
 □ 3775 Tenth Street Riverside, CA 92501-3669 • T 951 684 4664
 E 951 684 6276
 □ 5751 Palmer Way, Suite C Carlsbad, CA 92010-7249 • T 760 438 5899
 F 760 931 8194

Title LIGHTING FIXTURE SCHEDULE AND NOTES
E-0.3

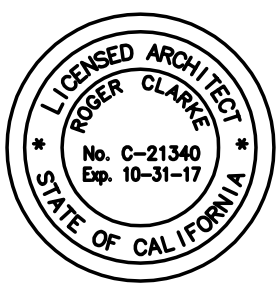
DSA #	04-114799	Date	06/08/2016	Sheet No.	ESK-3.1
DSA #	36-H7	Scale	N.T.S		

ADD #3

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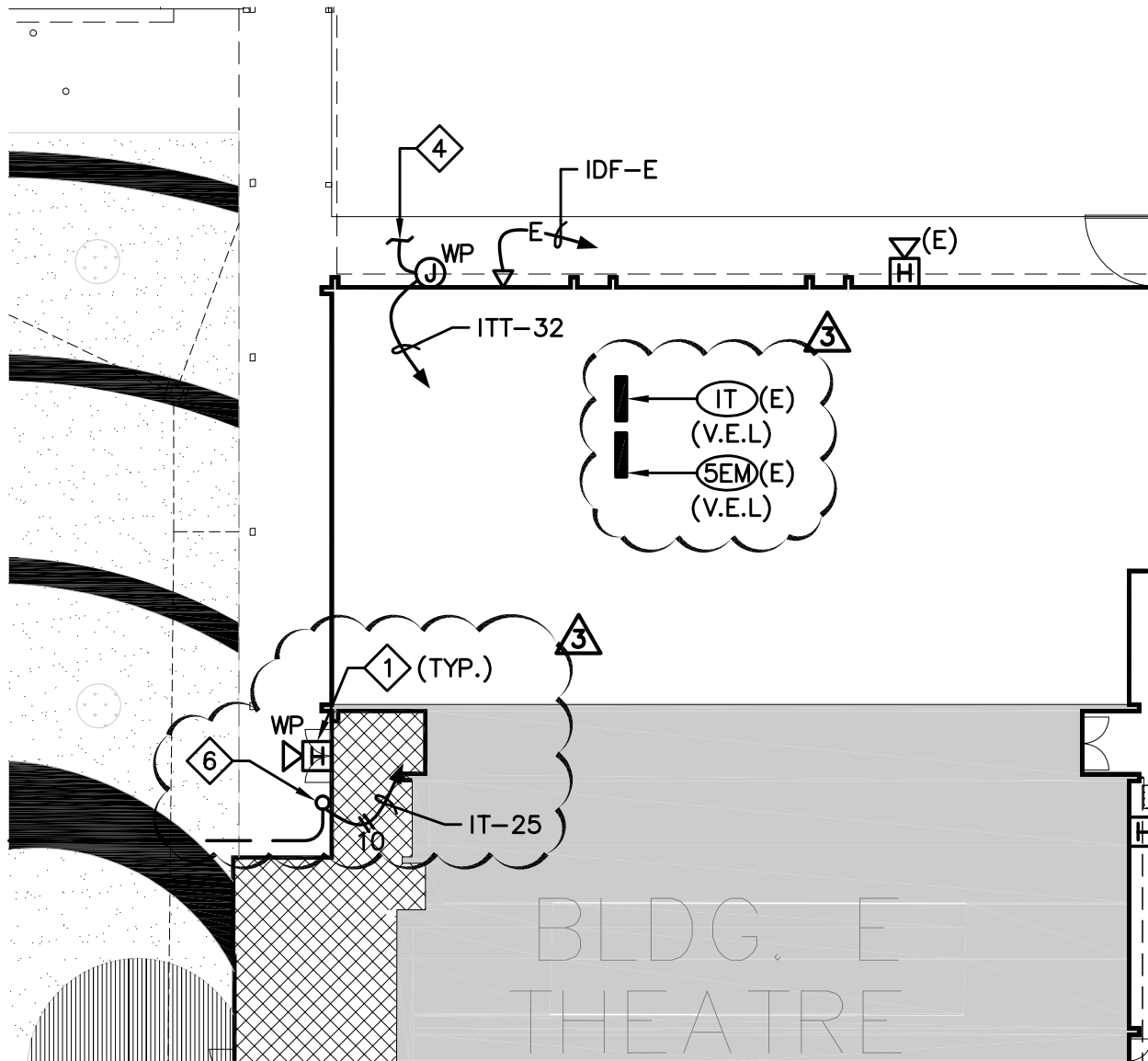


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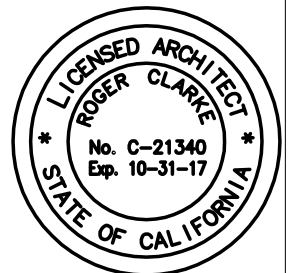
ADD #3

Project CAJON HIGH SCHOOL THEATRE RENOVATION SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT		Title SINGLE LINE DIAGRAM E-0.4	
Architects Planners Ruhnau RuhnauClarke 3775 Tenth Street Riverside, CA 92501-3669 • T 951 684 4664 F 951 684 6276 5751 Palmer Way, Suite C Carlsbad, CA•92010-7249 • T 760 438 5899 F 760 931 8194		DSA A# 04-114799	Date 06/08/2016
		DSA F# 36-H7	Scale N.T.S
		Sheet No. ESK-3.2	



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ADD #3

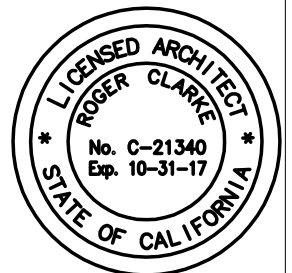
Project CAJON HIGH SCHOOL THEATRE RENOVATION SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT		Title ELECTRICAL SITE PLAN E-1.1	
Architects Planners Ruhnau RuhnauClarke 3775 Tenth Street Riverside, CA 92501-3669 • T 951 684 4664 F 951 684 6276 5751 Palmer Way, Suite C Carlsbad, CA•92010-7249 • T 760 438 5899 F 760 931 8194		DSA A# 04-114799	Date 06/08/2016
		DSA F# 36-H7	Scale 1"=20'-0"
			Sheet No. ESK-3.3

SHEET NOTES...

- 4 EXISTING WIRELESS ACCESS DEVICE/OUTLET BOX TO BE REMOVED AND RE-INSTALLED AFTER NEW CEILING IS INSTALLED. EXISTING WIRING SHALL BE PROTECTED IN PLACE FOR RE-USE.
- 5 EXISTING CLOCK TO BE REMOVED AND RE-INSTALLED AFTER WALL REMODEL COMPLETED. EXISTING WIRING SHALL BE PROTECTED IN PLACE FOR RE-USE.
- 6 EXISTING HAND DRYER TO BE REMOVED. REUSE EXISTING CIRCUIT FOR NEW HAND DRYER LOCATION, SEE SHEET E2.1.
- 7 EXISTING WATER HEATER TO BE RELOCATED. REUSE EXISTING CIRCUIT FOR NEW LOCATION, SEE E2.1.
- 8 REMOVE EXISTING BREAKER WITH ASSOCIATED CONDUIT AND WIRING FEEDER DR-1.
- 9 EXISTING SPEAKER TO BE REMOVED AND RE-INSTALLED UPON WALL AND CEILING REMODEL. EXISTING WIRING SHALL BE PROTECTED IN PLACE FOR RE-USE.

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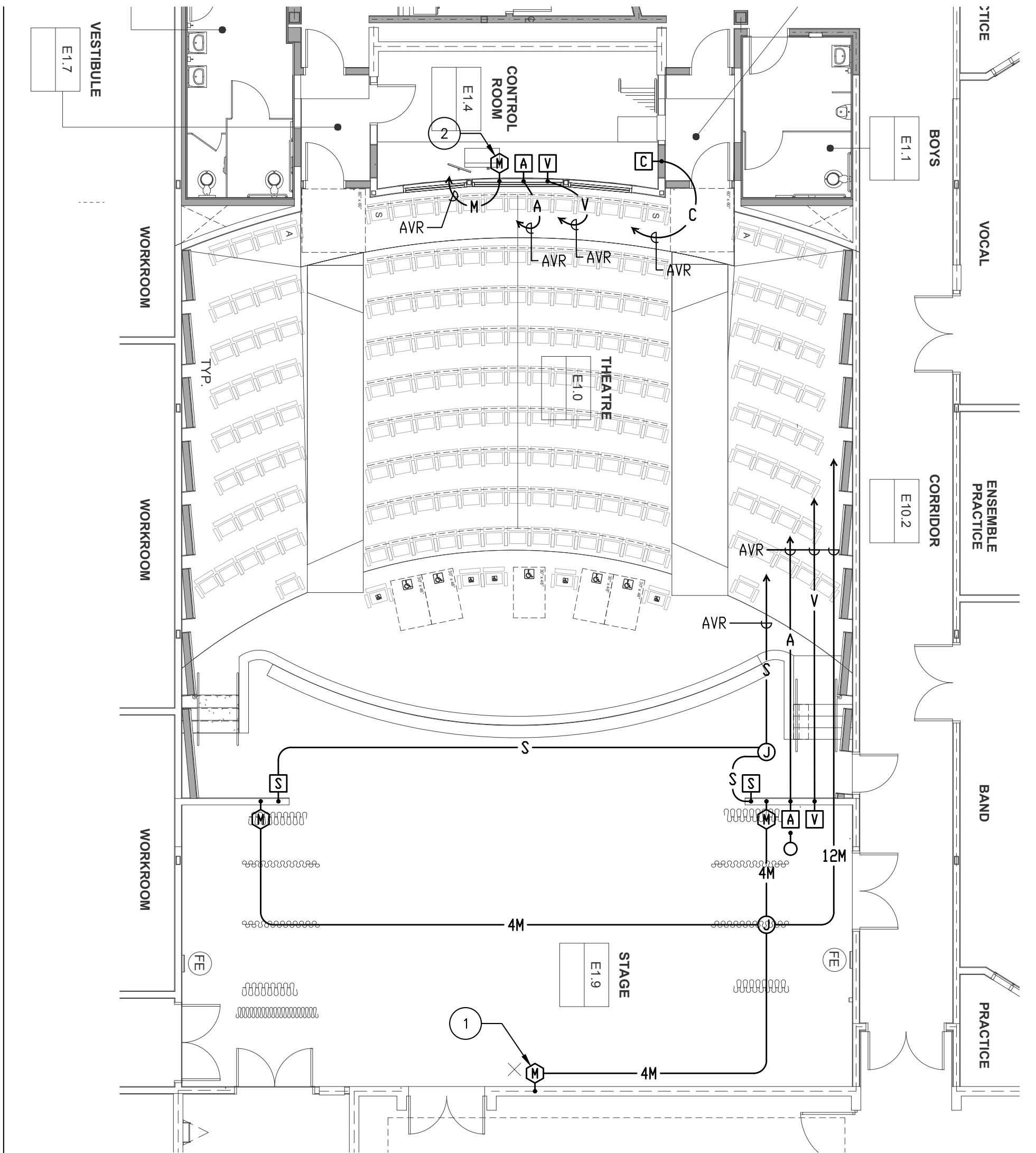
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ADD #3

Project CAJON HIGH SCHOOL THEATRE RENOVATION SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT		Title ELECTRICAL DEMOLITION PLANS – LEVELS 1&2 E-2.0	
Ruhnau RuhnauClarke		DSA A# 04-114799	Date 06/08/2016
Architects Planners 3775 Tenth Street Riverside, CA 92501-3669 • T 951 684 4664 F 951 684 6276 5751 Palmer Way, Suite C Carlsbad, CA•92010-7249 • T 760 438 5899 F 760 931 8194		DSA F# 36-H7	Scale N.T.S
		Sheet No. ESK-3.4	

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PLAN NOTES:

- 1 SURFACE FS BOX WITH RIGID GALVANIZED STEEL CONDUIT RISER.
- 2 TWO (2) MICROPHONE JACKS IN FLUSH WALL MOUNTED OUTLET BOX AT +18".

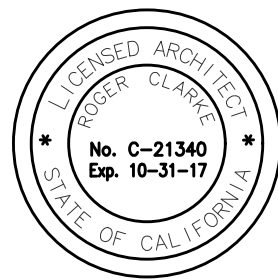


FBA Engineering

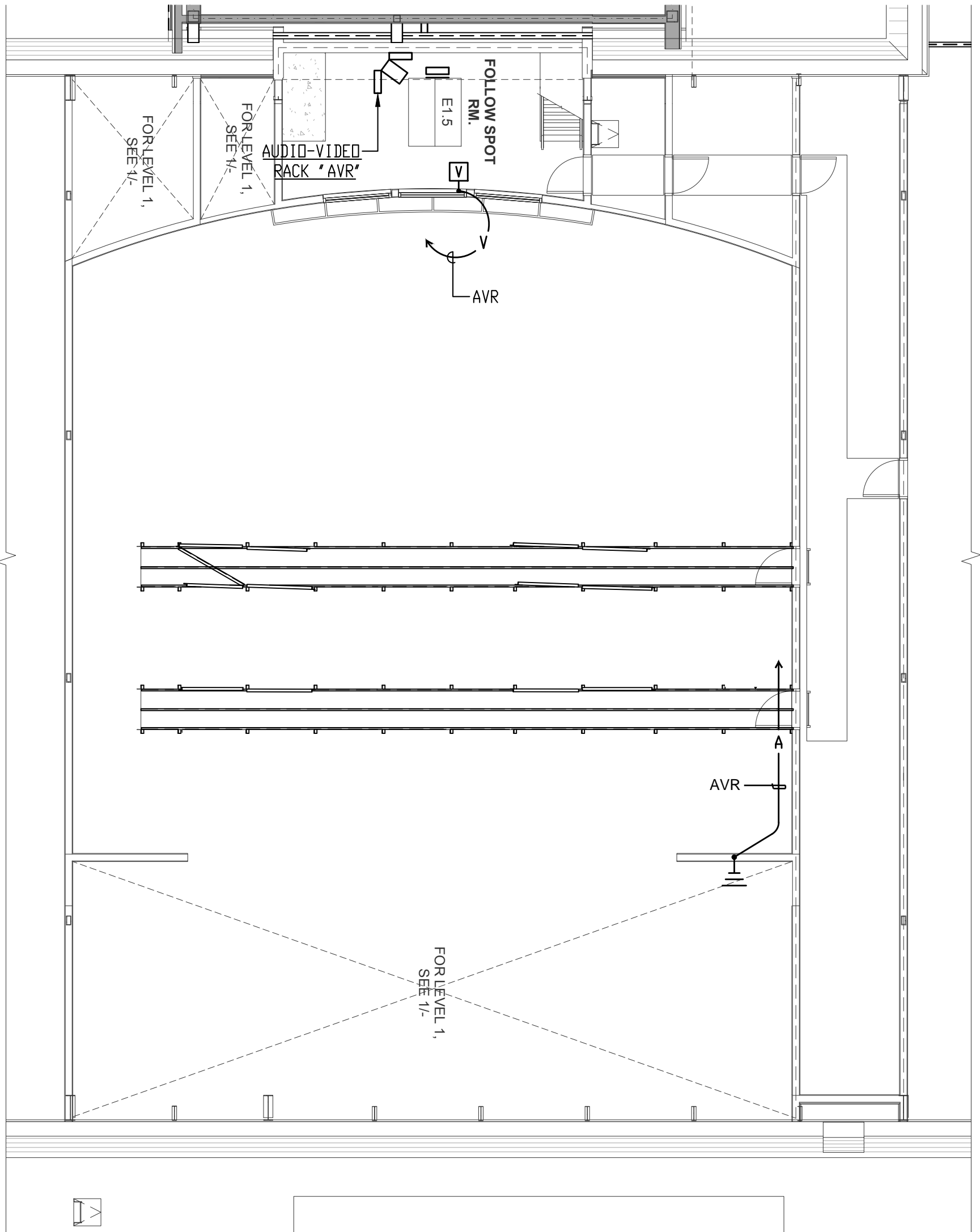
Consulting Electrical Engineers

150 Paularino Avenue Suite A120
Costa Mesa, CA 92626
949.852.9995 • 949.852.1657 (fax)
fbaenr.com

FBA Job Number: 874.922



Project CAJON HIGH SCHOOL THEATRE RENOVATION SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT		Title LOWER LEVEL AUDIO-VIDEO PLAN	
Ruhnau Ruhnau Clarke Architects • Planners ■ 3775 Tenth Street • Riverside, CA 92501-3669 • T 951 684 4664 • F 951 684 6276 ■ 5751 Palmer Way, Suite C • Carlsbad, CA 92010-7249 • T 760 438 5899 • F 760 931 8194	DSA A# 04-114799	Date 2016-06-07	Sheet No. AV 1
	DSA F# 36-H7	Scale 1/8"=1'-0"	

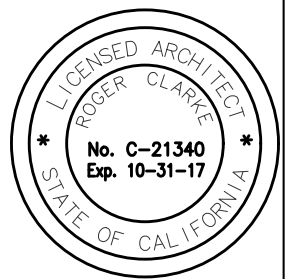


FBA Engineering

Consulting Electrical Engineers

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 fbaenr.com

FBA Job Number: 874.922



Project **CAJON HIGH SCHOOL THEATRE RENOVATION**
 SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

Title **UPPER LEVEL**
AUDIO-VIDEO PLAN

Architects-Planners

Ruhnau Ruhnau Clarke

- ▣ 3775 Tenth Street • Riverside, CA 92501-3669 • T 951 684 4664 • F 951 684 6276
- ▣ 5751 Palmer Way, Suite C • Carlsbad, CA 92010-7249 • T 760 438 5899 • F 760 931 8194

DSA A#
04-114799

Date
2016-06-07

Sheet No.

DSA F#
36-H7

Scale
1/8"=1'-0"

AV
2

- S SPEAKER ENCLOSURE, WALL-MOUNTED, +10'.

- WIRELESS MICROPHONE ANTENNA ON FLUSH WALL MOUNTED OUTLET BOX AT +10'.

- M FOUR (4) MICROPHONE JACKS IN FLUSH WALL MOUNTED 2-GANG OUTLET BOX AT +18", UNLESS NOTED OTHERWISE.

- A AUDIO INPUT CONNECTORS IN FLUSH WALL MOUNTED SINGLE-GANG OUTLET BOX AT +18".

- V VIDEO INPUT CONNECTORS IN FLUSH WALL MOUNTED SINGLE-GANG OUTLET BOX AT +18".

- C TOUCH SCREEN CONTROL TERMINAL FOR AUDIO-VIDEO SYSTEM IN FLUSH BACKBOX ABOVE COUNTER.

- M — TWO (2) MICROPHONE CABLES IN "C.

- 4M — FOUR (4) MICROPHONE CABLES IN "C.

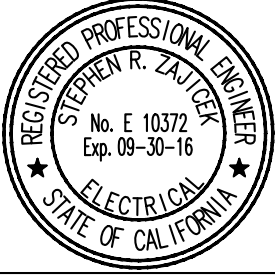
- 12M — TWELVE (12) MICROPHONE CABLES IN "C.

- A — 3/4"C. WITH AUDIO CABLE PER SPECIFICATIONS.

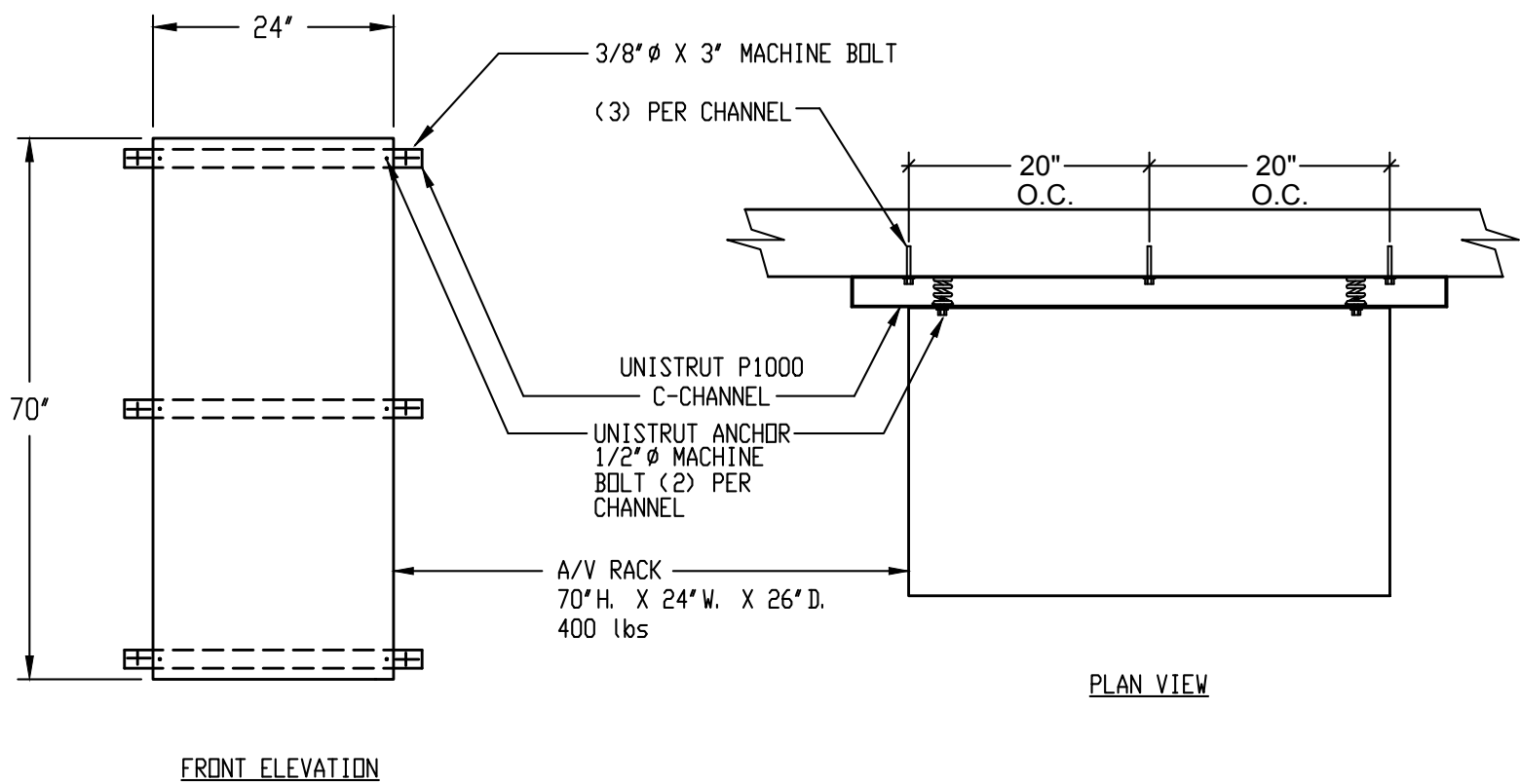
- V — 3/4"C. WITH VIDEO CABLE PER SPECIFICATIONS.

- C — 1"C. WITH A/V CONTROL CABLE PER SPECIFICATIONS.

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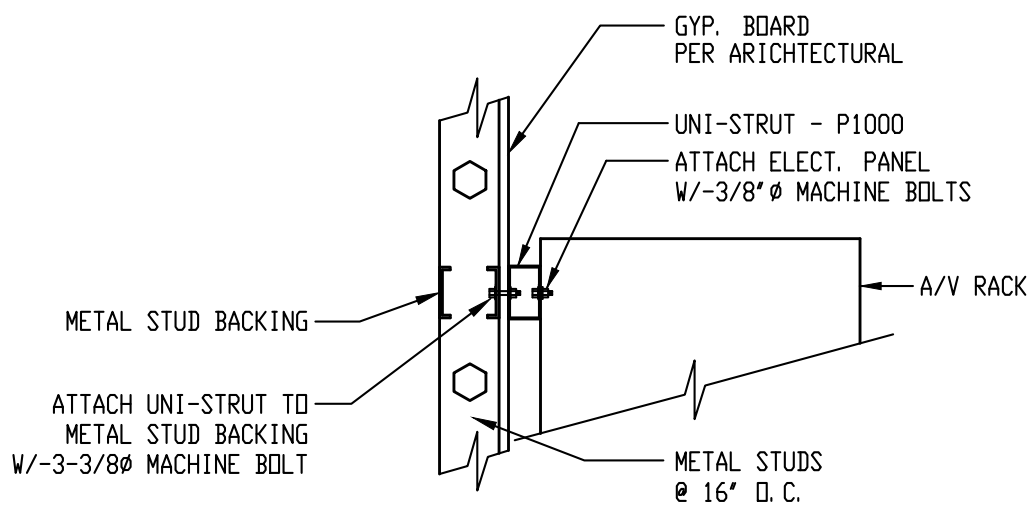


Project CAJON HIGH SCHOOL THEATRE RENOVATION SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT		Title AUDIO-VIDEO SYMBOL LIST	
	Ruhnau Ruhnau Clarke	DSA A#	Date
	Architects • Planners <ul style="list-style-type: none"> ▣ 3775 Tenth Street • Riverside, CA 92501-3669 • T 951 684 4664 • F 951 684 6276 ▣ 5751 Palmer Way, Suite C • Carlsbad, CA 92010-7249 • T 760 438 5899 • F 760 931 8194 	04-114799	2016-06-07
		DSA F#	Scale
		36-H7	NONE
		Sheet No.	AV 3



FRONT ELEVATION

PLAN VIEW



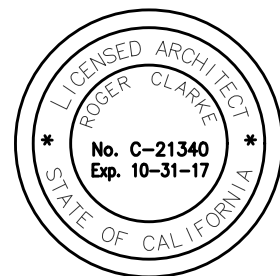
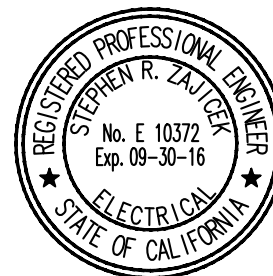
METAL STUD WALL

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FBA Job Number: 874.922



Project **CAJON HIGH SCHOOL THEATRE RENOVATION**
SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

Title **AUDIO-VIDEO RACK**
MOUNTING DETAIL

Architects-Planners

Ruhnau Ruhnau Clarke

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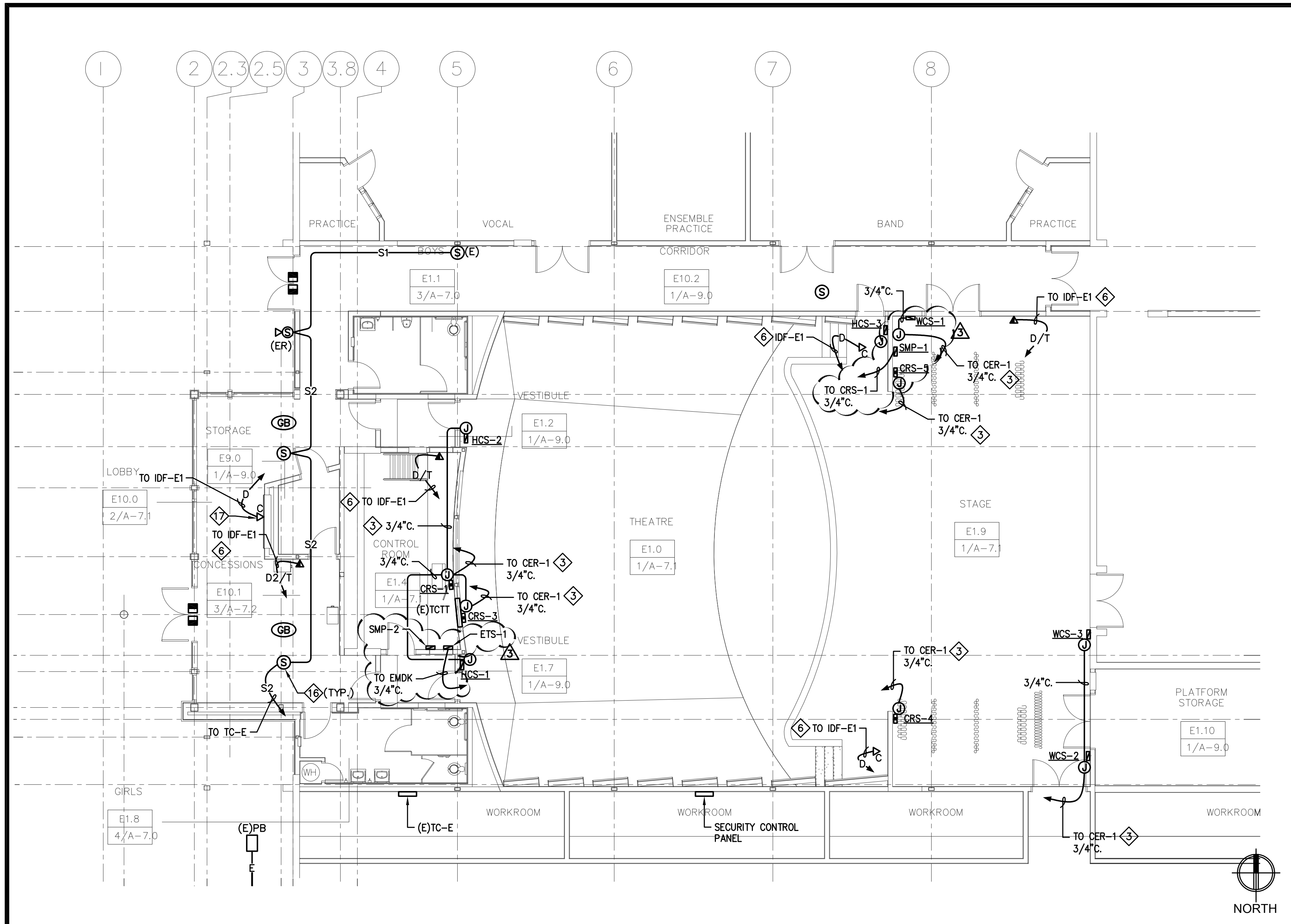
Date
2016-06-07

Sheet No.

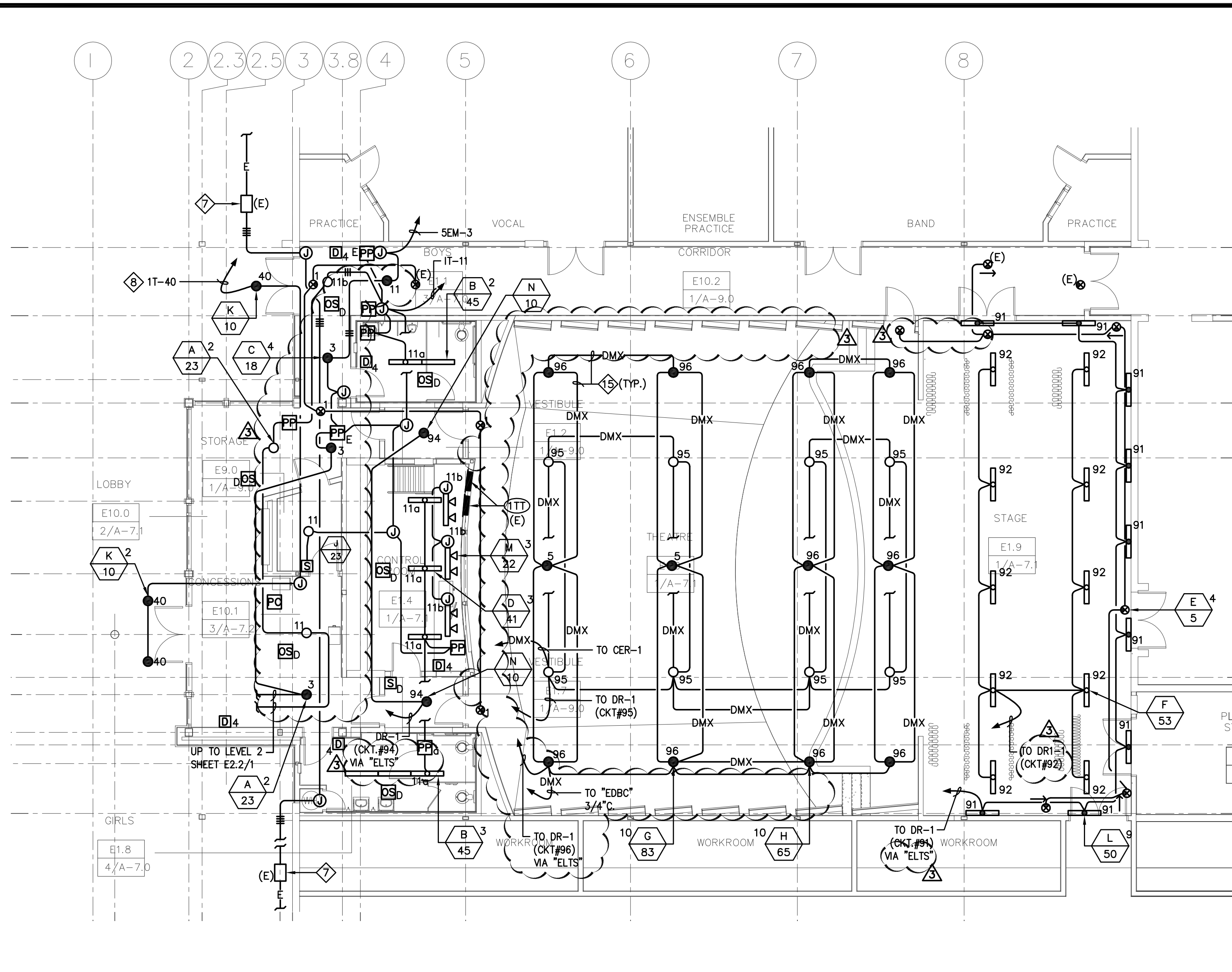
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Scale
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AV
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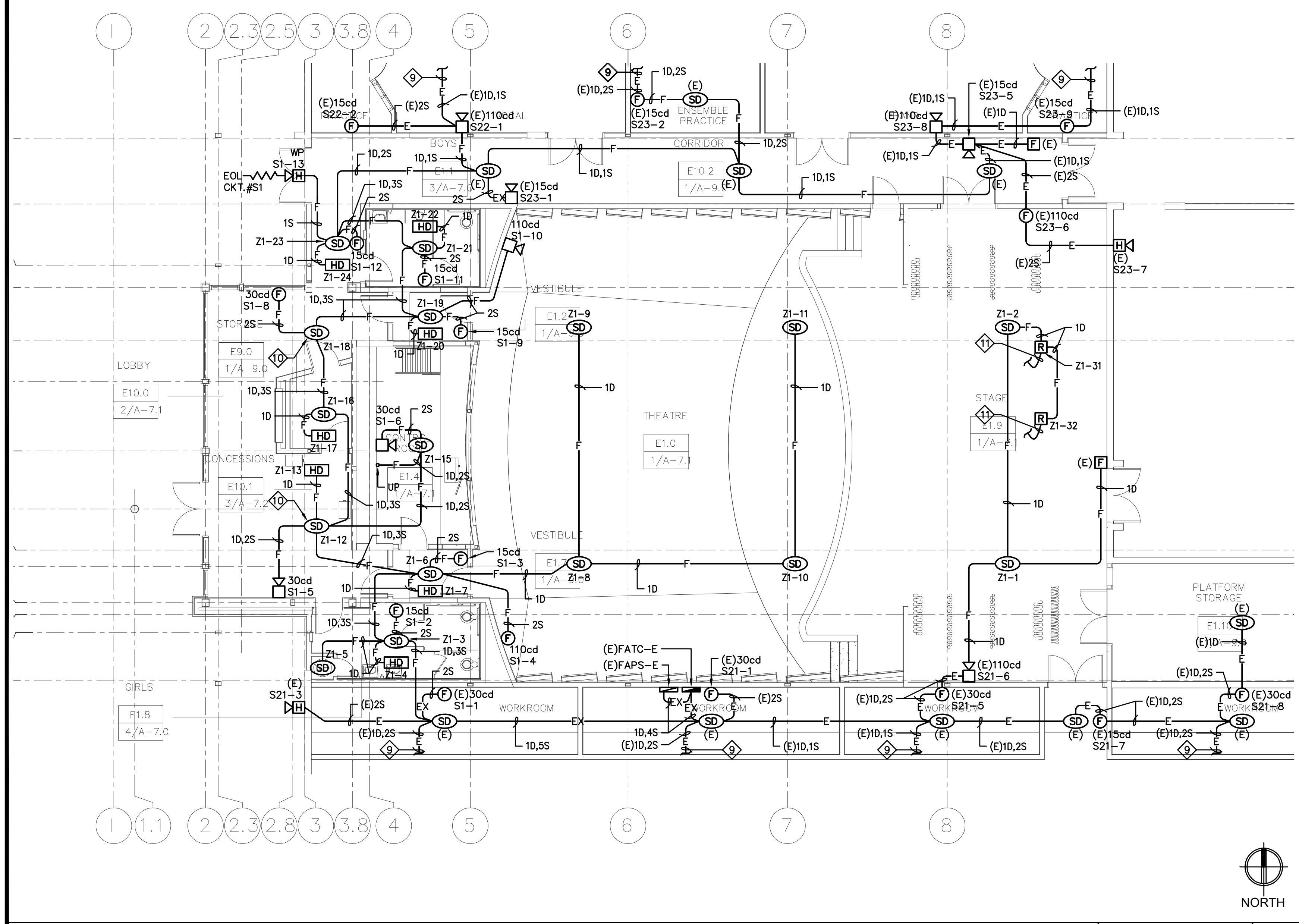


COMMUNICATION PLAN - LEVEL 1 1/8" = 1'-0" 3

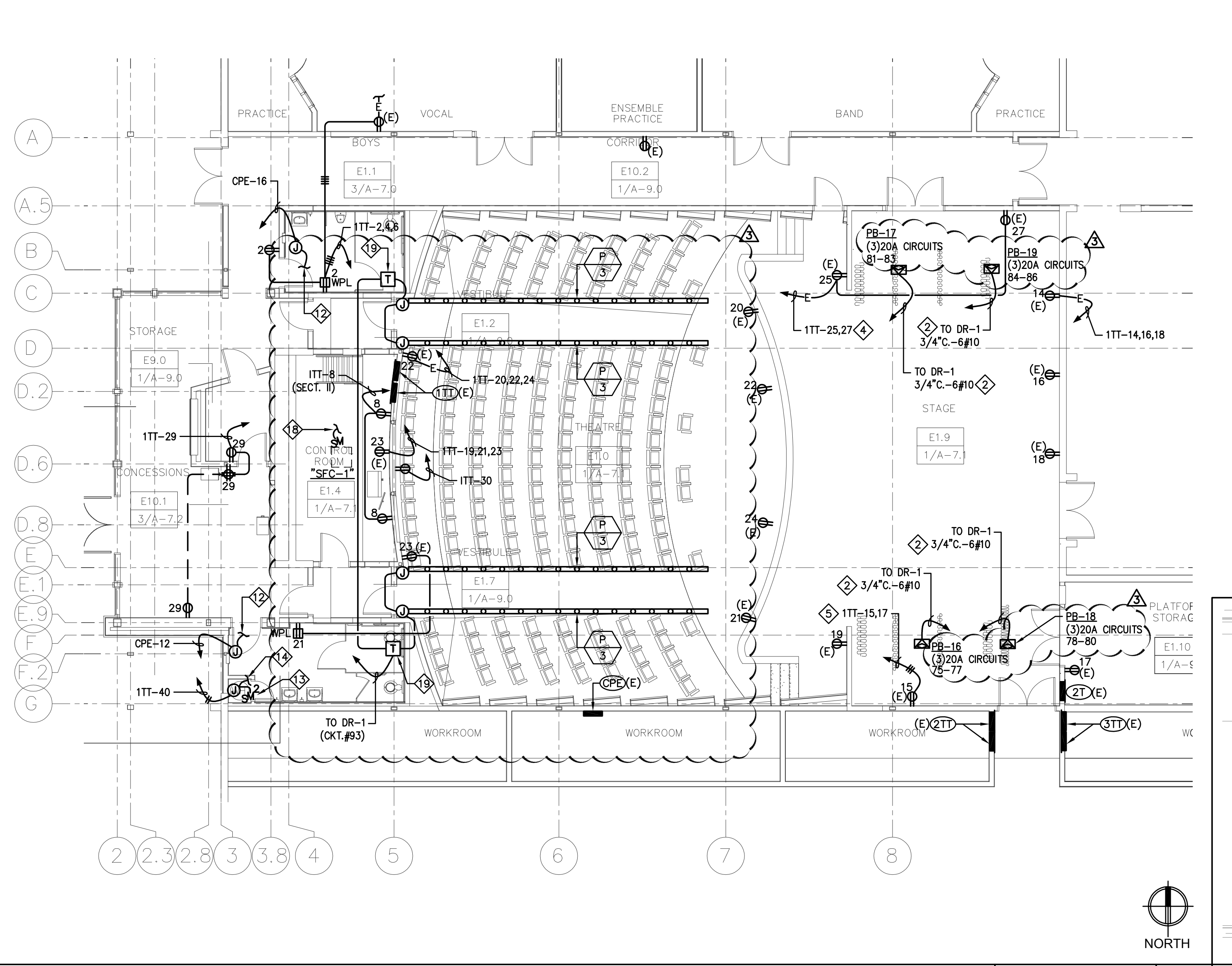


LIGHTING PLAN - LEVEL 1 1/8" = 1'-0" 1

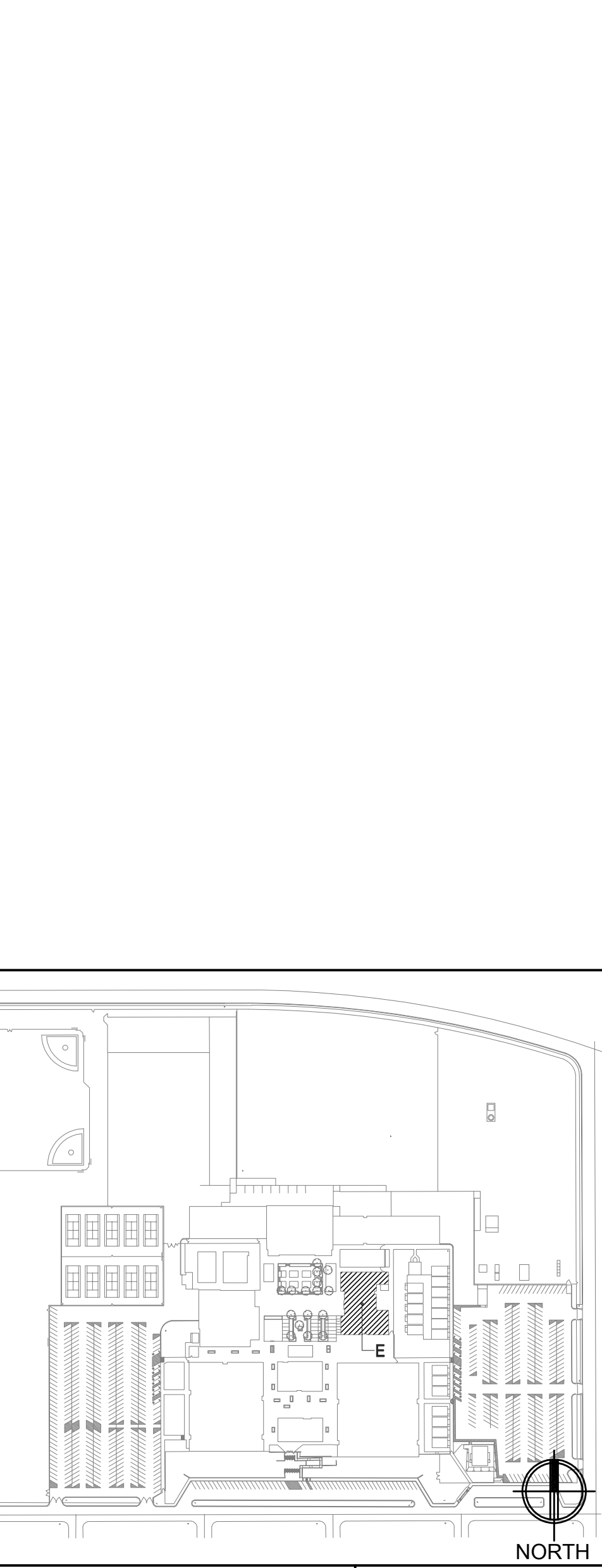
- ### SHEET NOTES
- 1 REFER TO THEATRICAL DRAWINGS FOR WIRING REQUIREMENTS.
 - 2 MAKE CONNECTION TO PLUG BOX/PITIAL BOX VERIFY EXACT LOCATION WITH THE THEATRICAL DRAWINGS PRIOR TO CONSTRUCTION. REFER TO SHEET TL8.1.1 FOR PLUG/PITIAL BOX TYPE.
 - 3 MAKE CONNECTION TO CONTROL RECEPTACLE/CONTROL BOX VERIFY EXACT LOCATION WITH THE THEATRICAL DRAWINGS PRIOR TO CONSTRUCTION. REFER TO SHEET TL8.2.1 FOR PLUG/PITIAL BOX TYPE.
 - 4 REMOVE CIRCUIT #29 WIRE FROM EXISTING CONDUIT RUN.
 - 5 REMOVE CIRCUIT #13 WIRE FROM EXISTING CONDUIT RUN.
 - 6 REFER TO (E-1) FOR IDF-E1 LOCATION.
 - 7 VERIFY EXACT LOCATION OF EXISTING SURFACE MOUNTED EXTERIOR FIXTURE.
 - 8 CIRCUIT SHALL BE CONTROLLED BY EMS.
 - 9 TO EXISTING NOTIFICATION AND INITIATING DEVICES NOT PART OF THE SCOPE OF WORK.
 - 10 SMOKE DETECTOR MOUNTED ON LOW CEILING.
 - 11 MAKE CONNECTION TO AUTOMATIC ROOF VENT PER THE MANUFACTURERS REQUIREMENTS. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION.
 - 12 MAKE CONNECTION TO ELECTRIC HAND DRYER. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
 - 13 MAKE CONNECTION TO CIRCULATING PUMP, CP-1.
 - 14 MAKE CONNECTION TO ELECTRIC WATER HEATER.
 - 15 3/4" CONDUIT WITH (1) BELDEN #9729 CABLE. REFER TO THEATRICAL DRAWINGS FOR DMX CONTROL OF FIXTURE TYPES "G" AND "H".
 - 16 BOGEN #S8E725 SPEAKER (TO MATCH EXISTING).
 - 17 DATA OUTLET FOR WIRELESS ACCESS POINT (OWNER FURNISHED CONTRACTOR INSTALLED).
 - 18 INTERLOCK FAN COIL WITH HEAT PUMP. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
 - 19 MOUNT AISLE LIGHTING TRANSFORMER ABOVE CEILING.



FIRE ALARM PLAN - LEVEL 1 1/8" = 1'-0" 4



POWER PLAN - LEVEL 1 1/8" = 1'-0" 2



SITE KEYPLAN 1" = 300'

RRC PROJECT NO: 1-78-04		REVISIONS:	
NO.	DATE	NO.	DESCRIPTION
1	09/04/15	1	50% CD SET
2	09/30/15	2	75% CD SET
3	11/06/15	3	DSA SUBMITTAL SET
4	04/05/16	4	DSA BACK CHECK

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Ontario, CA 91764
Ph: 951.987.0217
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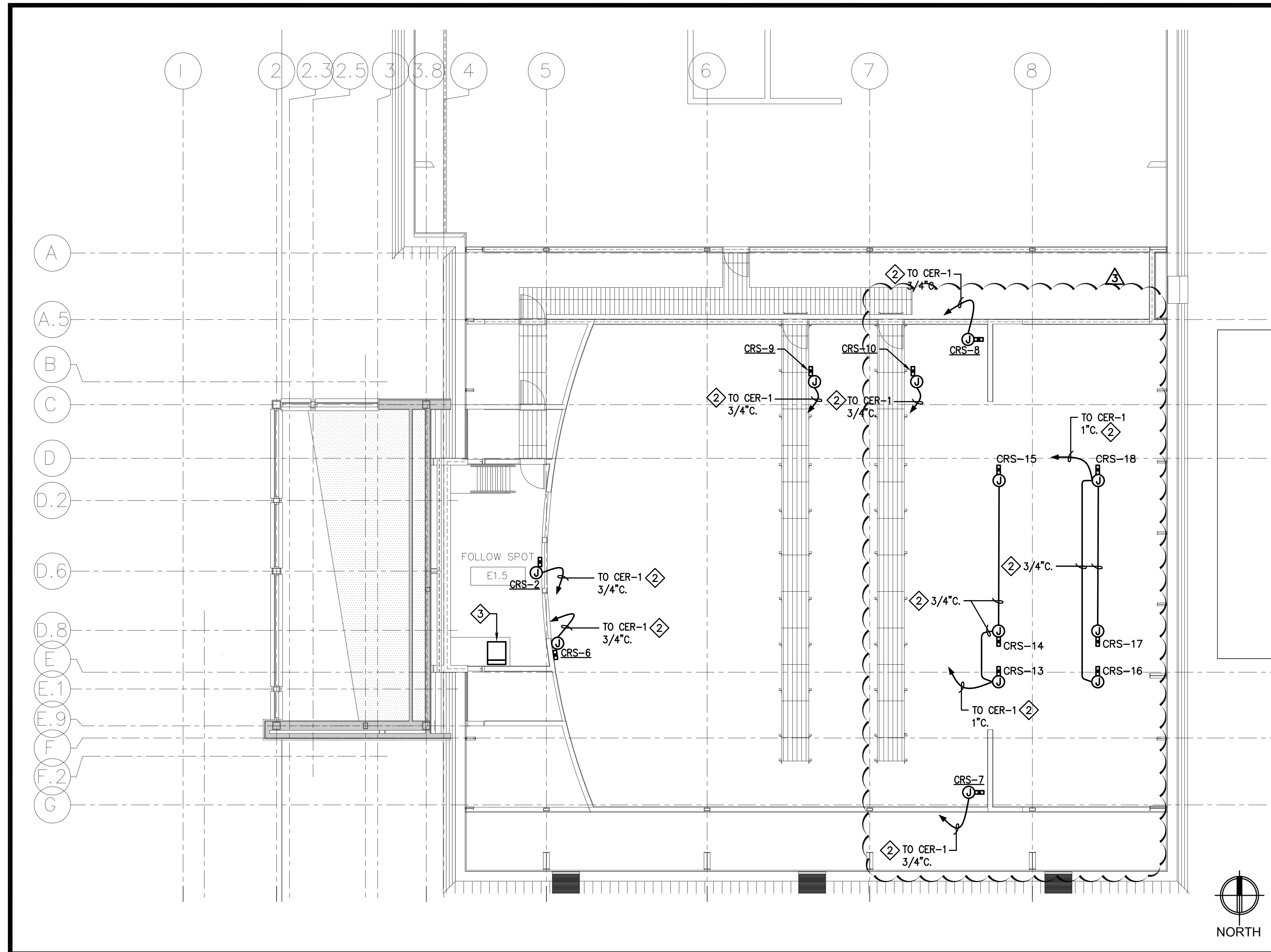
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3775 Tenth Street, Riverside, CA, 92501 | t. 951.684.6664 | f. 951.684.6276
5751 Palmer Way, Suite C, Carlsbad, CA., 92010 | t. 760.438.5899 | f. 760.931.8194

CAJON HIGH SCHOOL THEATRE RENOVATION
1200 HILL DRIVE, SAN BERNARDINO, CA 92407
SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

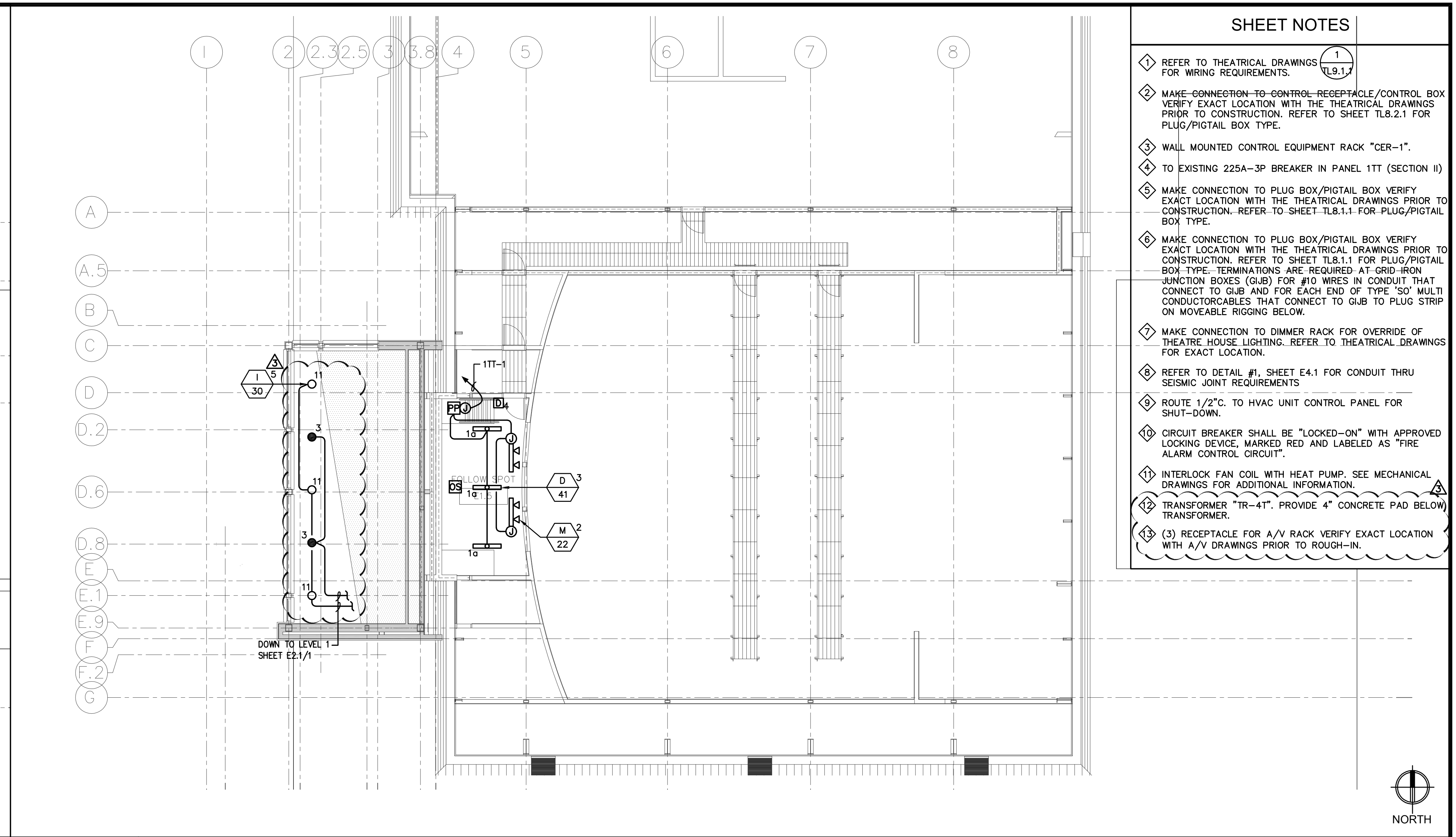
CONSULTANT
ARCHITECT

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OFFICE OF REGULATION SERVICES
04-114799
AC: _____ FLS: _____ SS: _____
DATE: _____
DSA APPROVAL

E-2.1

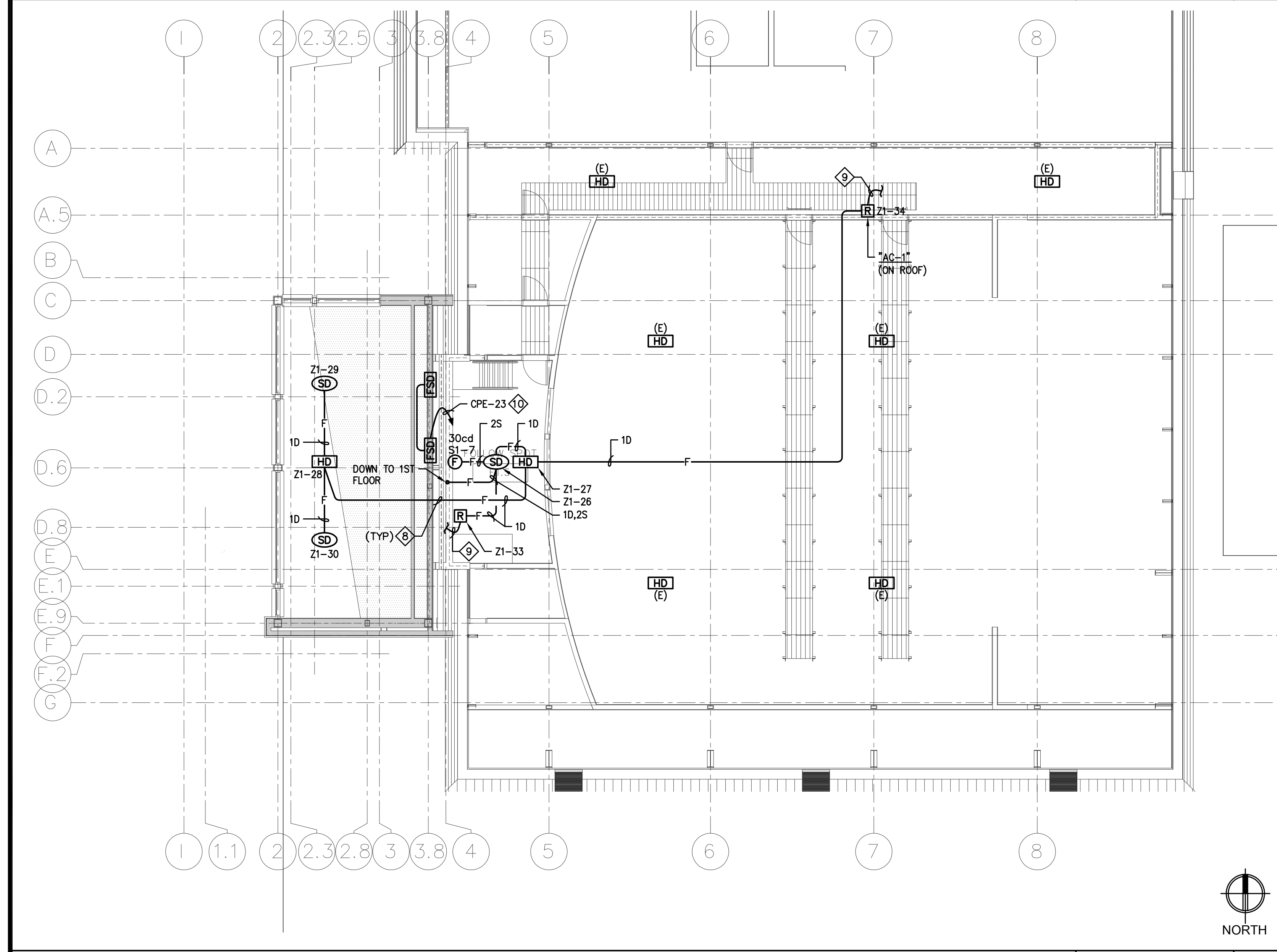


COMMUNICATION PLAN - LEVEL 2 1/8" = 1'-0" 3

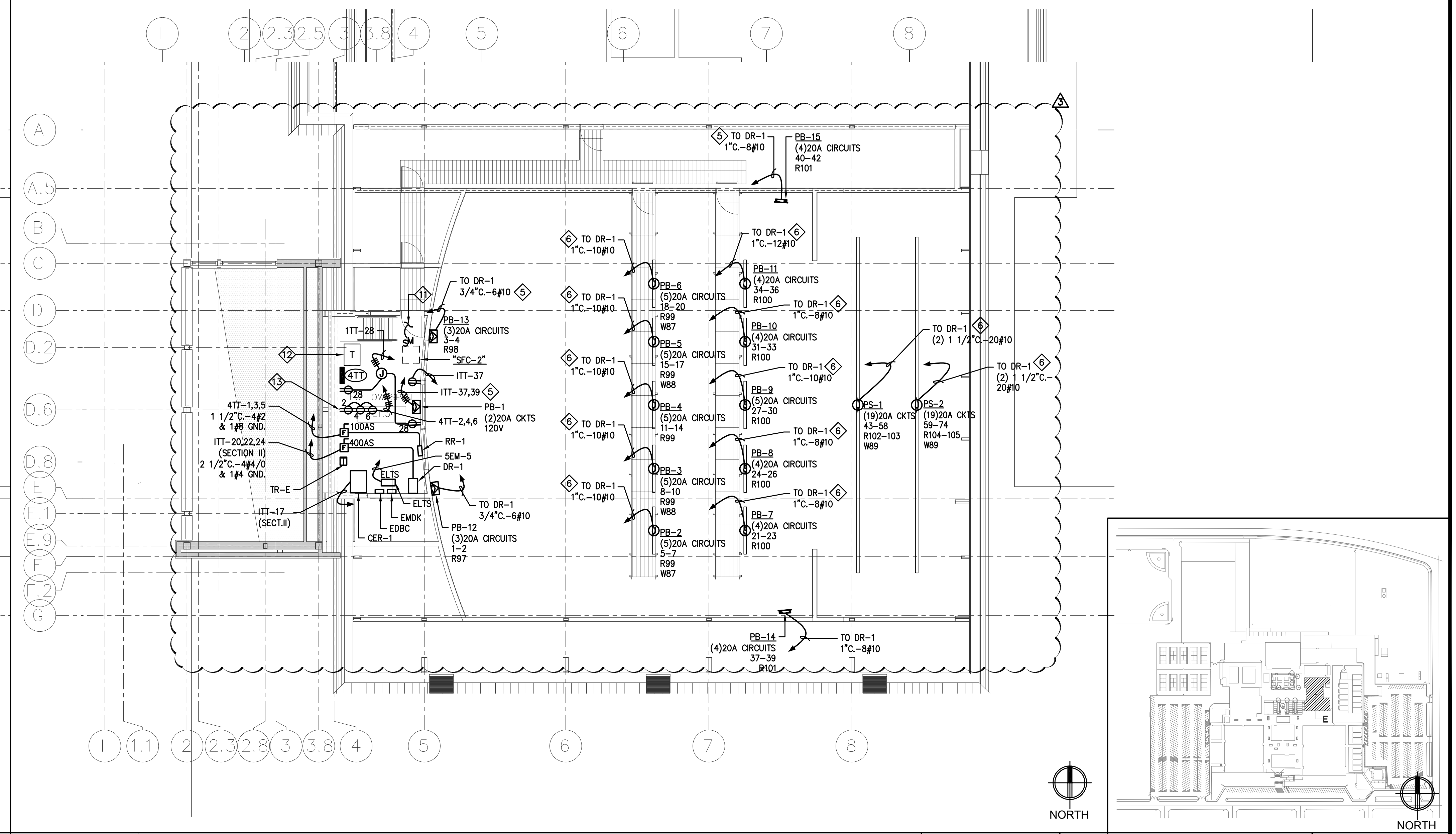


LIGHTING PLAN - LEVEL 2 1/8" = 1'-0" 1

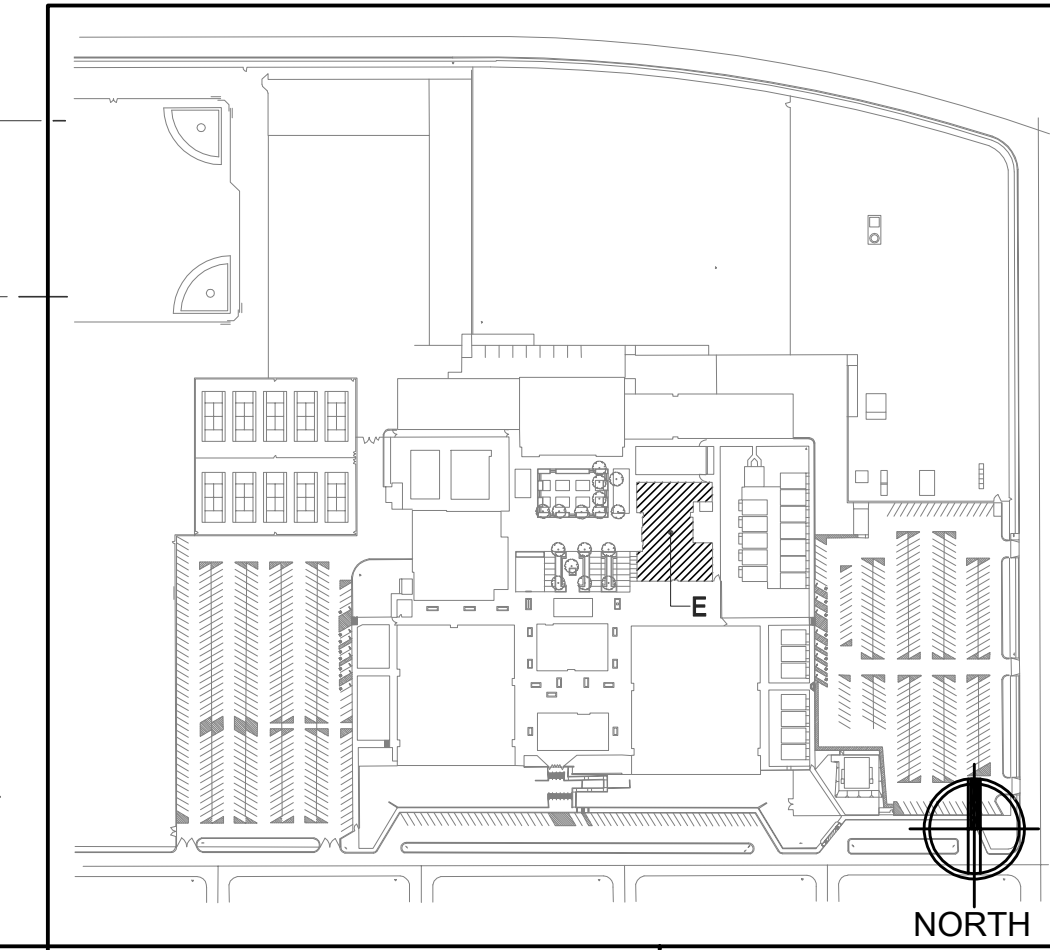
- SHEET NOTES**
- 1 REFER TO THEATRICAL DRAWINGS FOR WIRING REQUIREMENTS.
 - 2 MAKE CONNECTION TO CONTROL RECEPTACLE/CONTROL BOX VERIFY EXACT LOCATION WITH THE THEATRICAL DRAWINGS PRIOR TO CONSTRUCTION. REFER TO SHEET TLB.2.1 FOR PLUG/PIGTAIL BOX TYPE.
 - 3 WALL MOUNTED CONTROL EQUIPMENT RACK "CER-1".
 - 4 TO EXISTING 225A-3P BREAKER IN PANEL 1TT (SECTION II)
 - 5 MAKE CONNECTION TO PLUG BOX/PIGTAIL BOX VERIFY EXACT LOCATION WITH THE THEATRICAL DRAWINGS PRIOR TO CONSTRUCTION. REFER TO SHEET TLB.1.1 FOR PLUG/PIGTAIL BOX TYPE.
 - 6 MAKE CONNECTION TO PLUG BOX/PIGTAIL BOX VERIFY EXACT LOCATION WITH THE THEATRICAL DRAWINGS PRIOR TO CONSTRUCTION. REFER TO SHEET TLB.1.1 FOR PLUG/PIGTAIL BOX TYPE. TERMINATIONS ARE REQUIRED AT GRID-IRON JUNCTION BOXES (GJB) FOR #10 WIRES IN CONDUIT THAT CONNECT TO GJB AND FOR EACH END OF TYPE "SO" MULTI CONDUCTORABLES THAT CONNECT TO GJB TO PLUG STRIP ON MOVEABLE RIGGING BELOW.
 - 7 MAKE CONNECTION TO DIMMER RACK FOR OVERRIDE OF THEATRE HOUSE LIGHTING. REFER TO THEATRICAL DRAWINGS FOR EXACT LOCATION.
 - 8 REFER TO DETAIL #1, SHEET E4.1 FOR CONDUIT THRU SEISMIC JOINT REQUIREMENTS
 - 9 ROUTE 1/2" C. TO HVAC UNIT CONTROL PANEL FOR SHUT-DOWN.
 - 10 CIRCUIT BREAKER SHALL BE "LOCKED-ON" WITH APPROVED LOCKING DEVICE, MARKED RED AND LABELED AS "FIRE ALARM CONTROL CIRCUIT".
 - 11 INTERLOCK FAN COIL WITH HEAT PUMP. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
 - 12 TRANSFORMER "TR-4T", PROVIDE 4" CONCRETE PAD BELOW TRANSFORMER.
 - 13 (3) RECEPTACLE FOR A/V RACK VERIFY EXACT LOCATION WITH A/V DRAWINGS PRIOR TO ROUGH-IN.



FIRE ALARM PLAN - LEVEL 2 1/8" = 1'-0" 4



POWER PLAN - LEVEL 2 1/8" = 1'-0" 2



SITE KEYPLAN 1" = 300'

RRC PROJECT NO: 1-78-04		REVISIONS:	
NO.	DATE	NO.	DESCRIPTION
1	09/04/15	1	50% CD SET
2	09/30/15	2	75% CD SET
3	11/06/15	3	DSA SUBMITTAL SET
4	04/05/16	4	DSA BACK CHECK

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CAJON HIGH SCHOOL THEATRE RENOVATION
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ELECTRICAL FLOOR PLANS - LEVEL 2
E-2.2

