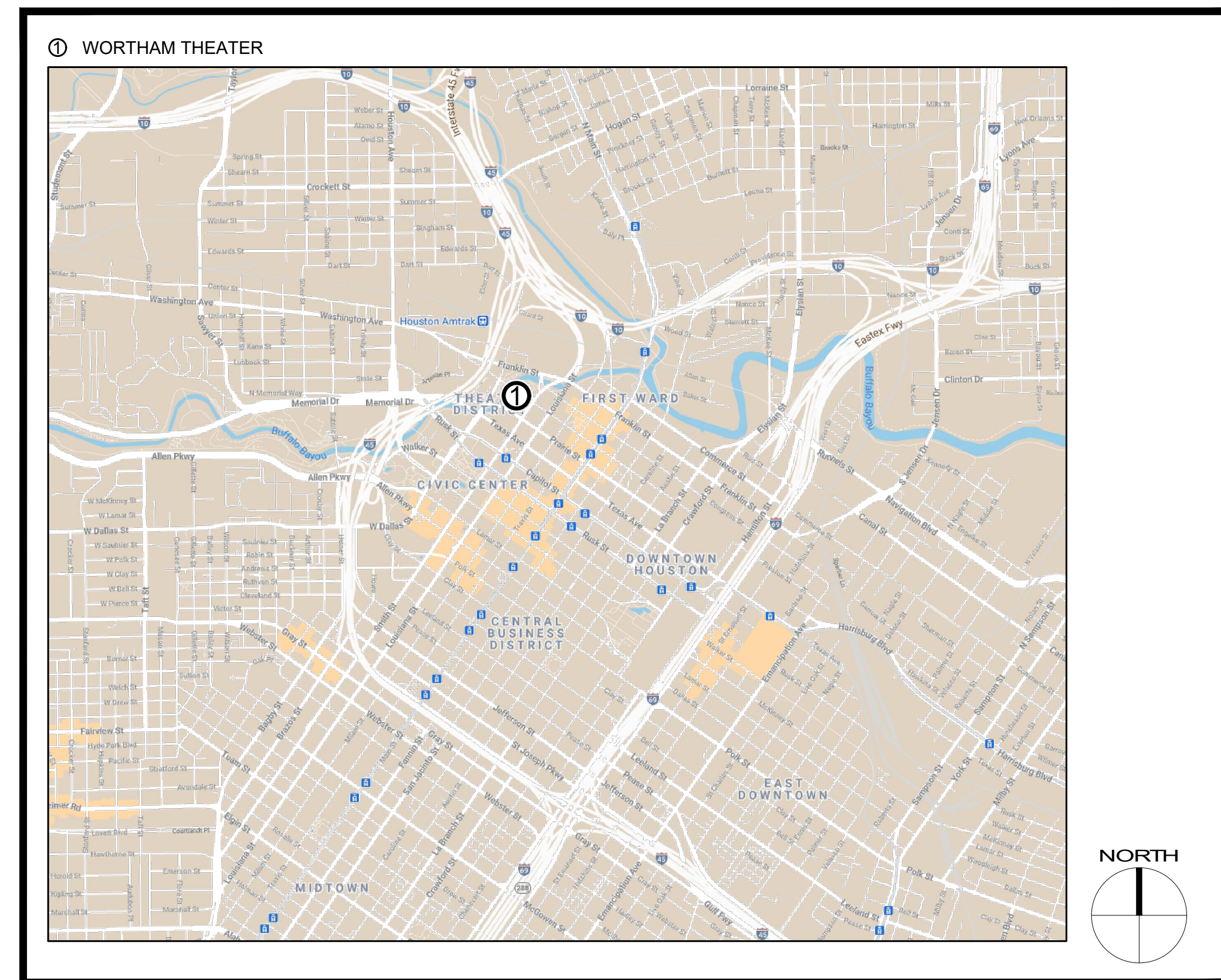


# BROWN THEATER 7TH FLOOR DIMMER RACK REPLACEMENT AT THE WORTHAM THEATER

501 TEXAS ST,  
HOUSTON, TX 77002  
ENGINEER'S PROJECT # 2144

## LOCATION MAP



## SCOPE OF WORK

Replace dimming racks on the 7th floor for the Brown Theater and integrate into the existing controls and building wiring.

1. Field verify and label existing feeder and branch circuit dimming wiring.
2. Remove existing dimmer racks and turn over to the owner.
3. Provide new dimmer racks matching existing footprint.
4. Reconnect existing wiring, matching existing module numbers.
5. Provide new controls system with dimmer racks.
6. Program new controls system and demonstrate full functionality.
7. Substantially complete all work by Close of Business on Friday, August 5, 2022.

Install all systems in accordance with the codes as adopted by the local authority having jurisdiction including all amendments.

1. IBC-2012
2. NEC-2020

## INDEX OF DRAWINGS

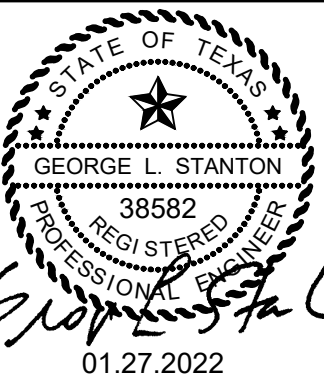
COVER SHEET

- E1 - ELECTRICAL FLOOR PLANS
- E2 - EXISTING DIMMER RACK ELEVATIONS & NOTES
- E3 - ETC DIMMER RACK ELEVATIONS & NOTES
- E4 - ELECTRICAL & CONTROLS SCHEMATICS & NOTES

PROJECT: 2144			
DATE: 01/27/2022			
NO.	DATE	ISSUE	
01.	12/28/22	70K	CD REVEN
02.	07/24/22	100K	CD
03.	01/27/22	100K	CD
04.	01/27/22	100K	CD
05.			
06.			
07.			



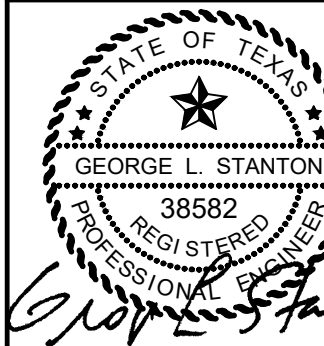
BROWN THEATER 7TH FLOOR DIMMING RACK REPLACEMENT AT  
 THE WORTHAM THEATER  
 501 TEXAS AVE, HOUSTON, TX 77072



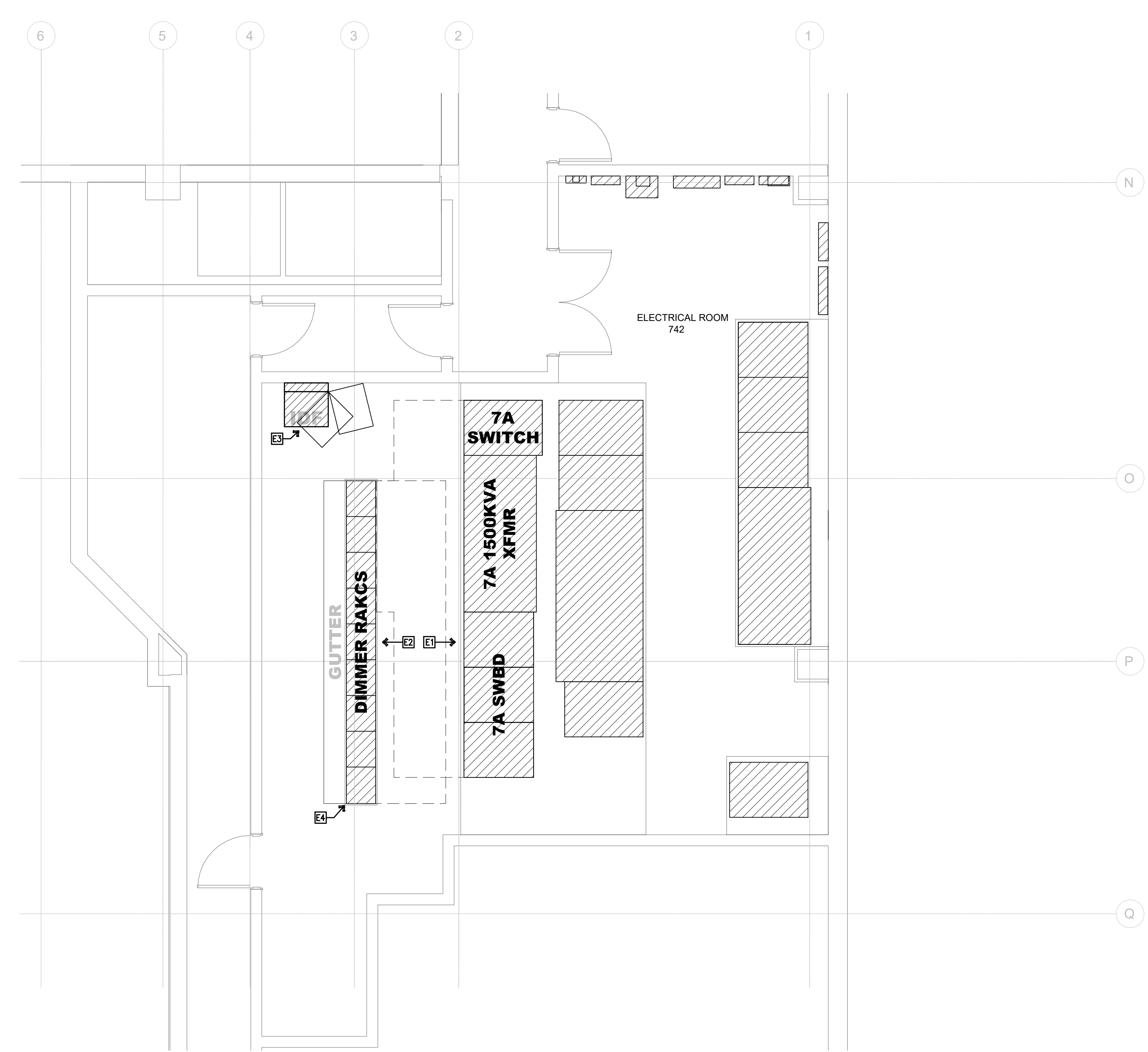
COVER SHEET



BROWN THEATER 7TH FLOOR DIMMING RACK REPLACEMENT AT THE WORTHAM THEATER 501 TEXAS AVE, HOUSTON, TX 77072



- ELECTRICAL KEYED NOTES:**
- E1 EXISTING UNIT SUBSTATION 7A, SHOWN FOR REFERENCE ONLY.
  - E2 EXISTING 7TH FLOOR DIMMING RACKS TO BE REPLACED.
  - E3 EXISTING DIMMING CONTROL CABINET.
  - E4 REPAIR DAMAGED CORNER OF EXISTING HOUSEKEEPING PAD PRIOR TO SETTING NEW DIMMER RACKS.



**1 EXISTING 7TH FLOOR ELECTRICAL ROOM**

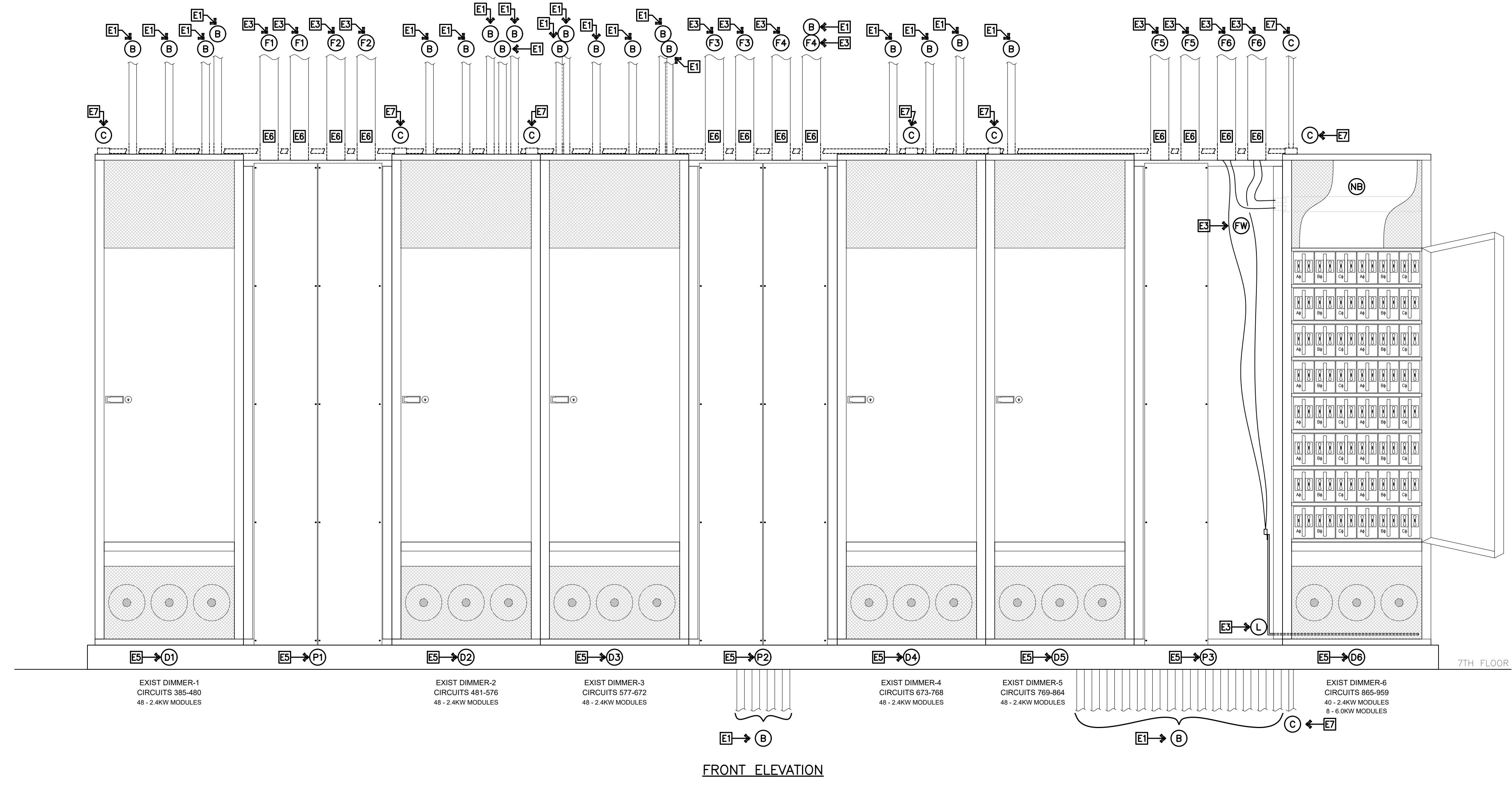
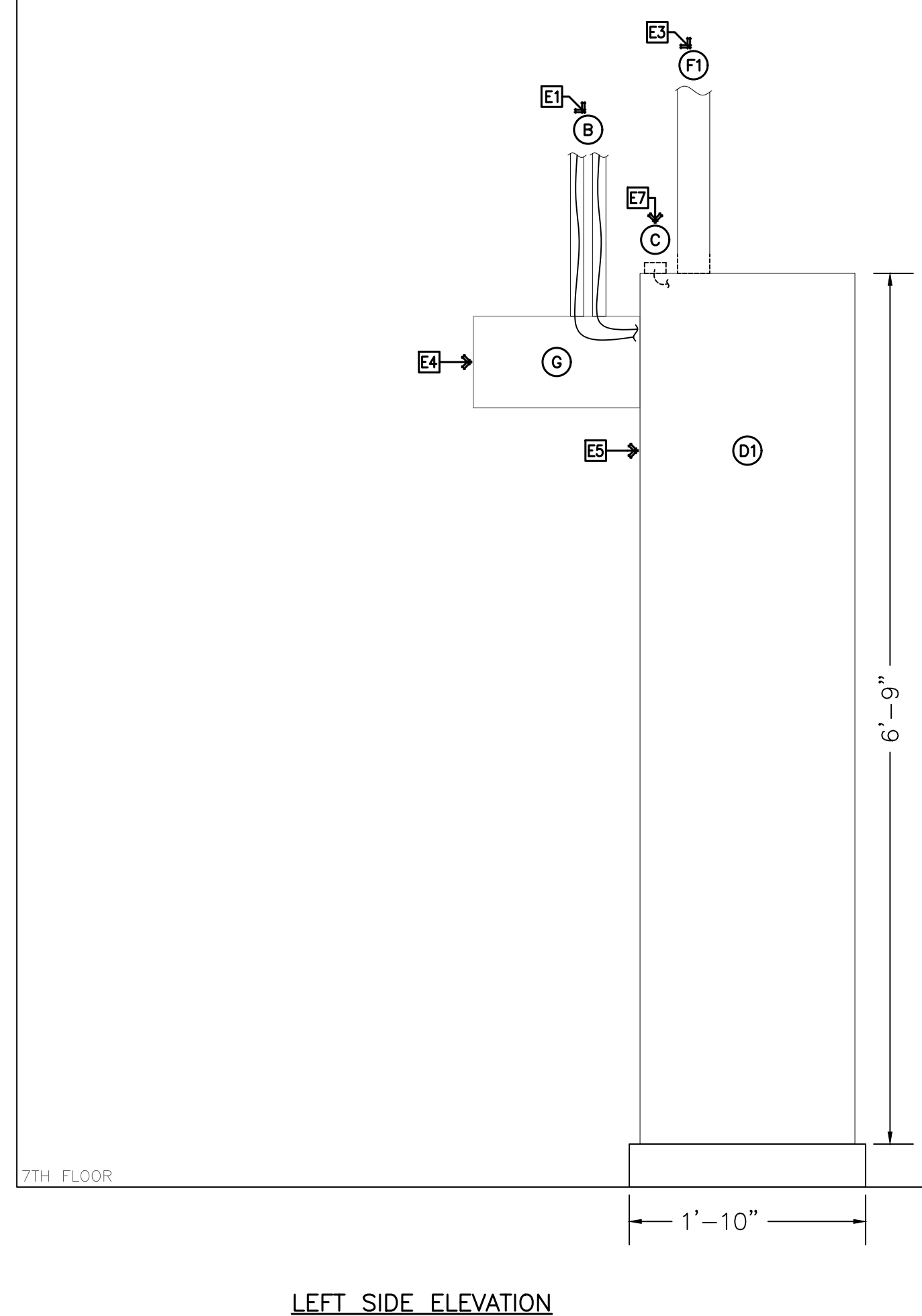
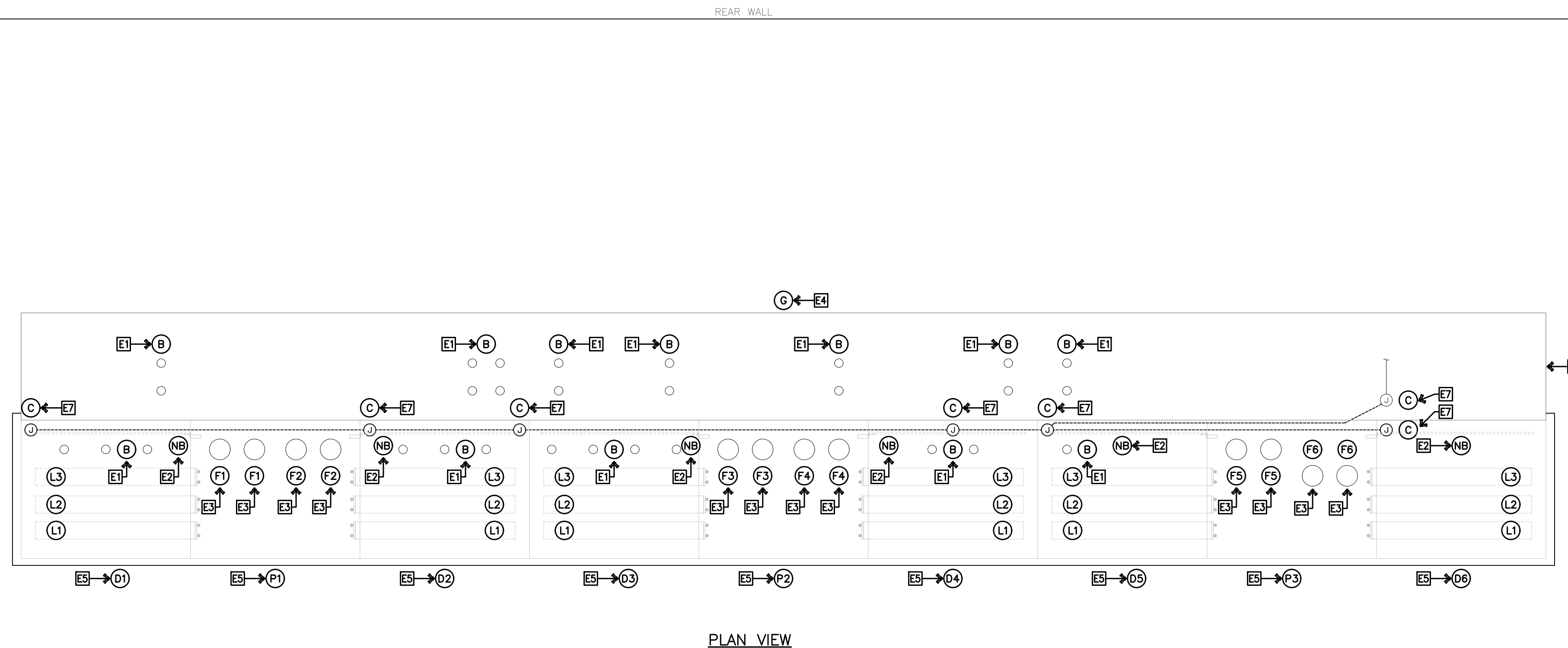
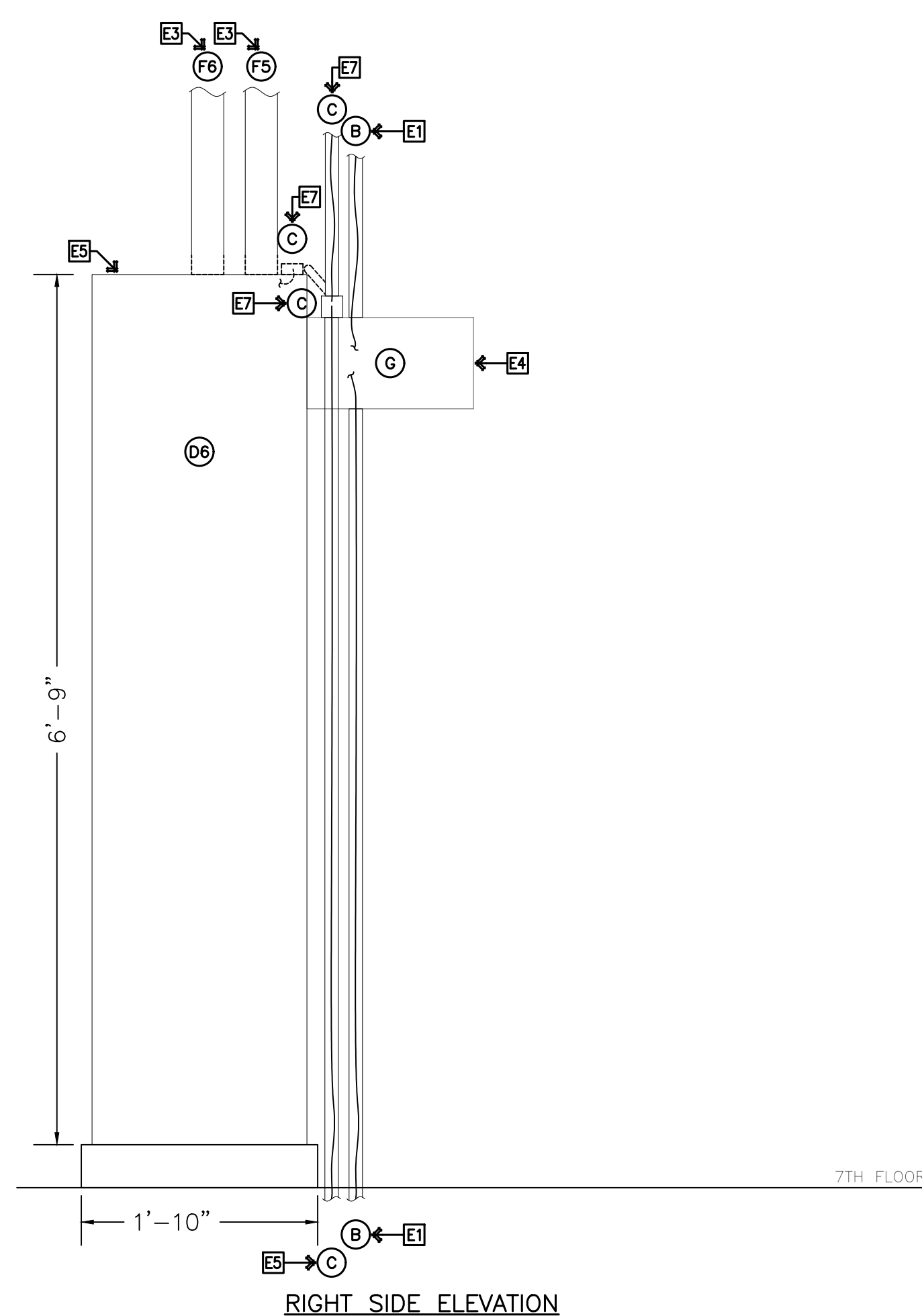
SCALE: 1/4" = 1'-0"  
 NOTES:  
 1. FIELD VERIFY EXISTING CONDITIONS AND SYSTEMS PRIOR TO BEGINNING WORK.

**PROJECT SCHEDULE:**  
 THE FACILITIES ARE AN ACTIVE THEATER AND THERE IS LIMITED SUMMER AVAILABILITY TO PERFORM THE REQUIRED WORK. THE CONTRACTOR SHALL INCLUDE IN THEIR BID ANY AND ALL AFTER-HOURS WORK, SUPPLEMENTAL CREWS, DOUBLE-SHIFTS, EXPEDITED EQUIPMENT FEES, OR OTHER METHODS OF GUARANTEEING THE WORK SHALL BE COMPLETED WITHIN THE DESIGNATED WINDOW.

**ACCESS TO THE FACILITIES:**

1. ON-SITE WORK:	STARTING MONDAY, JUNE 27, 2022.
2. SUBSTANTIAL COMPLETION:	BY CLOSE OF BUSINESS, FRIDAY, AUGUST 5, 2022
3. FINAL COMPLETION:	FRIDAY, AUGUST 26, 2022

4. ANY WORK OR ACCESS TO THE FACILITIES OUTSIDE THE JUNE 27 - AUGUST 5 WINDOW SHALL REQUIRE FORMAL APPROVAL BY THE OWNER, INCLUDING REMEDIAL WORK TO REACH FINAL COMPLETION.

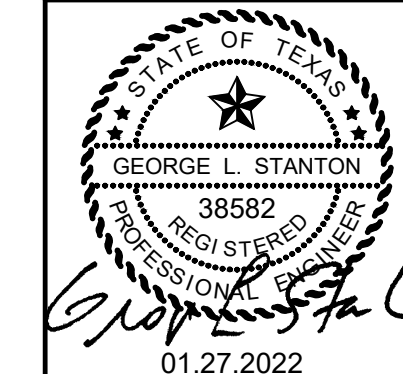


- ELECTRICAL KEYED NOTES:**
- E1 EXISTING DIMMING BRANCH CIRCUITS ENTER THE BACK OF THE DIMMER RACKS FROM THE REAR WIRING GUTTER AND THROUGH CONDUITS ON THE TOP OF THE EXISTING RACKS. WIRING TO BE DISCONNECTED AND RECONNECTED TO NEW DIMMER RACKS. MODIFY EXISTING CONDUITS AND WIRES TO MATCH HEIGHTS AND CONNECTION POINTS ON NEW EQUIPMENT CABINETS. TYPICAL. LABEL EACH WIRE WITH THE CORRESPONDING DIMMER CIRCUIT PRIOR TO DISCONNECTION, TYPICAL.
  - E2 EXISTING DIMMING NEUTRAL WIRING ENTERS THE BACK OF THE DIMMER RACKS FROM THE REAR WIRING GUTTER AND THROUGH CONDUITS ON THE TOP OF THE EXISTING RACKS. NEUTRAL WIRING TO BE DISCONNECTED AND RECONNECTED TO NEW DIMMER RACKS. MODIFY EXISTING CONDUITS AND WIRES TO MATCH HEIGHTS AND CONNECTION POINTS ON NEW EQUIPMENT CABINETS. TYPICAL. LABEL EACH WIRE WITH THE CORRESPONDING DIMMER RACK PRIOR TO DISCONNECTION, TYPICAL. ALL DIMMER CIRCUITS AND CORRESPONDING NEUTRAL WIRING SHALL ORIGINATE FROM THE SAME DIMMER RACK. FIELD VERIFY EXISTING WIRING PRIOR TO DISCONNECTION AND MAINTAIN PAIRINGS.
  - E3 EXISTING INCOMING DIMMER RACK FEEDERS TO BE DISCONNECTED AND RECONNECTED TO NEW DIMMER RACKS, TYPICAL.
  - E4 EXISTING AUXILIARY WIRING GUTTER TO REMAIN. PROVIDE NEW UNISTRUT SUPPORTS (NOT SHOWN) ANCHORED TO THE FLOOR AND BOLTED TO THE GUTTER AT EACH CORNER AND EVERY 3FT ALONG THE REAR OF THE GUTTER.
  - E5 EXISTING DIMMING RACKS AND POWER RACKS TO BE REMOVED AND OFFERED TO OWNER AS SALVAGE.
  - E6 MODIFY EXISTING FEEDER CONDUITS AND FEEDER WIRES TO MATCH HEIGHTS AND CONNECTIONS POINTS OF NEW DIMMER RACKS. VERIFY AND MAINTAIN EQUAL LENGTHS OF ALL PARALLEL FEEDER CONDUCTORS. TYPICAL.
  - E7 EXISTING CONTROL WIRING ENTERS THE TOP OF THE DIMMER RACKS FROM J-BOXES AND CONDUITS ON THE TOP OF THE EXISTING RACKS. MODIFY EXISTING CONDUITS TO MATCH HEIGHTS AND CONNECTION POINTS ON NEW EQUIPMENT. EXISTING CONTROL CABLING FROM THE DATA CABINET TO BE REPLACED WITH NEW. EXISTING CONTROL CABLING EXTENDING TO THEATRICAL LIGHTING CONTROLS IN OTHER SPACES TO BE RECONNECTED TO THE NEW DIMMER RACKS.

- EQUIPMENT KEYED NOTES:**
- B DIMMING BRANCH CIRCUIT WIRING TO REMAIN
  - D DIMMER RACKS TO BE REPLACED
    - D1 DIMMER RACK #1
    - D2 DIMMER RACK #2
    - D3 DIMMER RACK #3
    - D4 DIMMER RACK #4
    - D5 DIMMER RACK #5
    - D6 DIMMER RACK #6
  - C EXISTING CONTROL WIRING TO BE REWORKED.
  - F EXISTING DIMMER RACK FEEDERS ENTERING THE TOP OF THE EXISTING RACKS, FEEDERS TO REMAIN.
    - F1 INCOMING FEEDER FOR DIMMER RACK #1
    - F2 INCOMING FEEDER FOR DIMMER RACK #2
    - F3 INCOMING FEEDER FOR DIMMER RACK #3
    - F4 INCOMING FEEDER FOR DIMMER RACK #4
    - F5 INCOMING FEEDER FOR DIMMER RACK #5
    - F6 INCOMING FEEDER FOR DIMMER RACK #6
    - FW INCOMING FEEDER WIRING
  - G WIRING GUTTER FOR DIMMING BRANCH CIRCUIT CONNECTIONS TO REMAIN
  - L LINE VOLTAGE POWER BUSS
    - L1 A PHASE BUSS
    - L2 B PHASE BUSS
    - L3 C PHASE BUSS
  - NB LOAD NEUTRAL BUSS
  - P POWER RACK TO BE REPLACED
    - P1 POWER RACK #1
    - P2 POWER RACK #2
    - P3 POWER RACK #3

**1 EXISTING DIMMER RACK ELEVATIONS**  
 SCALE: 1" = 1'-0"  
 NOTES:  
 1. FIELD VERIFY EXISTING CONDITIONS AND SYSTEMS PRIOR TO BEGINNING WORK.

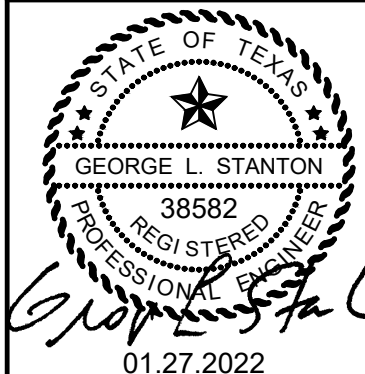
**BROWN THEATER 7TH FLOOR DIMMING RACK REPLACEMENT AT THE WORTHAM THEATER**  
 501 TEXAS AVE, HOUSTON, TX 77072



NO.	DATE	ISSUE
01.	12/28/22	70K CD REVIEW
02.	01/24/22	100K CD
03.	01/27/22	100K CD R1
04.		
05.		
06.		
07.		
08.		



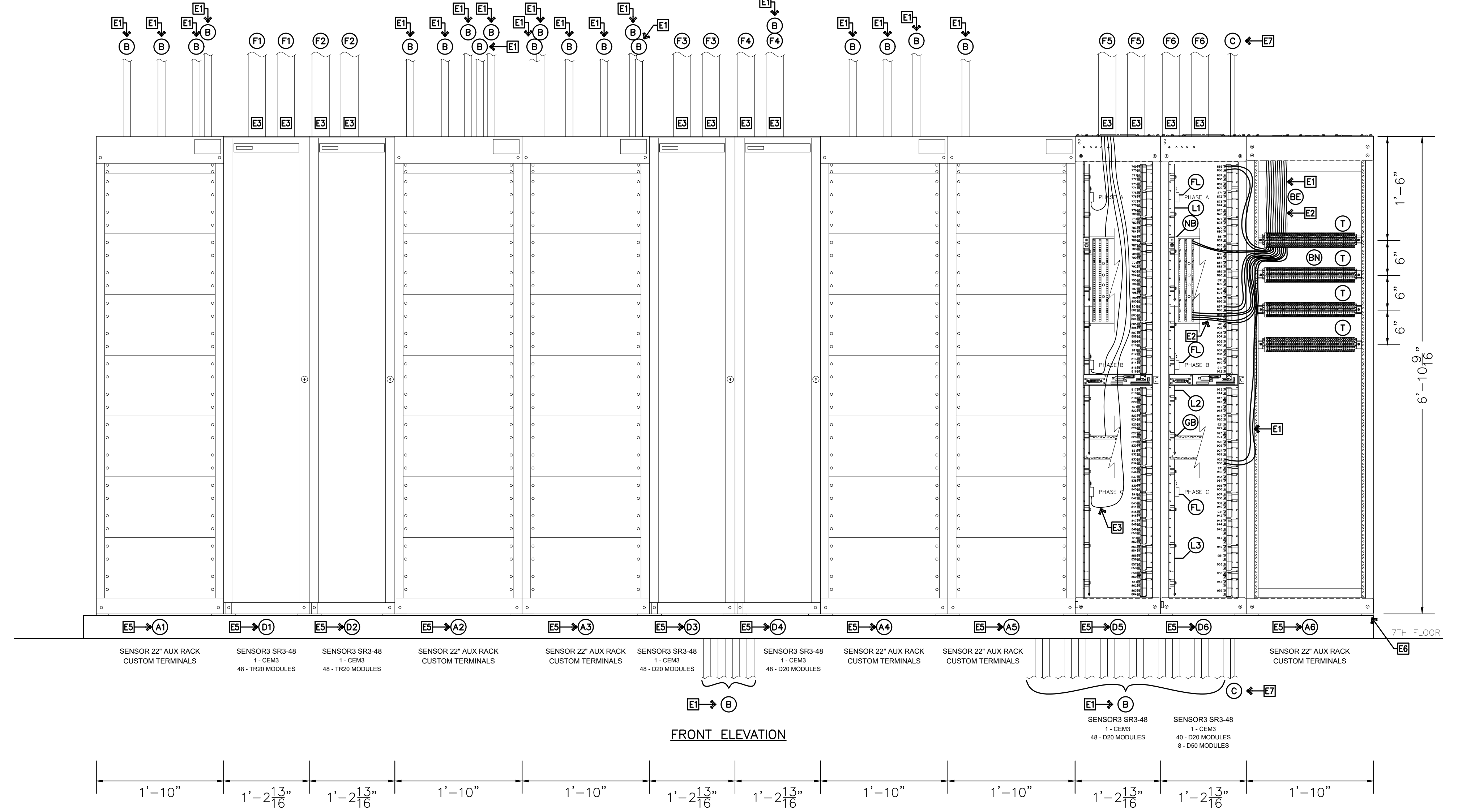
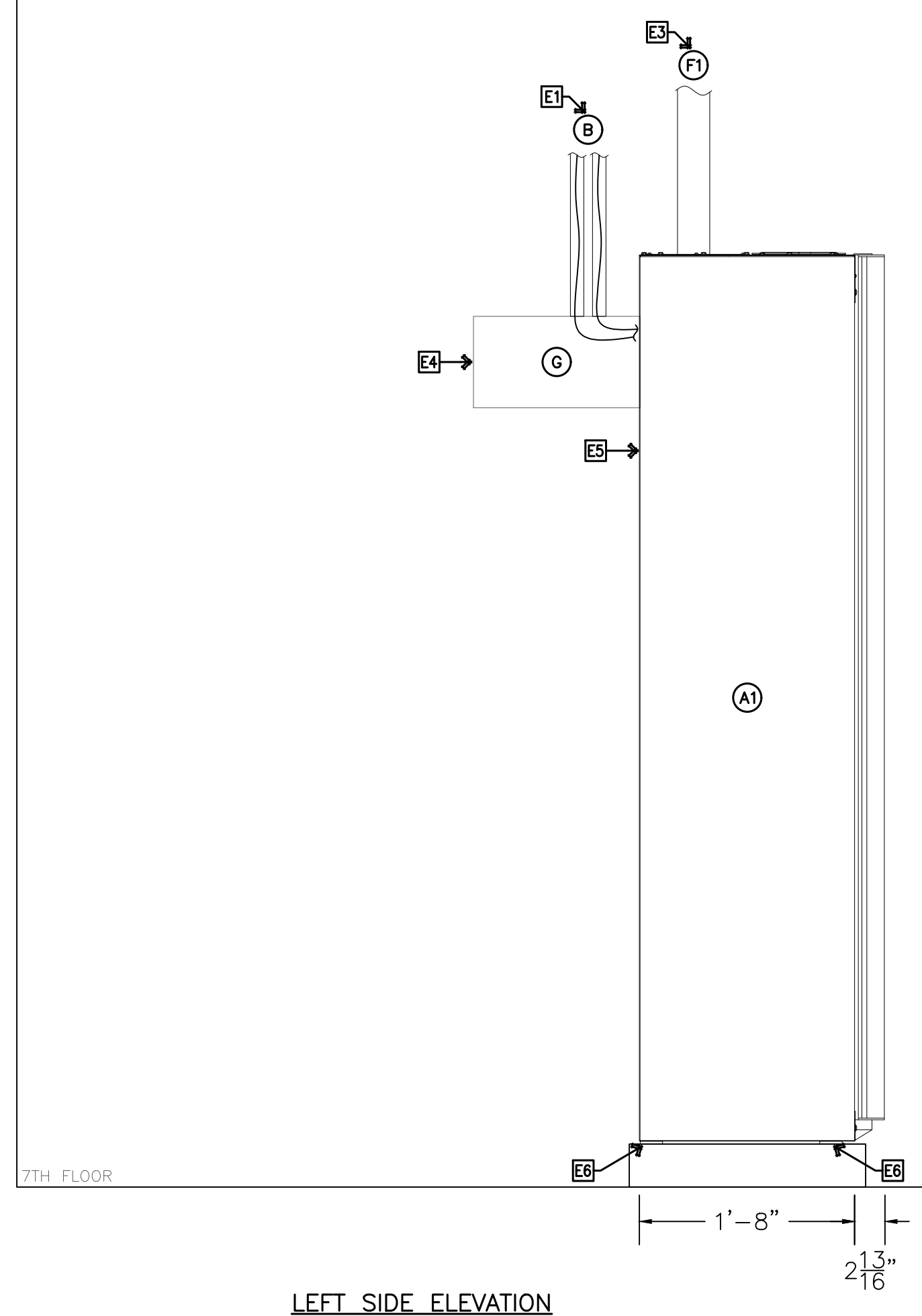
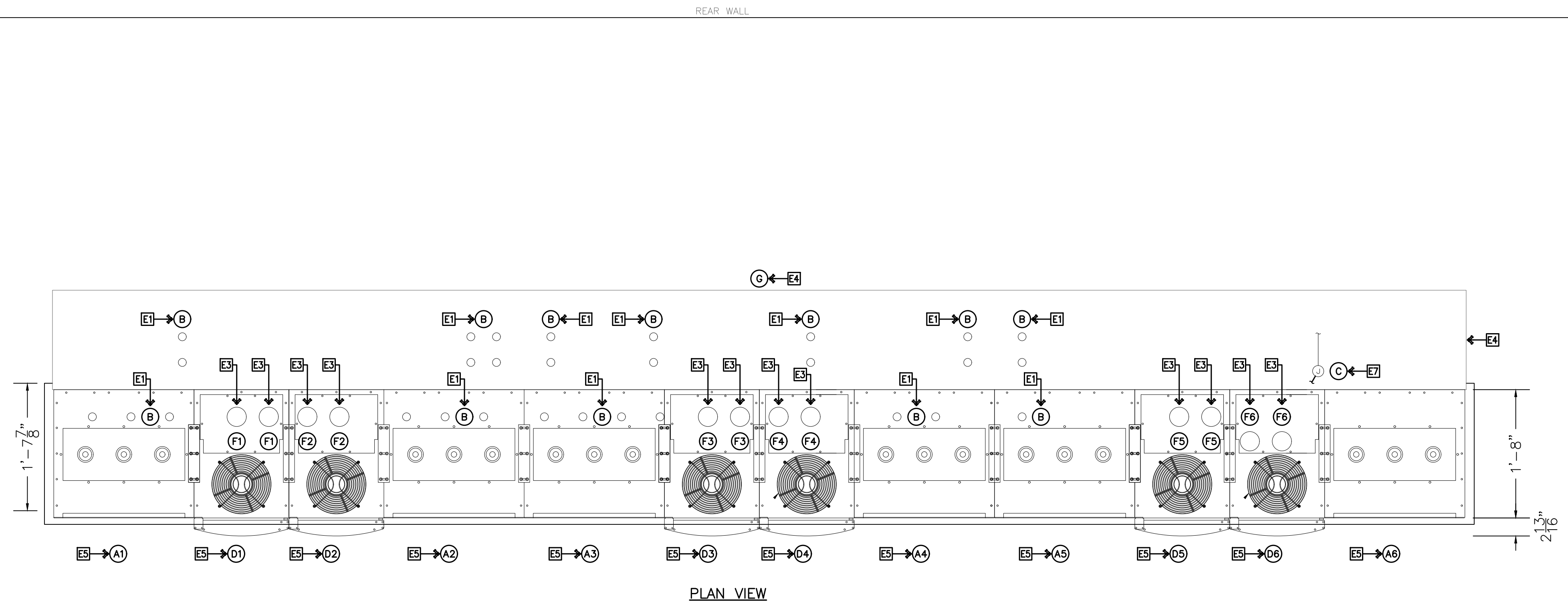
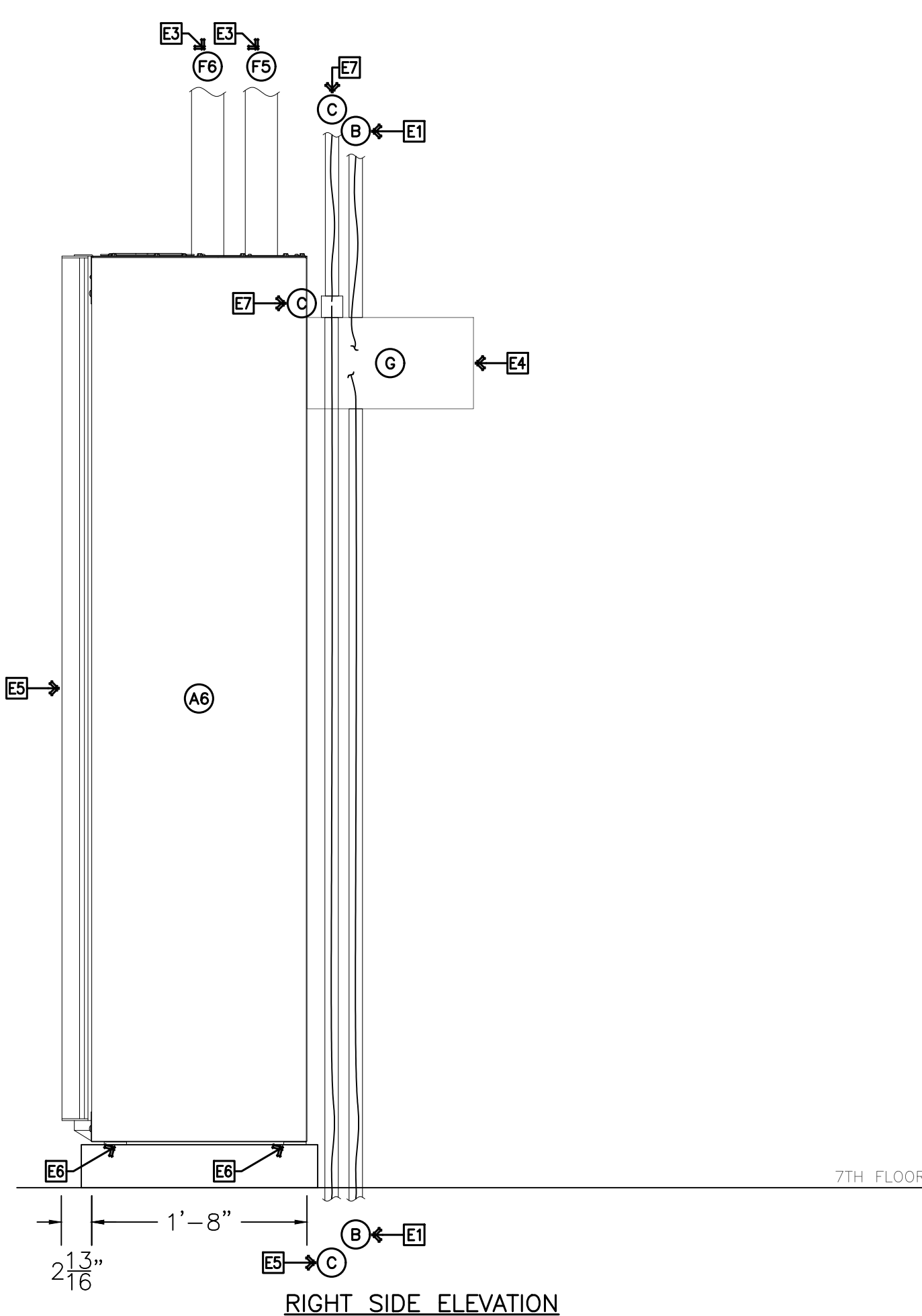
BROWN THEATER 7TH FLOOR DIMMING RACK REPLACEMENT AT THE WORTHAM THEATER  
501 TEXAS AVE, HOUSTON, TX 77072



**PROJECT SCHEDULE:**  
THE FACILITIES ARE AN ACTIVE THEATER AND THERE IS LIMITED SUMMER AVAILABILITY TO PERFORM THE REQUIRED WORK. THE CONTRACTOR SHALL INCLUDE IN THEIR BID ANY AND ALL AFTER-HOURS WORK, SUPPLEMENTAL CREWS, DOUBLE-SHIFTS, EXPEDITED EQUIPMENT FEES, OR OTHER METHODS OF GUARANTEEING THE WORK SHALL BE COMPLETED WITHIN THE DESIGNATED WINDOW.

**ACCESS TO THE FACILITIES:**

1. ON-SITE WORK:	STARTING MONDAY, JUNE 27, 2022.
2. SUBSTANTIAL COMPLETION:	BY CLOSE OF BUSINESS, FRIDAY, AUGUST 5, 2022
3. FINAL COMPLETION:	FRIDAY, AUGUST 26, 2022
4. ANY WORK OR ACCESS TO THE FACILITIES OUTSIDE THE JUNE 27 - AUGUST 5 WINDOW SHALL REQUIRE FORMAL APPROVAL BY THE OWNER, INCLUDING REMEDIAL WORK TO REACH FINAL COMPLETION.	



- EX ELECTRICAL KEYED NOTES:**
- E1 EXISTING DIMMING BRANCH CIRCUITS ENTER THE BACK OF THE DIMMER RACKS FROM THE REAR WIRING GUTTER AND THROUGH CONDUITS ON THE TOP OF THE EXISTING RACKS. WIRING TO BE DISCONNECTED AND RECONNECTED TO NEW AUXILIARY RACK TERMINAL STRIPS AND EXTENDED FROM TERMINAL STRIPS TO NEW DIMMER RACK BUSSING. LABEL EACH WIRE, SPLICE POINT, AND TERMINAL STRIP WITH THE CORRESPONDING DIMMER CIRCUIT MATCHING AS-BUILT CIRCUITING, TYPICAL.  
REMOVE ANY EXISTING WIRE NUTS ON THE INCOMING WIRING AND USE IRREVERSIBLE CONNECTORS TO EXTEND TO THE NEW TERMINAL STRIPS AS NEEDED. WHERE THE EXISTING WIRING IS OF SUFFICIENT LENGTH LAND DIRECTLY ON THE TERMINAL STRIPS. PROVIDE A LABEL AT EACH SPLICE POINT WITH THE AS-BUILT DIMMER CIRCUIT NUMBER. TYPICAL. THE INTENT IS TO HAVE AT MOST ONLY A SINGLE SPLICE POINT IN EACH WIRE AND FOR THAT SPLICE POINT TO BE A PERMANENT CONNECTOR. NO WIRE NUTS SHALL BE ALLOWED, TYPICAL.
  - E2 EXISTING DIMMING NEUTRAL WIRING ENTERS THE BACK OF THE DIMMER RACKS FROM THE REAR WIRING GUTTER AND THROUGH CONDUITS ON THE TOP OF THE EXISTING RACKS. WIRING TO BE DISCONNECTED AND RECONNECTED TO NEW AUXILIARY RACK TERMINAL STRIPS AND EXTENDED FROM TERMINAL STRIPS TO NEW DIMMER RACK NEUTRAL BUSSING. ALL NEUTRAL WIRES SHALL LAND ON THE NEUTRAL BUSS IN THE SAME DIMMER RACK AS THE CORRESPONDING LINE VOLTAGE WIRING. LABEL EACH NEUTRAL WIRE WITH THE CORRESPONDING DIMMER RACK DESIGNATION.  
ALL DIMMER CIRCUITS AND CORRESPONDING NEUTRAL WIRING SHALL ORIGINATE FROM THE SAME DIMMER RACK. FIELD VERIFY EXISTING WIRING PRIOR TO DISCONNECTION AND MAINTAIN PARALLEL. REMOVE ANY EXISTING WIRE NUTS ON THE INCOMING WIRING AND USE IRREVERSIBLE CONNECTORS TO EXTEND TO THE NEW TERMINAL STRIPS AS NEEDED. WHERE THE EXISTING WIRING IS OF SUFFICIENT LENGTH LAND DIRECTLY ON THE TERMINAL STRIPS. THE INTENT IS TO HAVE AT MOST ONLY A SINGLE SPLICE POINT IN EACH WIRE AND FOR THAT SPLICE POINT TO BE A PERMANENT CONNECTOR. NO WIRE NUTS SHALL BE ALLOWED, TYPICAL.
  - WHERE THE EXISTING NEUTRAL WIRING DOES NOT MATCH THESE REQUIREMENTS, SUBMIT AN RF1 TO THE OWNER/ENGINEER FOR DIRECTION BEFORE PROCEEDING.
  - E3 EXISTING INCOMING DIMMER RACK FEEDERS TO BE RECONNECTED TO NEW DIMMER RACK BUSS/LUGS, TYPICAL.
  - E4 EXISTING AUXILIARY WIRING GUTTER TO REMAIN. PROVIDE NEW UNISTRUT SUPPORTS AND EXTENDED FROM TERMINAL STRIPS TO NEW DIMMER RACK NEUTRAL BUSSING. ALL NEUTRAL WIRES SHALL LAND ON THE NEUTRAL BUSS IN THE SAME DIMMER RACK AS THE CORRESPONDING LINE VOLTAGE WIRING. LABEL EACH NEUTRAL WIRE WITH THE CORRESPONDING DIMMER RACK DESIGNATION.  
ALL DIMMER CIRCUITS AND CORRESPONDING NEUTRAL WIRING SHALL ORIGINATE FROM THE SAME DIMMER RACK. FIELD VERIFY EXISTING WIRING PRIOR TO DISCONNECTION AND MAINTAIN PARALLEL. REMOVE ANY EXISTING WIRE NUTS ON THE INCOMING WIRING AND USE IRREVERSIBLE CONNECTORS TO EXTEND TO THE NEW TERMINAL STRIPS AS NEEDED. WHERE THE EXISTING WIRING IS OF SUFFICIENT LENGTH LAND DIRECTLY ON THE TERMINAL STRIPS. THE INTENT IS TO HAVE AT MOST ONLY A SINGLE SPLICE POINT IN EACH WIRE AND FOR THAT SPLICE POINT TO BE A PERMANENT CONNECTOR. NO WIRE NUTS SHALL BE ALLOWED, TYPICAL.
  - E5 NEW DIMMING RACKS AND AUXILIARY TERMINAL RACKS TO BE INSTALLED ON EXISTING CONCRETE HOUSEKEEPING PAD. REPAIR ANY DAMAGE TO EXISTING HOUSEKEEPING PAD.
  - E6 REMOVE CABINET FEET AND SET ON CONCRETE HOUSEKEEPING PAD WITH WAFFLE TYPE VIBRATION ISOLATION PADS AT THE CORNERS OF EACH CABINET, TYPICAL.
  - E7 EXISTING CONTROL WIRING ENTERS THE TOP OF THE DIMMER RACKS FROM J-BOXES AND CONDUITS ON THE TOP OF THE EXISTING RACKS. MODIFY EXISTING CONDUITS TO MATCH HEIGHTS AND CONNECTION POINTS ON NEW EQUIPMENT.  
EXISTING CONTROL CABLING FROM THE DATA CABINET TO BE REPLACED WITH NEW. EXISTING CONTROL CABLING EXTENDING TO THEATRICAL LIGHTING CONTROLS IN OTHER SPACES TO BE RECONNECTED TO THE NEW DIMMER RACKS.

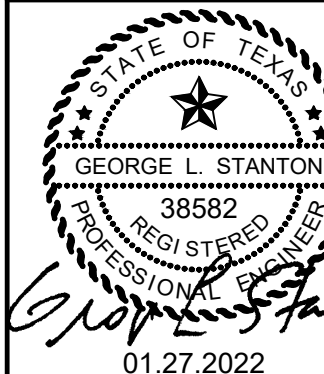
- EX EQUIPMENT KEYED NOTES:**
- A AUXILIARY TERMINAL RACKS FOR DIMMING LOAD WIRE RECONNECTION  
A1 AUX TERMINAL RACK #1  
A2 AUX TERMINAL RACK #2  
A3 AUX TERMINAL RACK #3  
A4 AUX TERMINAL RACK #4  
A5 AUX TERMINAL RACK #5  
A6 AUX TERMINAL RACK #6
  - B DIMMING BRANCH CIRCUIT WIRING TO REMAIN  
BE EXISTING DIMMING WIRING FROM GUTTER  
BN NEW DIMMING WIRING FROM MODULES TO TERMINAL STRIPS
  - D NEW DIMMER RACKS  
D1 DIMMER RACK #1  
D2 DIMMER RACK #2  
D3 DIMMER RACK #3  
D4 DIMMER RACK #4  
D5 DIMMER RACK #5  
D6 DIMMER RACK #6
  - F EXISTING DIMMER RACK FEEDERS ENTERING THE TOP OF THE RACKS. FEEDERS TO REMAIN.  
F1 INCOMING FEEDER FOR DIMMER RACK #1  
F2 INCOMING FEEDER FOR DIMMER RACK #2  
F3 INCOMING FEEDER FOR DIMMER RACK #3  
F4 INCOMING FEEDER FOR DIMMER RACK #4  
F5 INCOMING FEEDER FOR DIMMER RACK #5  
F6 INCOMING FEEDER FOR DIMMER RACK #6  
FL BUSS LUGS FOR FEEDER CONNECTIONS
  - G WIRING GUTTER FOR DIMMING BRANCH CIRCUIT CONNECTIONS TO REMAIN
  - GB GROUND BUSS
  - L LINE VOLTAGE POWER BUSS  
L1 A PHASE BUSS  
L2 B PHASE BUSS  
L3 C PHASE BUSS
  - NB LOAD NEUTRAL BUSS
  - T TERMINAL STRIPS FOR DIMMING LOAD WIRE RECONNECTION

**1 NEW ETC DIMMER RACK ELEVATIONS**  
SCALE: 1" = 1'-0"  
NOTES:  
1. FIELD VERIFY EXISTING CONDITIONS AND SYSTEMS PRIOR TO BEGINNING WORK.  
2. PROVIDE NEW CONDUIT (NOT SHOWN HERE) FOR LOW VOLTAGE CONTROL CABLING.  
3. WHERE ADDITIONAL SPACE IS REQUIRED TO MAKE WIRING SPLICES PROVIDE AN ENCLOSURE ON THE REAR OF THE NEW DIMMING/AUXILIARY CABINETS SIZED BY THE CONTRACTOR FOR THE NUMBER OF CONDUCTORS/SPLICES PER NEX REQUIREMENTS, MINIMUM SIZE 12"x12"x4".

NO.	DATE	ISSUE
01.	12/28/22	75% CD REVIEW
02.	01/24/22	100% CD
03.	01/27/22	100% CD R1
04.		
05.		
06.		
07.		
08.		



BROWN THEATER 7TH FLOOR DIMMING RACK REPLACEMENT AT THE WORTHAM THEATER  
501 TEXAS AVE, HOUSTON, TX 77072



ELECTRICAL MATERIAL AND EQUIPMENT — NO ELECTRICAL MATERIALS, APPARATUS, DEVICES, APPLIANCES, FIXTURES, OR EQUIPMENT SHALL BE SOLD OR INSTALLED IN THE CITY UNLESS THEY ARE IN CONFORMANCE WITH THE PROVISIONS OF THIS CODE, THE LAWS OF THE STATE OF TEXAS AND ANY APPLICABLE RULES AND REGULATIONS ISSUED UNDER THE AUTHORITY OF THE STATE STATUTES. THE MAKER'S NAME, TRADEMARK, OR OTHER IDENTIFICATION SYMBOL SHALL BE PLACED ON ALL ELECTRICAL MATERIALS, APPARATUS, DEVICES, APPLIANCES, FIXTURES, AND EQUIPMENT USED OR INSTALLED UNDER THE PROVISIONS OF THIS CODE. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE LISTED AND LABELED FOR THE INTENDED USE AND SHALL BE INCLUDED IN A LIST PUBLISHED BY AN APPROVED AGENCY. SHOW COMPLIANCE ON ELECTRICAL DRAWINGS. SECTION 508 CITY OF HOUSTON ELECTRICAL CODE.

ALL FEEDERS AND BRANCH CIRCUITS SHALL HAVE GREEN GROUND WIRE SIZED PER NATIONAL ELECTRICAL CODE

FEEDER SCHEDULE		
LABEL	OC PD	WIRING
800E	(E)800/3	2-3" C EACH W/ 3-500MCM +500MCM N +1/0 G
800N*	(E)800/3	2-3" C EACH W/ 3-500MCM +500MCM N +1/0 G

\* VERIFY EXISTING CONDUCTOR SIZE, LENGTH, AND CONDITION. INCLUDE THE COST TO PROVIDE NEW FEEDERS TO REPLACE THE EXISTING AS DIRECTED BY THE OWNER/ENGINEER.

ELECTRICAL LOAD ANALYSIS		SEG PROJ 2144
LOAD DESCRIPTION	SERVICE VOLTAGE IS 208Y/120 VOLTS, 3 PHASE, 4 WIRE	AMPS
REMOVED LOAD		0
ADDED LOAD		0
SUBTOTAL		0
25% X ADDED LIGHTS		0
25% X ADDED LARGEST MOTOR		0
TOTAL CHANGED LOAD		0

ALL WORK INDICATED IS TO SUPPORT THE REPLACEMENT OF THE EXISTING DIMMER RACKS IN THE 7TH FLOOR ELECTRICAL ROOM. ELECTRICAL LOADS ARE UNCHANGED FROM THOSE OF THE ORIGINAL DIMMER RACKS. THE EXISTING FEEDERS AND ELECTRICAL INFRASTRUCTURE ARE SUFFICIENT.

SHORT CIRCUIT ANALYSIS			SEG PROJECT: 2144
LOCATION	SHORT CIRCUIT AVAILABLE	EQUIPMENT AIC/SCCR RATING	208Y/120 VOLTS
EXISTING UNIT SUBSTATION	63,000A	100,000A	
NEW DIMMER RACKS D1,D2,D3,D4,D5,D6	47,500A	100,000A	

SPD SHALL HAVE SAME AIC RATING AS SWITCHGEAR TO BE PROTECTED.

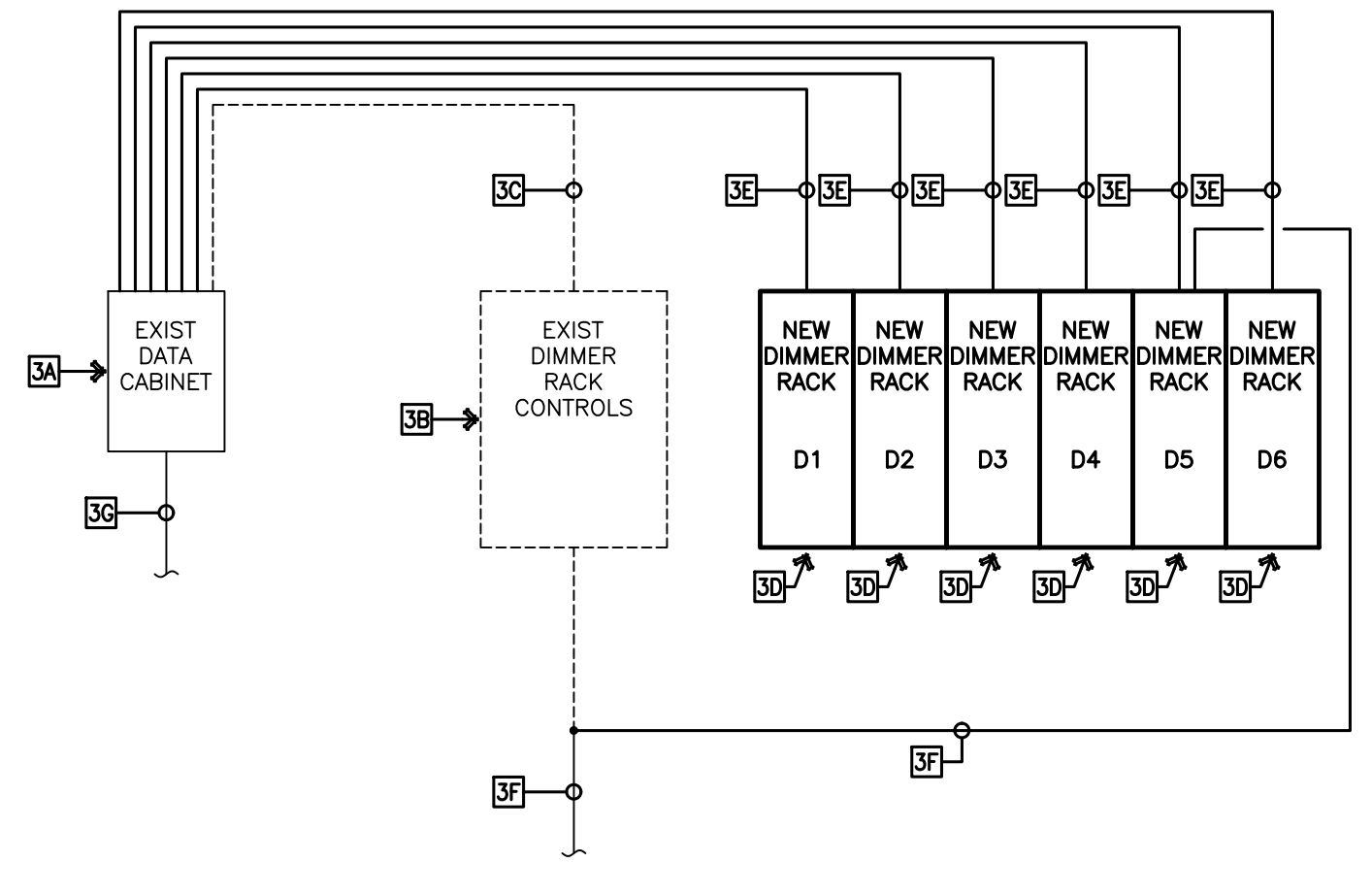
WHERE CIRCUIT BREAKERS ARE APPLIED IN COMPLIANCE WITH THE SERIES COMBINATION RATINGS MARKED ON THE EQUIPMENT BY THE MANUFACTURER, THE ENCLOSURE(S) SHALL BE PERMANENTLY AND LEGIBLY MARKED IN THE FIELD TO INDICATE THE EQUIPMENT HAS BEEN APPLIED USING A SERIES COMBINATION RATING.

ELECTRICAL EQUIPMENT SUPPLIER SHALL PROVIDE A READILY VISIBLE, ENGRAVED NAMEPLATE TO BE PERMANENTLY AFFIXED TO THE EQUIPMENT STATING THE FOLLOWING:  
CAUTION — SERIES COMBINATION SYSTEM RATED \_\_\_\_\_ AMPERES.  
IDENTIFIED REPLACEMENT COMPONENTS REQUIRED.

A PERMANENTLY AFFIXED LABEL SHALL BE ATTACHED TO ALL NEW ELECTRICAL EQUIPMENT WITH THE AVAILABLE FAULT CURRENT AT THE TIME OF INSTALLATION AND CALCULATION. THE LABEL SHALL BE 2" X 3" IN SIZE AND SHALL BE BLUE LETTERING ON A CONTRASTING BACKGROUND. THIS LABEL SHALL ALSO INCLUDE THE DATE OF THE CALCULATION.

- GENERAL ELECTRICAL NOTES:
- INSTALL SYSTEM IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION INCLUDING ALL AMENDMENTS.
  - PROVIDE CONDUIT FOR ALL NEW WIRING AND DEVICES.
    - 3/4" FOR POWER AND 1" FOR DATA UNLESS NOTED OTHERWISE.
    - ALL DATA CABLING SHALL BE INSTALLED IN CONDUIT INCLUDING IN CEILING CAVITIES.
    - PROVIDE SURFACE MOUNT CONDUIT/J-BOXES FOR NEW POWER WHERE APPROVED BY OWNER.
    - ALL ELECTRICAL HOMERUNS SHALL BE IN CONDUIT, MIN 3/4".
  - MAX LENGTH FOR FLEX CONDUIT SHALL BE 1/2" AND MIN SIZE SHALL BE 1/2". ALL FLEX CONDUIT SHALL BE LISTED FOR GROUNDING.
  - 20 AMP, SINGLE PHASE BRANCH CIRCUITS SERVING LIGHTING AND GENERAL RECEPTACLES MAY BE GROUDED IN A SINGLE RACEWAY PROVIDED A NEUTRAL CONDUCTOR IS INSTALLED FOR EACH CIRCUIT REQUIRING A NEUTRAL.
    - DO NOT INSTALL MORE THAN FOUR CURRENT CARRYING CONDUCTORS IN A CONDUIT EXCEPT SIX #12 OR #10 CURRENT CARRYING CONDUCTORS MAY BE INSTALLED IN 3/4" OR LARGER CONDUIT FOR 20A CIRCUITS.
    - DO NOT INSTALL 480/277 VOLT CONDUCTORS IN THE SAME CONDUIT WITH 240/208/120 VOLT CONDUCTORS.
    - DO NOT COMBINE NEUTRALS. PROVIDE DEDICATED NEUTRALS FOR EACH BRANCH AND DIMMING CIRCUIT.
  - PROVIDE GREEN GROUND WIRE WITH ALL CIRCUITS SIZED PER NEC. BOND GREEN GROUND WIRE TO EACH END OF CONDUIT.
  - PROVIDE J-BOXES, CONDUIT AND SLEEVES THRU ALL FIRE WALLS FOR DATA, LOW VOLTAGE WIRING, ETC.
  - PROVIDE PULL BOXES, JUNCTION BOXES, WIRING TROUGHS AND CABINETS WHEREVER REQUIRED FOR PROPER INSTALLATION OF VARIOUS ELECTRICAL SYSTEMS. ALL JUNCTION/PULL BOXES INSTALLED ABOVE ACCESSIBLE CEILINGS SHALL BE MOUNTED SO THAT THE ACCESS PANEL IS NO HIGHER THAN 18" ABOVE THE CEILING. PROVIDE CIRCUIT LABELS IN PERMANENT MARKER ON ALL NEW J-BOX COVERS IN THE AREA OF RENOVATION.
  - ALL WIRING SHALL BE 800 VOLT SOFT DRAWN ANNEALED COPPER, 80% CONDUCTIVITY, CONTINUOUS FROM OUTLET TO OUTLET. MINIMUM WIRE SIZE #12; ALL WIRE SHALL BE STRANDED TYPE THHN, THHN-2 (NET RATED FOR 90°C) OR XHHW-2. ALL WIRES SHALL BE COLOR CODED WITH THE SAME COLOR CONNECTED TO THE SAME UNGROUNDED PHASE THROUGHOUT THE INSTALLATION MATCHING THE EXISTING BUILDING COLOR CODE SCHEME.
    - ALL SPLICES SHALL BE MADE WITH PERMANENT, PRESSURE-TYPE CONNECTIONS. WIRE NUTS ARE NOT ALLOWED. #18-#8 AWG CONNECTIONS SHALL BE MADE WITH IDEAL BUCHANAN SPLICE CAP GRIP CONNECTORS OF EQUAL. INSTALL SNAP-ON INSULATING SPLICE CAP ON ALL CONNECTIONS. SPLICES FOR #6-#4 AWG CONNECTIONS SHALL BE MADE WITH BURNDY HEAT SHRINK INSULATED, BUTT SPLICE CONNECTORS OR EQUAL. SUBMIT PROPOSED METHOD OF SPLICING LARGER CONDUCTORS FOR OWNER/ENGINEER APPROVAL.
  - WHERE PORTIONS OF INTERIOR RACEWAY SYSTEM ARE EXPOSED TO WIDELY DIFFERENT TEMPERATURES, PROVIDE AIR SEAL PER NEC TO PREVENT CIRCULATION OF AIR FROM WARMER TO COOLER SECTIONS.
  - ALL MATERIAL MUST BE NEW AND OF GOOD QUALITY AND SHALL BEAR THE STAMP OF APPROVAL OF THE UNDERWRITERS' LABORATORIES, INC. (U.L.).

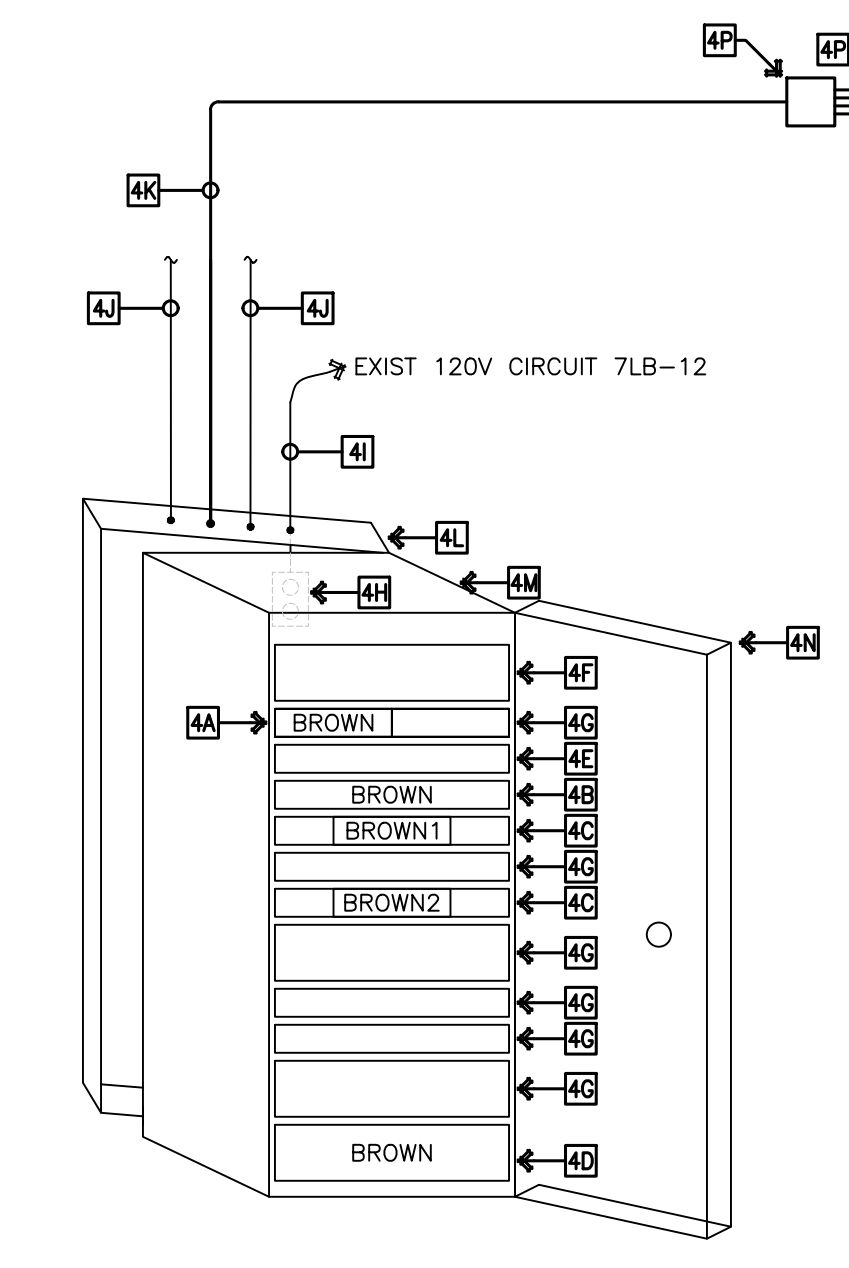
- GENERAL RENOVATION AND REMODELING NOTES:
- THESE ELECTRICAL DRAWINGS ONLY SHOW SOME EXISTING ELECTRICAL PANELS, DEVICES AND EQUIPMENT IN AREAS OF RENOVATION. ALL OTHER ELECTRICAL EQUIPMENT, WIRING DEVICES, LOW VOLTAGE SYSTEMS, J-BOXES AND CONDUITS SHALL BE LOCATED AND FIELD VERIFIED BY CONTRACTOR.
  - ALL REMOVED DEVICES SHALL BE OFFERED TO THE OWNER AS SALVAGE.
  - RELOCATE CONDUIT AS NECESSARY TO ALLOW NEW OR MODIFIED CONSTRUCTION. RESUPPORT EXISTING CABLING/CONDUIT TO REMAIN TO MEET CURRENTLY ADOPTED CODE REQUIREMENTS. REMOVE ALL ABANDONED CONDUIT AND WIRE. REPAIR EXISTING ELECTRICAL SYSTEMS DAMAGED BY CONSTRUCTION ACTIVITIES.
  - ANY DAMAGE TO EXISTING BUILDING, ELECTRICAL EQUIPMENT, WIRING DEVICES, CONDUIT, WIRING, ETC. SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER. ALL MATERIALS USED FOR THE REPLACEMENT MUST MEET RENOVATION PROJECT STANDARDS.
  - ELECTRICAL CONTRACTOR SHALL BEGAIN FIELD VERIFYING ALL EXISTING BRANCH CIRCUITS FOR EXISTING AREAS TO BE RENOVATED IMMEDIATELY AFTER THE CONTRACT IS ISSUED.
  - ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXISTING CIRCUITS WITH OWNER'S MAINTENANCE PERSONNEL AFTER NORMAL BUILDING HOURS AS REQUIRED.
  - ANY CIRCUIT OR PARTIAL CIRCUIT TO REMAIN OR BE REUSED SHALL REMAIN ACTIVE.
  - ELECTRICAL CONTRACTOR SHALL INCLUDE COST RELATED TO FIELD VERIFY EXISTING CIRCUITS IN BASE PROPOSAL. FIND AND RECORD ALL EXISTING DEVICES IN CEILINGS, WALLS AND CASEWORK IN AREAS TO BE RENOVATED. PROVIDE A COPY OF THE FIELD VERIFIED DEVICE DRAWINGS TO OWNER PRIOR TO BEGINNING WORK.
  - AT THE END OF THE PROJECT PROVIDE A NEW TYPED AS-BUILT PANEL SCHEDULE FOR ALL PANELS WITH CIRCUITS ADDED, REMOVED, OR MODIFIED AS PART OF THE PROJECT USING BUILDING ROOM NUMBERS.



- CONTROLS RISER KEYED NOTES:
- EXISTING DATA CABINET AND EQUIPMENT TO REMAIN.
  - EXISTING DIMMER RACK CONTROLS TO BE REMOVED AND OFFERED TO OWNER AS SALVAGE.
  - EXISTING CONTROLS CABLING FROM EXISTING DIMMER RACKS TO EXISTING DATA CABINET TO BE DEMO.
  - NEW DIMMER RACK AND THEATRICAL CONTROLS PROVIDED AS PART OF THIS PROJECT.
  - NEW CAT6 NETWORK CABLES FROM EXISTING DATA CABINET TO NEW DIMMER RACKS. PROVIDE END TO END CONDUIT PATHWAYS FROM DATA CABINET TO NEW RACK. NETWORK CABLING MAY BE COMBINED IN A SINGLE CONDUIT WHERE IT CONNECTS TO THE EXISTING DATA RACK. MAINTAIN MAXIMUM 40% CONDUIT FILL.
  - EXISTING CONTROL CABLING EXTENDING FROM DIMMER RACKS TO THEATRICAL LIGHTING CONTROLS IN OTHER SPACES TO BE RECONNECTED TO THE NEW DIMMER RACKS.
  - EXISTING CONTROL CABLING EXTENDING FROM CONTROLS CABINET TO THEATRICAL LIGHTING CONTROLS IN OTHER SPACES TO REMAIN.

**3 PARTIAL THEATRICAL CONTROLS SCHEMATIC**  
SCALE: NO SCALE

NOTES:  
1. EXISTING CIRCUITS AND EQUIPMENT SHOWN DASHED TO BE DEMO.



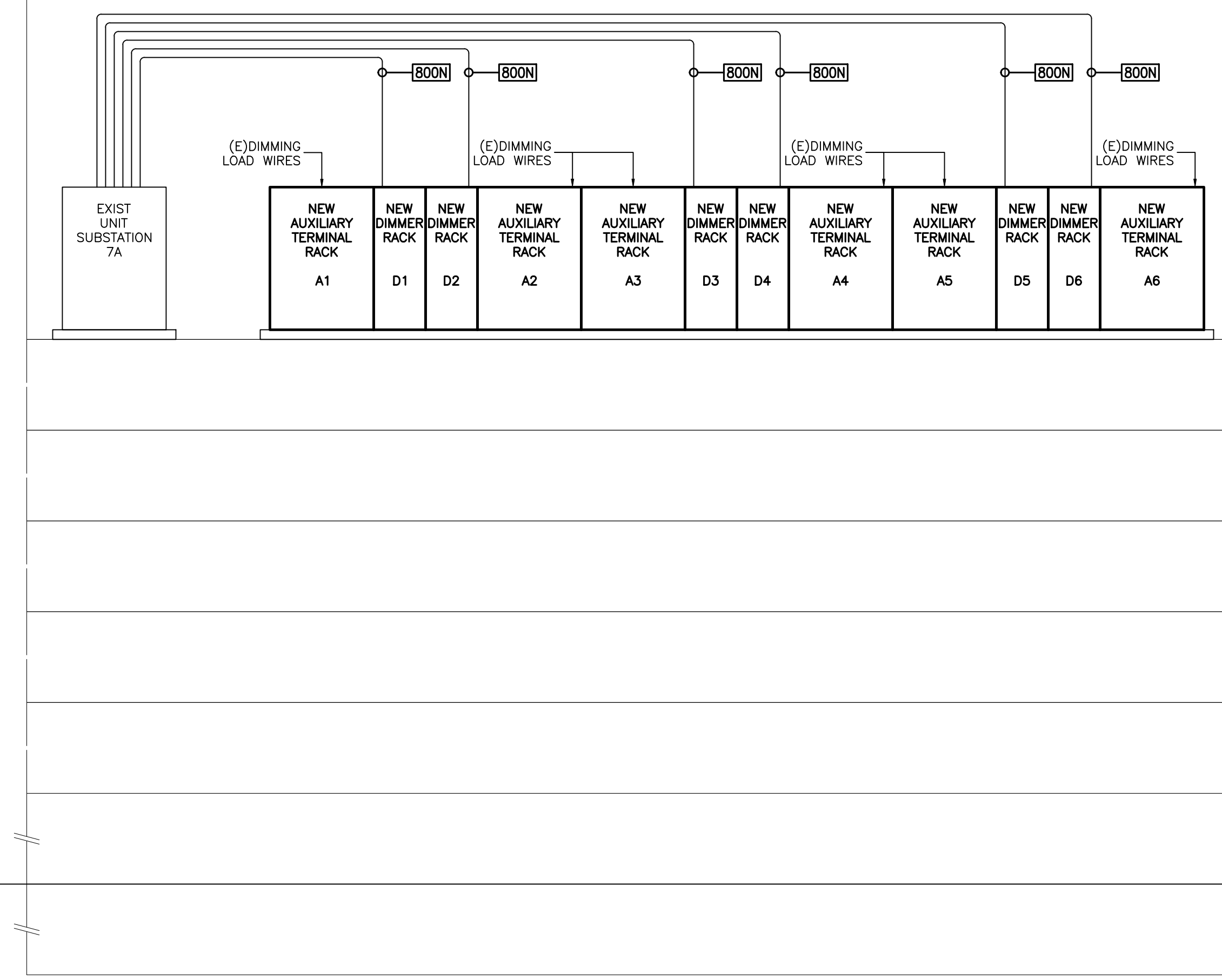
- DATA CABINET KEYED NOTES:
- 1/2U DMX GATEWAY
  - 24-PORT PATCH PANEL
  - 1/2U 8-PORT SWITCH, CENTER MOUNTED
  - 120V UNINTERRUPTIBLE POWER SUPPLY (UPS)
  - BLANK PLATE WITH PORT LABELS
  - LOGO PLATE
  - BLANK PLATE
  - DUPLEX RECEPTACLE MOUNTED ON CABINET BACKPLANE.
  - EXISTING CONDUIT FOR POWER WIRING
  - EXISTING CONDUIT FOR DATA CABLING
  - NEW 1.25" CONDUIT FOR NEW DATA CABLING
  - CABINET REAR PANEL
  - CABINET CENTER SECTION
  - CABINET VENTED FRONT DOOR
  - EMPTY SPACE
  - J-BOX AT STRUCTURE AND 1" TO DIMMER RACKS FOR CONTROL CABLING.

**4 EXISTING 7TH FLOOR DATA CABINET**  
SCALE: NO SCALE

- NOTES:
- COORDINATE WITH OWNER FOR MODIFICATIONS TO EXISTING DATA CABINET CONNECTIONS AND LABELING.
    - ALL DEVICES AND RACK MOUNTED EQUIPMENT IS EXISTING. REUSE EXISTING BROWN THEATER PATCH PANEL AND SWITCHES FOR NEW CONNECTIONS.
    - REMOVE EXISTING DIMMING CONTROL WIRING AND CABLING ABANDONED AS PART OF THIS PROJECT.
    - PROVIDE NEW CONDUIT FROM NEW DIMMER RACKS TO EXISTING DATA CABINET FOR NEW CABLING PATHWAY. PROVIDE PROTECTIVE BUSHING ON CONDUIT ENDS AND INSULATED FITTINGS.
    - PROVIDE NEW CAT6 CONNECTIONS FOR NEW DIMMER RACK CONTROLS. CONNECT TO EMPTY SPACES IN BROWN THEATER PATCH PANEL.
    - UPDATE PORT LABELS TO REFLECT NEW AND REMOVED CABLING CONNECTIONS. LABELS SHALL MATCH DIMMER RACK ASSIGNMENTS AS DESIGNATED BY OWNER.
    - PROVIDE ALL PATCH CORDS AND MISCELLANEOUS COMPONENTS AS REQUIRED FOR A COMPLETE INSTALLATION. PATCH CORDS INSTALLED IN THE CABINET SHALL BE 1FT IN LENGTH.
  - ONLY BROWN THEATER RACK CONTROLS ARE TO BE REWORKED, DO NOT DISTURB CABLING FOR OTHER SPACES LOCATED IN THE CABINET.
  - PERFORM END-TO-END TEST OF ALL NEW CABLING AND INCLUDE TEST RESULTS IN CLOSE OUT DOCUMENTS.

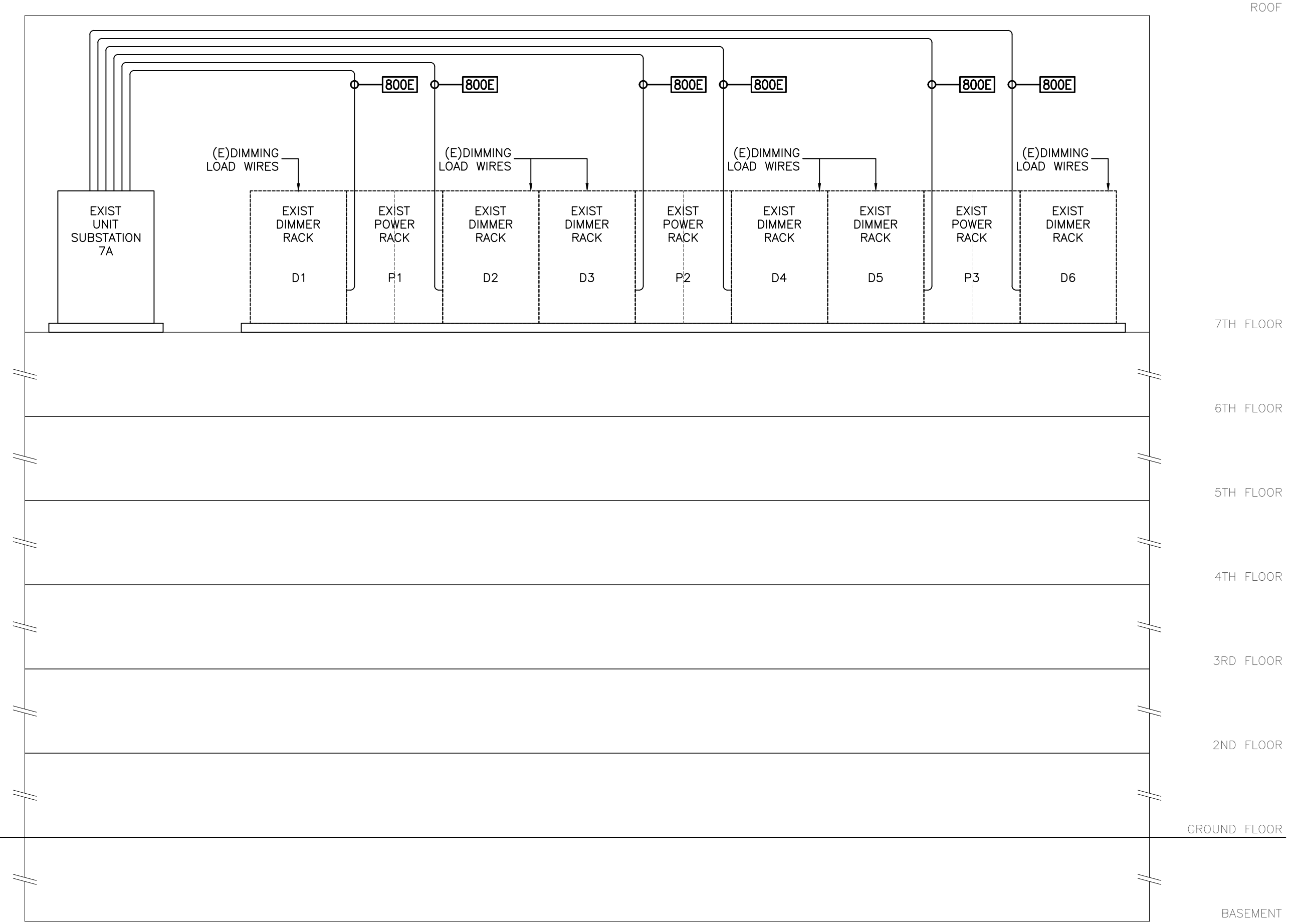
**1 PARTIAL EXISTING ELECTRICAL SCHEMATIC**  
SCALE: NO SCALE

NOTES:  
1. EXISTING CIRCUITS AND EQUIPMENT SHOWN DASHED TO BE DEMO.



**2 PARTIAL NEW ELECTRICAL SCHEMATIC**  
SCALE: NO SCALE

- NOTES:
- REUSE EXISTING FEEDER WIRING WHERE OF SUFFICIENT LENGTH AND IN GOOD CONDITION. RECONNECT TO NEW DIMMER RACK BUSSING CONNECTIONS.
    - ALL FEEDER WIRING SHALL BE UNSPLICED, CONTINUOUS FROM UNIT SUBSTATION TO DIMMER RACK BUSSING CONNECTIONS.
    - ALL PARALLELED CONDUCTORS SHALL BE THE SAME LENGTH PER NEC2020 310.10(G)(2). CONFIRM CONDUCTOR LENGTHS AS PART OF TRIM OUT PROCESS PRIOR TO ENERGIZING NEW DIMMER RACKS.
  - RECONNECT EXISTING DIMMING LOAD WIRING TO NEW AUXILIARY TERMINAL RACK TERMINAL STRIPS. PROVIDE ADDITIONAL WIRING TO CONNECT TERMINAL STRIPS TO NEW DIMMER MODULES.
  - VERIFY EXISTING CONDUCTOR SIZE, LENGTH, AND CONDITION. INCLUDE THE COST TO PROVIDE NEW FEEDERS TO REPLACE THE EXISTING AS DIRECTED BY THE OWNER/ENGINEER.



ROOF  
7TH FLOOR  
6TH FLOOR  
5TH FLOOR  
4TH FLOOR  
3RD FLOOR  
2ND FLOOR  
GROUND FLOOR  
BASEMENT