

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

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SANTA BARBARA • SANTA CRUZ

OFFICE OF DESIGN & CONSTRUCTION SERVICES and PHYSICAL FACILITIES

CONTRACTING SERVICES
Building 439
Santa Barbara, California 93106-1030
Telephone (805) 893-3356
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SENT VIA: FAX ON THIS DATE
 HAND DELIVERY ON THIS DATE
 FEDERAL EXPRESS ON THIS DATE
 UNITED PARCEL SERVICE ON THIS DATE

HOLDERS OF PLANS AND SPECIFICATIONS:

Research Greenhouse
Project No. FM090158S/981530
Addendum No. 4

April 10, 2009

Enclosed is **ADDENDUM NO. 4** to the Construction Documents on the above-captioned project.

Bid date is Friday, April 17, 2009 at 2:30PM to be held at:

CONTRACTING SERVICES
Facilities Management, Bldg. 439,
Door #E, Reception Counter
University of California, Santa Barbara
Santa Barbara, CA 93106-1030.

Late arrivals shall be disqualified. Please allow time for unforeseen traffic delays, securing a parking permit and potential parking problems.

Anna Galanis
Director, Contracting Services

ADDENDUM NUMBER 4

To the

CONSTRUCTION DOCUMENTS

April 10, 2009

GENERAL

The following changes, additions or deletions shall be made to the following document(s) as indicated. All other conditions shall remain the same.

I SPECIFICATIONS

Item No.

1. Section 01500, Construction Facilities and Temporary Controls, PART 1-GENERAL;
Add to read in its entirety:

“1.04. CONSTRUCTION FENCING

- A. Fencing: Before beginning demolition and site clearing, erect temporary construction fence around entire perimeter of work site per the attached sketch SK-1, and maintain construction fence in good condition until removal is approved by University Representative.”

2. Section 01500, Construction Facilities and Temporary Controls; **Add** to read in its entirety:

“PART 2- PRODUCTS

2.01 CONSTRUCTION FENCE MATERIALS

- A. General: Provide new materials.
- B. For fences, safety barriers, noise and vision barriers, where appropriate or required, provide 5/8 inch thick minimum exterior type plywood 6 feet high; or 11 gage galvanized 2 inch open mesh chain link fencing 6 feet high with galvanized steel pipe posts, 1 ½ inch I.D. for line posts and 2 ½ inch I.D. for corner posts.
 1. Where plywood fencing is used, paint all exterior surfaces a green color as selected by the University Representative.

-
2. Where chain link is used, cover fencing with green plastic fabric, color as approved by University Representative. Securely fasten fabric to fencing and maintain in a satisfactory condition as determined solely by the University Representative.
 - a. Fabric: 5.2 oz./sq yd and 80% shade.
 - b. Bind fabric hems with 2-3/4 inch binding tape with brass grommets every 12 inches. Run a tab horizontally through center with brass grommets every 12 inches. Attach grommets in fabric to fencing with #9 gage hog rings.”
 3. Section 01565, Hazardous Material Procedures, PART 1-GENERAL, Para. 1.01B; **Change** to read in its entirety:

“B. Lead-based Paint. There is no known lead-based paint in the specific project area. In the event it is encountered the Contractor shall take whatever necessary steps he/she deem necessary to comply with 29 Code of Federal Regulations, Part 1926.62 and Title 8, Code of California Regulations, Section 1532.1, pertaining to environmental and workers protection, and lead abatement methods and procedures.”
 4. Section 02222, Trenching, Backfilling and Compacting for Utilities, PART 1-GENERAL, 1.03 Submittals; **Add** to read in its entirety :

“E. If boring is proposed for portions of utility installation, submit proposed methodology for University approval before construction.”
 5. Section 13120, Greenhouse, PART 1-GENERAL, 1.01 Work Included, Para. 1.01.B; **Change** to read in its entirety:

“B. Base bid shall include complete project, including but not limited to complete outfitting of greenhouse Module #1, except for that work specifically included in Alternates #1 and #2. Alternate #1 generally consists of the outfitting of greenhouse Module #2. Alternate #2 generally consists of the outfitting of greenhouse Module #3. Note in general that all electrical work for all three modules is included in base bid. Refer to drawings for further description of scopes of alternate bids.”
 6. Section 13120, Greenhouse, PART 2- PRODUCTS, 2.11 Evaporative Cooling Pad System; **Add** to read in its entirety:

“G. Drop Sash Wall: Motorized for automatic opening. Include complete, motorized drop sash wall in Base Bid for Modules 1, 2 and 3.”

7. Section 13800, Greenhouse Environmental Control System, 1.02 Work Included; **Add** to read in its entirety:

“16. In order to achieve connection to campus Metasys System, provide ¾” conduit with twisted shielded pair wire from greenhouse environmental control panel to Johnson Controls panel located on east wall in Noble Hall, Room 1269. [Room 1269 is the room just west of the room to which the standby power connection is being run.] Contractor shall provide a dry set of contacts programmed for an alarm condition. University will terminate and program input to Johnson system.

8. Section 13800, Greenhouse Environmental Control System, 2.09 Sequence of Environmental Control Operations, B Cooling, Para. 2.09.B.4; **Change** first sentence to read in it’s entirety:

“4. If the temperature rises above the set point, the exterior drop sash wall vents shall open automatically and the exhaust fans started.”

9. Section 16400, Distribution, PART 2-PRODUCTS, 2.02 Distribution Panel Boards, Para. 2.02.I; **Delete** Subparagraph 2.02.I, (Integral Transient voltage Surge Suppressor TVSS), in its entirety.

II. DRAWINGS

Item No.

1. On all Drawings change project number from FM090158S to FM090158S/981530
2. Title Sheet, ALTERNATE BID SUMMARY, Alternate Bid #1 Module 2 AND Alternate Bid#2 Module 3. **Change** first bullet to read in its entirety:

“COOLING PADS (COMPLETE, MOTORIZED DROP SASH WALL INCLUDED IN BASE BID)”

3. Title Sheet, ALTERNATE BID SUMMARY, Alternate Bid #1 Module 2 AND Alternate Bid#2 Module 3. **Delete** eighth bullet point in its entirety

“(19) GROW LIGHTS – ROUGH-IN ONLY”. [Note that rough-in for grow lights, including sockets, is included in Base Bid.]

4. Sheet C1.1, SITE TOPOGRAPHIC MAP, At northeasterly corner of existing Lath House (Bldg 540). **Add** note to read,

“Protect existing water riser in place.”

5. Sheet A2.1, FLOOR PLAN, Module 2 Alternate #1 AND Module 3 Alternate #2. **Change** first bullet to read in its entirety:

“COOLING PADS (COMPLETE, MOTORIZED DROP SASH WALL INCLUDED IN BASE BID)”

6. Sheet A2.1, FLOOR PLAN, Module 2 Alternate #1 AND Module 3 Alternate #2. **Delete** eighth bullet point in its entirety:

“(19) GROW LIGHTS – ROUGH-IN ONLY”. [Note that rough-in for grow lights, including sockets, is included in Base Bid.]

7. Sheet A3.1, EXTERIOR ELEVATIONS AND SECTIONS, #1 SECTION. **Change** note pointing to gro-light to read in its entirety:

“GROW-LIGHT ROUGH IN MOUNTED TO UNISTRUT SPANNING BETWEEN TRUSSES. INCLUDE ALL REQ'D UNISTRUT IN BASE BID.”

8. Sheet MP0.1, MECHANICAL SYMBOLS AND ABBREVIATIONS, Plumbing Fixture Schedule. **Change** EW-1 make and model to read in its entirety:

“Bradley Model S19-430EFW”

9. Sheet E0.1, ELECTRICAL SYMBOLS. **Replace** in its entirety with attached drawing E0.1, dated 04/10/2009.

10. Sheet E1.0, SITE PLAN ELECTRICAL. **Replace** in its entirety with attached drawing E1.0 dated 04/10/2009

11. Sheet E1.0, SITE PLAN ELECTRICAL. (This note is in addition to the drawing revisions reflected in the revised Drawing E1.0, dated 04/10/2009.): **Add** the following note in its entirety:

"At Contractor's Option, University will allow an alternate route for the new conduit/conductor run from the MSA in Noble Hall to the new emergency panel EP. Starting from the MSA in Noble Hall, once conduit has exited Noble Hall, it may proceed west, above grade, on the surface of the concrete wall north of Noble Hall, parallel to other existing conduits. Then the conduit may continue north on the exterior wall surface of Pharmacology Building 569 clear to the NE corner of Building 569. Then route underground from there to emergency panel EP at east end of Headhouse. All above grade conduit shall be rigid metal and not EMT (even if existing conduits are EMT). Submit exact details of this alternate routing for final University approval."

12. Sheet E2.1, TYPICAL FLOOR PLAN PHOTMETRIC AND ELECTRICAL FLOOR PLAN. **Replace** in its entirety with attached drawing E2.1 dated 04/10/2009.

III. CLARIFICATIONS

Item No.

1. Sheet C1.2, GRADING & DRAINAGE PLAN. **Clarification:** The existing electrical conduit that passes diagonally through the footprint of the new greenhouse is a 2" conduit that ranges in depth from 22" to 33" below existing grade. This electrical line shall remain in place and in service throughout the duration of construction. Modify excavation, scarification, backfill and compaction methods in immediate proximity of conduit as required to protect conduit. If and where conduit intrudes into profile of new footings, refer to drawing Detail 1/S.

SKETCHES

SK-1 LIMITS OF CONSTRUCTION FENCING, Dated 04/09/2009, attached.

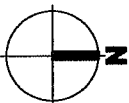
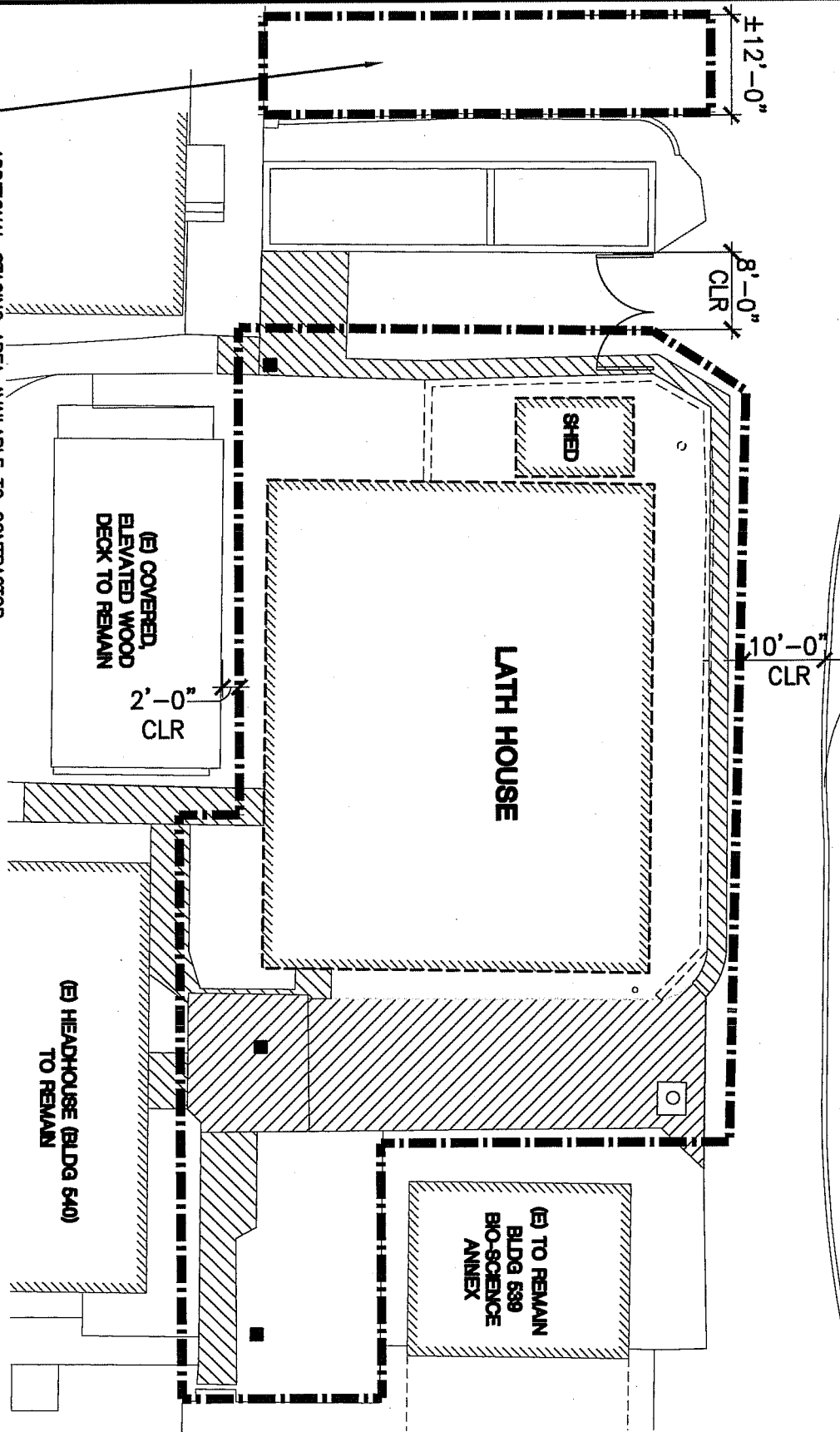
END OF ADDENDUM NO. 4

ADDITIONAL STAGING AREA AVAILABLE TO CONTRACTOR
 AT RATE OF \$144 PER MONTH. CONTRACTOR TO MAKE
 PAYMENT TO UCSB TRANSPORTATION AND PARKING
 SERVICES AT BEGINNING OF CONSTRUCTION.

SK-1

LIMITS OF CONSTRUCTION FENCING

1/16" = 1'-0"



MFDB ARCHITECTS INC.

RESEARCH GREENHOUSE
 University of California
 Santa Barbara, CA

Date 04/09/09
 Job No. 20621
 Dwg. AM 3-1
 Ref. A1.0, A1.1

ELECTRICAL SYMBOL LIST

* This is a standard list and not all symbols and abbreviations may be used.

LIGHTING

- + AREA LUMINAIRE ARM MOUNTED WITH POLE AND CONCRETE BASE
- WALL MOUNTED LUMINAIRE
- OR ☒ SURFACE OR PENDANT MOUNTED LUMINAIRE
- SURFACE OR PENDANT MOUNTED FLUORESCENT 1' X 4' LUMINAIRE
- SURFACE OR PENDANT MOUNTED FLUORESCENT STRIPLIGHT
- SURFACE MOUNTED LUMINAIRE CONNECTED TO EMERGENCY CIRCUIT OR WITH INTEGRAL EMERGENCY BATTERY CONNECTED TO UNSWITCHED CIRCUIT
- ⊖ EXIT SIGN WALL MOUNTED, ARROW(S) INDICATES DIRECTION IF SHOWN
- ⊖ EXIT SIGN CEILING MOUNTED, ARROW(S) INDICATES DIRECTION IF SHOWN

SWITCHES AND RECEPTACLES

- ⊞ SINGLE POLE SWITCH
 - a THRU z (LOWERCASE) = LUMINAIRE CONTROL DESIGNATION
 - D = DIMMER
 - F = FAN SPEED CONTROL
 - K = KEY OPERATED SWITCH
 - M = MANUAL MOTOR STARTER WITH THERMAL OVERLOAD
 - L = LIGHTED HANDLE
 - W = WEATHER PROOF SWITCH
 - V = LOW VOLTAGE SWITCH
- ⊞ CEILING MOUNTED OCCUPANCY SENSOR
 - P = PASSIVE INFRARED
 - D = DUAL TECHNOLOGY
- ⊞ WALL MOUNTED OCCUPANCY SENSOR
 - P = PASSIVE INFRARED
 - D = DUAL TECHNOLOGY
- ⊞ TWISTLOCK RECEPTACLE, CORD, AND PLUG CONNECTION FOR GROW LIGHT. SEE LETTER CODE LIST AT DUPLEX RECEPTACLE FOR OPTIONS
- ⊞ DUPLEX RECEPTACLE
 - A = ABOVE COUNTER
 - B = CLOCK HANGER
 - C = FLUSH CEILING MOUNTED
 - F = ARC FAULT PROTECTED BY BREAKER IN PANEL
 - G = GROUND FAULT CIRCUIT INTERRUPTER
 - K = CHILD RESISTANT COVER
 - L = ISOLATED GROUND
 - P = PENDANT MOUNTED WITH CORD GRIPS. VERIFY PENDANT LENGTH
 - T = TAMPER RESISTANT SHUTTERED RECEPTACLE
 - W = TRANSPARENT WEATHER PROOF CONTINUOUS COVER AND GFCI PROTECTED
- ⊞ DOUBLE DUPLEX RECEPTACLE. SEE LETTER CODE LIST AT DUPLEX RECEPTACLE FOR OPTIONS

CONNECTIONS / EQUIPMENT

- ⊞ MOTOR CONNECTION
- ⊞ HEAVY DUTY FUSED DISCONNECT SWITCH
- ⊞ OR ⊞ JUNCTION BOX
- ⊞ TRANSFORMER
- ▼ TELEPHONE OUTLET WITH 3/4" C. AND PULLSTRING TO ACCESSIBLE CEILING SPACE
- ▼ COMBINATION COMMUNICATIONS OUTLET.
 - A = ABOVE COUNTER WITH 2 CAT6 AND 1" CONDUIT TO ACCESSIBLE CEILING SPACE.
 - B = WITH 2 CAT6 AND 1" CONDUIT TO ACCESSIBLE CEILING SPACE.
 - C = FLUSH CEILING MOUNTED WITH 2 CAT6 CABLES.
 - J = ABOVE CEILING MOUNTED WITH 2 CAT6 CABLES.
 - T = TAMPER RESISTANT WITH 2 CAT6 CABLES AND 1" CONDUIT TO ACCESSIBLE CEILING SPACE.
 - V = WITH RG-6 COAX FOR CATV NETWORK.
 - W = WEATHER PROOF CONTINUOUS COVER WITH 1" CONDUIT TO ACCESSIBLE CEILING SPACE.

TELECOMMUNICATIONS

MISCELLANEOUS

- CONDUIT ELLED UP
- CONDUIT ELLED DOWN
- ⊞ CONDUIT/WIRING STUBBED OUT WITH END CAP OR INSULATED PLASTIC BUSHING
- | GROUNDING POINT
- ≡ BRANCH PANEL
- ≡ FLUSH WALL MOUNTED BRANCH PANEL
- ≡ MAIN DISTRIBUTION PANEL / SUB DISTRIBUTION PANEL
- ~ FLEXIBLE CONDUIT
- #10
B-27,29 BRANCH CIRCUIT WIRING. ARROW INDICATES HOME RUN TO PANEL WITH CIRCUITS AS NOTED. WIRE SIZE IS #12 AWG MINIMUM UNLESS NOTED OTHERWISE. SHORT TICK MARKS INDICATE PHASE CONDUCTORS. LONG TICK MARKS INDICATE NEUTRAL CONDUCTORS. A SINGLE CURVED TICK MARK INDICATES INSULATED GREEN GROUND CONDUCTOR. SECOND CURVED TICK MARK INDICATES "ISOLATED GROUND" (GREEN INSULATION WITH YELLOW STRIPE) CONDUCTOR.
- CONDUIT CONCEALED IN WALL OR CEILING SPACE
- CONDUIT ROUTED BELOW FLOOR / GRADE
- EXISTING CONDUIT CONCEALED IN WALL OR CEILING SPACE
- EXISTING CONDUIT ROUTED BELOW FLOOR / GRADE
- ⬡ REFERENCE NOTE
- ⬡ MECHANICAL EQUIPMENT CONNECTION ITEM. REFER TO SCHEDULE

ABBREVIATIONS

- A AMPERES, AMBER
- AFF ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- AIC AVAILABLE INTERRUPTING CAPACITY
- C CONDUIT, CLOSE, CONTROL
- CLG CEILING
- CU COPPER
- (E) EXISTING
- GFI GROUND FAULT INTERRUPTER
- G, GND GROUND
- IG ISOLATED GROUND
- KV KILOVOLT
- KVA KILOVOLT AMPERES
- KW KILOWATT
- MCA MINIMUM CIRCUIT AMPS
- MOCPP MAXIMUM OVERCURRENT PROTECTION
- NL NIGHT LIGHT
- PH PHASE
- TTB TELEPHONE TERMINAL BOARD
- TYP TYPICAL
- UL UNDERWRITERS LABORATORIES
- V VOLTS, VOLTAGE
- WP WEATHERPROOF
- OFOI OWNER FURNISHED, OWNER INSTALLED

LUMINAIRE SCHEDULE

THIS LUMINAIRE SCHEDULE IS NOT COMPLETE WITHOUT A COPY OF THE PROJECT MANUAL CONTAINING THE ELECTRICAL SPECIFICATIONS.

TYPE	DESCRIPTION:
TYPE G	GROW LIGHT (GEO) DESCRIPTION: PENDANT @ +12' AFG. SEE ARCHITECTURAL DRAWING A3.1 FOR MOUNTING REQUIREMENTS. PROVIDE ROUGH-IN, READY FOR PLUG-IN. MOUNTING: NOTE: 1000W HPS.
TYPE U	FLUORESCENT UTILITY LUMINAIRE. HOUSING: WEATHERPROOF JELLY JAR.
TYPE W	EXTERIOR WALL MOUNTED H.I.D. LUMINAIRE. HOUSING: CORROSION RESISTANT, DIE CAST ALUMINUM HOUSING. LENS: PRISMATIC BOROSILICATE GLASS REFRACTOR. REFLECTOR: SPECULAR ANODIZED ALUMINUM REFLECTOR. FINISH: COORDINATE WITH ARCHITECT. BALLAST: -20 DEGREE, CWA, HIGH POWER FACTOR BALLAST. UL LISTING: UL LISTED WET. NOTE: COORDINATE MOUNTING HEIGHT AND LOCATION WITH ARCHITECTURAL PLANS. LAMP: ONE 175 WATT GLASS ARC TUBE METAL HALIDE LAMP. INPUT WATTS: 210. MANUFACTURERS: LITHONIA TWH SERIES, LUMARK, HUBBELL OR APPROVED.

GENERAL SHEET NOTES

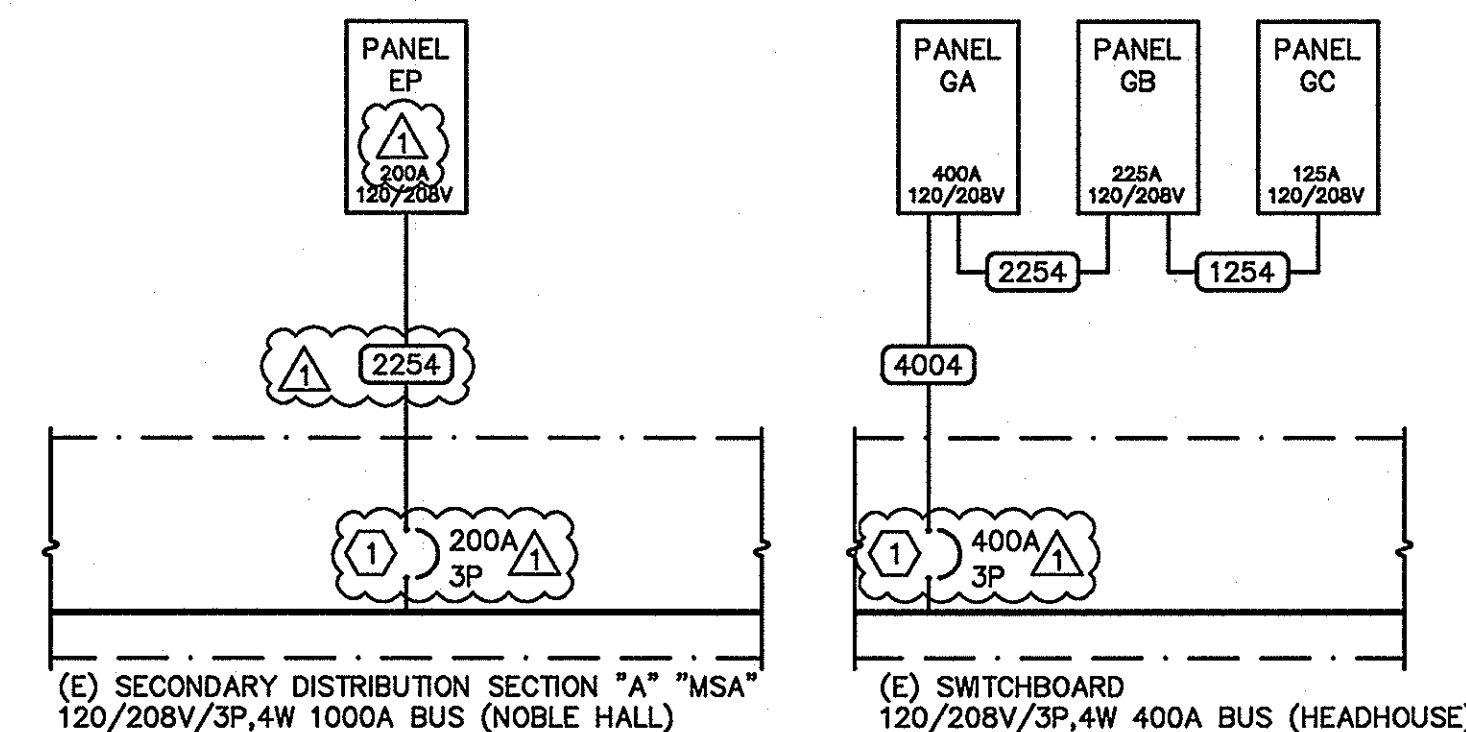
- A. GROW LIGHTS TO BE WIRED FOR 208V. CONTRACTOR SHALL PROVIDE NEMA PLUG CONFIGURATION TO MATCH GROW LIGHTS FURNISHED BY UNIVERSITY. CONFIRM THE NEMA PLUG CONFIGURATION WITH UNIVERSITY PRIOR TO PLACING SOCKET ORDER.

SHEET KEYNOTES

- ① INSTALL IN (E) SPACE. MATCH (E) TYPE AND RATINGS.

COPPER FEEDER SCHEDULE

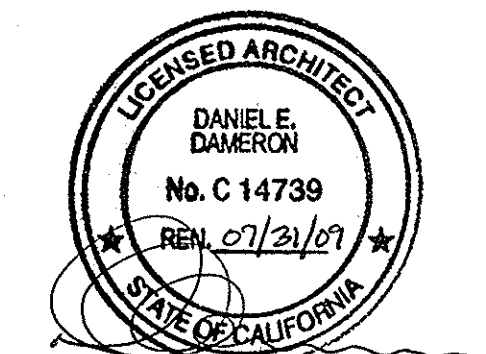
- 1254 4 #1 CU THWN, 1 #4 CU GND., IN 1-1/2" C.
- 2254 4 #4/0 CU THWN, 1 #2 CU GND., IN 2-1/2" C.
- 4004 2 SETS OF (4 #3/0 CU THWN, 1 #1 CU GND., IN 2" C)



1 POWER ONE-LINE DIAGRAM
NO SCALE

DRAWING INDEX

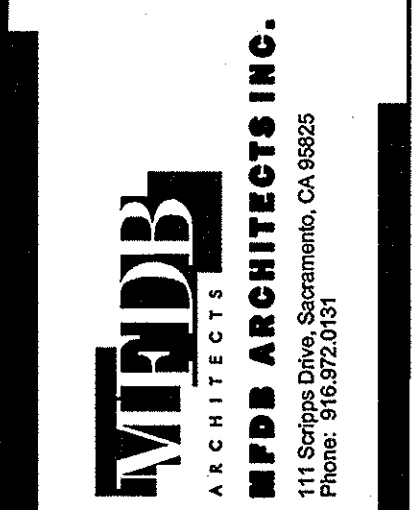
- E0.1 ELECTRICAL SYMBOLS, LUMINAIRE SCHEDULE, POWER ONE-LINE DIAGRAM
- E1.0 SITE PLAN - ELECTRICAL, NETWORK ONE-LINE DIAGRAM
- E2.1 TYPICAL FLOOR PLAN - ELECTRICAL & PHOTOMETRIC



PROJECT 2006-0291
CONTACT Aric Goe

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Architect / Engineer Stamp

Designated Campus Fire Marshal Review

UNIVERSITY OF CALIFORNIA, SANTA BARBARA
RESEARCH GREENHOUSE
SANTA BARBARA, CA
UCSB PROJECT NUMBER FMO80158S/981530

SHEET TITLE
ELECTRICAL SYMBOLS

DATE
01/09/09

JOB NO.
20621

SHEET NO.

E0.1

OF

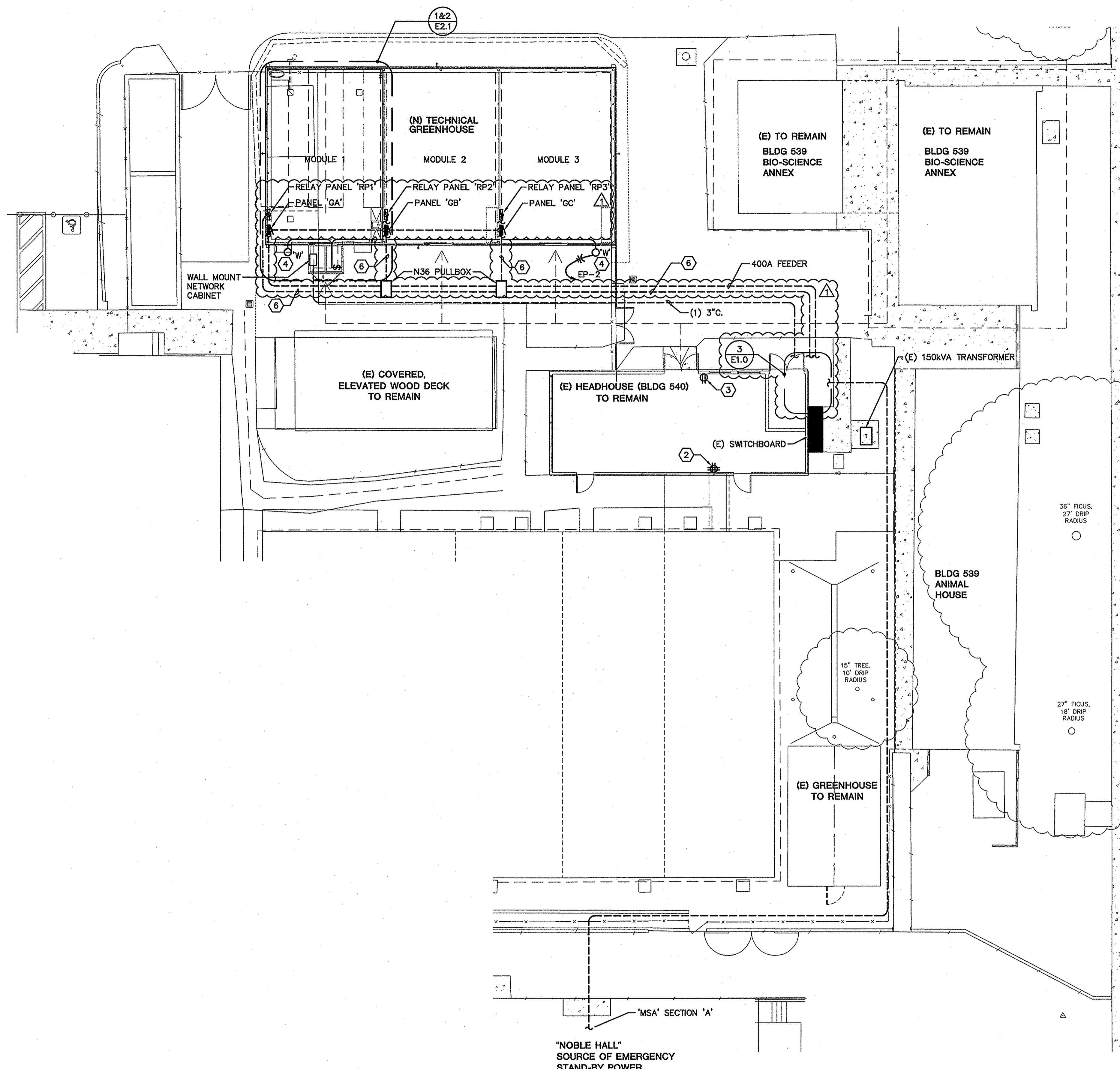
DRAWING NO. 541-101

GENERAL SHEET NOTES

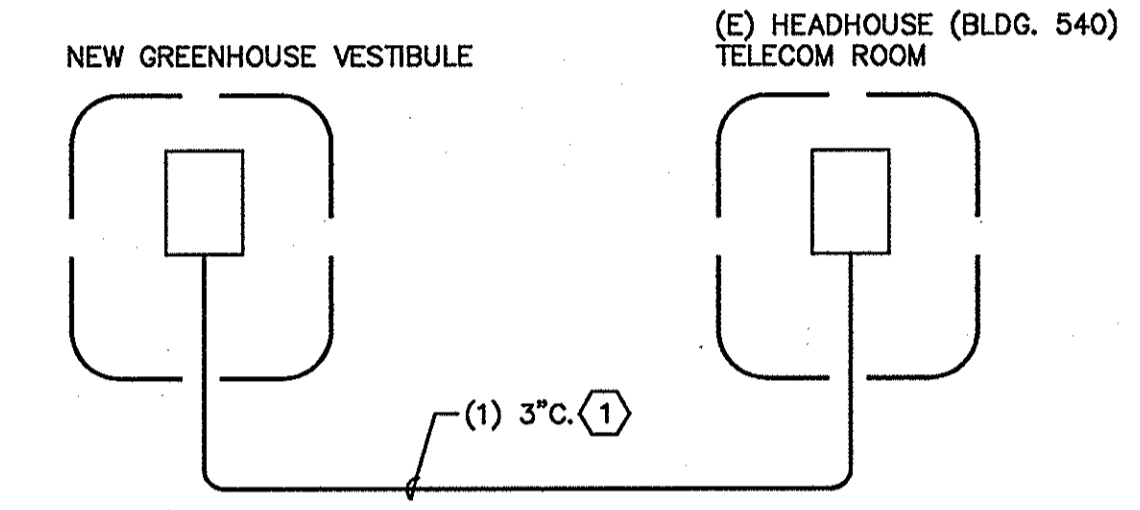
- A. SEE POWER ONE-LINE ON E0.1 FOR FEEDER SIZES.
- B. IF CONTRACTOR ELECTS TO COMBINE BRANCH CIRCUIT CONDUCTORS CONNECTING BACK TO PANEL EP INTO FEWER CONDUITS, CONTRACTOR SHALL ADHERE TO ADJUSTMENT FACTORS OUTLINED IN CEC TABLE 310.15(B)(2)(c).

SHEET KEYNOTES

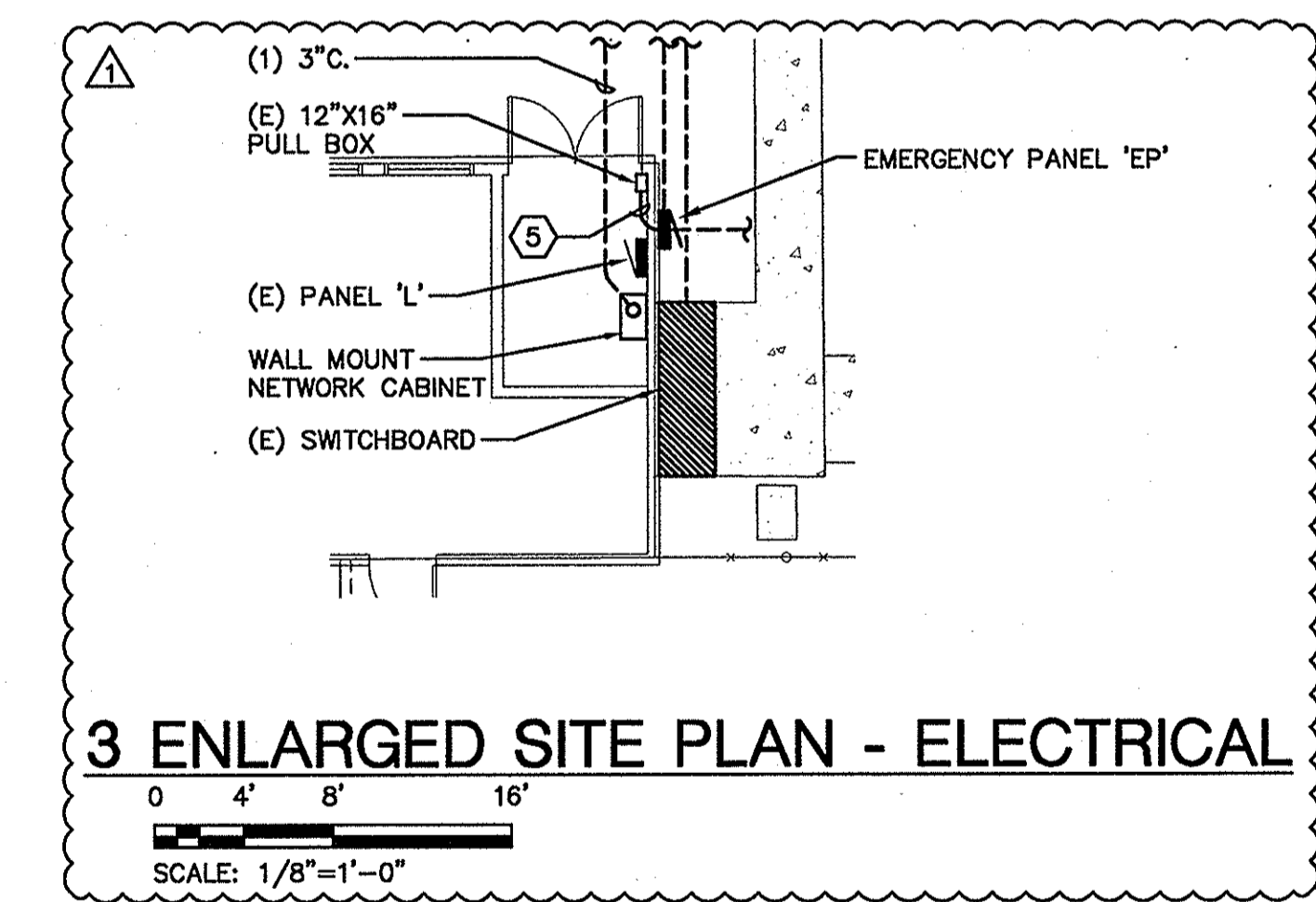
- 1. INSTALL ONE(1) 6-STRAND, 50/125 LASER OPTIMIZED LOOSE TUBE MULTI MODE OSP FIBER OPTIC CABLE AND ONE(1) 6-STRAND LOOSE TUBE, SINGLE MODE OSP FIBER OPTIC CABLE AND FIVE(5) 4-PAIR, CAT5E GEL FILLED CABLES.
- 2. REPLACE (E) DUPLEX RECEPTACLE WITH NEW QUAD RECEPTACLE, RECONNECT TO (E) CIRCUIT.
- 3. PROVIDE DUPLEX OUTLET TO PROVIDE POWER FOR DACT. CONNECT TO CIRCUIT EP-10.
- 4. PROVIDE INTEGRAL PHOTOSENSOR FOR AUTOMATIC CONTROL OF EXTERIOR WALL PACK LUMINAIRES.
- 5. INSTALL (4) #1/0 CU THWN-2, 1 #6 CU GND, IN 2" C. FROM 100A C.B. IN PANEL EP TO EXISTING 12"x16" PULLBOX. LEAVE 18" TAILS IN PULLBOX FOR FUTURE TERMINATION. PLACE LOCKOUT ON 100A C.B. IN PANEL EP.
- 6. ROUTE CONDUIT AND CONDUCTORS TO PANEL 'EP' IN THIS LOCATION.



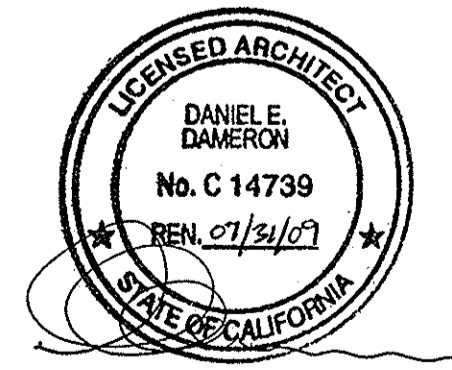
1 SITE PLAN - ELECTRICAL
 SCALE: 1"=10'-0"



2 NETWORK ONE-LINE DIAGRAM
 NO SCALE



3 ENLARGED SITE PLAN - ELECTRICAL
 SCALE: 1/8"=1'-0"



PROJECT 2006-0291
 CONTACT Eric Goo

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SHEET TITLE
SITE PLAN ELECTRICAL

DATE
 01/09/09

JOB NO.
 20621

SHEET NO.

E1.0

