ADDENDUM NO. 9

DELAWARE STATE UNIVERSITY (OWNER)
OPTICAL SCIENCE CENTER FOR APPLIED RESEARCH
Contract Nos.:
PC-2014-006B-OSCARIT (I.T. Cabling)
1220 N. DuPont Highway
Dover, DE 19901

THE WHITING-TURNER CONTRACTING COMPANY
(CONSTRUCTION MANAGER)
1200 N. DuPont Highway
Dover, DE 19901
302-857-6883 (phone)

BIDS DUE: **JUNE 26, 2013 at 10:00 AM (REVISED)**

LOCATION: **Delaware State University**
Whiting-Turner Contracting Company Jobsite Trailer
1200 N. DuPont Highway
Dover, DE 19901

NOTICE TO ALL BIDDERS

1.0 GENERAL NOTES

1.1 Bidders are hereby notified that this Addendum shall be and hereby becomes part of their Contract Documents and shall be attached to the Project Manual for this project. All bidders shall acknowledge this addendum on the Bid Form.

1.2 The following items are intended to revise and clarify the drawings and Project Manual and shall be included by the Bidder in their proposal.

1.3 Bidders shall verify that their Sub-Bidders are in full receipt of the information contained herein.

1.4 CAD files will not be provided for bidding purposes. CAD files will be made available as requested to awarded Contractors.

1.5 The cost to purchase drawings, specifications and any addenda should be included in the bid.

1.6 The due date for **Bid Package 16B – I.T. Cabling ONLY** is revised to **Thursday June 26, 2014 at 10 AM**. The due date **for Bid Package 09D – Painting** shall remain for **June 17, 2014**.

1.7 A future addendum shall be issued to clarify the extents of the 12-strand sing mode fiber optic and 200-pair copper cable to be installed to other campus buildings.

1.8 Scope reviews with the winning bidder of the **16B – I.T. Cabling** shall be held on **Friday June 27, 2014 at 10 AM.**

2.0 CHANGES TO DIVISIONS 00 & 01

1.1 SECTION 00400 – BID FORM 16B I.T. CABLING **(REVISED)**

3.0 DRAWINGS ISSUED

3.1 E0.1 Cover Abbreviations

3.2 E0.2 Cover Symbols

3.3 E4.5 Riser Diagrams Telecom

3.4 E5.0 Details

3.5 E5.1 Details

3.6 E5.3 Details

3.7 E5.4 Door Details

3.8 EP1.1 Power Plan Ground Level

3.9 EP1.2 Power Plan Second Level

3.10 EP1.3 Power Plan Third Level

3.11 EP1.4 Power Diagram Penthouse Level

3.12 EP 2.1 Power Plan Partial Ground Level

3.13 EP2.2 Power Plan Second Level

3.14 EP2.3 Power Plan Partial Third Level

3.15 EP2.4 Power Plan Partial Penthouse Level

3.16 EP2.5 Power Plan Partial Plans

3.17 ES1.1 Site Plan New

SECTION 00400 – BID FORM **(ADDENDUM ❾)**

For Bids Due: **June 26, 2014** **To:** **Delaware State University**
1200 N. DuPont Highway
Dover, DE 19901

Bid Package: **16B – I.T. CABLING (PC-2014-006B-OSCARIT)**

Name of Bidder: _____

Delaware Business License No.: _____ **Taxpayer ID No.:** _____

(Other License Nos.): _____

Phone No.: _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

BASE BID: **$** _____ **Dollars**

($ _____ **)**

ALTERNATES – See Division 01 – Section 01025 for complete description of alternates

Not all of the blanks spaces may be required. Alternate prices are to conform to applicable project specification sections or drawing details. An "ADD" or "DEDUCT" amount is indicated by circling whichever is applicable. If an alternate does not apply to a specific bid package, insert: "Not Applicable". **Both Base Bid and Alternate shall be considered prior to award. (Addendum ❽)**

ALTERNATE NO. 1:

Add / Deduct (circle one): _____ Dollars

($ _____)

UNIT PRICES – See specific Scope of Work for unit pricing description:

Unit prices conform to applicable project specification section. Refer to the specifications and/or specific scope of work for a complete description of required unit prices for this bid package. Not all of the blank spaces below may be required.

None.

LABOR HOURS: (Addendum ❽)

The following quantity of estimated field labor hours and crew size information is provided for review purposes by the Construction Manager and Owner.

1. The total quantity of field regular shift labor hours estimated for this project:_____hours

2. The total quantity of field overtime shift labor hours estimated for this project:_____hours

Total:_____hours

I/We acknowledge the receipt of addenda as listed below and the price(s) submitted include any cost/schedule impact they may have.

Addendum Number	Date of Addendum
1-6	Base bid documents

This bid shall remain valid and cannot be withdrawn for **Sixty (60)** days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid (REQUIRED).

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Subcontractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to complete all the work required in accordance with the project schedule included in specification section 01780.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation (circle one)

By _____ **Trading as** _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address: _____

_____

_____

_____

Witness: _____ **By:** _____
(Authorized Signature)

_____
(Printed Name and Title)

Date: _____

ATTACHMENTS

Subcontractor List (See Section 00450 and any updates by addenda)
Non-Collusion Statement
Bid Security (Deposit or Bid Bond)

BID FORM

Bid Package #: 16B – I.T. CABLING

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the *Owner*, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.

NOTE: **Subcontractor categories specific to each bid package are listed in specification section 00450 and will be updated at the pre-bid meeting and via addendum. If no categories are requested for a bid package, then none are required to be submitted. Refer to specification section 00450 and any addenda that may modify the required listing.**

Subcontractor Category	Subcontractor	Address (City & State) & License #
		City
		State
		License #

Subcontractor Category	Subcontractor	Address (City & State) & License #
		City
		State
		License #

Subcontractor Category	Subcontractor	Address (City & State) & License #
		City
		State
		License #

BID FORM

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date to the Delaware State University.

All the terms and conditions of Bid #16B – I.T. CABLING have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ ,2014

My Commission expires _____. NOTARY PUBLIC _____

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED

END OF SECTION 00400

ABBREVIATIONS

@	AT	DIA.	DIAMETER	ILL.	ILLUMINATION	P.T.	POTENTIAL TRANSFORMER
A	AMPERE	DIC.	DICTATION	IMC	INTERMEDIATE METAL CONDUIT	PWR.	POWER
ABV.	ABOVE	DISC.	DISCONNECT	J.B.	JUNCTION BOX	RCVR	RECEIVER
AE.	AERIAL ELECTRIC	DIST.	DISTRIBUTION	KVA.	KILOVOLT AMPERE	RE	EXISTING TO REMOVE
AF	AMP FRAME	DWG.	DRAWING	KW.	KILOWATT	REC.	RECEPTACLE
A.F.C.	ABOVE FINISHED CEILING	E	EMERGENCY	KWH.	KILOWATT HOUR	REQ.	REQUIRED
A.F.F.	ABOVE FINISHED FLOOR	EA.	EACH	L.A.	LIGHTNING ARRESTER	SEC.	SECONDARY
A.I.C.	AMPERE INTERRUPTING CAPACITY	E.C.	ELECTRICAL CONTRACTOR	LP	LIGHTNING PROTECTION	SPEC.	SPECIFICATION
A.W.C.	AMPERE WITHSTAND CAPACITY	EHH.	ELECTRICAL HANDHOLE	L.I.M.	LINE ISOLATION MONITOR	SS.	SUBSTATION
AL	ALUMINUM	ELEC.	ELECTRICAL	L.O.	LUGS ONLY	S.T.	SHUNT TRIP
ALT.	ALTERNATE	ELEV.	ELEVATOR	LSIG*	LONG,SHORT,INSTATANIUS TIME & GROUND FAULT PICKUP.	STD.	STANDARD
AM	AMMETER	EMERG.	EMERGENCY	L.S.	LIMIT SWITCH	STR.	STARTER
AMP.	AMPERE	EMH.	ELECTRICAL MANHOLE	LT.	LIGHT	SW.	SWITCH
ANNUN.	ANNUNCIATOR	EMT	ELECTRICAL METALLIC TUBING	LTG.	LIGHTING	SWGR.	SWITCHGEAR
ANT.	ANTENNA	ENCL.	ENCLOSURE	L.V.	LOW VOLTAGE	SYS.	SYSTEM
A.S.	AMMETER SWITCH	E.O.	ELECTRICALLY OPERATED	MC	METAL-CLAD (CABLE)	TEL.	TELEPHONE
A.T.	AMP TRIP	E.R.	EXISTING RELOCATED	M.C.B.	MAIN CIRCUIT BREAKER	TEMP.	TEMPERATURE
A.T.C.	AUTOMATIC TEMPERATURE CONTROL	EQUIP.	EQUIPMENT	M.C.C.	MOTOR CONTROL CENTER	THH.	TELEPHONE HAND HOLE
A.T.S.	AUTOMATIC TRANSFER SWITCH	E.W.C.	ELECTRIC WATER COOLER	M.C.P.	MOTOR CONTROL PROTECTOR	TMH.	TELEPHONE MANHOLE
AUX.	AUXILIARY	EX.	EXISTING TO REMAIN	MFR.	MANUFACTURER	TP.	TAMPERPROOF
B.D.	BUS DUCT	F.	FUSE(D)	MH.	ELECTRICAL/TELECOMMUNICATIONS MANHOLE	TV.	TELEVISION
B.I.L.	BASIC IMPULSE LEVEL	F/A	FIRE ALARM	MIN.	MINIMUM	TYP.	TYPICAL
BKBD.	BACKBOARD	F.A.T.B	FIRE ALARM TERMINAL BOX	M.O.	MECHANICALLY OPERATED	U.C.	UNDERCOUNTER
BKR.	BREAKER	F.B.O.	FURNISHED BY OWNER	M.S.P.	MOTOR STARTER PANEL	U.E.	UNDERGROUND ELECTRIC
BLDG.	BUILDING	FDR.	FEEDER	MTD.	MOUNTED	U/F	UNFUSED
BSMT.	BASEMENT	F.H.C.	FIRE HOSE CABINET	M.T.S.	MANUAL TRANSFER SWITCH	U.L.	UNDERWRITER'S LABORATORY
C.	CONDUIT	F.I.	FILM ILLUMINATOR	N.C.	NORMALLY CLOSED	U.O.N.	UNLESS OTHERWISE NOTED
CAB.	CABINET	FL.	FLOOR	N.I.C.	NOT IN CONTRACT	U.T.	UNDERGROUND TELEPHONE
C/B	CIRCUIT BREAKER	FLUOR.	FLUORESCENT	N.O.	NORMALLY OPEN	U.V.	UNDER VOLTAGE
CBL.	CABLE	F.S.	FLOW SWITCH	N.T.S.	NOT TO SCALE	V.	UNDERWRITERS' LABORATORY
CDT.	CONDUIT	FSD	FIRE SMOKE DAMPER	O.C.	ON CENTER	VERT.	UNDERGROUND TELEPHONE
CKT.	CIRCUIT	FUT.	FUTURE	O.C.B.	OIL CIRCUIT BREAKER	V/M	VOLTMETER
CLG.	CEILING	GA.	GAUGE	O.C.P.	OVERCURRENT PROTECTION	VS	VOLTMETER SWITCH
CONN.	CONNECTION	G.C.	GENERAL CONTRACTOR	O.S.&Y.	OPEN STEM AND YOKE	W	WATT
CONST.	CONSTRUCTION	G.F.I.	GROUND FAULT INTERRUPTER	P.	POLE	W	WIRE
CONT.	CONTINUOUS	G.F.S.C.	GROUND FAULT SENSING RELAY COIL	PB	PULL BOX	WP	WEATHERPROOF
CONTR.	CONTRACTOR	GND.	GROUND	P.C.	PLUMBING CONTRACTOR	XFMR	TRANSFORMER
C.T.	CURRENT TRANSFORMER	HH.	HANDHOLE	P.F.	POWER FACTOR	XFR	TRANSFER
CU.	COPPER	H.I.D.	HIGH INTENSITY DISCHARGE	PH.	PHASE	XMTR	TRANSMITTER
DEMO.	DEMOLITION	HORZ.	HORIZONTAL	P.L.	PILOT LIGHT	XPDR	TRANSPONDER
D.C.	DIRECT CURRENT	H.P.	HORSEPOWER	PNL.	PANEL	XP	EXPLOSION PROOF
		HT.	HEIGHT	PRI.	PRIMARY	ø	PHASE
		H.V.	HIGH VOLTAGE	P.S.	PULL STATION		
		HVAC	HEATING, VENTILATING, AIR CONDITIONING	P.S.I.	POUNDS PER SQUARE INCH		
		HWP	HOSPITAL GRADE RECEPTACLE WITH WEATHER PROOF COVER				

PANELBOARD NAME CONVENTIONS

EE-LP 2 A 1

MULTIPLE PANELBOARD DESIGNATION (AS REQUIRED)

BUILDING PHASE
- A: PHASE 1
- B: PHASE 2

BUILDING FLOOR UNMBER
- L: LOWER LEVEL
- 1: FIRST FLOOR
- 2: SECOND FLOOR
- 3: THIRD FLOOR

PANELBOARD TYPE
- LP: LIGHTING PANEL
- RP: POWER AND/OR RECEPTACLE PANEL
- PP: DISTRIBUTION PANEL

PANELBOARD PREFIX (IF REQUIRED)
(IF PREFIX NOT PRESENT, PANEL TYPE IS NORMAL POWER)
NON-HEALTHCARE:
- EE: EMERGENCY POWER
- ES: STAND BY (LEGALLY REQUIRED) POWER
- EO: STAND BY (OPTIONAL) POWER

GENERAL NOTES

1. THIS IS A STANDARD SYMBOL LIST. ALL DEVICE SYMBOLS AND ABBREVIATIONS MAY NOT NECESSARILY APPEAR ON THE FLOOR PLANS OR DETAIL SHEET. ONLY THOSE SYMBOLS INDICATED ON THE FLOOR PLANS ARE USED FOR THIS PROJECT. ALL OTHERS ARE TO BE CONSIDERED NOT USED AND SHOULD BE DISREGARDED.
2. REFER TO SPECIFICATIONS SECTION 26.00
3. DIMENSIONS MARKED ARE TO BE VERIFIED IN THE FIELD, THOSE MARKED N.T.S, ARE SHOWN NOT TO SCALE, ALL OTHERS ASSUMED TO BE CORRECT AND SHOULD BE CHECKED WITH OTHER TRADE DRAWINGS AND VERIFIED BY THE CONTRACTOR.
4. FOR EXACT LOCATION OF REMOVABLE PARTITIONS, FOR MOUNTING HEIGHT OF UNDER-COUNTER LIGHTING FIXTURES AND OTHER TASK LIGHTING, REFER TO ARCHITECTURAL DRAWINGS.
5. CONTRACTOR SHALL VERIFY ALL DOOR SWINGS BEFORE INSTALLING SWITCH BOXES, FOR EXACT LOCATION OF LIGHTING FIXTURES SEE REFLECTED CEILING PLAN DRAWINGS.
6. ELECTRICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF SUSPENDED LIGHTING FIXTURES IN MECHANICAL AND STORAGE AREAS WITH OTHER TRADES.
7. FOR EXACT LOCATION AND RATING OF MECHANICAL EQUIPMENT (AC UNITS, FANS, PUMPS, ETC.) REFER TO RESPECTIVE TRADES DRAWINGS.
8. REFER TO HEATING, VENTILATING, AIR CONDITIONING AND PLUMBING SECTIONS OF SPECIFICATIONS FOR REQUIRED CONTROL WIRING OF MECHANICAL EQUIPMENT.
9. THE ELECTRICAL CONTRACTOR SHALL PROVIDE EXPANSION FITTINGS IN ALL RACEWAYS CROSSING CONSTRUCTION OR EXPANSION JOINTS, REFER TO STRUCTURAL DRAWINGS FOR LOCATION OF JOINTS.
10. UNLESS INDICATED OTHERWISE ALL PANELS, CABINETS, AND THE LIKE, IN ELECTRIC CLOSETS OR EQUIPMENT ROOMS SHALL BE MOUNTED ON STRUCTURAL CHANNEL FRAMING AND FRAMED FLOOR-TO-CEILING AS REQUIRED, STRUCTURAL SLAB-TO-SLAB.
11. WIRE AND CONDUIT SIZE IN SCHEDULES AND AS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY. THE ELECTRICAL CONTRACTOR MAY INSTALL MULTIPLE CIRCUITS IN A SINGLE RACEWAY WHERE PRACTICABLE. PROVIDE WIRE AND CONDUIT SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
12. ALL ITEMS REMOVED SHALL BECOME PROPERTY OF THE OWNER AND SHALL BE DISPOSED OF AS PER THE OWNER'S INSTRUCTIONS, UNLESS INDICATED OTHERWISE. ALL ITEMS WHICH ARE NOT TO BE STORED ON SITE BY OWNER SHALL BE REMOVED FROM THE BUILDING IMMEDIATELY, AT CONTRACTORS EXPENSE.
13. USE OF THE OWNER'S ELEVATORS AND BUILDING CORRIDORS FOR HANDLING OF THE REMOVED EQUIPMENT AND MATERIALS SHALL BE AT THE DIRECTION OF THE OWNER AND SHALL BE COORDINATED WITH HIS OPERATIONS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFEKEEPING OF HIS OWN PROPERTY ON THE JOB SITE. OWNER ASSUMES NO RESPONSIBILITY FOR PROTECTION OF PROPERTIES AGAINST FIRE, THEFT AND ENVIRONMENTAL CONDITIONS.
15. WHERE USED, THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL."
16. ALL CIRCUITS SHALL BE PROVIDED WITH A SEPARATE NEUTRAL CONDUCTOR. SHARED NEUTRAL CONDUCTORS SHALL NOT BE PERMITTED
17. HORIZONTAL CROSS RUNS OF CONDUIT AND/OR CABLE IN PARTITIONS SHALL NOT BE PERMITTED, UNLESS ALLOWED IN SPECIFIC INSTANCES, BY THE ENGINEER.

MOUNTING HEIGHTS

9" BELOW FINISH CEILING	WALL-MOUNTED CLOCKS, PROGRAM BELLS, FIRE ALARM GONGS AND ILLUMINATED FIRE SIGNALS (OR AS SHOWN ON ARCHITECTURAL DETAILS).
10'-0"	BATTERY LIGHTING UNITS AND REMOTE WALL MOUNTED LIGHT HEADS (OR 1'-0" BELOW FINISHED CEILING TO TOP OF UNIT).
8'-6"	PENDANT-HUNG INDUSTRIAL AND STRIP LIGHTING FIXTURES.
CENTERED ABOVE DOOR OR WINDOW OPENING	WARNING AND SIGNALING FIXTURES/SIGNS.
7'-6"	OR 6" BELOW FINISHED CEILING WHICHEVER IS LOWER. AUDIBLE FIRE ALARM SIGNAL DEVICES.
6'-8"	OR 6" BELOW FINISHED CEILING WHICHEVER IS LOWER. VISUAL FIRE ALARM SIGNAL DEVICES AND COMBINATION AUDIBLE/VISUAL FIRE ALARM SIGNALS.
6'-6"	TOP OF FLUSH AND SURFACE MOUNTED ELECTRICAL LIGHTING OR POWER PANELBOARDS AND TELEPHONE CABINETS.
6'-3"	TOP OF BACK-MOUNTED WALL EXIT FIXTURES (NOT MOUNTED ABOVE DOORS).
6'-0"	TOP OF HIGHEST ELECTRICAL SAFETY DISCONNECT SWITCHES, MAGNETIC STARTERS, CONTACTORS.
4'-6"	WALL-MOUNTED TELEPHONES, PAY STATIONS (3'-6" AT HANDICAP LOCATIONS) AND TOILET ROOM RECEPTACLES.
4'-0"	WALL MOUNTED ELECTRICAL DEVICE LIGHTING SWITCHES, MANUAL MOTOR STARTERS, THERMOSTATS, FIRE ALARM PULL STATIONS, CARD READERS, AND WIREMOLD
3'-6"	ELECTRICAL RECEPTACLES TELEPHONE OUTLETS
2'-0"	ELECTRICAL RECEPTACLES WITHIN MECHANICAL SPACES, ELECTRICAL AND ELEVATOR ROOMS.
18"	ELECTRICAL RECEPTACLES TELEPHONE OUTLETS TELEVISION OUTLETS COMPUTER OUTLETS
00"	FINISHED FLOOR

MOUNTING HEIGHT NOTES:

1. MOUNTING HEIGHTS TO CENTER OF OUTLETS UNLESS OTHERWISE NOTED, IN MASONRY CONSTRUCTION THE ABOVE MOUNTING HEIGHTS SHALL BE USED FOR REFERENCE TO NEAREST BLOCK OR BRICK COURSING.
2. THE ABOVE MOUNTING HEIGHTS SHALL BE ADHERED TO UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE ON THE DRAWING OR SPECIFICATIONS. ALL DEVICE MOUNTING SHALL BE COORDINATED WITH ARCHITECT'S ELEVATION DRAWINGS.
3. A + BESIDE A DEVICE INDICATES THAT DEVICE IS MOUNTED ABOVE A COUNTER OR CASEWORK. A - BESIDE A DEVICE INDICATES THAT DEVICE IS MOUNTED BELOW COUNTER OR CASEWORK. COORDINATE WITH ARCHITECTURAL DETAILS AND CASEWORK CONTRACTOR.

DRAWING INDEX:

PR-01 Project request PR-01
IT Cabling 04/10/2014

BALLINGER

833 CHESTNUT ST, SUITE 1400
PHILADELPHIA, PA 19107
T 215 446 0900
F 215 446 0901
BALLINGER-AE.COM

delaware state university
optical science center for applied research

IT cabling
10 april 2014

e0.1 cover
abbreviations

scale: none
0 2' 4' 8'

LIGHTING SYMBOLS

LIGHTING FIXTURE NONENCLATURE:
A1 INDICATES LIGHTING FIXTURE TYPE
a,b INDICATES SWITCH DESIGNATION
1 INDICATES CIRCUIT DESIGNATION
1es INDICATES CIRCUIT DESIGNATION ON EMERGENCY POWER

2 x 2 RECESSED OR SURFACE MOUNTED FLUORESCENT

2 x 4 RECESSED OR SURFACE MOUNTED FLUORESCENT

RECESSED FLUORESCENT SLOT FIXTURE

PENDANT MOUNTED LINEAR FLUORESCENT FIXTURE

WALL MOUNTED LINEAR FLUORESCENT FIXTURE

PERIMETER RECESSED LINEAR FLUORESCENT FIXTURE

RECESSED DOWNLIGHT FIXTURE

RECESSED ACCENT LIGHT

RECESSED WALL WASH

WALL OR SURFACE MOUNTED FIXTURE

COVE LIGHTING

TRACK LIGHTING SYSTEM

SURFACE MOUNTED LINEAR FLUORESCENT STRIP, UNDER CABINET TASK LIGHT OR CASEWORK MOUNTED LIGHT

PENDANT HUNG INDUSTRIAL FLUORESCENT STRIP

ENCLOSED INDUSTRIAL FLUORESCENT FIXTURE

EXIT FIXTURE - CEILING MOUNTED - FACES AND ARROWS AS INDICATED

EXIT FIXTURE - WALL OR SURFACE MOUNTED - FACES AND ARROWS AS INDICATED

FIXTURE ON EMERGENCY POWER

EXTERIOR LUMINAIRE - POLE MOUNTED

EXTERIOR LUMINAIRE - WALL MOUNTED

EXTERIOR DIRECTIONAL FLOOD LUMINAIRE - POLE MOUNTED

EXTERIOR DIRECTIONAL FLOOD LUMINAIRE - WALL MOUNTED

EXTERIOR UPLIGHT LUMINAIRE - GROUND MOUNTED

EXTERIOR AREA LIGHTING FIXTURE

EXTERIOR WALKWAY LIGHTING FIXTURE

S — SINGLE POLE, WALL SWITCH (SHOWN WITHOUT SUBSCRIPT) OTHER SWITCHES SHALL BE COORDINATED WITH SUBSCRIPT [SUBSCRIPT INDICATES TYPE OF SWITCH]

- 3 - THREE WAY SWITCH
- 4 - FOUR WAY SWITCH
- L - LOW VOLTAGE SWITCH
- D - SINGLE POLE DIMMING SWITCH
- P - SWITCH WITH PILOT LIGHT
- K - KEY OPERATED MOMENTARY CONTACT
- LD - LOW VOLTAGE DIMMING SWITCH
- a,b - INDICATES SWITCH DESIGNATION
- OR - WALL CONTROL OVERRIDE SWITCH
- M - MANUAL MOTOR STARTER
- LM - LOW VOLTAGE MASTER SWITCH
- MR - MOTOR RATED SWITCH
- MS - MOTION SENSOR WALL SWITCH
- MS2 - BI-LEVEL MOTION SENSOR WALL SWITCH
- T - TIMER SWITCH
- 3T - 3-WAY TIMER SWITCH

OS — CEILING MOUNTED OCCUPANCY SENSOR OCCUPANCY SENSOR TECHNOLOGY SHALL BE COORDINATED WITH SUBSCRIPT [SUBSCRIPT INDICATES TYPE OF OCCUPANCY SENSOR]

- A1 - IR TECHNOLOGY 180 DEGREE
- A2 - IR TECHNOLOGY 360 DEGREE
- A3 - IR TECHNOLOGY CORRIDOR
- B1 - DUAL TECHNOLOGY 180 DEGREE
- B2 - DUAL TECHNOLOGY 360 DEGREE
- B3 - DUAL TECHNOLOGY CORRIDOR
- C1 - ULTRASONIC TECHNOLOGY 180 DEGREE
- C2 - ULTRASONIC TECHNOLOGY 360 DEGREE
- C3 - ULTRASONIC TECHNOLOGY CORRIDOR
- R - SENSOR SHALL CONNECT TO RELAY PANEL

TELECOMM SYMBOLS

CEILING MOUNTED DATA OUTLET - DOUBLE GANG JUNCTION BOX WITH SINGLE GANG OPENING, FACEPLATE WITH FOUR OPENINGS, AND TWO DATA JACKS.

VOICE/DATA COMBINATION - DOUBLE GANG JUNCTION BOX WITH SINGLE GANG OPENING, AND EMPTY 1-1/4" CONDUIT W/PULLSTRING, SEE SPECIFICATIONS.
X = QUANTITY OF VOICE OR DATA JACKS IF OTHER THAN TWO.
R = 2 DATA JACKS MOUNTED IN WIREMOLD RACEWAY. SEE DETAIL DRAWINGS.

DATA - DOUBLE GANG JUNCTION BOX WITH SINGLE GANG OPENING, AND EMPTY 1-1/4" CONDUIT W/PULLSTRING, SEE SPECIFICATIONS.
X = QUANTITY OF DATA JACKS IF GREATER THAN ONE.
R = 1 DATA JACK MOUNTED IN WIREMOLD RACEWAY. SEE DETAIL DRAWINGS.

TELEPHONE - SINGLE GANG JUNCTION BOX WITH SINGLE GANG OPENING, AND EMPTY 3/4" CONDUIT W/PULLSTRING, SEE SPECIFICATIONS
PS - PAY STATION W - WALL
WP - WEATHER PROOF
HP - HANDICAPPED PHONE

POKE THRU TO BE PURCHASED BY ELECTRICAL CONTRACTOR - REFERENCE POWER SERIES DRAWINGS FOR TYPE - CABLE QUANTITIES AS NOTED ON FLOOR PLANS

FBX — FLOOR BOX X - SEE CORRESPONDING DETAIL

AV1 — ONE DATA JACK FOR PROJECTOR

ONE DATA JACK FOR CAMERA

ACCESS CONTROL AND CCTV SYMBOLS

CR	CARD READER - SINGLE GANG BOX
J	JUNCTION BOX - DOUBLE GANG BOX
PS	POWER SUPPLY
ML	MAGNETIC LOCK
SS	DOOR CONTACT
EL	ELECTRIC LOCKSET
ELR	ELECTRIC LATCH RETRACTION
RX	REQUEST TO EXIT SWITCH
PT	POWER TRANSFER HINGE
HO	MAGNETIC HOLD-OPEN DEVICE - SINGLE GANG BOX
PP	AUTO-OPEN PUSH PLATE - SINGLE GANG BOX
AO	AUTO-OPENER
XXX	DOOR NUMBER
A	3/4" CONDUIT
D	18/2
X-X	CCTV CAMERA SINGLE GANG BOX WITH 3/4" CONDUIT AND ONE DATA DROP. OUTDOOR CAMERAS RECEIVE OUTDOOR RATED CABLE AND PROTECTORS.
MS	MOTION SENSOR - SINGLE GANG BOX
LR	EMERGENCY LOCK RELEASE - SINGLE GANG BOX
CX	CHEXIT DEVICE
AI	AUDIO INTERCOM - SINGLE GANG BOX
VI	VIDEO INTERCOM - SINGLE GANG BOX

POWER DEVICE SYMBOLS

SINGLE RECEPTACLE - 125V,2P,3W

DUPLEX RECEPTACLE - 125V,2P,3W

QUADRAPLEX RECEPTACLE CONNECTED TO NORMAL POWER- 125V,2P,3W

DUPLEX GROUND FAULT MASTER RECEPTACLE - 125V,2P,3W

QUADRAPLEX GROUND FAULT MASTER RECEPTACLE - 125V,2P,3W

DUPLEX GROUND FAULT SLAVE RECEPTACLE - 125V,2P,3W

IG — ISOLATED GROUND RECEPTACLE

CEILING MOUNTED RECEPTACLE, TYPE AS INDICATED

FLOOR MOUNTED RECEPTACLE, TYPE AS INDICATED

WP — GFCI DUPLEX RECEPTACLE WITH WEATHERPROOF COVER CONNECTED TO NORMAL POWER.

GFCI — GFCI DUPLEX RECEPTACLE CONNECTED TO EMERGENCY POWER.

XP — EXPLOSION PROOF HAZARDOUS LOCATION DUPLEX RECEPTACLE - 125V,2P,3W

PEDESTAL MOUNTED RECEPTACLE(S)

L5-20R — SPECIAL PURPOSE NORMAL POWER RECEPTACLE NEMA CONFIGURATION AS INDICATED

L5-20R — SPECIAL PURPOSE EMERG. POWER RECEPTACLE NEMA CONFIGURATION AS INDICATED

t3 — DUPLEX RECEPTACLE ON EMERGENCY POWER - 125V,2P,3W

t3 — QUADRAPLEX RECEPTACLE ON EMERGENCY POWER - 125V,2P,3W

\+ — INDICATES WIRING DEVICE MOUNTED ABOVE COUNTER, BACKSPLASH OR CASEWORK.

PX — POKE THROUGH DEVICE

FBX — FLOOR BOX X - SEE CORRESPONDING DETAIL

CBX — CEILING BOX X - SEE CORRESPONDING DETAIL

B — BACK BOX WITH BLANK COVER

J — JUNCTION BOX

CP — CONTROL PANEL

PB — PULL BOX

PUSH BUTTON

EMERGENCY POWER OFF

A — WALL CLOCK
[CLOCK FUNCTIONS]
A - ANALOG ET - ELAPSED TIMER 2 - DOUBLE FACE
D - DIGITAL M - MASTER

CSG — CLOCK SIGNAL GENERATOR

FD — POWER FURNITURE FEED

CORD REEL AND DUPLEX RECEPTACLE

CONDUIT WIRING SYMBOLS

GROUND LOOP DROP TO LOWER LEVEL

GROUND CONDUCTOR THROUGH ROOF TO STEEL

ONE INCH PVC CONDUIT (ROOF-TO-GRADE)

HT — ELECTRICAL HEAT TRACING

EG — EXISTING GROUND CABLE

G — GROUNDING CABLE

GB — GROUNDING BUS BAR

AE — AERIAL SERVICE CABLE
[INDICATES TYPE OF SERVICE]
AE - AERIAL ELECTRIC
AT - AERIAL TELEPHONE
AC - AERIAL COMMUNICATIONS

UE — UNDERGROUND CONDUIT OR DUCTBANK
[INDICATES TYPE OF SERVICE]

E — E - UNDERGROUND ELECTRIC

T - UNDERGROUND TELEPHONE

TC — TC - UNDERGROUND COMMUNICATIONS

EMH — MANHOLE OR HANDHOLE
[INDICATES TYPE OF SERVICE]
MH OR HH - ELECTRIC MANHOLE OR HANDHOLE
TMH OR THH - TELEPHONE MANHOLE OR HANDHOLE
CMH OR CHH - COMMUN. MANHOLE OR HANDHOLE

DUCTBANK

LIGHTNING PROTECTION AIR TERMINAL

GROUND ROD

LP — LIGHTNING PROTECTION DOWN CONDUCTOR IN PVC SLEEVE

CONDUIT STUB-UP FROM FLOOR SLAB

CONDUIT STUB-UP WITH DEVICE AS SHOWN

CONDUIT RISE

CONDUIT DROP

CONDUIT FLOOR TO FLOOR

CONDUIT STUBBED OUT OR INTO HUNG CEILING SPACE

THROUGH WALL CONDUIT SEALING FITTING

BRANCH CIRCUIT WIRING RUN EXPOSED

BRANCH CIRCUIT WIRING CONCEALED IN WALL OR ABOVE CEILING

E — EMERGENCY SYSTEM BRANCH CIRCUIT WIRING

BRANCH CIRCUIT WIRING IN OR BELOW FLOOR CONSTRUCTION

BRANCH CIRCUIT WIRING TO PANEL

5(20/3) — NUMBER OF POLES OF O.C. DEVICE
AMPERE RATING OF O.C. DEVICE (IF NOT INDICATED ASSUME 20/1)
CIRCUIT NUMBER OF PANELBOARD

POWER EQUIPMENT SYMBOLS

MOTOR

UNFUSED SAFETY DISCONNECT SWITCH

FUSED SAFETY DISCONNECT SWITCH

CIRCUIT BREAKER

MOTOR STARTER

COMBINATION MOTOR STARTER AND DISCONNECT SWITCH

COMBINATION MOTOR STARTER AND CIRCUIT BREAKER

COMBINATION MOTOR STARTER AND FUSED DISCONNECT SWITCH

ELECTRICAL PANEL - SURFACE MOUNTED

ELECTRICAL PANEL - FLUSH MOUNTED

DISTRIBUTION PANEL

T — TRANSFORMER

BD — BUS DUCT

BD — BUS DUCT WITH PLUG IN SWITCH

CT — CABLE TRAY - SEE DETAILS FOR WIDTH AND LOCATION

A/V SYMBOLS

EV — WALL-MOUNTED DOUBLE GANG JUNCTION BOX WITH (2) 1 1/2" C TO NEAREST ACCESSIBLE CEILING.

AV1 — SINGLE GANG BOX FOR POWER, DOUBLE GANG BOX FOR A/V AND DOUBLE GANG BOX WITH SINGLE GANG OPENING FOR DATA - SEE DETAIL DRAWING FOR DETAILS AND CONDUIT QUANTITIES.

AV2 — FOUR GANG BOX WITH (2) 2-1/2" C TO NEAREST ACCESSIBLE CEILING

CAM — VIDEO CONFERENCING CAMERA INSTALLED IN ACT CEILING

FIRE ALARM SYMBOLS

WALL MOUNTED FIRE EVACUATION SPEAKER

CEILING MOUNTED FIRE EVACUATION SPEAKER/STROBE

F — FIRE ALARM MANUAL PULL STATION

FIRE ALARM HORN

FIRE ALARM HORN/STROBE

FIRE ALARM STROBE

FIRE ALARM SIREN

WALL MOUNTED FIRE EVAUATION SPEAKER AND STROBE

FIREMEN'S PHONE JACK

ELECTRIC DOOR HOLDER

ELECTRONIC PROGRAMMABLE ALARM WITH STROBE

AUTOMATIC DETECTOR
[DETECTOR CONTROL FUNCTION]

B - BEAM DETECTOR
D - DUCT MOUNTED, SMOKE IONIZATION (INSTALLED BY DIV. 15 CONTRACTOR)
F - THERMAL, FIXED TEMPERATURE
FR - THERMAL, COMBINATION RATE OF RISE PLUS FIXED TEMPERATURE
PE - SMOKE REFRACTION, PHOTO ELECTRIC
R - THERMAL, RATE OF RISE
S - AREA SMOKE, IONIZATION

REMOTE ANNUNCIATOR INDICATOR LED

FS — ALARM INITIATING CONTACT
[CONTACT CONTROL FUNCTION]

EP - ELECTRIC PNEUMATIC SWITCH
ETL - ELECTRIC THERMAL LINK
FS - FLOW SWITCH "ALARM"
FA - FIRST AID (HOSE SYSTEM) "ALARM"
G - GAS ALARM PANEL
GM - GAS MANIFOLD
R - REFRIGERATION UNIT
OS&Y - ALARM CHECK VALVE "TROUBLE"
TS - TAMPER SWITCH "TROUBLE"

C — FIRE ALARM ADDRESSABLE RELAY
[RELAY FUNCTION]
C - CONTROL
M - MONITOR

ELECTRIC DAMPER WITH DIVISION 23 LOCKOUT DISCONNECT

POWER RACEWAY SYMBOLS

R — SURFACE MOUNTED MULTI-OUTLET RACEWAY

P1 — SURFACE MOUNTED MULTI-OUTLET PLUGMOLD

P2 — OVERHEAD MOUNTED MULTI-OUTLET PLUGMOLD

W — SURFACE MOUNTED WIREWAY

CF — CELLULAR FLOOR SYSTEM

TD — TRENCH DUCT

UF — UNDERFLOOR SYSTEM

UNDERFLOOR/TRENCH DUCT JUNCTION BOX

E — RACEWAY ENTRANCE END FITTING

SINGLE LINE SYMBOLS

POTHEAD

AM — AMMETER

AS — AMMETER SWITCH

M — UTILITY METERING

VM — VOLTMETER

VS — VOLTMETER SWITCH

KWH — WATT HOUR METER

X51 RELAY — SOLID STATE RELAY

(CT) CURRENT TRANSFORMER

(PT) POTENTIAL TRANSFORMER

51 — RELAY
[NUMBER INDICATES RELAY TYPE]

DRAW OUT DEVICE

CIRCUIT BREAKER

DISCONNECT SWITCH

FUSE

NORMALLY OPEN CONTACTOR/ NORMALLY CLOSED CONTACTOR

CAPACITOR

VACUUM CIRCUIT BREAKER

DISCONNECT SWITCH WITH AUXILIARY CONTACTS TO DE-ENERGIZE LOADS

TIE — TIE CIRCUIT BREAKER

FUSED SF6 SWITCH WITH GROUND

COMBINATION MOTOR STARTER AND CIRCUIT BREAKER OR MOTOR CIRCUIT PROTECTOR

INDICATING LIGHT

HAND, OFF, AUTO SWITCH

CONTROL POWER TRANSFORMER

LA — LIGHTNING ARRESTOR

CONTROL INTERLOCK

K — KEY INTERLOCK

TRANSFORMER

SINGLE LINE SYMBOLS (CONTINUED)

ISOLATION TRANSFORMER

THREE WINDING TRANSFORMER

DELTA/WYE CONNECTION

GENERATOR

PANEL NAME — PANEL

HEATER

25 — MOTOR [NUMBER INDICATES MOTOR HORSEPOWER]

A1 — POWER FEEDER DESIGNATION

TVSS — TRANSIENT VOLT SURGE SURPRESSOR

UNINTERRUPTIBLE POWER SUPPLY

RECTIFIER/INVERTER

AUTOMATIC THROW-OVER — AUTOMATIC THROW-OVER

CONTROL PANEL — CONTROL PANEL

M.T.S. — MANUAL TRANSFER SWITCH

A.T.S. — AUTOMATIC TRANSFER SWITCH

OFF — DTDS — DOUBLE THROW DISCONNECT SWITCH

XXX AF
XXX AT

VARIABLE FREQUENCY DRIVE WITHOUT BYPASS (5% AC LINE REACTOR)

XXX AF
XXX AT

VARIABLE FREQUENCY DRIVE WITH BYPASS SECTION (5% AC LINE REACTOR)

LINE REACTOR

HARMONIC FILTER — HARMONIC FILTER

GF — GFSC — GROUND FAULT

VAULT OR HANDHOLE

BPIS — BYPASS ISOLATION SWITCH

DEAD BREAK JUNCTION

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richärd+bauer
in association with
becker morgan group

BALLINGER

833 CHESTNUT ST, SUITE 1400
PHILADELPHIA, PA 19107
T 215 446 0900
F 215 446 0901
BALLINGER-AE.COM

delaware state university
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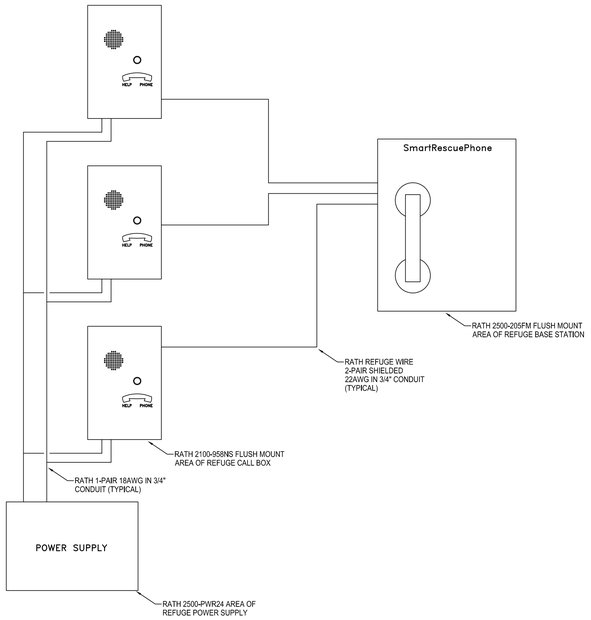
10 april 2014

e0.2 cover symbols

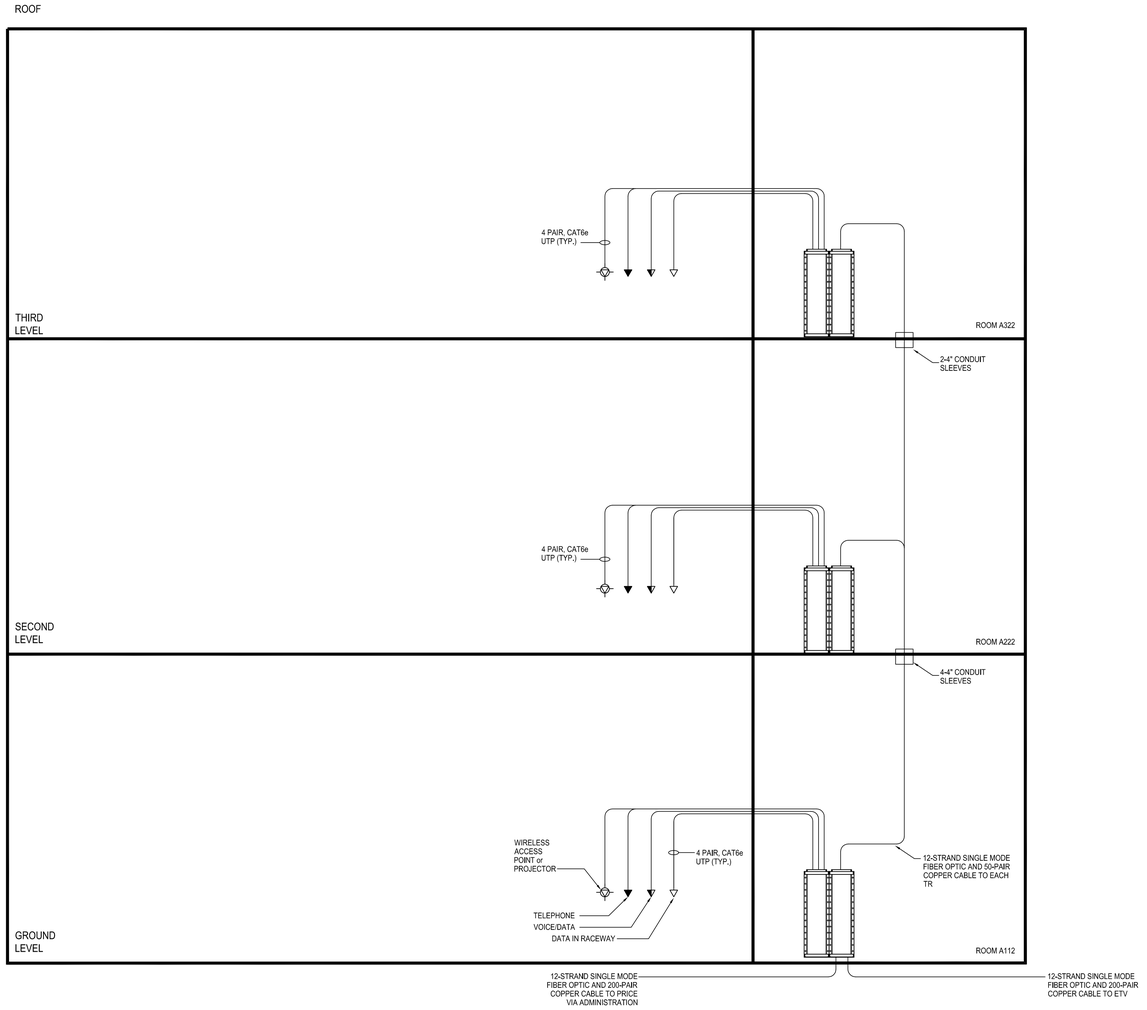
scale: none
0 2' 4' 8'

GENERAL NOTES:

1. REFER TO DWG E0.1 and E0.2 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.



N.T.S. 2 RISER DIAGRAM
AREA OF REFUGE COMMUNICATION SYSTEM



N.T.S. 1 RISER DIAGRAM
INSIDE AND OUTSIDE CABLE PLANT

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in assoc ation with
becker morgan group

BALLINGER

833 CHESTNUT ST, SUITE 1400
PHILADELPHIA, PA 19107
T 215 446 0900
F 215 446 0901
BALLINGER-AE.COM

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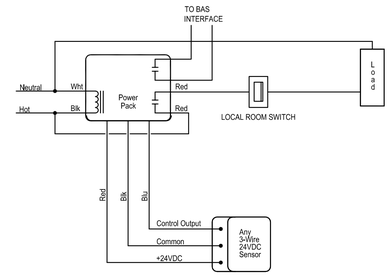
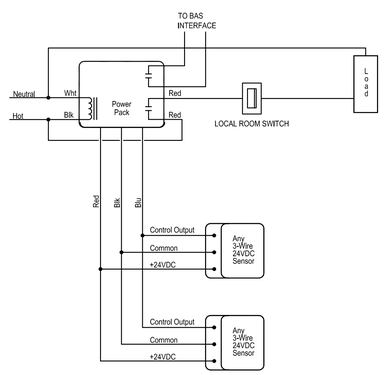
e4.5 riser diagrams
telecomm

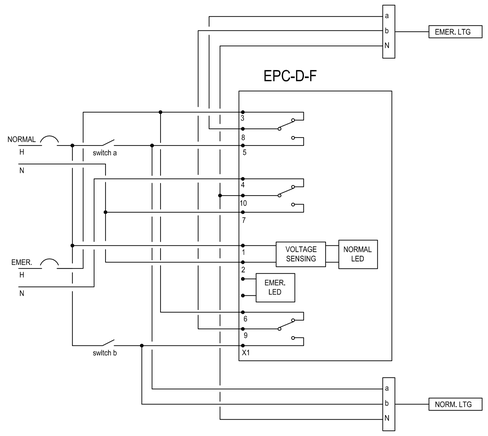
scale: none
0 2' 4' 8'



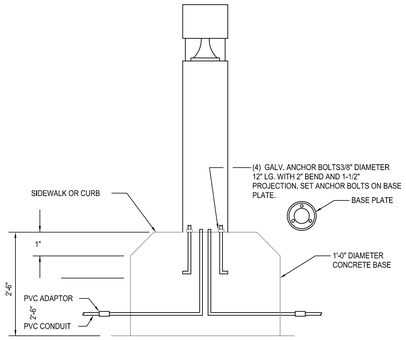
N.T.S. 13 MULTIPLE OCCUPANCY SENSOR
WIRING DIAGRAM



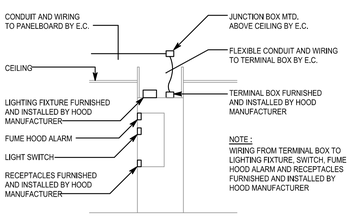
N.T.S. 12 MULTIPLE OCCUPANCY SENSOR
WIRING DIAGRAM



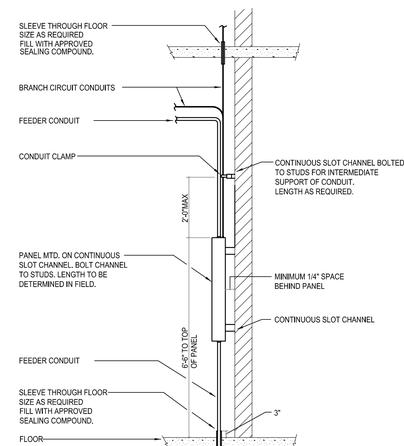
N.T.S. 9 LIGHTING RELAY CONTROL DEVICE
WIRING DETAIL



N.T.S. 7 BOLLARD



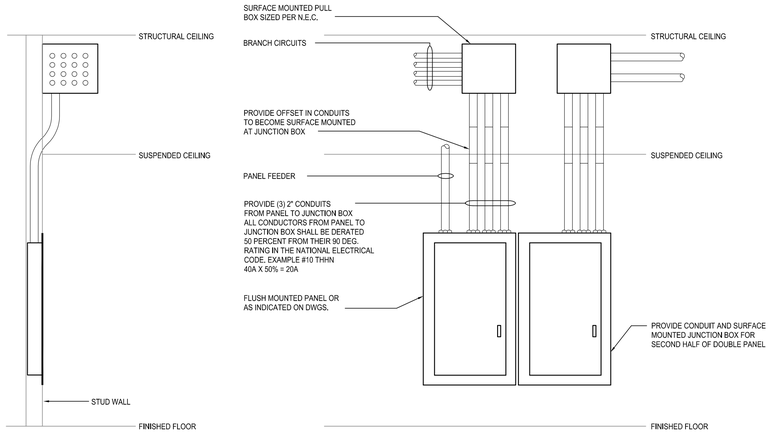
N.T.S. 6 TYPICAL ELECTRICAL CONNECTIONS
TO FUME HOOD



N.T.S. 3 TYPICAL PANELBOARD MOUNTING
IN ELECTRICAL CLOSETS

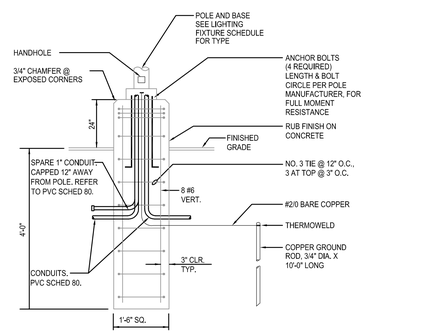
GENERAL NOTES:

1. FOR SYMBOLS AND ABBREVIATIONS REFER TO DRAWING E0.1 AND E0.2.

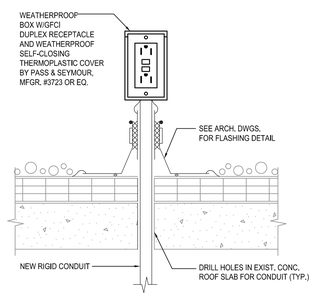


COORDINATION NOTE: THE IMMEDIATE AREA ABOVE ALL ELECTRICAL PANELS SHALL BE KEPT FREE OF ALL DUCTWORK, PLUMBING AND MISCELLANEOUS MECHANICAL DEVICES.

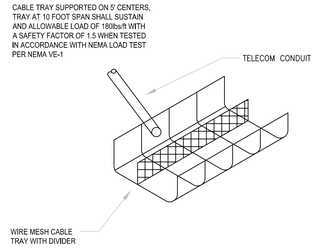
N.T.S. 10 TYPICAL PANELBOARD MOUNTING
RECESSED IN WALL



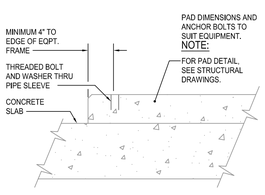
N.T.S. 11 POLE BASE DETAIL FOR SITE POLES
SITE LIGHTING FIXTURE



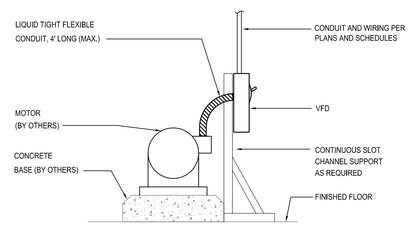
N.T.S. 8 GFCI RECEPTACLE OUTLET



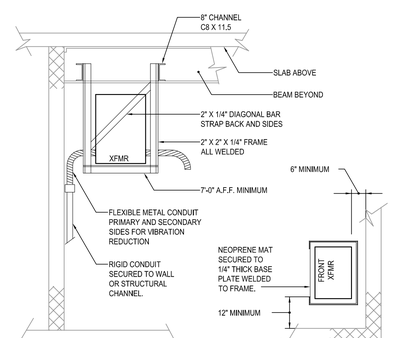
N.T.S. 5 WIRE MESH CABLE TRAY



N.T.S. 4 HOUSEKEEPING PAD
(NEW SLAB)



N.T.S. 2 TYPICAL MOTOR CONNECTION DETAIL
WITH LOCAL DISCONNECTING MEANS
TYPICAL FOR P-X AND P-X



N.T.S. 1 TRAPEZE MOUNTED TRANSFORMER

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BALLINGER

833 CHESTNUT ST, SUITE 1400
PHILADELPHIA, PA 19107
T 215 446 0900
F 215 446 0901
BALLINGER-AE.COM

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e5.0 details

scale: as noted
0 2' 4' 8'

VIDEO SURVEILLANCE CABLE TYPES

A - FOR POWER TO ALL FIXED CAMERAS AND FIBER TRANSMITTERS USE PLENUM RATED 18/2 WITHIN 300FT OF POWER SUPPLY 16/2 GREATER THAN 300FT OF POWER SUPPLY

FOR POWER TO ALL PTZ CAMERAS USE PLENUM RATED 18/2 WITHIN 300FT OF POWER SUPPLY 16/2 GREATER THAN 300FT OF POWER SUPPLY

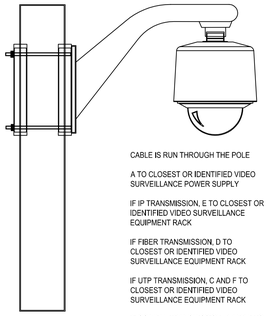
B - FOR COAXIAL CABLE VIDEO TRANSMISSION FROM DESIGNATED CAMERAS UP TO 1000FT OF FIBER TRANSMITTER OR OTHER VIDEO SURVEILLANCE SYSTEM INPUT USE RG6 PLENUM RATED CABLE WITH 18 SOLID BARE COPPER CENTER CONDUCTOR AND 100% SHIELD. SUCH AS BELDEN 9248. TERMINATE CABLE AT BOTH ENDS WITH 2-PIECE OR 3-PIECE CRIMP OR SOLDER 750HM BNC

C - FOR UTP VIDEO TRANSMISSION FROM DESIGNATED CAMERAS USE PLENUM RATED CAT5E OR CAT6 CABLE SUITABLE FOR FUTURE UPGRADE TO ETHERNET APPLICATIONS. SUCH AS BELDEN 1583A OR 7883A

D - FOR FIBER VIDEO TRANSMISSION FROM DESIGNATED CAMERAS USE PLENUM RATED 62.5 um MULTIMODE FIBER CABLE. TERMINATED AT BOTH ENDS WITH ST CONNECTOR

E - FOR IP VIDEO TRANSMISSION FROM DESIGNATED CAMERAS USE PLENUM RATED CAT5E OR CAT6 CABLE SUITABLE FOR ETHERNET APPLICATIONS, SUCH AS BELDEN 1583A OR 7883A

F - FOR PTZ CONTROL OF ALL COAXIAL AND UTP VIDEO TRANSMISSION PTZ CAMERAS USE PLENUM RATED DUAL INDIVIDUALLY-SHIELDED, TWISTED 20AWG PAIR IN A SINGLE JACKET. SUCH AS BELDEN 9402



CABLE IS RUN THROUGH THE POLE

A TO CLOSEST OR IDENTIFIED VIDEO SURVEILLANCE POWER SUPPLY

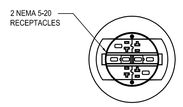
IF IP TRANSMISSION, E TO CLOSEST OR IDENTIFIED VIDEO SURVEILLANCE EQUIPMENT RACK

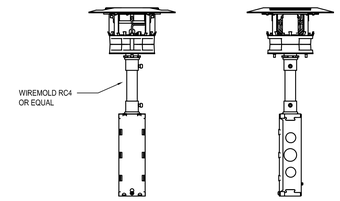
IF FIBER TRANSMISSION, D TO CLOSEST OR IDENTIFIED VIDEO SURVEILLANCE EQUIPMENT RACK

IF UTP TRANSMISSION, C AND F TO CLOSEST OR IDENTIFIED VIDEO SURVEILLANCE EQUIPMENT RACK

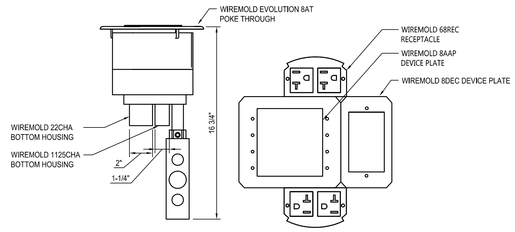
IF COAXIAL TRANSMISSION, B AND F TO CLOSEST OR IDENTIFIED VIDEO SURVEILLANCE EQUIPMENT

N.T.S. 11 PTZ OUTDOOR POLE PENDANT DOME





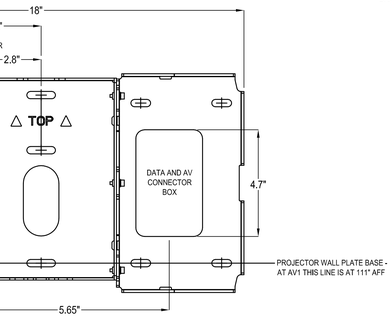
N.T.S. 7 PT-1 POKE-THRU ASSEMBLY
POWER



N.T.S. 4 PT-2 POKE-THRU ASSEMBLY
POWER/ DATA / AV

GENERAL NOTES:

1. FOR SYMBOLS AND ABBREVIATIONS REFER TO DRAWING E001 AND E002.



NOTE:

INSTALL ELECTRICAL OUTLET AND DATA/AV BOXES (TO CENTER LINE OF BOX) AS FOLLOWS:
- AV1 AT 114.5" AFF IN CENTER OF SPACES SHOWN ABOVE

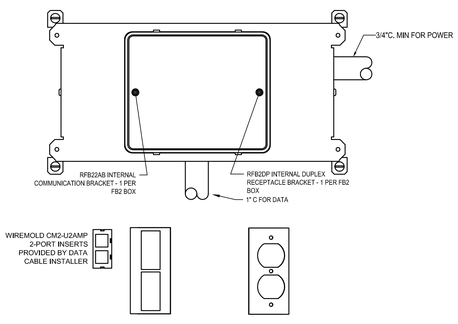
USE IMAGE CENTER LINE AS REFERENCE. REFER TO ARCH DRAWINGS FOR IMAGE CENTER LINE LOCATIONS.

N.T.S. 9 AV1 ROUGH-IN DETAIL

FRONT VIEW

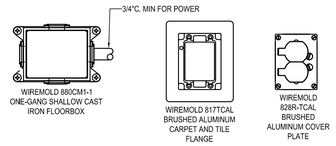
NOTES:
1. DO NOT INSTALL RECEPTACLES ABOVE SINK.

N.T.S. 6 TYPICALTYPE P2 MULTI-OUTLET ASSEMBLY MOUNTING DETAIL



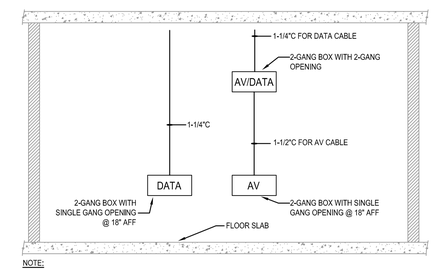
WIREMOLD RFB2 FLOOR BOX WITH FLOOR PORT ACTIVATION COVER IN BRUSHED ALUMINUM

N.T.S. 3 FB3 - FLOOR BOX



WIREMOLD 880CM1-1 SHALLOW CAST IRON FLOOR BOX WITH BRUSHED ALUMINUM COVER

N.T.S. 2 FB2 - FLOOR BOX



NOTE:

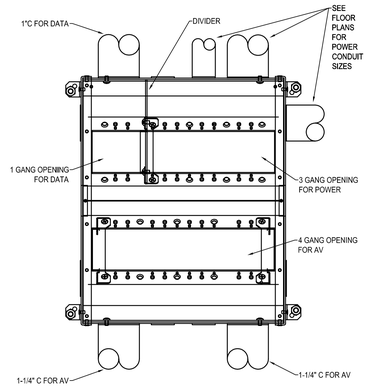
AV2, AV3 AND AV4 ROUGH-IN. DATA OUTLETS INSTALLED IN UPPER AND LOWER BOXES. AV OUTLETS INSTALLED IN UPPER AND LOWER BOXES WITH CABLE BETWEEN THE TWO BOXES ONLY. SEE DETAIL 2/E505 FOR UPPER POWER AND AV/DATA BOX MOUNTING HEIGHTS.

N.T.S. 8 AV1 ROUGH-IN ELEVATION

FRONT VIEW

NOTES:
1. DO NOT INSTALL RECEPTACLES ABOVE SINK.

N.T.S. 5 TYPICAL WALL TYPE P1 MOUNTED MULTI-OUTLET ASSEMBLY MOUNTING DETAIL



FSR FL-500P-4 FLOOR BOX WITH BRUSHED ALUMINUM COVER

N.T.S. 1 FB1 - FLOOR BOX

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in association with
becker morgan group

BALLINGER

833 CHESTNUT ST, SUITE 1400
PHILADELPHIA, PA 19107
T 215 446 0900
F 215 446 0901
BALLINGER-AE.COM

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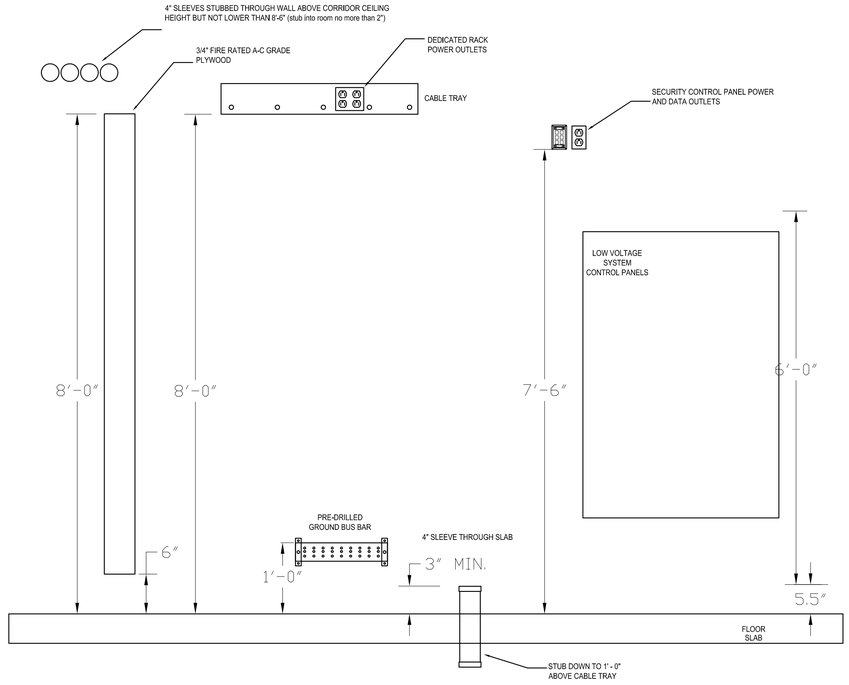
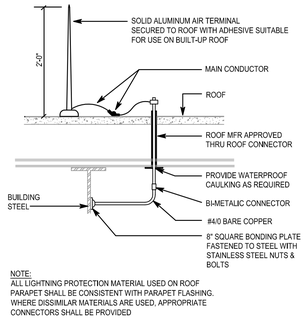
e5.1 details

scale: as noted
0 2' 4' 8'

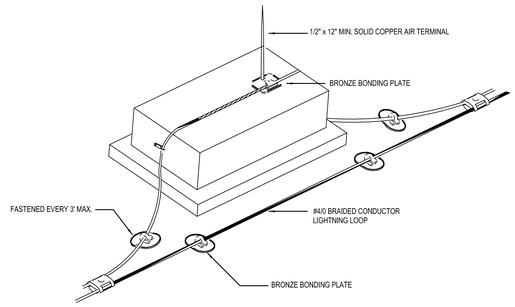


N.T.S. 10 TELECOMM ROOM MOUNTING HEIGHTS
MOUNTING DETAIL



NOTE:
ALL LIGHTNING PROTECTION MATERIAL USED ON ROOF PARAPET SHALL BE CONSISTENT WITH PARAPET FLASHING. WHERE DISSIMILAR MATERIALS ARE USED, APPROPRIATE CONNECTORS SHALL BE PROVIDED

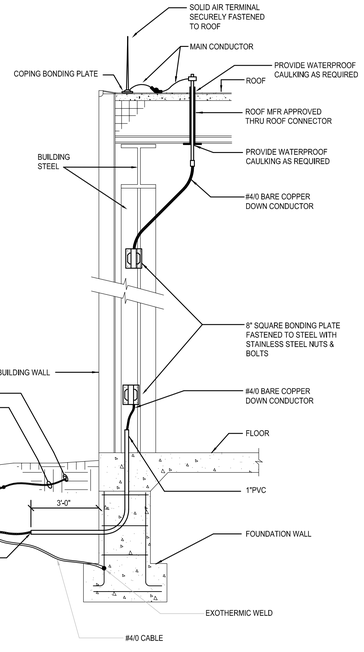
N.T.S. 7 TYPICAL MID-ROOF AIR TERMINAL
MOUNTING DETAIL



N.T.S. 4 TYPICAL AIR-TERMINAL MOUNTING DETAIL

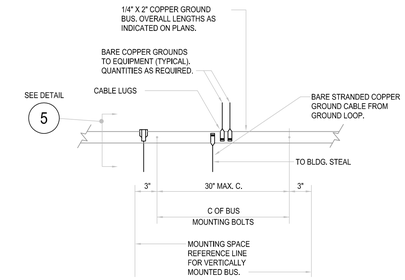
GENERAL NOTES:

1. FOR SYMBOLS AND ABBREVIATIONS REFER TO DRAWING E001 AND E002.

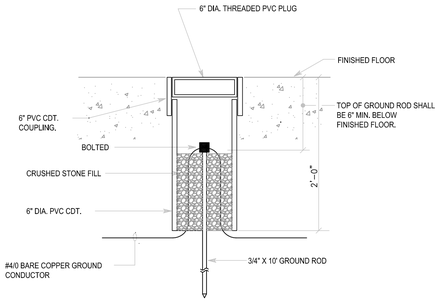


NOTE:
ALL LIGHTNING PROTECTION INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 780. REFER TO SPECIFICATION SECTION 16670.

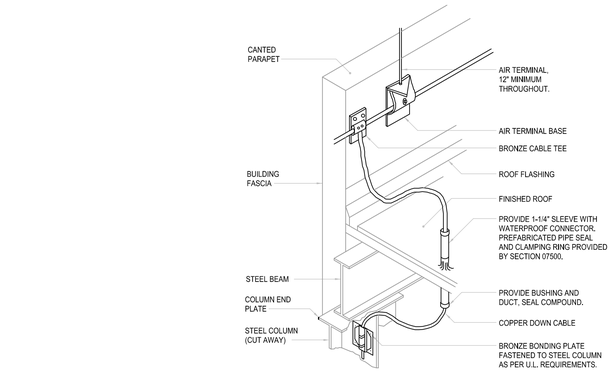
N.T.S. 6 TYPICAL LIGHTNING PROTECTION
SYSTEM PROTECTION DETAIL



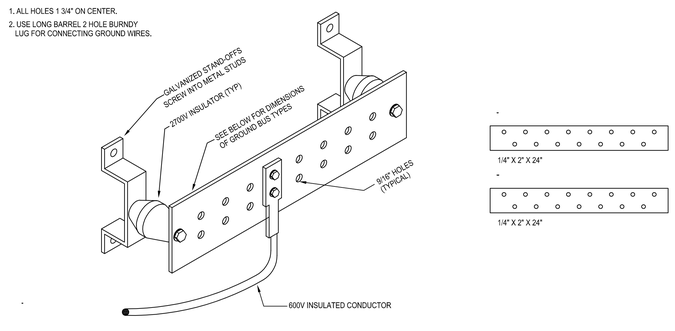
N.T.S. 3 EQUIPMENT GROUND BUS



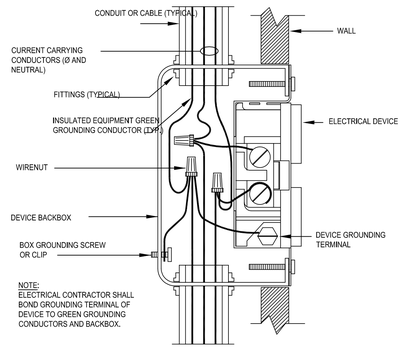
N.T.S. 2 GROUND CONDUCTOR
TEST WELL DETAIL



N.T.S. 9 LIGHTNING PROTECTION CONNECTION
CONNECTION AT ROOF PARAPET

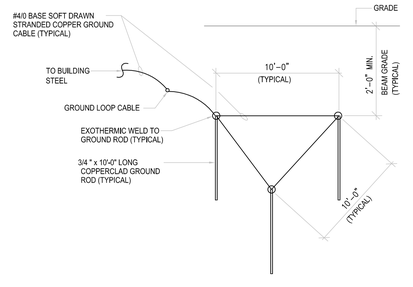


N.T.S. 8 TYPICAL GROUND BUS
MOUNTING DETAIL



NOTE:
ELECTRICAL CONTRACTOR SHALL BOND GROUNDING TERMINAL OF DEVICE TO GREEN GROUNDING CONDUCTORS AND BACKBOX.

N.T.S. 5 TYPICAL RECEPTACLE GROUNDING



N.T.S. 1 GROUNDING ROD CONTERPOISED DETAIL

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833 CHESTNUT ST, SUITE 1400
PHILADELPHIA, PA 19107
T 215 446 0900
F 215 446 0901
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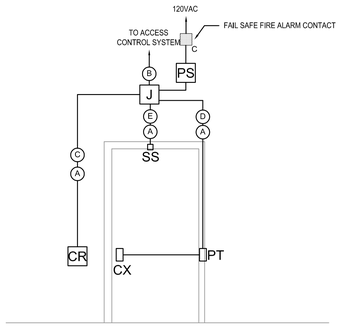
e5.3 details

scale: as noted
0 2' 4' 8'

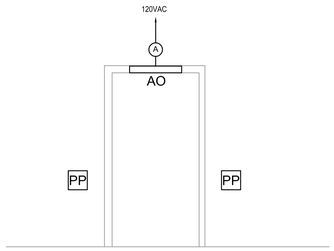
GENERAL NOTES:

1. FOR SYMBOLS AND ABBREVIATIONS REFER TO DRAWING E001 AND E002.

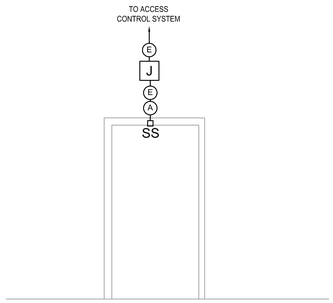
- (A) 3/4" C
- (B) 18/4, 22/6, 22/2, 22/4
- (C) 22/6
- (D) 18/4
- (E) 22/2
- (F) 22/4



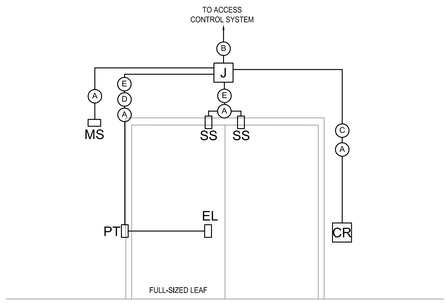
N.T.S. 6 DOOR DETAIL
DOOR A102A



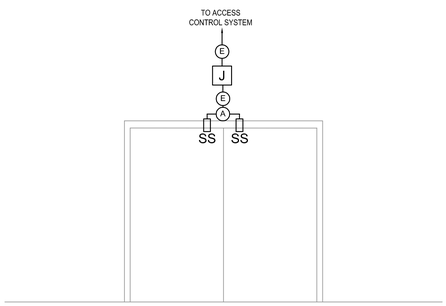
N.T.S. 3 DOOR DETAIL
DOORS A100, A101, A105, A107



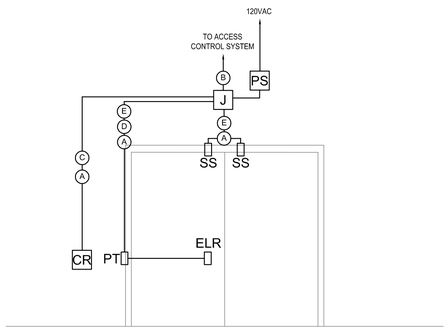
N.T.S. 5 DOOR DETAIL
DOORS A103A, A103B, A131, A132A, A116A



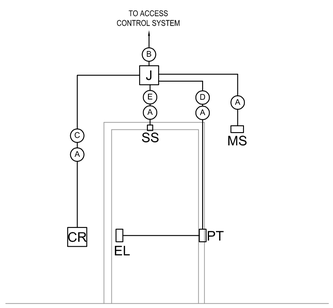
N.T.S. 2 DOOR DETAIL
DOORS A122, A124A, A126, A128A, A130, A232A, A332, A334, A336, A338, A234, A236, A238



N.T.S. 7 DOOR DETAIL
DOORS 350, 351, 352A, 352B



N.T.S. 4 DOOR DETAIL
DOOR A120



N.T.S. 1 DOOR DETAIL
DOORS A112, A121, A222, A322, A339

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833 CHESTNUT ST, SUITE 1400
PHILADELPHIA, PA 19107
T 215 446 0900
F 215 446 0901
BALLINGER-AE.COM

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e5.4 door details

scale: as noted
0 2' 4' 8'

GENERAL NOTES:

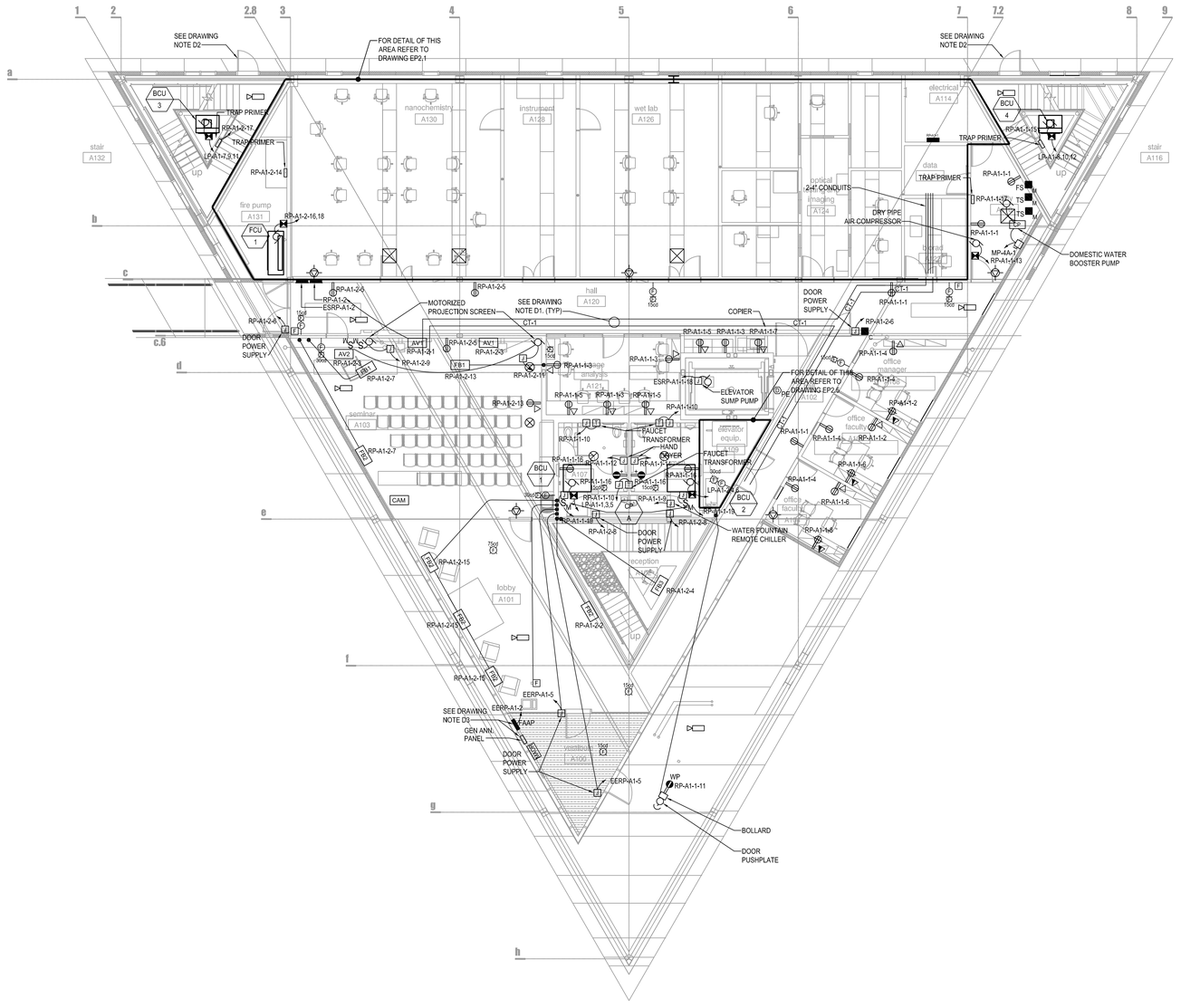
1. REFER TO E001 AND E002 FOR SYMBOLS, ABBREVIATIONS, GENERAL NOTES AND PROPOSED SEQUENCE OF WORK.
2. REFER TO DRAWING E5.4 FOR DOOR ROUGH IN REQUIREMENTS FOR DOOR ACCESS.
3. DIMENSIONAL INFORMATION FOR EXACT LOCATIONS OF FLOOR BOXES, POKE THRUS, ETC. TO BE CONFIRMED AND PROVIDED BY ARCHITECT PRIOR TO ROUGH IN INSTALLATION.
4. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF DEVICES ON WALLS. WHERE TWO DEVICES (I.E. LIGHT SWITCH AND SPEAKER/STROBE) ARE SHOWN AT THE SAME LOCATION, THE DEVICES SHALL BE VERTICALLY ALIGNED ON CENTER WITH EACH OTHER.

DRAWING NOTES:

D1. DATA CABLE TRAY AT INSIDE EDGE OF UTILITY TRAY IN HALL. REFER TO ARCH DRAWINGS ON SHEETS A14.0 AND A14.1 FOR TYPICAL UTILITY TRAY ARRANGEMENTS.

D2. CONDUIT PATHWAY FOR DOOR ACCESS CONTROLS TO EXTERIOR STAIRWAY DOORS SHALL BE ROUTED UNDERSLAB AND STUBBED UP INTO DOOR JAMB. COORDINATE EXACT LOCATION WITH ARCH DETAILS AND SHEET E5.4.

D3. REFER TO ARCH DETAIL FOR PANEL MOUNTING IN VESTIBULE.



ground level electrical plan

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in association with becker morgan group

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833 CHESTNUT ST, SUITE 1400
PHILADELPHIA, PA 19107
T 215 446 0900
F 215 446 0901
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ep1.1 power plan
ground level

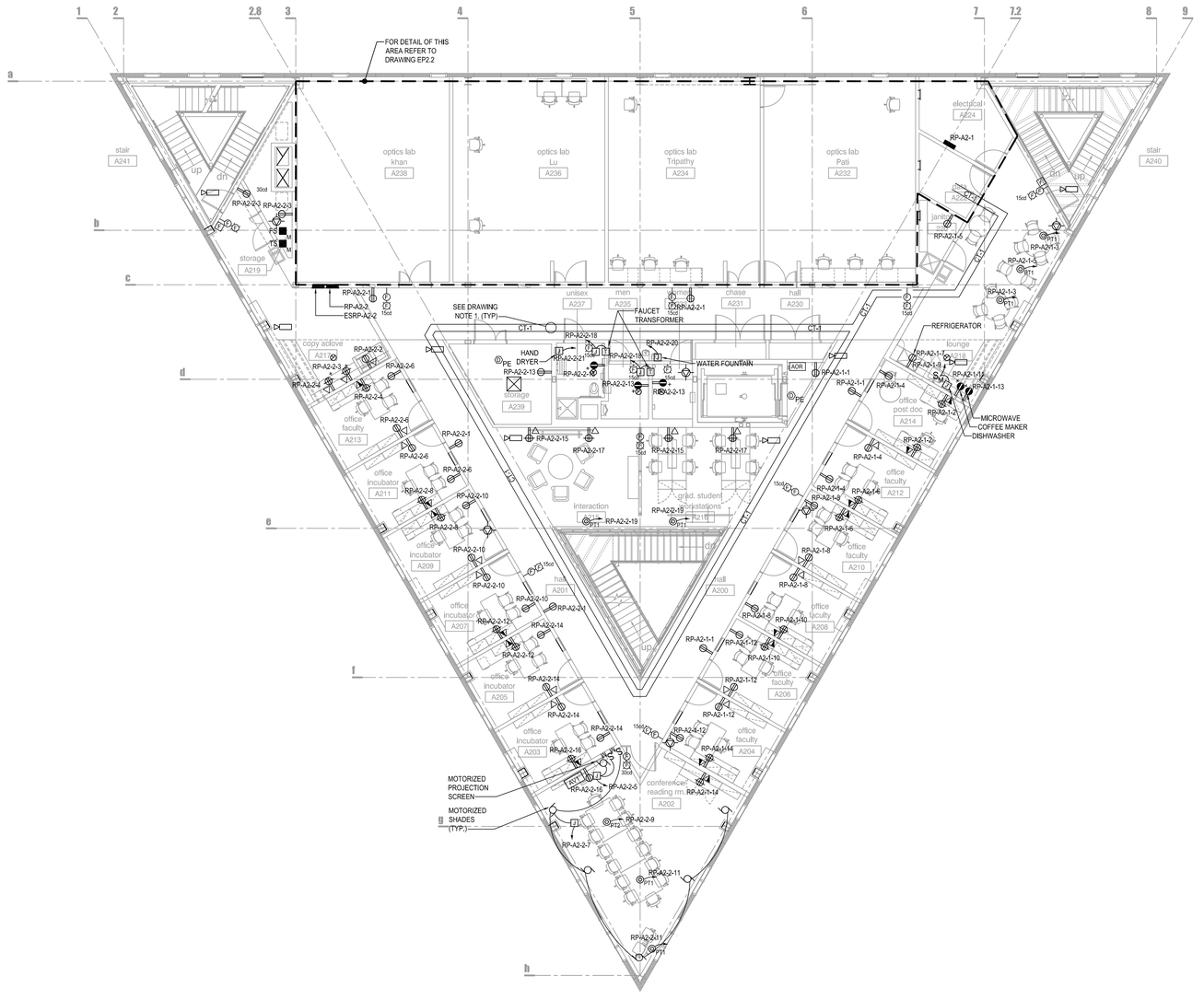
scale: 1/8"=1'-0"
0 4' 8' 16'

GENERAL NOTES:

1. REFER TO E001 AND E002 FOR SYMBOLS, ABBREVIATIONS, GENERAL NOTES AND PROPOSED SEQUENCE OF WORK.
2. REFER TO DRAWING E5.4 FOR DOOR ROUGH IN REQUIREMENTS FOR DOOR ACCESS.
3. DIMENSIONAL INFORMATION FOR EXACT LOCATIONS OF FLOOR BOXES, POKE THRUS, ETC, TO BE CONFIRMED AND PROVIDED BY ARCHITECT PRIOR TO ROUGH IN INSTALLATION.
4. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF DEVICES ON WALLS. WHERE TWO DEVICES (I.E. LIGHT SWITCH AND SPEAKER/STROBE) AND SHOWN AT THE SAME LOCATION, THE DEVICES SHALL BE VERTICALLY ALIGNED ON CENTER WITH EACH OTHER.

DRAWING NOTES:

D1. DATA CABLE TRAY AT INSIDE EDGE OF UTILITY TRAY IN HALL. REFER TO ARCH DRAWINGS ON SHEETS A14.0 AND A14.1 FOR TYPICAL UTILITY TRAY ARRANGEMENTS.



second level electrical plan

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ep1.2 power plan
second level

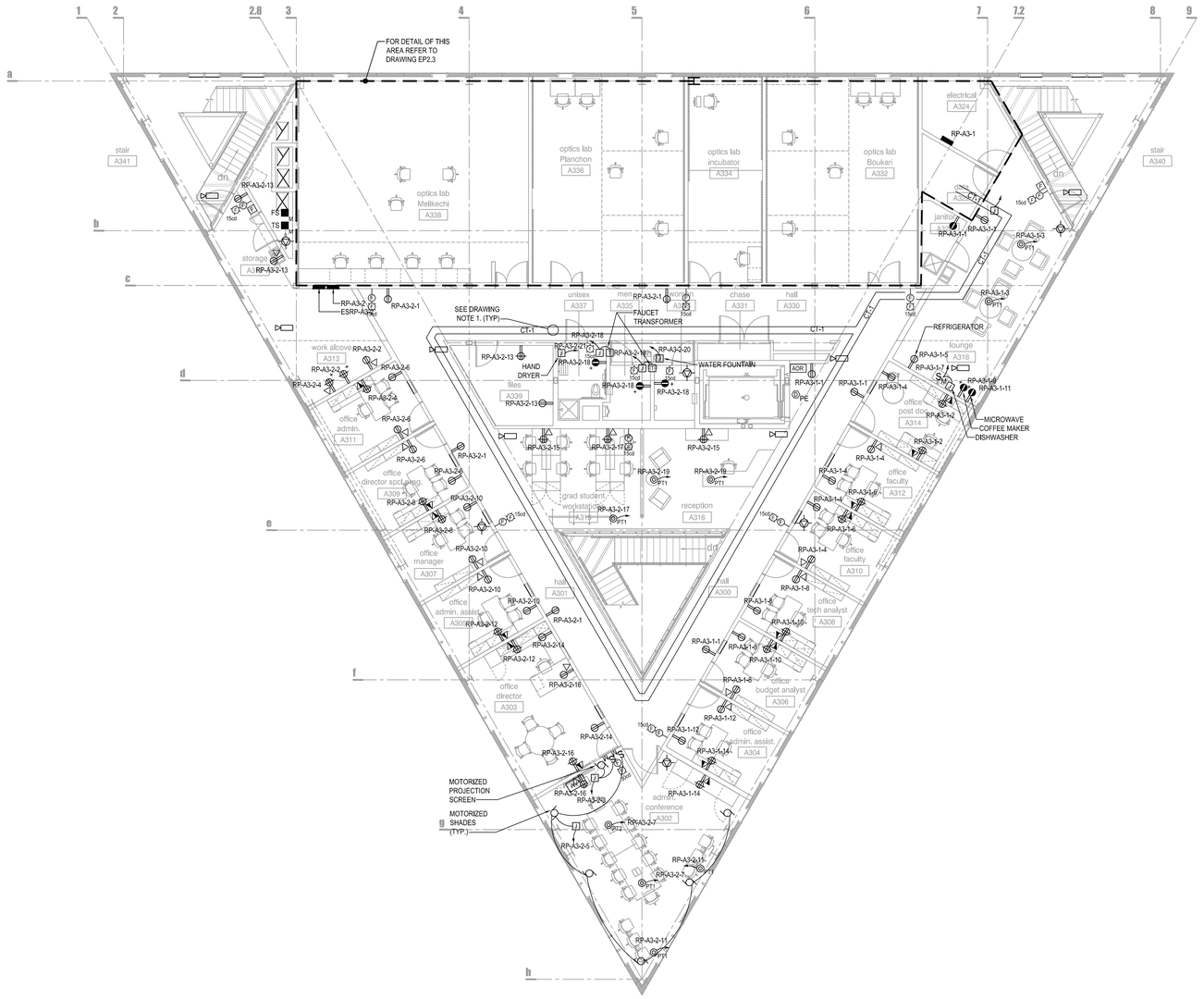
scale: 1/8"=1'-0"
0 4' 8' 16'

GENERAL NOTES:

1. REFER TO E001 AND E002 FOR SYMBOLS, ABBREVIATIONS, GENERAL NOTES AND PROPOSED SEQUENCE OF WORK.
2. REFER TO DRAWING E5.4 FOR DOOR ROUGH IN REQUIREMENTS FOR DOOR ACCESS.
3. DIMENSIONAL INFORMATION FOR EXACT LOCATIONS OF FLOOR BOXES, POKE THRUS, ETC. TO BE CONFIRMED AND PROVIDED BY ARCHITECT PRIOR TO ROUGH IN INSTALLATION.
4. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF DEVICES ON WALLS. WHERE TWO DEVICES (I.E. LIGHT SWITCH AND SPEAKER/STROBE) AND SHOWN AT THE SAME LOCATION, THE DEVICES SHALL BE VERTICALLY ALIGNED ON CENTER WITH EACH OTHER.

DRAWING NOTES:

D1. DATA CABLE TRAY AT INSIDE EDGE OF UTILITY TRAY IN HALL. REFER TO ARCH DRAWINGS ON SHEETS A14.0 AND A14.1 FOR TYPICAL UTILITY TRAY ARRANGEMENTS.



third level electrical plan

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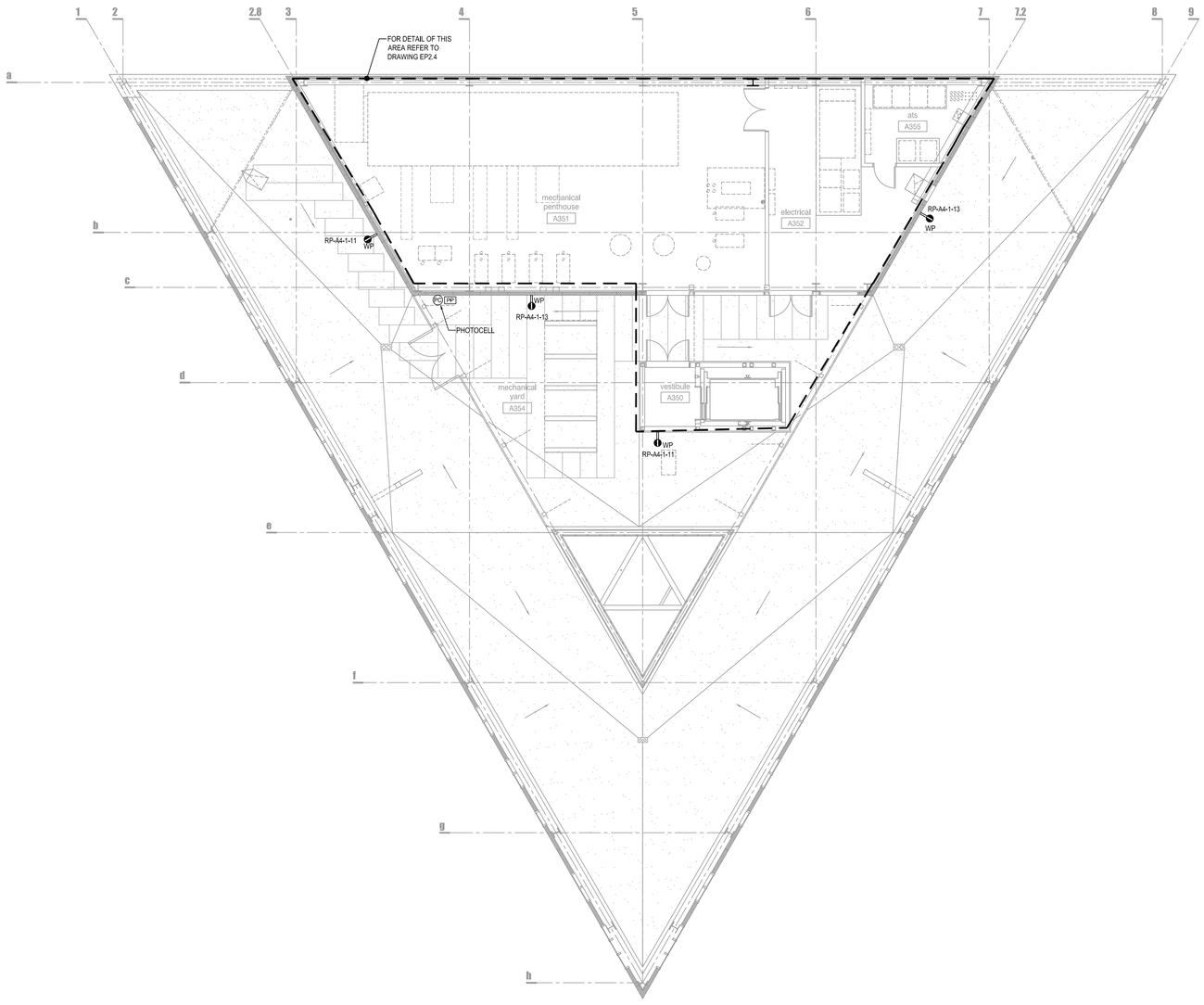
ep1.3 power plan
third level

scale: 1/8"= 1'-0"
0 4' 8' 16'

GENERAL NOTES:

1. REFER TO E001 AND E002 FOR SYMBOLS, ABBREVIATIONS, GENERAL NOTES AND PROPOSED SEQUENCE OF WORK.
2. REFER TO DRAWING E5.4 FOR DOOR ROUGH IN REQUIREMENTS FOR DOOR ACCESS.
3. DIMENSIONAL INFORMATION FOR EXACT LOCATIONS OF FLOOR BOXES, POKE THRUS, ETC. TO BE CONFIRMED AND PROVIDED BY ARCHITECT PRIOR TO ROUGH IN INSTALLATION.
4. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF DEVICES ON WALLS. WHERE TWO DEVICES (I.E. LIGHT SWITCH AND SPEAKER/STROBE) ARE SHOWN AT THE SAME LOCATION, THE DEVICES SHALL BE VERTICALLY ALIGNED ON CENTER WITH EACH OTHER.



fourth level electrical plan

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ep1.4 power diagram
penthouse level

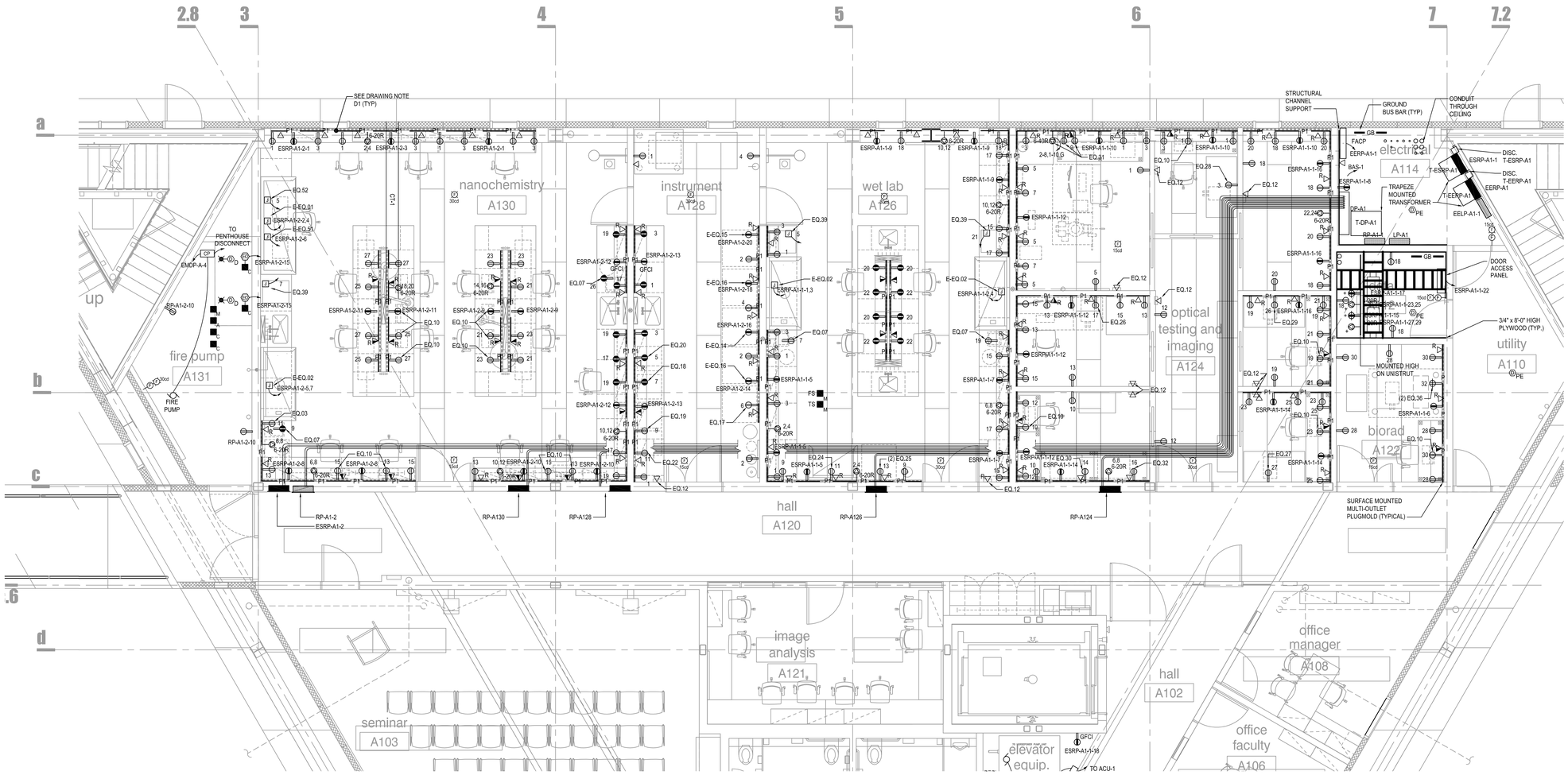
scale: 1/8"=1'-0"
0 4' 8' 16'

GENERAL NOTES:

1. REFER TO E001 AND E002 FOR SYMBOLS, ABBREVIATIONS, GENERAL NOTES AND PROPOSED SEQUENCE OF WORK.
2. REFER TO DRAWING E5.4 FOR DOOR ROUGH IN REQUIREMENTS FOR DOOR ACCESS.
3. DIMENSIONAL INFORMATION FOR EXACT LOCATIONS OF FLOOR BOXES, POKE THRUS, ETC. TO BE CONFIRMED AND PROVIDED BY ARCHITECT PRIOR TO ROUGH IN INSTALLATION.
4. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF DEVICES ON WALLS. WHERE TWO DEVICES (I.E. LIGHT SWITCH AND SPEAKER/STROBE) AND SHOWN AT THE SAME LOCATION, THE DEVICES SHALL BE VERTICALLY ALIGNED ON CENTER WITH EACH OTHER.

DRAWING NOTES:

D1. REFER TO ELECTRICAL DETAILS 5&6 E5.1 FOR RACEWAYS DIMENSIONS.



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833 CHESTNUT ST, SUITE 1400
PHILADELPHIA, PA 19107
T 215 446 0900
F 215 446 0901
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partial ground level

ep2.1 power plan
partial ground level

scale: 1/4"=1'-0"
0 2' 4' 8'

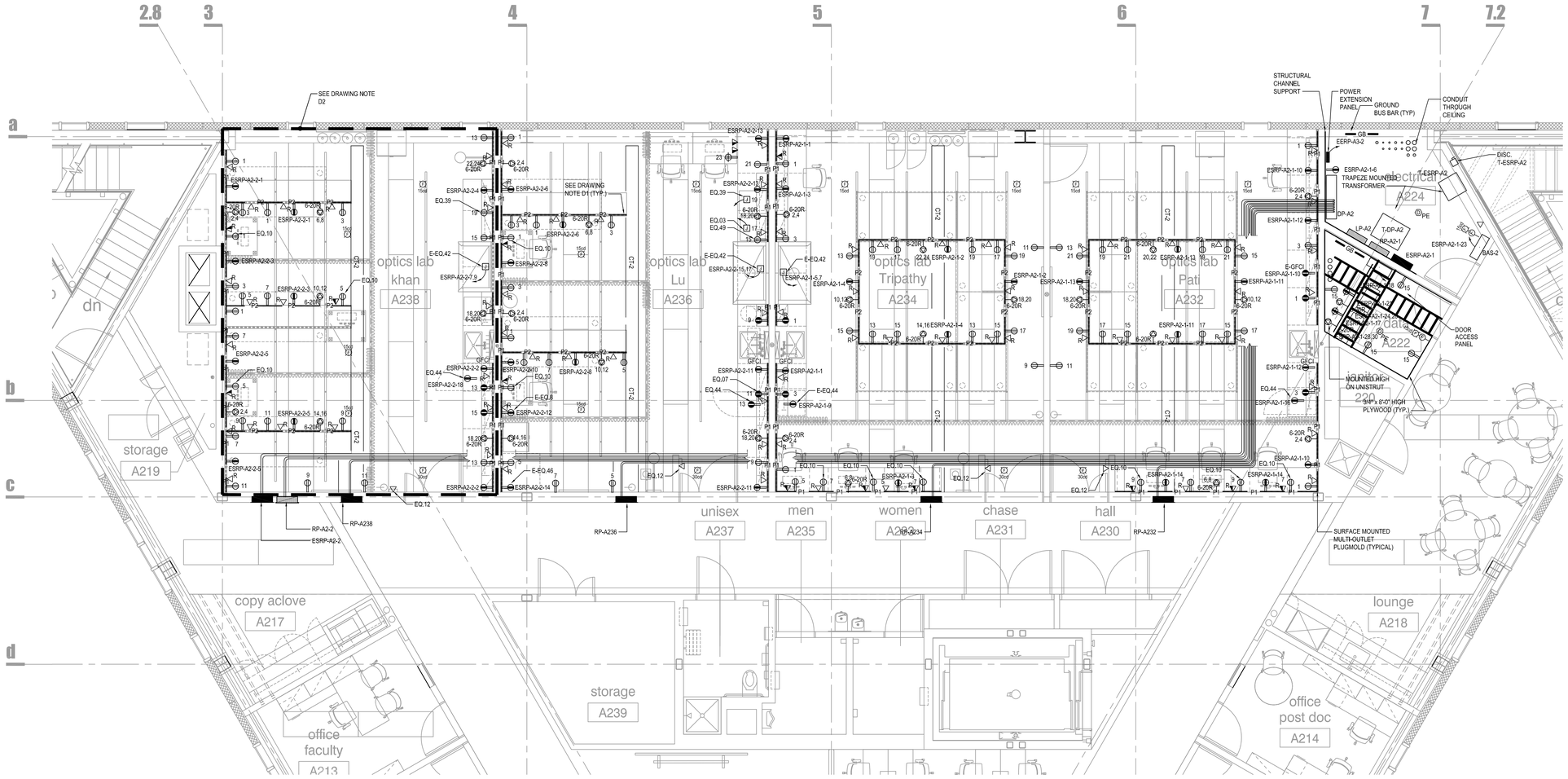
GENERAL NOTES:

1. REFER TO E001 AND E002 FOR SYMBOLS, ABBREVIATIONS, GENERAL NOTES AND PROPOSED SEQUENCE OF WORK.
2. REFER TO DRAWING E5.4 FOR DOOR ROUGH IN REQUIREMENTS FOR DOOR ACCESS.
3. DIMENSIONAL INFORMATION FOR EXACT LOCATIONS OF FLOOR BOXES, POKE THRUS, ETC. TO BE CONFIRMED AND PROVIDED BY ARCHITECT PRIOR TO ROUGH IN INSTALLATION.
4. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF DEVICES ON WALLS. WHERE TWO DEVICES (I.E. LIGHT SWITCH AND SPEAKER/STROBE) AND SHOWN AT THE SAME LOCATION, THE DEVICES SHALL BE VERTICALLY ALIGNED ON CENTER WITH EACH OTHER.

DRAWING NOTES:

D1. REFER TO ARCH SHEETS A7.1 AND A7.2 FOR OVERHEAD RACEWAY MOUNTING DETAILS. REFER TO ELECTRICAL DETAILS S&6 E5.1 FOR RACEWAYS DIMENSTIONS.

D2. ELECTRICAL DEVICES IN ROOM 238 SHALL BE PRICED AS ALTERNATE #1. REFER TO SHEET G1.1 FOR BASE BID REQUIREMENTS. PROVIDE NEMA 5-20R OUTLETS AT 25 FT INTEVALS ALONG PERIMETER OF ROOM AS PART OF BASE BID.



partial second level

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T 215 446 0900
F 215 446 0901
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ep2.2 power plan
second level

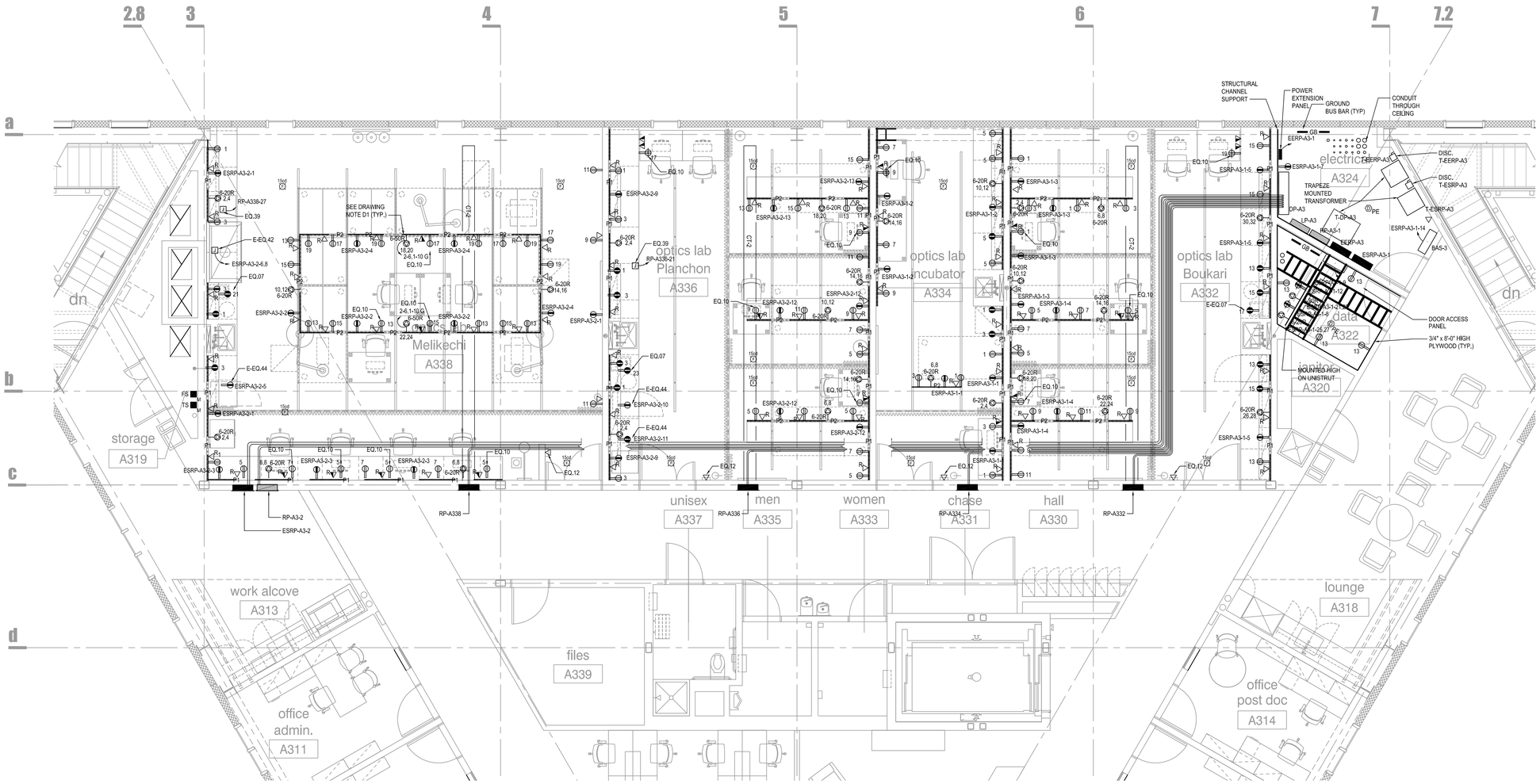
scale: 1/4"=1'-0"
0 2' 4' 8'

GENERAL NOTES:

1. REFER TO E001 AND E002 FOR SYMBOLS, ABBREVIATIONS, GENERAL NOTES AND PROPOSED SEQUENCE OF WORK.
2. REFER TO DRAWING E5.4 FOR DOOR ROUGH IN REQUIREMENTS FOR DOOR ACCESS.
3. DIMENSIONAL INFORMATION FOR EXACT LOCATIONS OF FLOOR BOXES, POKE THRUS, ETC. TO BE CONFIRMED AND PROVIDED BY ARCHITECT PRIOR TO ROUGH IN INSTALLATION.
4. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF DEVICES ON WALLS. WHERE TWO DEVICES (I.E. LIGHT SWITCH AND SPEAKER/STROBE) ARE SHOWN AT THE SAME LOCATION, THE DEVICES SHALL BE VERTICALLY ALIGNED ON CENTER WITH EACH OTHER.

DRAWING NOTES:

D1. REFER TO ARCH SHEETS A7.1 AND A7.2 FOR OVERHEAD RACEWAY MOUNTING DETAILS. REFER TO ELECTRICAL DETAILS S&6 E5.1 FOR RACEWAYS DIMENSTIONS.



partial third level

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T 215 446 0900
F 215 446 0901
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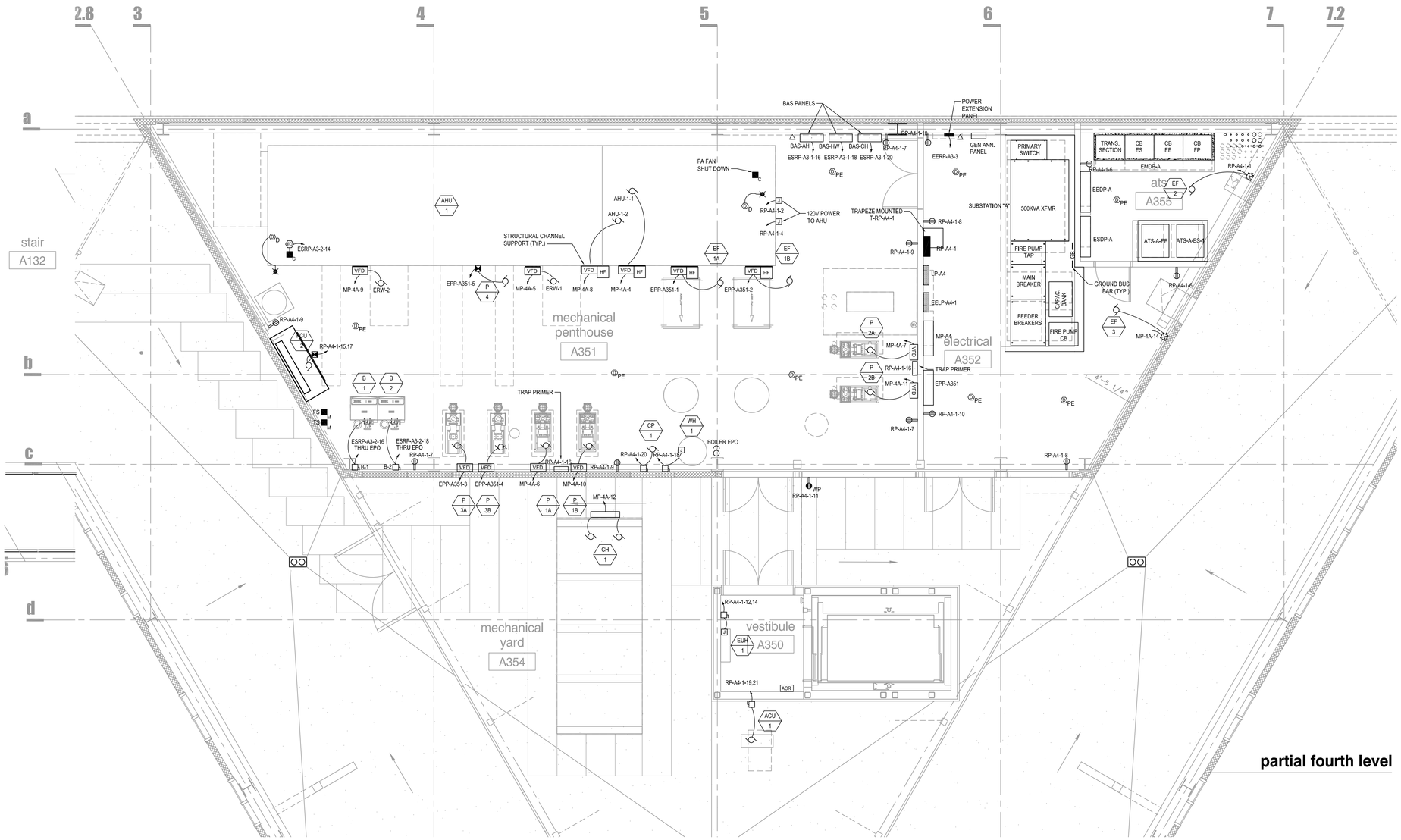
ep2.3 power plan
partial third level

scale: 1/4"=1'-0"
0 2' 4' 8'

GENERAL NOTES:

1. REFER TO E001 AND E002 FOR SYMBOLS, ABBREVIATIONS, GENERAL NOTES AND PROPOSED SEQUENCE OF WORK.
2. REFER TO DRAWING E5.4 FOR DOOR ROUGH IN REQUIREMENTS FOR DOOR ACCESS.
3. DIMENSIONAL INFORMATION FOR EXACT LOCATIONS OF FLOOR BOXES, POKE THRUS, ETC. TO BE CONFIRMED AND PROVIDED BY ARCHITECT PRIOR TO ROUGH IN INSTALLATION.
4. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF DEVICES ON WALLS. WHERE TWO DEVICES (I.E. LIGHT SWITCH AND SPEAKER/STROBE) ARE SHOWN AT THE SAME LOCATION, THE DEVICES SHALL BE VERTICALLY ALIGNED ON CENTER WITH EACH OTHER.



partial fourth level

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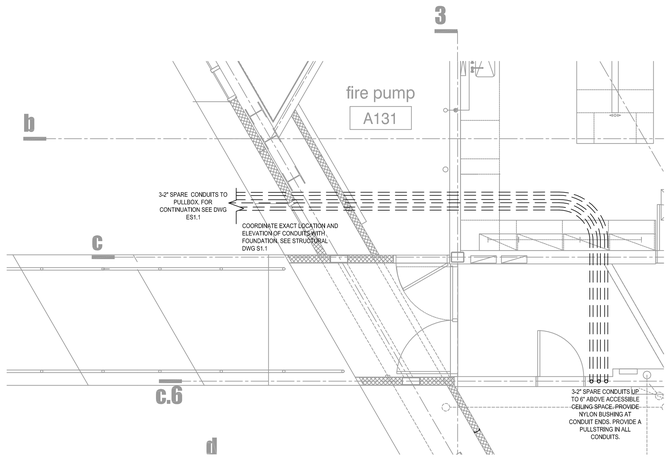
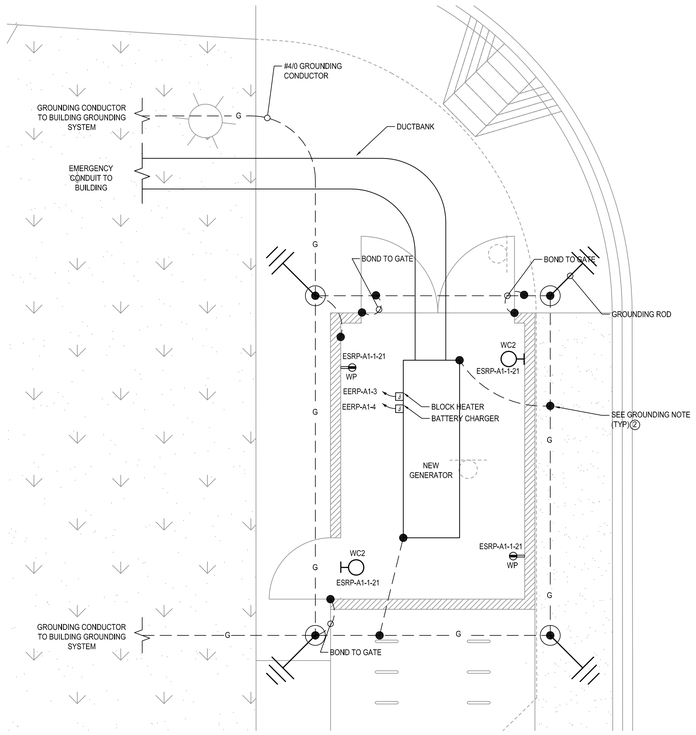
ep2.4 power plan
partial penthouse level

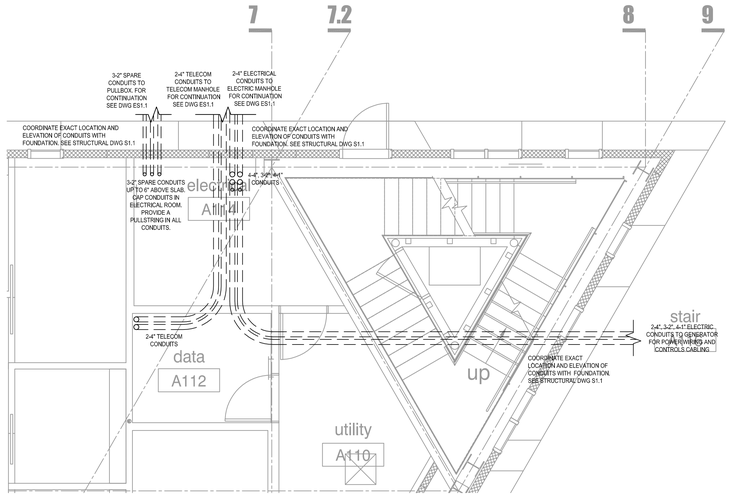
scale: 1/4"= 1'-0"
0 2' 4' 8'



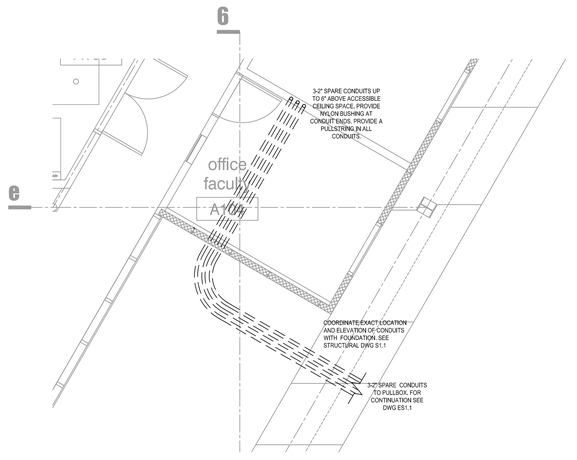
1/4"=1'-0" 5 UNDERSLAB PROPOSED CONDUIT ROUTING PLAN



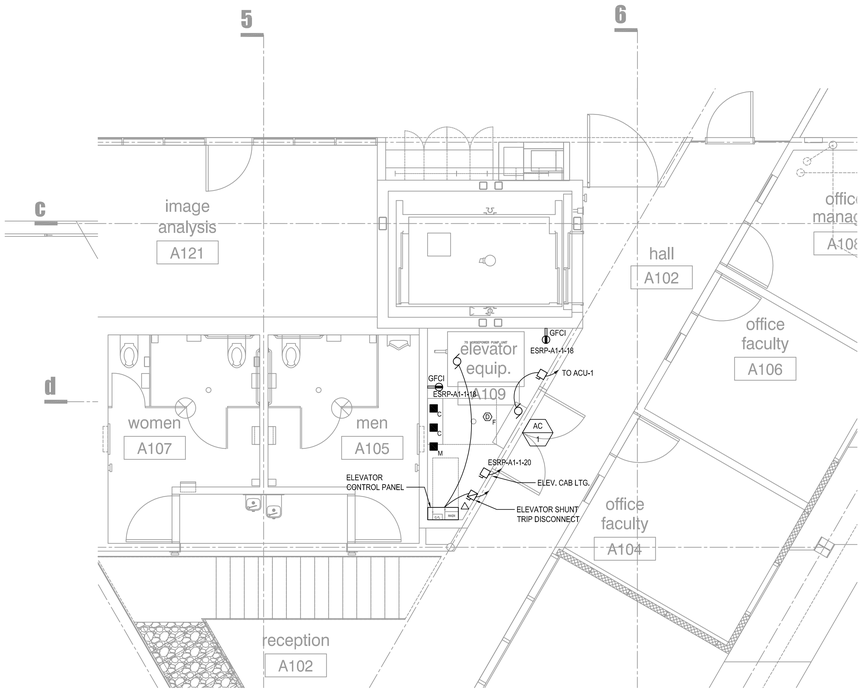
1/4"=1'-0" 2 NEW OUTDOOR GENERATOR GENERATOR



1/4"=1'-0" 4 UNDERSLAB PROPOSED CONDUIT ROUTING PLAN



1/4"=1'-0" 3 UNDERSLAB PROPOSED CONDUIT ROUTING PLAN



1/4"=1'-0" 1 PARTIAL GROUND FLOOR LAB'S

GENERAL NOTES:

1. REFER TO E0.1 AND E0.2 FOR SYMBOLS, ABBREVIATIONS, GENERAL NOTES AND PROPOSED SEQUENCE OF WORK.

GROUNDING NOTES:

① CONNECT GROUNDING COUNTERPOSE FOR BUILDING ADDITION TO EXISTING COUNTERPOSE AT THIS LOCATION. PROVIDE #4/0 COPPER GROUND CABLE AND EXOTHERMIC WELD.

② PROVIDE UFER GROUNDING FROM GROUNDING ROD TO COLUMN FOOTING REBAR.

PR-01 Project request PR-01
IT Cabling 04/10/2014

richärd+bauer
in association with
becker morgan group

BALLINGER

833 CHESTNUT ST, SUITE 1400
PHILADELPHIA, PA 19107
T 215 446 0900
F 215 446 0901
BALLINGER-AE.COM

delaware state university
optical science center for applied research

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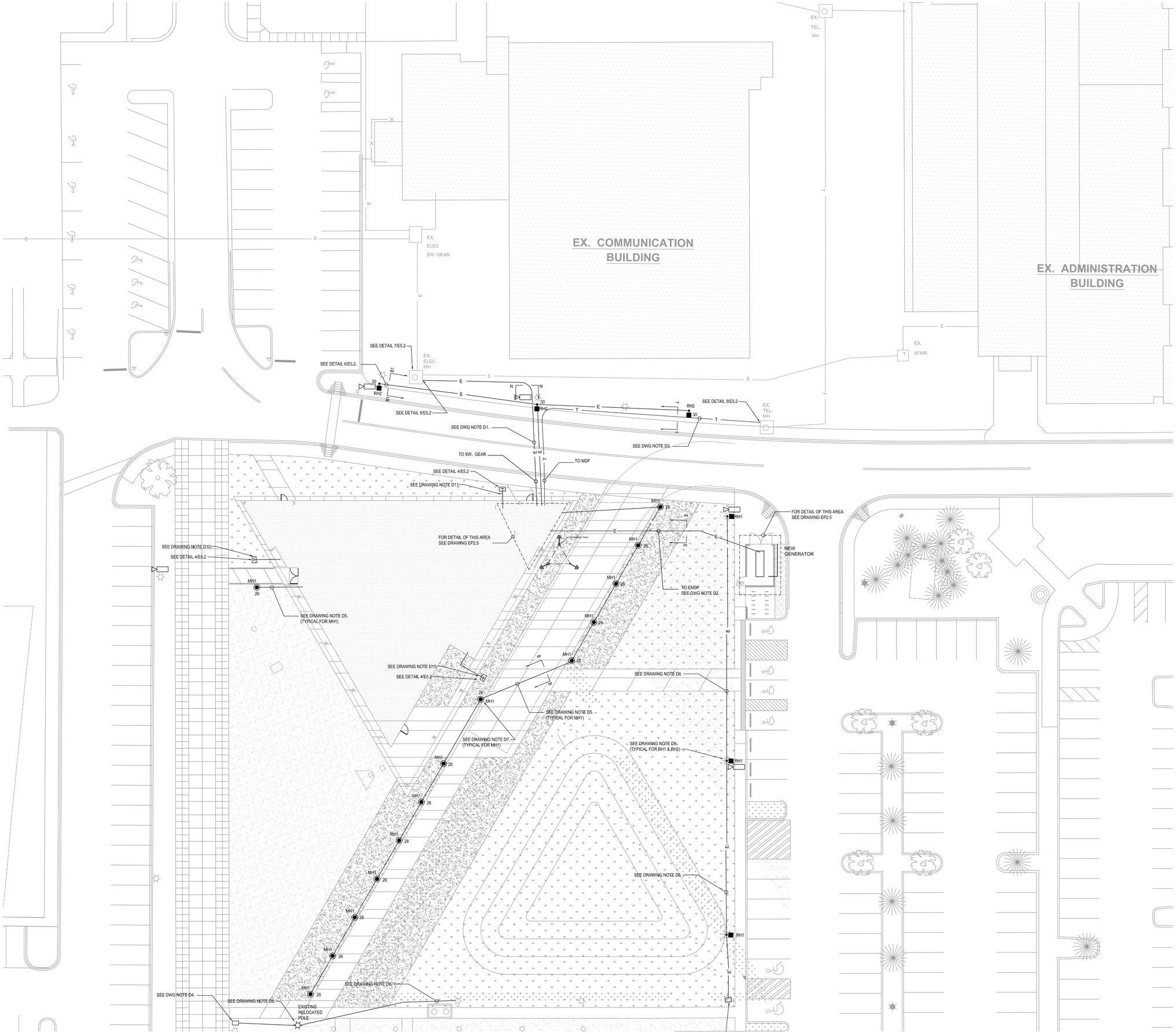
10 april 2014

ep2.5 power plan
partial plans

scale: as noted
0 2' 4' 8'



GENERAL NOTES :

1. FOR SYMBOLS AND ABBREVIATIONS REFER TO DRAWING E001 AND E002.
2. FOR CONCEPTUAL SITE LIGHTING LUMINAIRES AND LOCATIONS REFER TO ARCHITECTURAL DRAWINGS.
3. UNLESS OTHERWISE NOTED ALL LIGHT FIXTURES SHALL BE POWERED FROM PANEL LP-A1 LOCATED IN FIRST FLOOR ELECTRICAL ROOM.

DRAWING NOTES :

D1 PROVIDE 2-4" CONDUITS IN DUCTBANK FOR NORMAL POWER FEED TO BUILDING. SEE DETAIL 1/E5.2.

D2 PROVIDE 4-4" CONDUITS IN DUCTBANK FOR EMERGENCY POWER FEED TO BUILDING. SEE DETAIL 2/E5.2.

D3 PROVIDE 2-4" CONDUITS IN DUCTBANK FOR TELECOM FEED TO BUILDING. SEE DETAIL 3/E5.2.

D4 PROVIDE AN INGRADE HANDHOLE, INTERCEPT , SPLICE, AND EXTEND EXISTING UNDERGROUND ELECTRICAL CONNECTION TO LIGHT FIXTURE NEW LOCATION. SEE DETAILS 4&5/E5.2.

D5 PROVIDE 4#10 & 1#12G IN 1-1" UNDERGROUND CONDUIT. SEE DETAIL 4/E5.2.

D6 PROVIDE 1-1" CONDUIT IN DUCTBANK FOR POWER TO SITE LIGHT LIGHTING CROSSING UNDER ROADWAY. SEE DETAIL 6 DRAWING E5.2.

D7 SITE BOLLARD. REFER TO DETAIL 7/E5.0 FOR BOLLARD BASE MOUNTING.

D8 SITE POLE. REFER TO DETAIL 11/E5.0 FOR POLE BASE MOUNTING.

D9 MATCH EXISTING WIRE TYPE, SIZE, AND QUANTITY. INTERCEPT SPLICE AND EXTEND EXISTING CIRCUITING TO NEW SITE POLES. SEE DETAIL 4/E5.2.

D10 PROVIDE 3-2" CONDUIT STUBOUTS FOR FUTURE WORK FROM HANDHOLE AT GRADE, UNDERSLAB AND CONCEALED THROUGH NEAREST WALL INSIDE BUILDING TO ACCESSIBLE CEILING SPACE. PROVIDE NYLON BUSHING AT CONDUIT END INSIDE BUILDING. EXTEND CONDUITS TO 5'-0" FROM BUILDING FACE. CAP CONDUIT IN HANDHOLE. PROVIDE PULLSTRING IN ALL EMPTY CONDUITS.

D11 PROVIDE 3-2" CONDUIT STUBOUTS FOR FUTURE WORK FROM HANDHOLE AT GRADE AND UNDERSLAB TO 6" ABOVE SLAB IN BUILDING FIRST FLOOR ELECTRICAL ROOM. AT EXTERIOR EXTEND CONDUITS TO 5'-0" FROM BUILDING FACE. CAP CONDUITS AT BOTH ENDS. PROVIDE PULLSTRING IN ALL EMPTY CONDUITS.

plan legend

- E — NEW ELECTRICAL
- E — ELECTRICAL TO REMAIN
- T — NEW TELECOM
- T — TELECOM TO REMAIN

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BALLINGER-AE.COM

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es1.1 site plan
new

scale: 1/16" = 1'-0"
0 8' 16' 32'