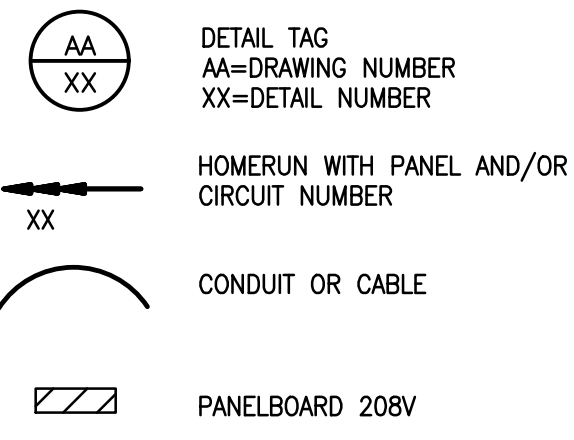


SYMBOLS LIST



ABBREVIATIONS

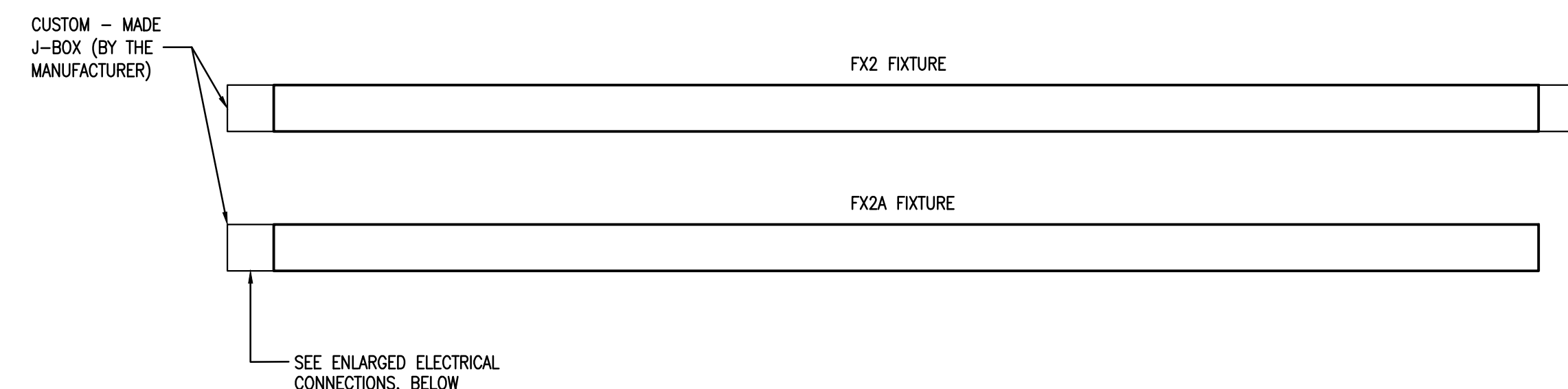
- A AMPERAGE
- A.F.F. ABOVE FINISHED FLOOR
- A.F.G. ABOVE FINISHED GRADE
- AF AMP FRAME
- AHJ AUTHORITY HAVING JURISDICTION
- AL ALUMINIUM
- AT AMP TRIP
- ATS AUTOMATIC TRANSFER SWITCH
- AWG AMERICAN WIRE GAUGE
- C CONDUIT
- C.B. CIRCUIT BREAKER
- CLG CEILING MOUNTED
- CKT CIRCUIT
- CP CONTROL PANEL
- CU COPPER
- DEMO DEMOLITION
- DWG DRAWING
- (E) EXISTING TO REMAIN
- ELEC. ELECTRICAL
- EM EMERGENCY
- EMT ELECTRICAL METALLIC TUBING
- EQUIP EQUIPMENT
- EXIST. EXISTING
- FA FIRE ALARM
- GFI GROUND FAULT CIRCUIT INTERRUPTER
- GND GROUND
- GRC GALVANIZED RIGID STEEL CONDUIT
- HOA HAND-OFF-AUTO
- HP HORSEPOWER
- KV KILOVOLTS
- KVA KILOVOLTS AMPS
- KW KILOWATTS
- KWH KILOWATT HOURS
- LTG LIGHTING
- MCB MAIN CIRCUIT BREAKER
- MFR MANUFACTURER
- MLO MAIN LUGS ONLY
- MTG MOUNTING
- NEC NATIONAL ELECTRICAL CODE
- N.T.S. NOT TO SCALE
- PVC POLYVINYLCHLORIDE
- PH PHASE
- PNL PANELBOARD
- PWR POWER
- (R) TO BE REMOVED (DEMOLISHED)
- RGS RIGID GALVANIZED STEEL
- RECEP RECEPTACLE
- SCC SHORT CIRCUIT CURRENT
- SW SWITCH
- SWBD SWITCHBOARD
- SWGCR SWITCHGEAR
- TP. TYPICAL
- UG UNDERGROUND
- U.O.N. UNLESS OTHERWISE NOTED
- V VOLTS/VOLTAGE
- VFD VARIABLE FREQUENCY DRIVE
- W/ WITH
- WP WEATHERPROOF
- XFMR TRANSFORMER
- +XX* + DENOTES 9" ABOVE COUNTERTOP OR SINK
XX*DENOTES HEIGHT ABOVE EXAM BED

GENERAL REQUIREMENTS:

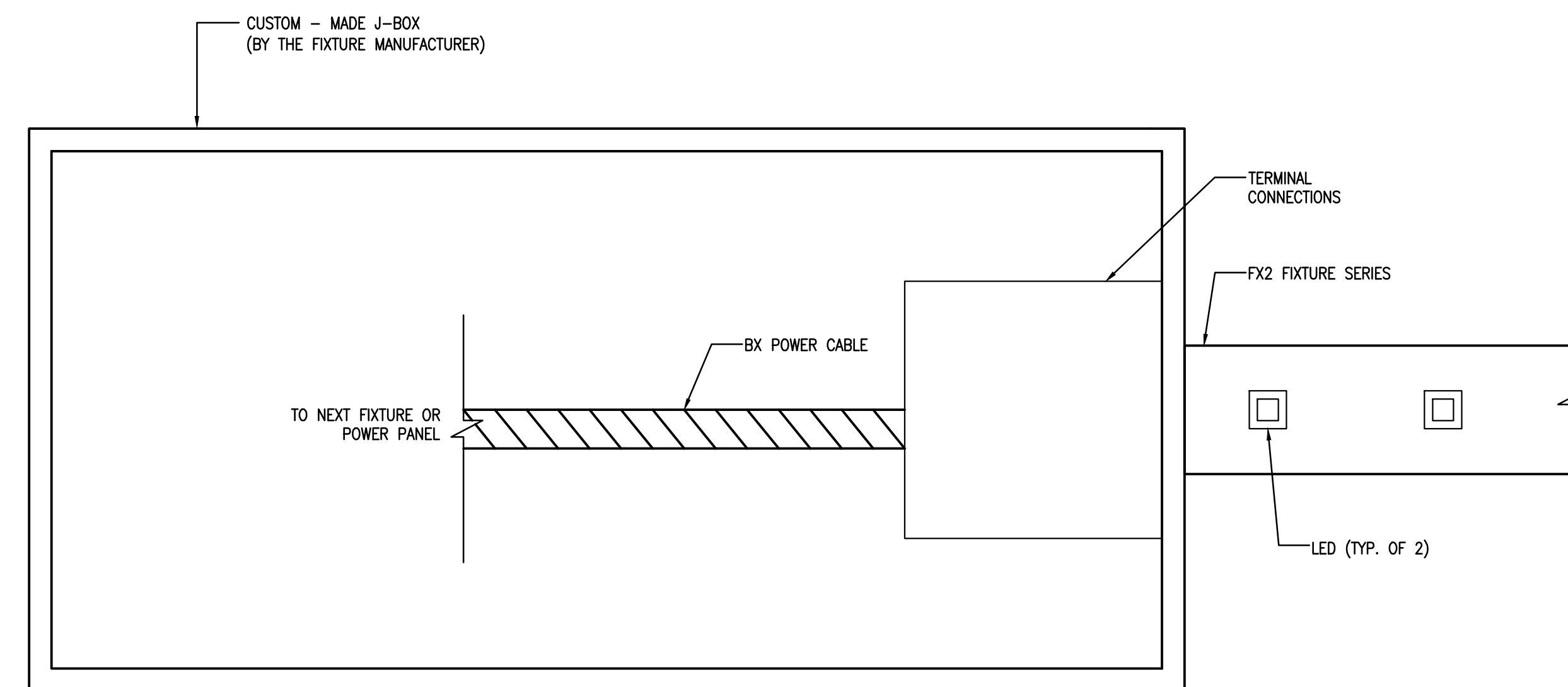
1. THE WORK TO BE DONE UNDER THIS PROJECT INCLUDES PROVIDING ALL EQUIPMENT, MATERIALS, LABOR AND SERVICES, AND PERFORMING ALL OPERATIONS FOR COMPLETE AND OPERATING SYSTEMS. ANY WORK NOT SPECIFICALLY COVERED BUT NECESSARY TO COMPLETE THIS INSTALLATION, SHALL BE PROVIDED. ALL EQUIPMENT AND WIRING TO BE NEW AND PROVIDED UNDER THIS CONTRACT UNLESS OTHERWISE NOTED.
2. ENTIRE INSTALLATION, INCLUDING MATERIALS, EQUIPMENT AND WORKMANSHIP, SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NFPA 70 AND NECA-1) ADOPTED IN THIS STATE AS WELL AS ALL APPLICABLE LAWS AND REGULATIONS AND REGULATORY BODIES HAVING JURISDICTION OVER THIS WORK.
3. THE TERM "FURNISH" SHALL MEAN TO OBTAIN AND SUPPLY TO THE JOB SITE. THE TERM "INSTALL" SHALL MEAN TO FIX IN POSITION AND CONNECT FOR USE. THE TERM "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL. THE TERM "CONTRACTOR" SHALL MEAN ELECTRICAL CONTRACTOR.
4. ONLY WRITTEN CHANGES AND/OR MODIFICATIONS APPROVED BY THE ARCHITECT, CONSULTING ENGINEER OR OWNER'S REPRESENTATIVE WILL BE RECOGNIZED.
5. ALL NEW ELECTRICAL MATERIAL AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS' LABORATORIES, INC. (UL) AND BEAR THE UL LABEL.
6. PROVIDE ALL SCAFFOLDING, LADDERS, RIGGING, HOISTING, ETC., FOR THIS WORK.
7. PROVIDE TECHNICAL MANUALS, PER SPECIFICATIONS, AND ONE INSTRUCTIONS TO USER FOR ALL EQUIPMENT AND SYSTEMS PROVIDED UNDER THIS CONTRACT AFTER ALL ARE CLEANED AND OPERATING.
8. THE DRAWINGS ARE DIAGRAMMATIC AND ALL SPECIALTIES AND APPURTENANCES ARE NOT SHOWN, BUT SHALL BE PROVIDED AS REQUIRED.
9. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF FINISHED CONSTRUCTION PRIOR TO FABRICATION AND INSTALLATION OF FIXTURES AND EQUIPMENT.
10. THE WORK SHALL INCLUDE ALL PANELS, DEVICES, FEEDERS AND BRANCH CIRCUIT WIRING AS REQUIRED FOR THE DISTRIBUTION SYSTEM INDICATED AND CALLED FOR ON THE DRAWINGS, REQUIRED BY SPECIFICATIONS AND AS NECESSARY FOR COMPLETE FUNCTIONAL SYSTEMS PRESENTED AND INTENDED.
11. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR, TOOLS, EQUIPMENT, CONSUMABLES AND SERVICES REQUIRED FOR OBTAINING, DELIVERY, INSTALLATION, CONNECTION, DISCONNECTION, REMOVAL, RELOCATION, REPAIR, REPLACEMENT, TESTING AND COMMISSIONING OF ALL EQUIPMENT AND DEVICES INCLUDED IN OR NECESSARY FOR THE WORK, AS APPLICABLE.
12. ELECTRICAL WORK SHALL INCLUDE ALL REQUIRED CUTTING, PATCHING AND THE FULL RESTORATION OF WALL AND FLOOR STRUCTURE AND SURFACES.
13. EXACT ROUTING OF CONDUITS SHALL BE DETERMINED IN THE FIELD.
14. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL CONDITIONS AND SYSTEMS THAT EFFECT HIS BIDDING AND WORK, AND SHALL PROVIDE VALUE FOR SAME IN HIS BID.
15. UPON COMPLETION OF THE ELECTRICAL WORK, CONTRACTOR SHALL TEST THE COMPLETE ELECTRICAL SYSTEM FOR SHORTS, GROUNDS, AND PROPER OPERATION, IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE.
16. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL CLEAN AND ADJUST ALL EQUIPMENT AND LIGHTING AND TEST SYSTEMS TO THE SATISFACTION OF OWNER AND ENGINEER. RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
17. ALL WORK SHALL BE PERFORMED BY THOSE SKILLED IN THEIR PARTICULAR TRADE IN A NEAT AND WORKMANLIKE MANNER.
18. ELECTRICAL WORK SHALL BE DONE AT SUCH A TIME, AND IN SUCH MANNER, AS WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF THE SITE'S AND/OR BUILDING'S ACTIVITIES. PROVISIONS SHALL BE MADE TO PERMIT THE USE OF ALL EXISTING ELECTRICAL SYSTEMS AT ALL TIMES. PROVIDE TEMPORARY FACILITIES TO SECURE THESE CONDITIONS AND REMOVE SUCH TEMPORARY FACILITIES WHEN NO LONGER REQUIRED.
19. SHUTDOWN WORK SHALL BE SCHEDULED AT SUCH TIME AND IN SUCH MANNER AS DIRECTED BY THE OWNER AND ENGINEER. PROVIDE A MINIMUM ONE WEEK NOTICE.
20. WHERE ALLOWABLE SHUTDOWN PERIODS CANNOT BE OF DURATION TO ACCOMMODATE ALL OF THE REQUIRED WORK, THE CONTRACTOR SHALL PERFORM THE WORK IN A SERIES OF PREPLANNED STAGES DURING ALLOWABLE SHUTDOWN PERIODS. PROVIDE TEMPORARY FACILITIES TO ALLOW RE-ENERGIZING OF SERVICES BETWEEN WORKING STAGES.

LIGHTING FIXTURE LEGEND

FX2	LED surface ceiling mounted line voltage tape containing an extruded clear thermoplastic jacket, 580 lumens/ft output, 2"W x 6"L x 1 1/2"H inline feed boxes at each end and continuous white opaque mounting channel. The feed boxes shall contain a conduit entry on the top and flush cover on the bottom.	Apogee Lighting	SFAC-8-35-H-LENGTH-2MOD BOX-STD-PCTW	LED 3500°K	5W/LF	120	Surface	1. Provide lengths as shown on drawings. 2. Contractor to provide manufacturer with required field dimensioned lengths. Tape cannot be field cut or modified. 3. Adjacent sections of tape to daisy chain together with BX jumpers. 4. Maximum length per feed - 100'. 5.
FX2A	Similar to FX2 except with a right angle power feed connector with an inline feed box at one end and a termination cap at the other end.	Apogee Lighting	SFAC-8-35-H-LENGTH-MOD BOX-STD-PCTW	LED 3500°K	5W/LF	120	Surface	
FX3	Similar to FX1 except the mounting channel shall be mounted to the vertical wall of an existing ceiling slot via 1" x 1" aluminum angle.	Apogee Lighting	SFAC-8-35-H-LENGTH-2BXR AU- STD-PCTW	LED 3500°K	5W/LF	120	Surface	1. See drawing FX3.0 for details. 2. Tape, channel and mounting angle shall extend continuously as shown on the lighting plans. 3. Stop mounting angle 4" short at each end of tape run to allow for BX whips exiting the top of the feed connector(s). 4. Contractor to furnish and install mounting angles.

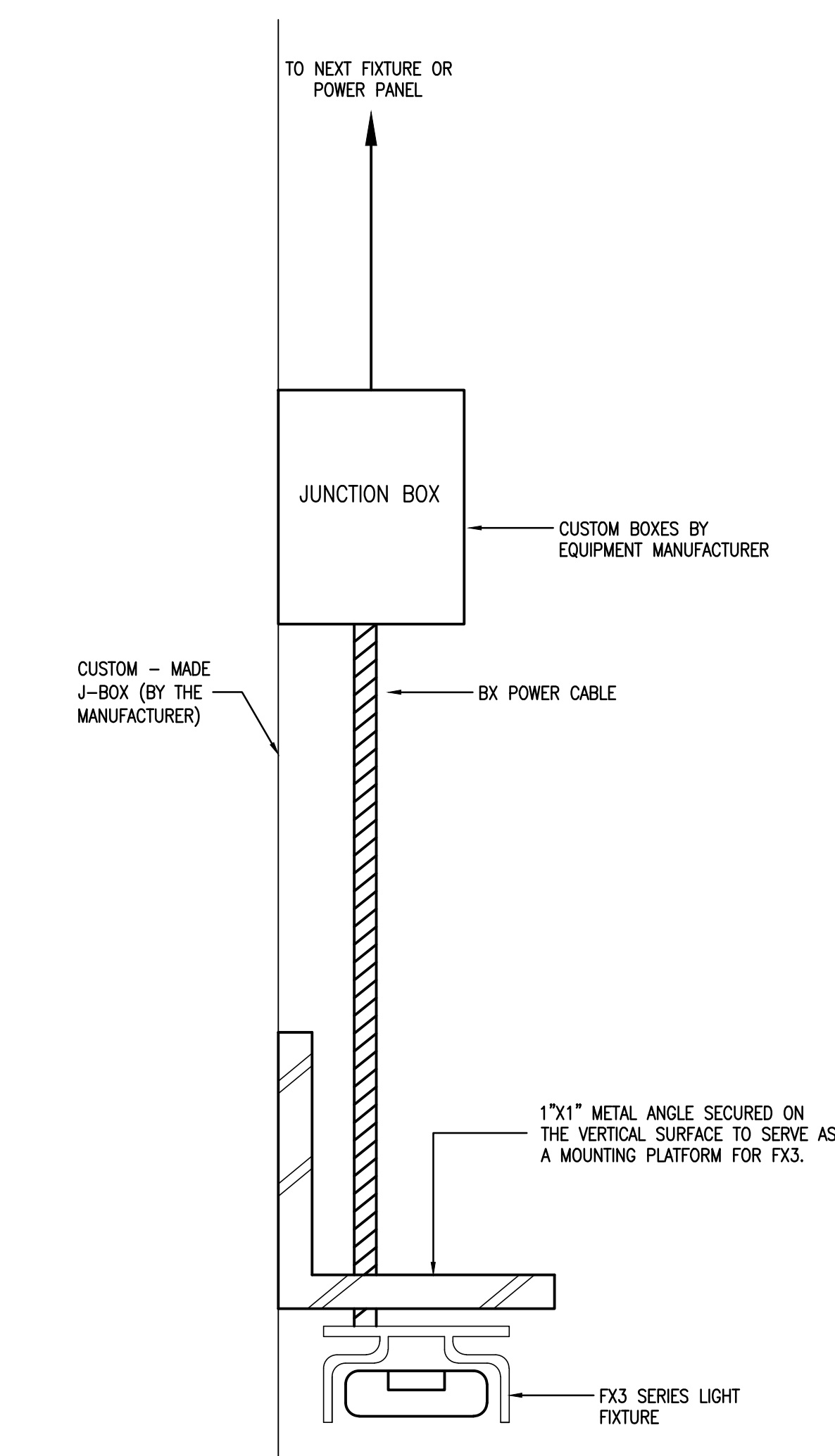


PLAN VIEW OF FIXTURE MOUNTING



PLAN VIEW ELECTRICAL CONNECTIONS

1 FX2/FX2A SERIES - MOUNTING DETAIL
SCALE: NOT TO SCALE

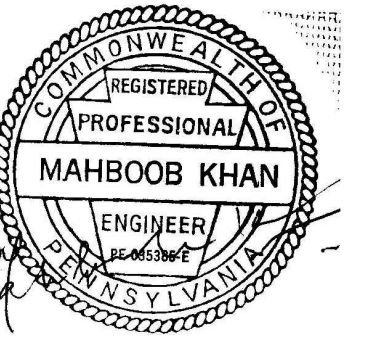


2 FX3 SERIES - MOUNTING DETAIL
SCALE: NOT TO SCALE

consultant

M AND S ENGINEERING SERVICE INC
Consulting Engineers
1581 Bristol Pike
Bensalem, PA 19020
Telephone 215.633.8337
msengineering@gmail.com

seal:



project:

PENNSYLVANIA CONVENTION CENTER
13TH STREET LIGHTING
ELECTRICAL POWER DESIGN
1101 ARCH STREET
Philadelphia, PA

no:	revision	date
1	BID SET	05.15.2024

sheet title:

**ELECTRICAL
SYMBOL LIST, ABBREVIATION,
GENERAL NOTES & DETAILS**

scale: As Noted

date: 5/15/2024

drawn by: J.M./P.O.D.

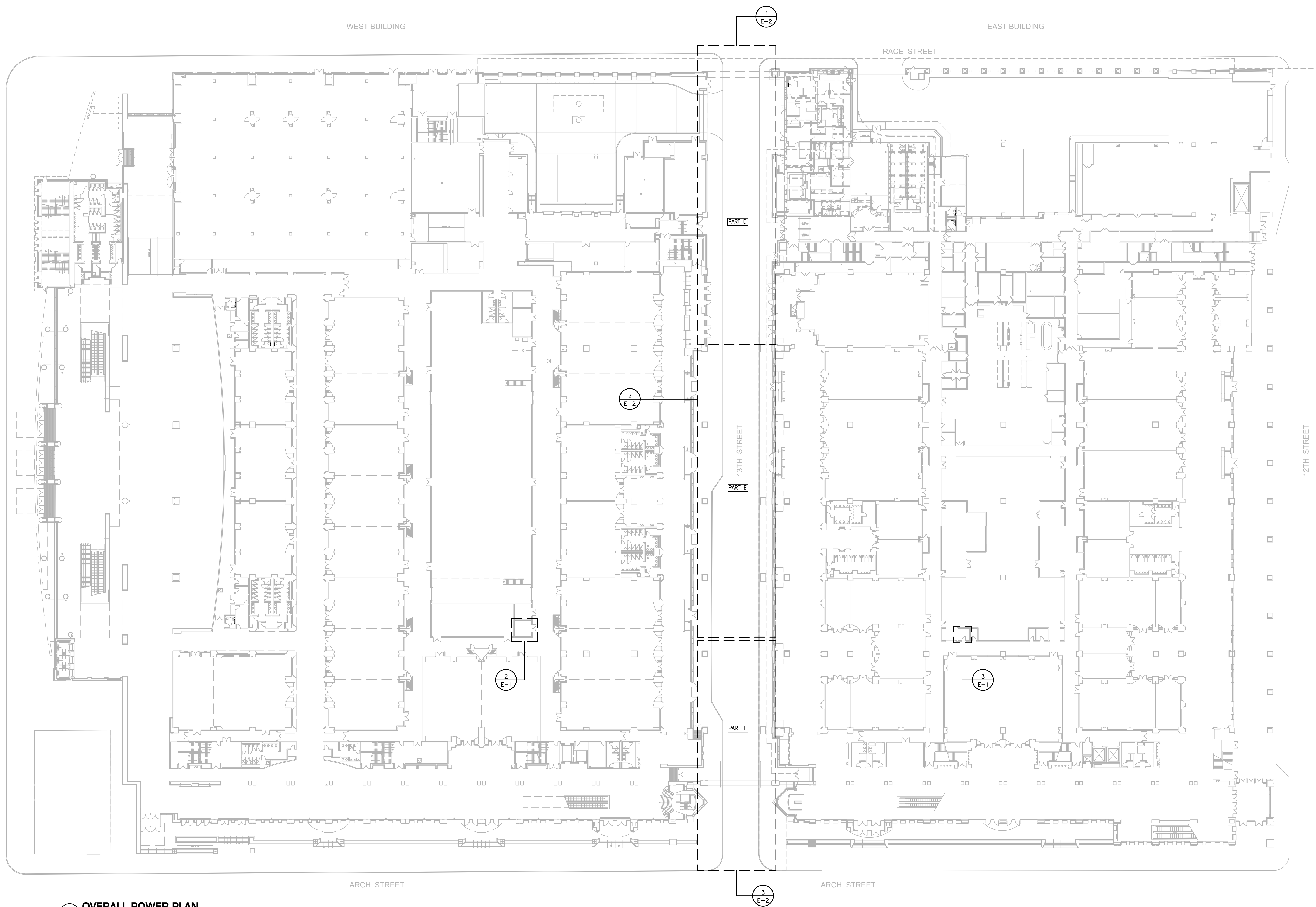
checked by: M.K.

The Contractor on site shall verify all dimensions and existing conditions. The Contractor is required to perform all work in compliance with applicable codes and regulations of governing authorities having jurisdiction.

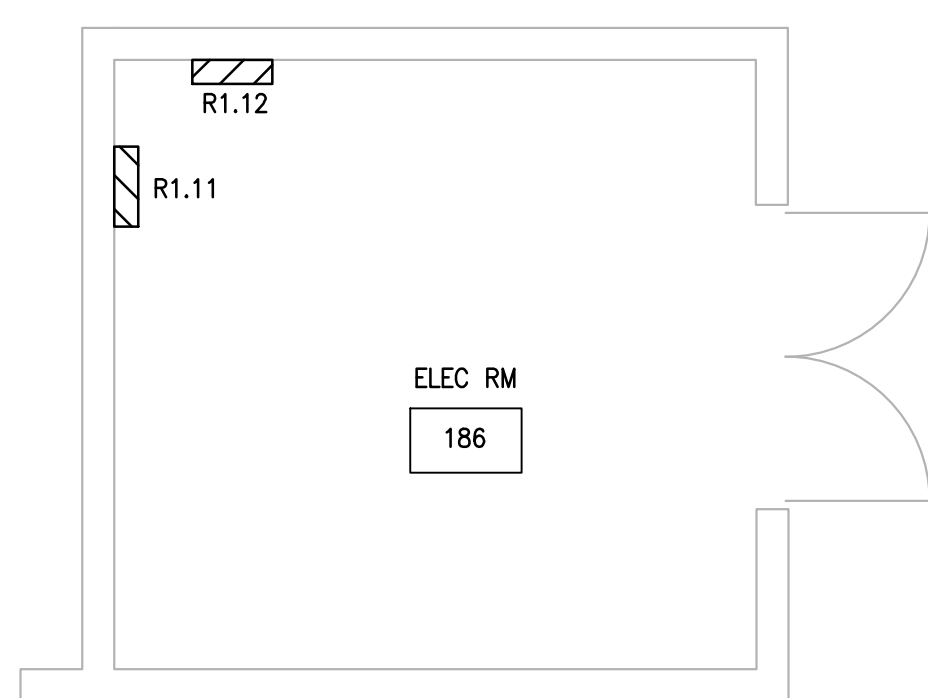
All drawings, specifications, plans, ideas, arrangements and designs represented or referred to are the property of and owned by M and S Engineering Services Inc., whether the project for which they are made is executed or not. None of the above may be disclosed or given to or used by any person, firm or corporation for any use or purpose whatsoever including any other project, except upon written permission and direction of M and S Engineering Services Inc.

drawing no.

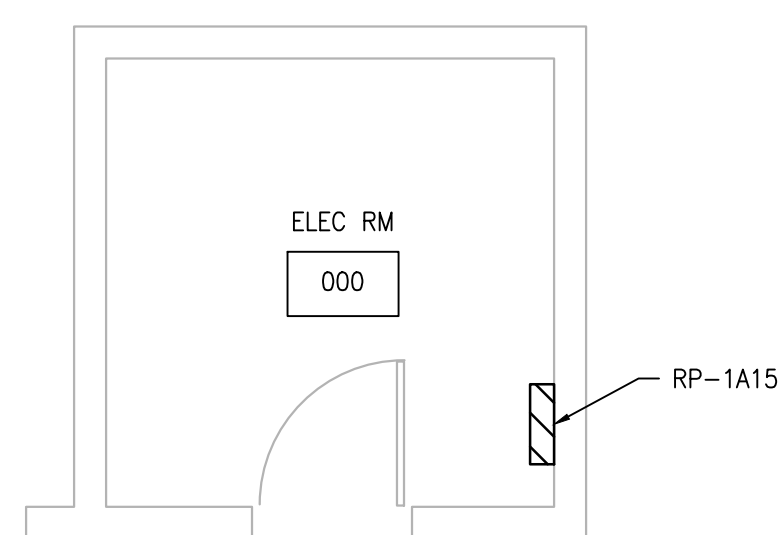
E-0



1 OVERALL POWER PLAN
SCALE: 1/32" = 1'-0"



2 PARTIAL POWER PLAN - ELEC RM 186
SCALE: 1/4" = 1'-0"



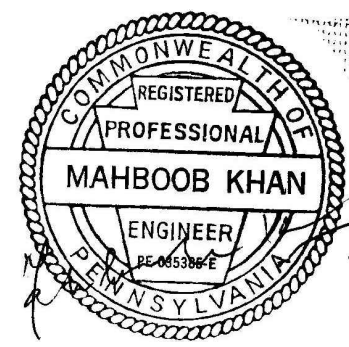
3 PARTIAL POWER PLAN - ELECTRICAL RM 000
SCALE: 1/4" = 1'-0"

consultant

M AND S ENGINEERING SERVICE INC
Consulting Engineers

1581 Bristol Pike
Bensalem, PA 19020
Telephone 215.653.8337
ms.eengineering@gmail.com

seal:



project:

PENNSYLVANIA CONVENTION CENTER
13TH STREET LIGHTING
ELECTRICAL POWER DESIGN
1101 ARCH STREET
Philadelphia, PA

no:	revision	date
1	BID SET	05.15.2024

sheet title:

**ELECTRICAL
OVERALL POWER PLAN**

scale: As Noted

date: 5/15/2024

drawn by: J.M.P.O.D.

checked by: M.K.

The Contractor on site shall verify all dimensions and existing conditions. The Contractor is required to perform all work in compliance with applicable codes and regulations of governing authorities having jurisdiction.

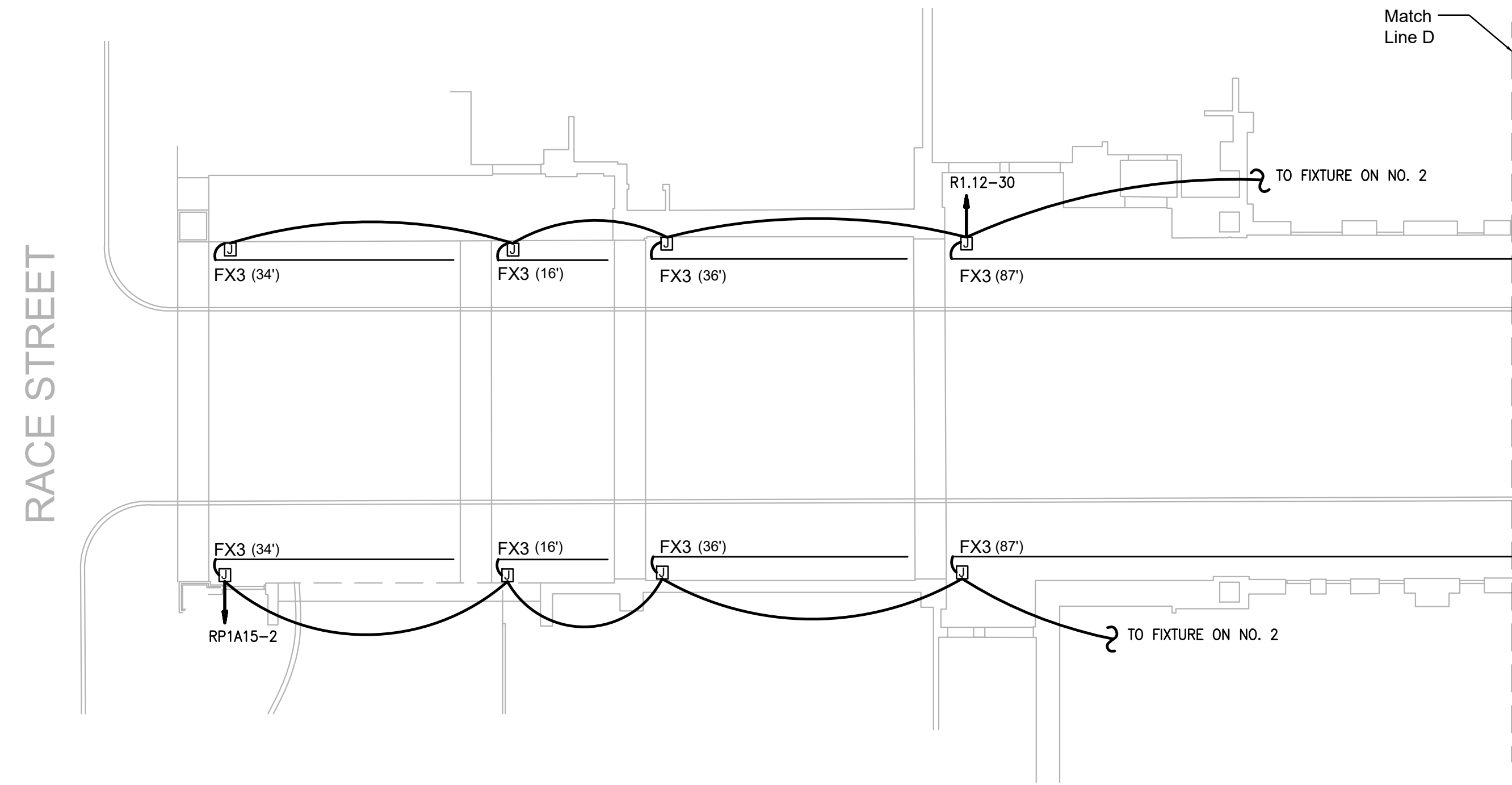
GENERAL NOTES:

1. THE INTENT OF THIS DESIGN IS TO ADD SECURITY LIGHTING TO THE OVERPASS TUNNEL.
2. THE 13TH STREET ROAD UNDER THE OVERPASS SHALL HAVE LIGHTING INSTALLED PER THE PLANS.
3. ELECTRICAL ROOM 186 IS LOCATED IN THE MIDDLE SOUTH PORTION OF THE BUILDING, THE ELECTRICAL CLOSET ROOM 000 HOUSING PANEL RP-1A15 IS LOCATED IN THE SOUTH EAST PORTION OF THE BUILDING.
4. REFER TO PLANS FOR LOCATION OF NEW LIGHTS AND LAYOUTS, SEE DRAWING E-2.
5. THE ROUTING OF CONDUIT AND WIRING SHALL BE DONE IN THE FIELD.
6. ALL LIGHT FIXTURES ARE 120V AND SHALL BE WIRED 208/120V PANEL INDICATED ON THE PLANS.
7. FIXTURE MOUNTING SHALL BE PER NO. 1 & NO. 2 ON DRAWING E-0.

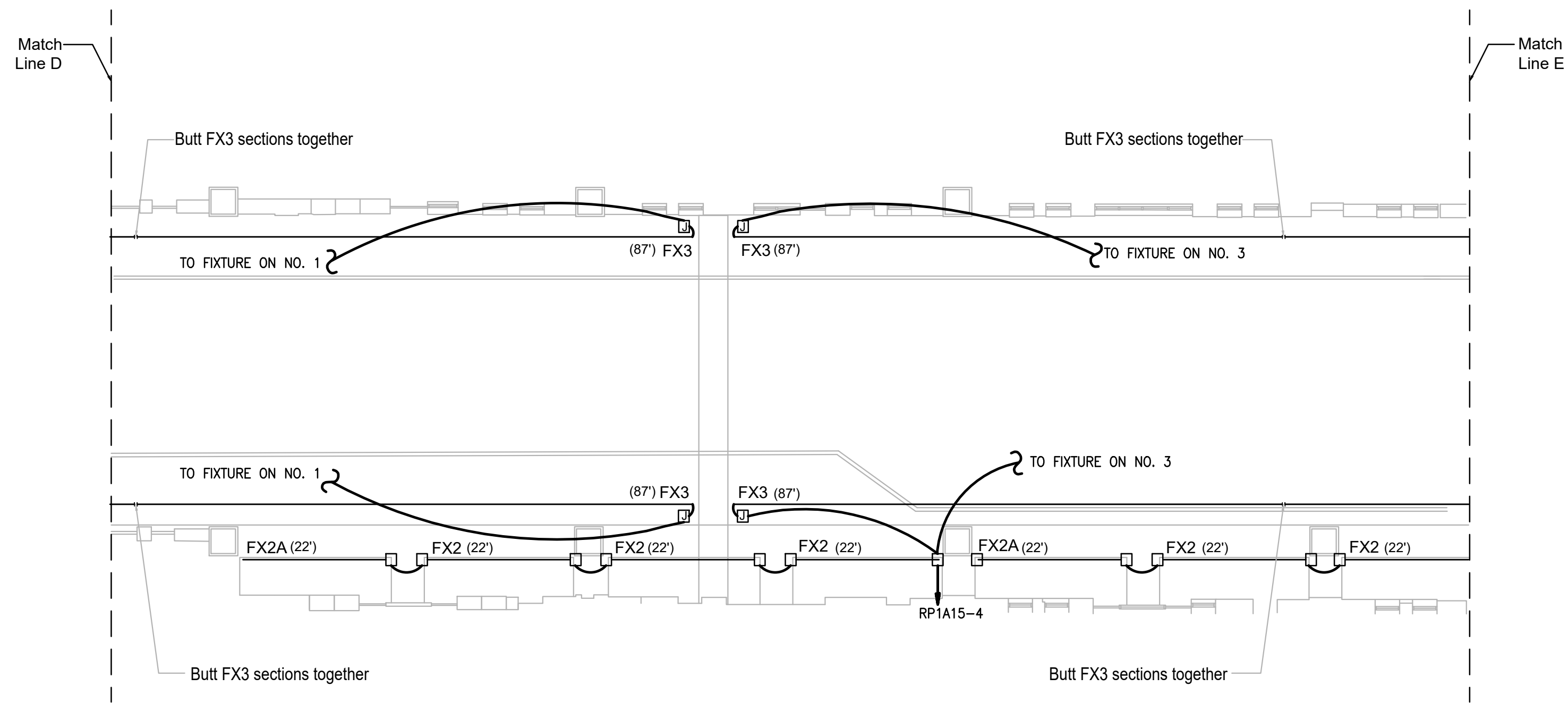
All drawings, specifications, plans, ideas, arrangements and designs represented or referred to are the property of and owned by M and S Engineering Services Inc., whether the project for which they are made is executed or not. None of the above may be disclosed or given to or used by any person, firm or corporation for any use or purpose whatsoever including any other project, except upon written permission and direction of M and S Engineering Services Inc.

drawing no.

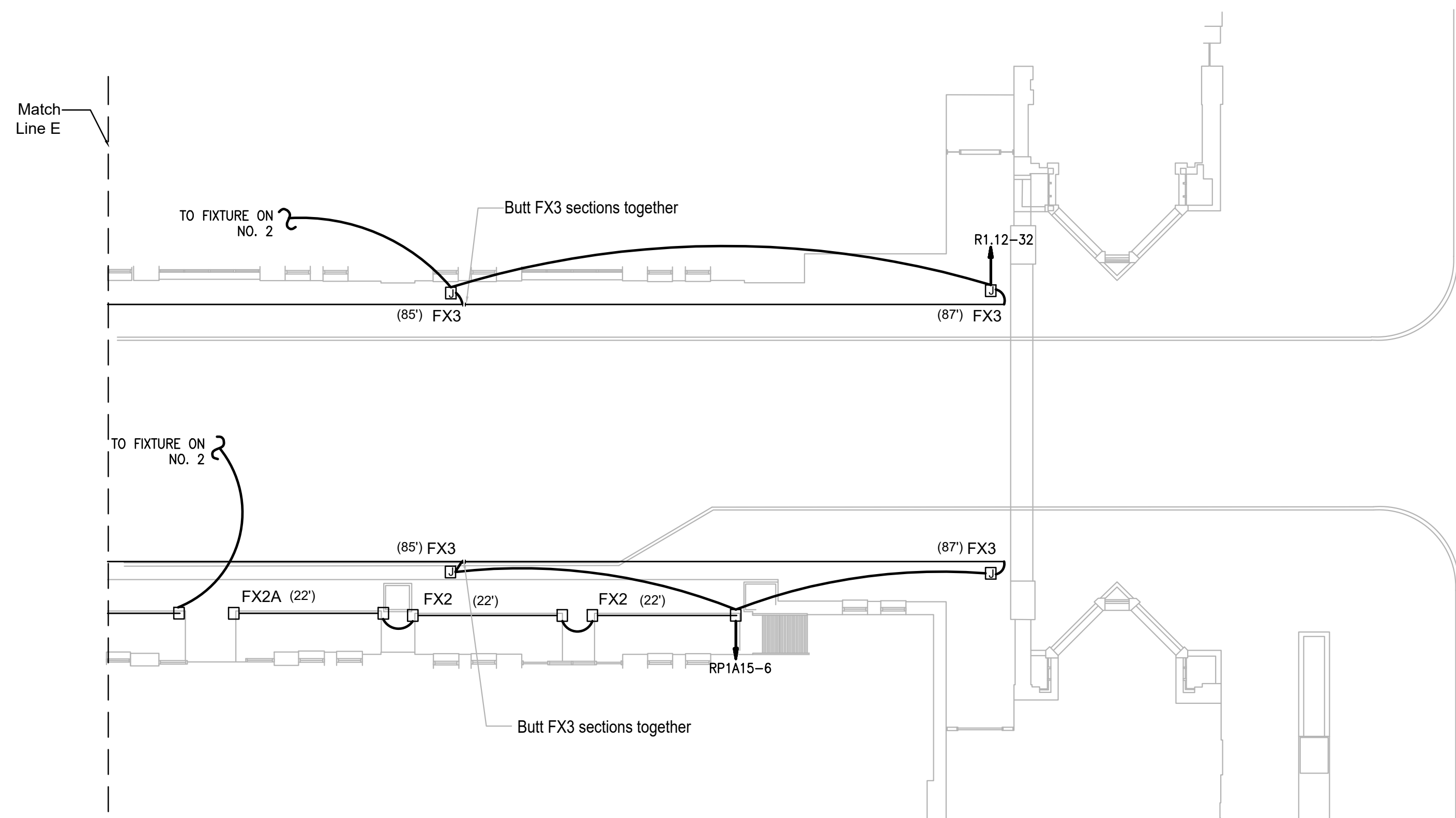
E-1



1 PARTIAL LIGHT PLAN - PART D
SCALE: 1/16" = 1'-0"



2 PARTIAL LIGHTING PLAN - PART E
SCALE: 1/16" = 1'-0"



3 PARTIAL LIGHTING PLAN - PART F
SCALE: 1/16" = 1'-0"

GENERAL NOTES:

1. WIRING SHALL BE CONCEALED AS MUCH AS POSSIBLE.
2. WIRING SHALL REFER TO BOTH CONDUIT AND CONDUCTORS.
3. ALL WIRING SHALL BE WEATHERPROOF AND BE SUITABLE FOR OUTDOORS AND WET LOCATIONS.
4. FOR CIRCUIT PROVIDE NEW 20A/1P CIRCUIT BREAKER FOR EACH CIRCUIT SHOWN.
5. WIRE CIRCUIT DIRECTLY TO THE PANEL.
6. THE LENGTHS OF THE FIXTURES ARE INDICATED NEXT TO THE FIXTURE ID.

LEGEND:

- ☐ CUSTOM MADE J-BOX COMES WITH THE FIXTURE. (PROVIDED BY FIXTURE MANUFACTURER.)
- ☑ CONNECT BX WHIPS ATTACHED TO THE BACK OF THE FIXTURE CONNECTION BOXES TO A NEW JUNCTION BOX INSTALLED ABOVE AN ACCESSIBLE CEILING.

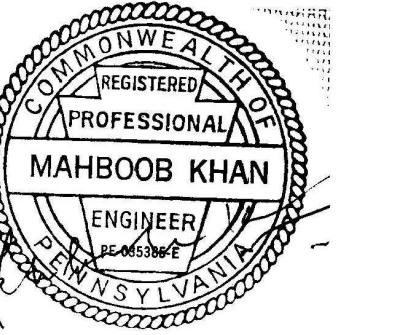
consultant

M AND S ENGINEERING SERVICE INC

Consulting Engineers

1581 Bristol Pike
Bensalem, PA 19020
Telephone: 215.633.8337
m.s.engineering@gmail.com

seal:



project:

PENNSYLVANIA CONVENTION CENTER
 13TH STREET LIGHTING
 ELECTRICAL POWER DESIGN
 1101 ARCH STREET
 Philadelphia, PA

no:	revision	date
1	BID SET	05.15.2024

sheet title:

PARTIAL LIGHTING PLANS - PART D, E, & F

scale: As Noted

date: 5/15/2024

drawn by: J.M./P.O.D.

checked by: M.K.

The Contractor on site shall verify all dimensions and existing conditions. The Contractor is required to perform all work in compliance with applicable codes and regulations of governing authorities having jurisdiction.

All drawings, specifications, plans, ideas, arrangements and designs represented or referred to are the property of and owned by M and S Engineering Services Inc., whether the project for which they are made is executed or not. None of the above may be disclosed or given to or used by any person, firm or corporation for any use or purpose whatsoever including any other project, except upon written permission and direction of M and S Engineering Services Inc.

drawing no.

E-2

© copyright M & S Engineering