ABBREVIATIONS

-#-
- 3/C THREE-CONDUCTOR

-A-
- AC ALTERNATING CURRENT
- ADA AMERICANS WITH DISABILITIES ACT
- AFC ABOVE FINISHED COUNTER
- AFF ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- AH AMPERE HOUR
- AHJ AUTHORITY HAVING JURISDICTION
- AHU AIR HANDLING UNIT
- AIC AMPERE INTERRUPTING CAPACITY
- ANN ANNUNCIATOR
- ANSI AMERICAN NATIONAL STANDARDS INSTITUTE
- ATS AUTOMATIC TRANSFER SWITCH
- AUX AUXILIARY
- AV AUDIO VISUAL
- AWG AMERICAN AIRE GAUGE

-B-
- BAS BUILDING AUTOMATION SYSTEM

-C-
- C CONDUIT
- CAB CABINET
- CAP CAPACITOR
- CATV COMMUNITY ANTENNA TELEVISION
- CB CIRCUIT BREAKER
- CCTV CLOSED CIRCUIT TELEVISION
- CD CONSTRUCTION DOCUMENTS
- CH CHILLER
- CHWP CHILLED WATER PUMP
- CKT CIRCUIT
- CL CENTERLINE
- CLG CEILING
- CO CONDUIT ONLY
- COMM COMMUNICATION
- CP CONTROL PANEL
- CPT CONTROL POWER TANSFORMER
- CSI CONSTRUCTION SPECIFICATION INSTITUTE
- CT CURRENT TRANSFORMER
- CTV CABLE TELEVISION
- CU COPPER

-D-
- DB DECIBEL
- DC DIRECT CURRENT
- DDC DIRECT DIGITAL CONTROL
- DEMO DEMOLITION
- DIV DIVISION
- DPST DOUBLE POLE, SINGLE THROW
- DWG DRAWING

-E-
- EA EACH
- EMER EMERGENCY
- EMI ELECTROMAGNETIC INTERFERENCE
- EMS ENERGY MANAGEMENT SYSTEM
- EMT ELECTRICAL METALLIC TUBING
- ENGR ENGINEER
- EPO EMERGENCY POWER OFF SWITCH
- EXIST, E EXISTING TO REMAIN

-F-
- F FAHRENHEIT
- FA FIRE ALARM
- FAAP FIRE ALARM ANNUNCIATOR
- FACP FIRE ALARM CONTROL PANEL
- FC FOOTCANDLE
- FLA FULL LOAD AMPS
- FLEX FLEXIBLE

-G-
- G GROUND
- GC GENERAL CONTRACTOR
- GEN GENERATOR
- GFCI GROUND FAULT CIRCUIT INTERRUPTER
- GFR GROUND FAULT RELAY

-H-
- HP HORSEPOWER
- HZ HERTZ

-J-
- JB JUNCTION BOX

-L-
- LA LIGHTNING ARRESTER
- LBS POUND(S)
- LED LIGHT EMITTING DIODE
- LRA LOCKED ROTOR AMPS
- LT LIGHT

-M-
- MCA MINIMUM CIRCUIT AMPACITY
- MCB MAIN CIRCUIT BREAKER
- MCC MOTOR CONTROL CENTER
- MIN MINIMUM
- MOP MAXIMUM OVERCURRENT PROTECTION
- MV MEDIUM VOLTAGE

-N-
- N NEW
- NC NORMALLY CLOSED
- NER NEW LOCATION OF EXIST RELOCATED
- NEUT, N NEUTRAL
- NL NIGHT LIGHT
- NO NORMALLY OPEN
- NTS NOT TO SCALE

-O-
- OCP OVERCURRENT PROTECTION

-P-
- P POLE
- PB PULL BOX
- PF POWER FACTOR
- PH PHASE
- PNL PANEL
- PWR POWER

-R-
- R REMOVE
- RE REMOVE EXIST
- RL RELOCATE EXIST

-S-
- SCHED SCHEDULE
- SD SMOKE DETECTOR
- SPDT SINGLE POLE, DOUBLE THROW
- SPEC SPECIFICATION
- SPKR SPEAKER
- SPST SINGLE POLE, SINGLE THROW
- SWBD SWITCHBOARD
- SWGR SWITCHGEAR

-T-
- TC TIME CLOCK
- TCP TELEPHONE CONTROL PANEL
- TEL TELEPHONE
- TELECOM TELECOMMUNICATIONS
- OM TP TWISTED PAIR
- TPS TWISTED PAIR SHIELDED
- TTB TELEPHONE TERMINAL BOARD
- TV TELEVISION
- TYP TYPICAL

-U-
- UL UNDERWRITERS LABORATORIES
- UON UNLESS OTHERWISE NOTED
- UPS UNINTERRUPTIBLE POWER SUPPLY
- UTIL UTILITY

-V-
- V VOLT
- VA VOLT AMPERE
- VAR VOLT AMPERE REACTIVE
- VCB VACUUM CIRCUIT BREAKER
- VD VOLTAGE DROP
- VFD VARIABLE FREQUENCY DRIVE
- VR VOLTAGE REGULATOR

-W-
- W WATT
- WHM WATTHOUR METER
- WP WEATHERPROOF

-X-
- XFMR TRANSFORMER
- XP EXPLOSION PROOF

-Z-
- ZSRG ZERO SEQUENCE REFERENCE GROUND

FIRE LIFE SAFETY NOTES

1. UNDER DESIGN/BUILD SCOPE OF WORK PROVIDE COMPLETE FIRE/LIFE SAFETY SYSTEM. CONTRACTOR SHALL PROVIDE AS PART OF FIRE ALARM SYSTEM:
   - -CONSTRUCTION DOCUMENT AND SHOP DRAWINGS.
   - -COORDINATE WITH MECHANICAL AND PLUMBING DRAWINGS FOR ALL REQUIRED FIRE ALARM DEVICES UNDER MECHANICAL/PLUMBING SECTION AND PROVIDE INTERCONNECTING WIRING FOR A COMPLETE WORKING SYSTEM.
2. PROPOSED SYSTEM DOCUMENTS SHALL BE PREPARED AND SUBMITTED TO AUTHORITIES HAVING JURISDICTION FOR REVIEW AND APPROVAL BY CONTRACTOR BEFORE START OF WORK.
3. COMPLETE SYSTEM SHALL BE TESTED, APPROVED AND SIGNED-OFF BY AUTHORITIES HAVING JURISDICTION.
4. THE ENTIRE INSTALLATION OF LIFE SAFETY SYSTEM INCLUDING MATERIALS AND EQUIPMENT SHALL BE COMPATIBLE WITH BASE BUILDING EQUIPMENT AND MEET OR EXCEED THE MINIMUM STANDARD AND REQUIREMENTS OF THE FOLLOWING:
   - a. U.L. LISTING SERVICES
   - b. N.F.P.A. NATIONAL FIRE CODE
   - c. U.B.C. AS ACCEPTED AND OR MODIFIED BY LOCAL AUTHORITIES
   - d. CITY FIRE AND BUILDING CODE
   - e. CITY ELECTRICAL CODE
   - f. STATE OF CALIFORNIA
   - g. AMERICAN DISABILITY ACT (ADA REQUIREMENTS)

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SYMBOLS (AS APPLICABLE)

POWER OUTLETS

FLOOR WALL CEILING

- DUPLEX
- QUADRUPLEX
- DUPLEX-VOICE-DATA
- GFCI DUPLEX
- SIMPLEX
- EMERGENCY DUPLEX
- EMERGENCY QUADRUPLEX
- EMERGENCY SIMPLEX
- DUPLEX-VOICE
- DUPLEX-DATA
- QUAD-VOICE
- QUAD-VOICE-DATA
- QUAD-DATA
- JUNCTION BOX
- POKE THRU
- COUNTERTOP DUPLEX
- ISOLATED GROUND DUPLEX
- ISOLATED GROUND SIMPLEX
- EXPLOSION PROOF DUPLEX
- EXPLOSION PROOF SIMPLEX
- SPLIT WIRE
- SPECIAL OUTLET
- MULTI OUTLET SURFACE RACEWAY

TELECOM

FLOOR WALL CEILING

- VOICE OUTLET
- DATA OUTLET
- VOICE-DATA
- CARD READER
- EMERGENCY BREAK GLASS
- PUSH BUTTON
- SPEAKER - AV
- TELCOM GROUNDING BUS BAR
- TELEPHONE BACKBOARD

WIRING

- 3/4" CONDUIT WITH 2#12 WIRES, UON. GROUND WIRE NOT SHOWN.
- 3/4" CONDUIT WITH 3#12 WIRES, UON. GROUND WIRE NOT SHOWN.
- 3/4" CONDUIT WITH 4#12 WIRES, UON. GROUND WIRE NOT SHOWN.
- 1LA-1,3,5 CONDUIT HOMERUN TO PANEL BOARD 1LA WITH CIRCUIT 1,3,5
- CAPPED CONDUIT
- CONDUIT RUN UNDERGROUND OR UNDER THE FLOOR SLAB
- CONDUIT TURNING DOWN
- CONDUIT TURNING UP
- CONDUIT BREAK

LIGHTING

FLOOR WALL CEILING

- RECESSED DOWNLIGHT
- 1X4 SURFACE MOUNTED LIGHT
- 2X4 SURFACE MOUNTED LIGHT
- 4FT WALL MOUNTED LIGHT
- 1X4 EMERGENCY LIGHT
- 2X4 EMERGENCY LIGHT
- 2X4 RECESSED LIGHT
- EXIT SIGN 1 FACE
- EXIT SIGN 1 FACE LEFT ARROW

SWITCHES/CONTROLS

FLOOR WALL CEILING

- LIGHT SWITCH - TIME OPERATED
- LIGHT SWITCH - SINGLE POLE
- LIGHT SWITCH - THREE WAY
- LIGHT SWITCH - KEY OPERATED
- LIGHT SWITCH - WITH PILOT LIGHT
- LIGHT SWITCH - LOW VOLTAGE OVER RIDE
- DIMMER
- OCCUPANCY SENSOR
- PHOTOCELL
- OCCUPANCY SENSOR POWER PACK
- OVERRIDE SWITCH
- ELECTRICAL PUSH BUTTON

POWER

- DISTRIBUTION BOARD
- 480/277V OR 208/120V RECESSED PANEL
- 480/277V OR 208/120V SURFACE MOUNTED PANEL
- TRANSFORMER
- DISCONNECT SWITCH
- SWITCH - MOTOR RATED
- FUSED DISCONNECT SWITCH
- MAGNETIC MOTOR STARTER - NEMA SIZE 1 INDICATED
- STARTER-DISCONNECT SWITCH
- MOTOR
- RELAY
- VARIABLE FREQUENCY DRIVE
- PULL BOX
- MANHOLE
- CABLE TRAY

SCHEMATIC DIAGRAM

- TERMINAL BLOCK
- NORMALLY CLOSED CONTACT
- NORMALLY OPEN CONTACT
- THROW CONTACT - SINGLE
- THROW CONTACT - DOUBLE
- SWITCH - CIRCUIT CLOSED
- SWITCH - CIRCUIT OPEN

FIRE ALARM

FLOOR WALL CEILING

- MANUAL PULL STATION
- ADDRESSABLE INTERFACE MODULE
- WATER FLOW SWITCH
- TAMPER SWITCH
- PRESSURE SWITCH
- SMOKE-HEAT DETECTOR
- SMOKE DETECTOR
- SMOKE DETECTOR - IONIZATION OF COMBUSTION
- SMOKE DETECTOR - PHOTOELECTRIC OF COMBUSTION
- HEAT DETECTOR
- HORN
- HORN-STROBE
- SPEAKER-STROBE
- STROBE LIGHT UNIT
- AUTOMATIC DOOR
- DOOR HOLDER
- FIRE ALARM CONTROL PANEL
- FIRE ALARM TERMINAL CABINET
- REMOTE ANNUNCIATOR PANEL
- CONTROL RELAY

SINGLE LINE DIAGRAM

- CIRCUIT BREAKER SWITCH
- FUSE - INLINE
- FUSE SWITCH
- FUSED-SWITCH BUS PLUG
- CIRCUIT BREAKER - ENCLOSED
- KIRK KEY INTERLOCK
- BUSDUCT
- SWITCHGEAR BUSWAY
- GROUND FAULT RELAY
- AMMETER
- DIGITAL METER U.O.N.
- TRANSFORMER - DELTA WYE-GROUNDED
- ATS - 3-POLE U.O.N. BP - WITH BYPASS ISOLATION
- BATTERY
- GENERATOR
- PANEL

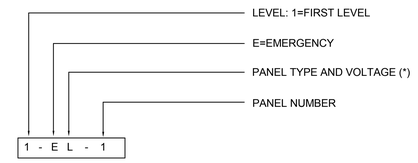
GROUNDING SYSTEM

- GROUND TEST WELL
- GROUND CABLE CONNECTION
- GROUND ROD - MIN. 3/4"□ x 10' LONG
- GROUND PLATE - WALL MOUNT
- GROUND PLATE - FLOOR MOUNT
- AIR TERMINAL - LIGHTNING ARRESTOR
- EQUIPMENT CONNECTION

ANNOTATION

- DIAMETER
- SQUARE FEET
- POINT OF CONNECTION
- POINT OF DISCONNECTION
- 1 / E-201 SYMBOLS SCALE: NOT TO SCALE — TITLE MARK; DETAIL OR PLAN NUMBER - 1; DETAIL OR PLAN REFERENCE LOCATION FOUND IN E-201
- 1 / E-501 — SECTION MARK A2T; SECTION NUMBER - 1; SECTION FOUND IN E-501
- 2 / E-201 — DETAIL BOUNDARY B; DETAIL NUMBER - 2
- 1 — SHEET KEYNOTE
- 1 — REVISION CLOUD (DELTA 1)
- 1 / E-501 — DETAIL REFERENCE; DETAIL NUMBER - 1; DETAIL FOUND IN E-501
- 1 — FEEDER TAG

PANEL DESIGNATION



*
- L :(120/208V) NORMAL BRANCH CKT. PANEL
- H :(277/480V) NORMAL BRANCH CKT. PANEL
- DL :(120/208V) NORMAL DISTRIBUTION PANEL
- DH :(277/480V) NORMAL DISTRIBUTION PANEL
- ELL :(120/208V) EMERGENCY LIFE SAFETY BRANCH CKT. PANEL
- ELH :(277/480V) EMERGENCY LIFE SAFETY BRANCH CKT. PANEL
- EEL :(120/208V) EMERGENCY EQUIPMENT BRANCH CKT. PANEL
- EEH :(277/480V) EMERGENCY EQUIPMENT BRANCH CKT. PANEL

GENERAL NOTES

1. COORDINATE EXACT LOCATION OF EQUIPMENT CONNECTION OUTLETS WITH APPROVED MANUFACTURE'S SHOP DRAWINGS.
2. JUNCTION BOXES, PULL BOXES, ETC. REQUIRING ACCESS SHALL NOT BE LOCATED IN HARD CEILING AREA, UNLESS ACCESS PANEL IS PROVIDED UNDER ARCHITECT APPROVAL.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN DRAWINGS FOR EXACT LOCATION OF LIGHT FIXTURES.
4. LIGHTING FIXTURES IN MECHANICAL EQUIPMENT SPACES & ELECTRICAL ROOMS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS, LIGHTING FIXTURES SHALL BE INSTALLED IN LOCATIONS BEST SUITED FOR EQUIPMENT ARRANGEMENT.
5. PROPOSE CONDUIT ROUTINGS ARE FOR GENERAL INFORMATION ONLY. CONTRACTOR MAY SELECT DIFFERENT ROUTING BASED ON FIELD CONDITION.
6. FOR ALL UNDER COUNTER & UNDER CABINET LIGHTS. COORDINATE MOUNTING AND QUANTITY OF LIGHT FIXTURES REQUIRED FOR THE LENGTH OF THE COUNTER/CABINET.
7. CONTRACTOR SHALL SEE ARCHITECTURAL ELEVATION DRAWINGS PRIOR TO ROUGH IN FOR LOCATION OF RECEPTACLES AND OTHER ELECTRICAL DEVICES.
8. CONTRACTOR SHALL PROVIDE A SEPARATE NEUTRAL FOR EACH GFI RECEPTACLE AND/OR CONNECT IN SUCH MANNER (IN PARALLEL) THAT IF ANY GFI RECEPTACLE TRIPS, THE DOWN STREAM RECEPTACLE(S) SHALL CONTINUE TO FUNCTION.
9. JUNCTION BOXES FOR PLANTER & IRRIGATION CONTROL SHALL BE STUB UP 6" ABOVE FINISHED LEVEL.
10. CONTRACTOR SHALL PROVIDE A SEPARATE NEUTRAL FOR COMPUTER EQUIPMENT.
11. FOR MEDICAL EQUIPMENT I.D./DESIGNATION NUMBERS, REFER TO ARCHITECTURAL DRAWINGS.
12. CONTRACTOR SHALL BE AWARE OF ALL THE REVIT MODELS OF THE OTHER TRADES, AND ENSURE THAT THEIR CONDUITS DO NOT RUN AT THE LOCATIONS OF DUCTWORK, PIPING, AND EQUIPMENT AS SHOWN ON THE REVIT MODEL. PRIORITY FOR COORDINATION GOES TO OTHER TRADES BEFORE ELECTRICAL FOR SPACE.

SHEET INDEX

SHEET NO.	SHEET TITLE	SHEET SCALE
E-001	ELECTRICAL COVER SHEET	NONE
E-101	SITE PLAN	1/8" = 1'-0"
E-201	FLOOR 1 - ELECTRICAL POWER PLAN	1/4" = 1'-0"
E-202	FLOOR 2 - ELECTRICAL POWER PLAN	1/4" = 1'-0"
E-203	ROOF - ELECTRICAL POWER PLAN	1/4" = 1'-0"
E-301	FLOOR 1 - ELECTRICAL LIGHTING PLAN	1/4" = 1'-0"
E-302	FLOOR 2 - ELECTRICAL LIGHTING PLAN	1/4" = 1'-0"
E-303	ROOF - ELECTRICAL LIGHTING PLAN	1/4" = 1'-0"
E-401	ELECTRICAL FIRE ALARM PLAN	1/4" = 1'-0"
E-402	ELECTRICAL FIRE ALARM PLAN	1/4" = 1'-0"
E-601	ELECTRICAL DETAILS	NONE
E-602	ELECTRICAL DETAILS	NONE
E-603	ELECTRICAL DETAILS	NONE
E-701	ELECTRICAL SINGLE LINE DIAGRAM	NONE
E-801	ELECTRICAL PANEL SCHEDULES	NONE
E-802	ELECTRICAL PANEL SCHEDULES	NONE
E-803	ELECTRICAL LIGHTING SCHEDULES	NONE

100% CONSTRUCTION DOCUMENTS

SCHEMATIC DESIGN	1
Revisions:	Date

CONSULTANTS:

SYSKA HENNESSY GROUP
A member company of SH Group, Inc.

Syska Hennessy Group, Inc.
425 California Street
Suite 700
San Francisco, CA 94104
Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

ARCHITECT/ENGINEERS:

HILLIARD ARCHITECTS ESTABLISHED 1988 GOING GREEN

HILLIARD ARCHITECTS, INC
251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

Drawing Title: **ELECTRICAL COVER SHEET**	Project Title: **MEDICAL SPECIALTIES BUILDING 648**		Project Number: **612-122**
Approved: Project Director	Location: VA MATHER		Building Number: **648**
	Date: **05/12/2014**	Checked: **M.H.** / Drawn: **LTA**	Drawing Number: **E-001**
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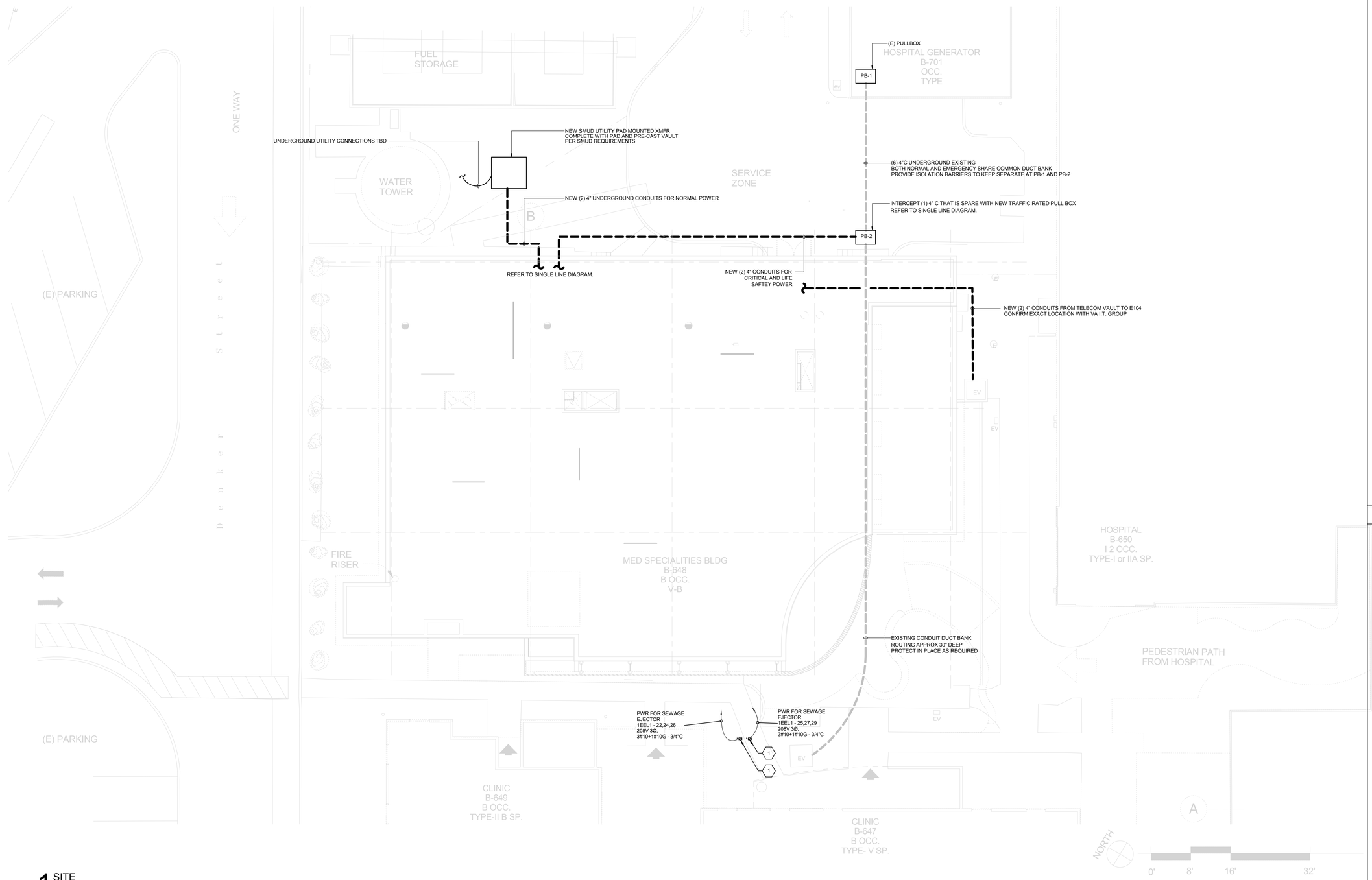
VA FORM 08-6231



1 SITE
1/8" = 1'-0"

KEY NOTES:

1 CONNECT TO SEWAGE EJECTOR REFER TO CIVIL DRAWINGS FOR EXACT LOCATION.

SHEET NOTES:

1 PROVIDE BARRIERS INALL BOXES AS REQUIRED TO ISOLATE DIFFERENT POWER TYPES (EM / STANDBY / NORMAL)

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425 California Street
Suite 700
San Francisco, CA 94104
Tel: 415.288.9060
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251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
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Drawing Title: **SITE PLAN**

Approved: Project Director

Project Title: **MEDICAL SPECIALTIES BUILDING 648**

Location: VA MATHER

Date: **05/12/2014** | Checked: **M.H.** | Drawn: **LTA**

Project Number: **612-122**

Building Number: **648**

Drawing Number: **E-101**

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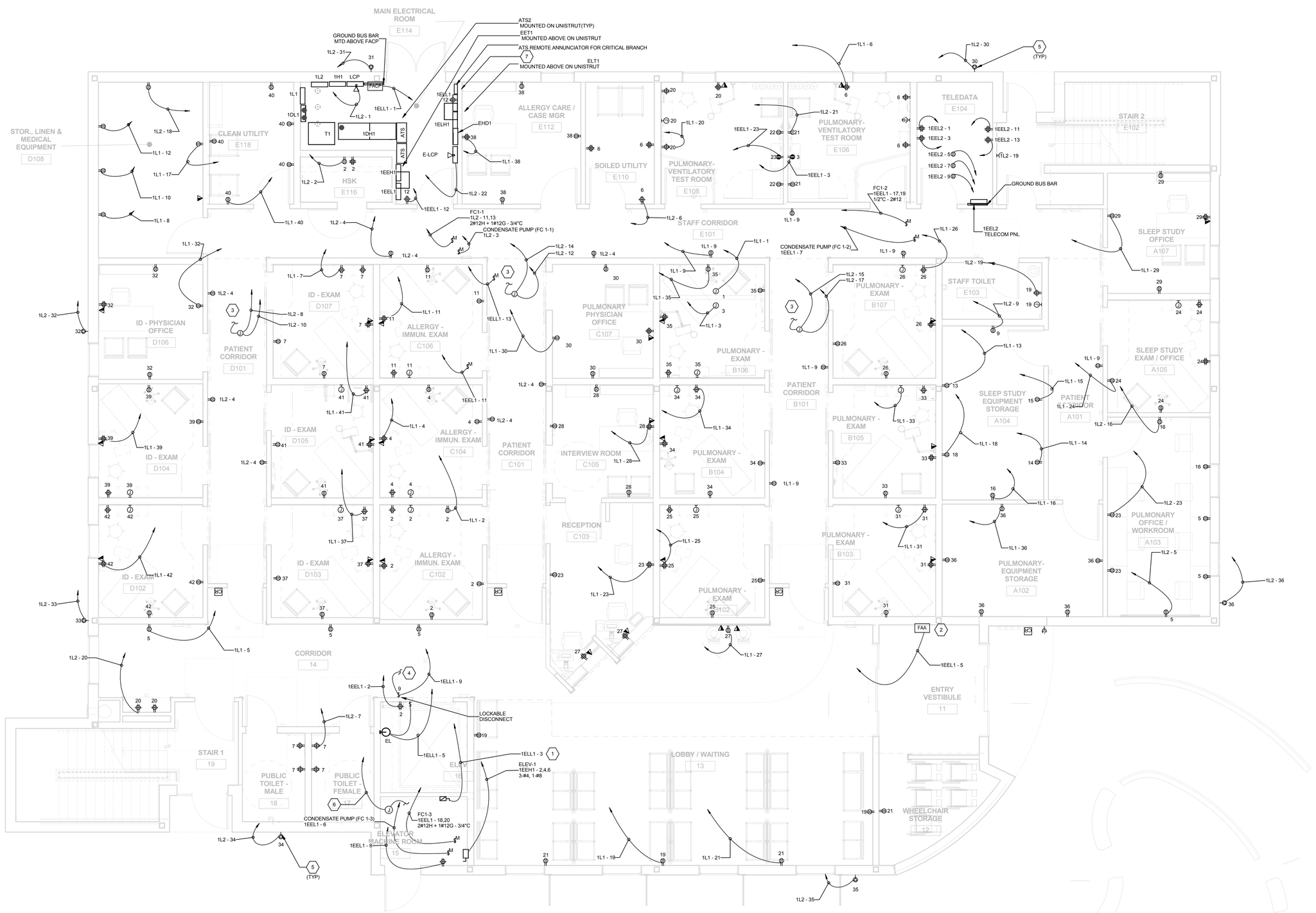

1 LEVEL 1 POWER PLAN
1/4" = 1'-0"

KEY NOTES:

1. REFER TO SINGLE LINE FOR FEEDER REQUIREMENT
2. LOCATE ANNUNCIATOR PANEL IN A CONSPICUOUS LOCATION NEAR MAIN ENTRANCE (ADDRESS SIDE). PER (CFC 1007.3.3.7A)
3. CONNECT TO DDC CONTROLLED VAV BOXES, DDC CONTROLLERS. SEE MECHANICAL APPROVED SHOP DRAWINGS FOR EXACT LOCATION AND QUANTITY OF VAV BOXES, DDC CONTROLLERS PRIOOR TO INSTALLATION (8 VAV BOXES PER CIRCUIT MAX). PROVIDE MOTOR RATED SWITCH AT EACH LOCATION. PROVIDE 120/24V STEP DOWN XFMR AT EACH VAV BOX LOCATION COMPLETE WITH ALL ACCESSORIES.
4. CONNECT TO ELEVATOR FIRE DOOR. COORDINATE EXACT REQUIREMENTS WITH ARCHITECT.
5. COLE LIGHTING DEEP HOUSING TL310-WCS WHILE IN USE WEATHER PROOF QUAD. (TYP)
6. PROVIDE PRE SIGNAL FROM ATS AUX CONTACTS IN BUILDING 702 TO ELEVATOR COMPLETE WITH ALL ACCESSORIES. RUN CONTROL WIRING IN COMMON 4" POWER CONDUIT.
7. RUN ATS CONTROL WIRING IN COMMON POWER 4" CONDUIT

SHEET NOTES:

1. WHERE HOMERUN IS UNLABLED, REFER TO DEVICE TAG THAT CONTAINS PANEL NAME AND CIRCUIT
2. ALL OUTDOOR EQUIPMENT AND DEVICES SHALL BE WEATHER PROOF.
3. MAX 3 CIRCUITS IN EACH HOMERUN.
4. FEEDER LENGTHS SHOWN FOR VOLTAGE DROP CALCULATION ONLY, AND SHALL NOT BE USED FOR TAKE-OFF LENGTHS OR BIDDING PURPOSES.
5. REFER TO EQUIPMENT FEEDER SCHEDULE ON THIS SHEET FOR ADDITIONAL FEEDER REQUIREMENTS. PROVIDE UNMARKED PER DRAWINGS AND SPECS CAN REQUIRE.

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Syska Hennessy Group, Inc.
425 California Street
Suite 700
San Francisco, CA 94104
Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

ARCHITECT/ENGINEERS:

ESTABLISHED 1988 HILLIARD ARCHITECTS GOING GREEN

HILLIARD ARCHITECTS, INC
251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

Drawing Title: **FLOOR 1 - ELECTRICAL POWER PLAN**

Approved: Project Director

Project Title: **MEDICAL SPECIALTIES BUILDING 648**

Location: VA MATHER

Date: **05/12/2014** | Checked: **M.H.** | Drawn: **LTA**

Project Number: **612-122**

Building Number: **648**

Drawing Number: **E-201**

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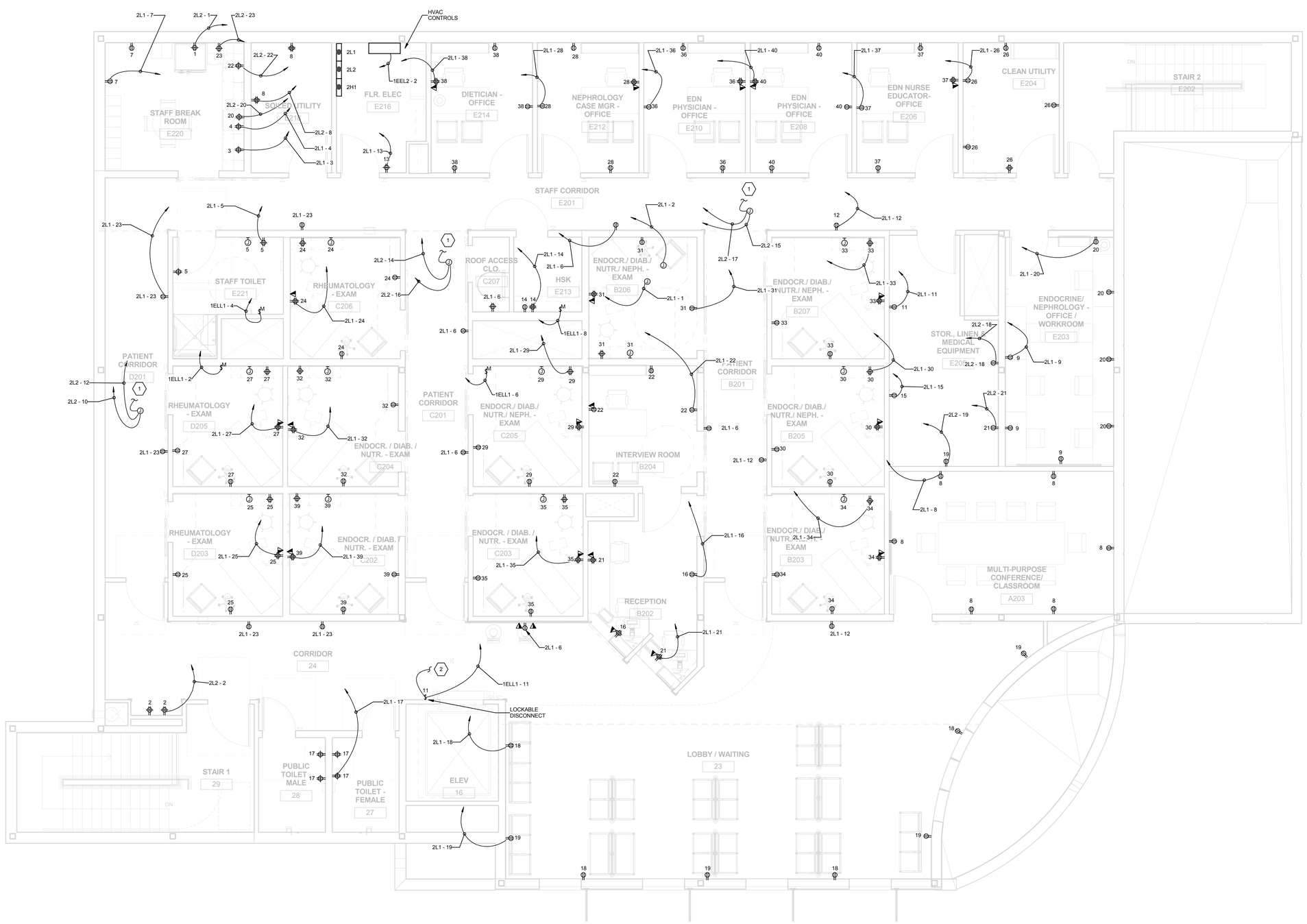

1 LEVEL 2 POWER PLAN
1/4" = 1'-0"

KEY NOTES:

1. CONNECT TO DDC CONTROLLED VAV BOXES, DDC CONTROLLERS. SEE MECHANICAL APPROVED SHOP DRAWINGS FOR EXACT LOCATION AND QUANTITY OF VAV BOXES, DDC CONTROLLERS PRIOOR TO INSTALLATION (8 VAV BOXES PER CIRCUIT MAX). PROVIDE MOTOR RATED SWITCH AT EACH LOCATION. PROVIDE 120/24V STEP DOWN XFMR AT EACH VAV BOX LOCATION COMPLETE WITH ALL ACCESSORIES.
2. CONNECT TO ELEVATOR FIRE DOOR. COORDINATE EXACT REQUIREMENTS WITH ARCHITECT.

SHEET NOTES:

1. WHERE HOMERUN IS UNLABLED, REFER TO DEVICE TAG THAT CONTAINS PANEL NAME AND CIRCUIT
2. ALL OUTDOOR EQUIPMENT AND DEVICES SHALL BE WEATHER PROOF.
3. MAX 3 CIRCUITS IN EACH HOMERUN.
4. FEEDER LENGTHS SHOWN FOR VOLTAGE DROP CALCULATION ONLY., AND SHALL NOT BE USED FOR TAKE-OFF LENGTHS OR BIDDING PURPOSES.
5. REFER TO EQUIPMENT FEEDER SCHEDULE ON THIS SHEET FOR ADDITIONAL REEDER REQUIREMENTS. PROVIDE UNMARKED PER DRAWINGS AND SPECS CAN REQUIRE.

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CONSULTANTS:

SYSKA HENNESSY GROUP
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Syska Hennessy Group, Inc.
425 California Street
Suite 700
San Francisco, CA 94104
Tel: 415.288.9060
Fax: 415.835.0385
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ARCHITECT/ENGINEERS:

ESTABLISHED 1988 HILLIARD ARCHITECTS GOING GREEN

HILLIARD ARCHITECTS, INC
251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

Drawing Title	**FLOOR 2 - ELECTRICAL POWER PLAN**
Approved: Project Director	
Project Title	**MEDICAL SPECIALTIES BUILDING 648**
Location	VA MATHER
Date	**05/12/2014**
Checked	**M.H.**
Drawn	**LTA**
Project Number	**612-122**
Building Number	**648**
Drawing Number	**E-202**
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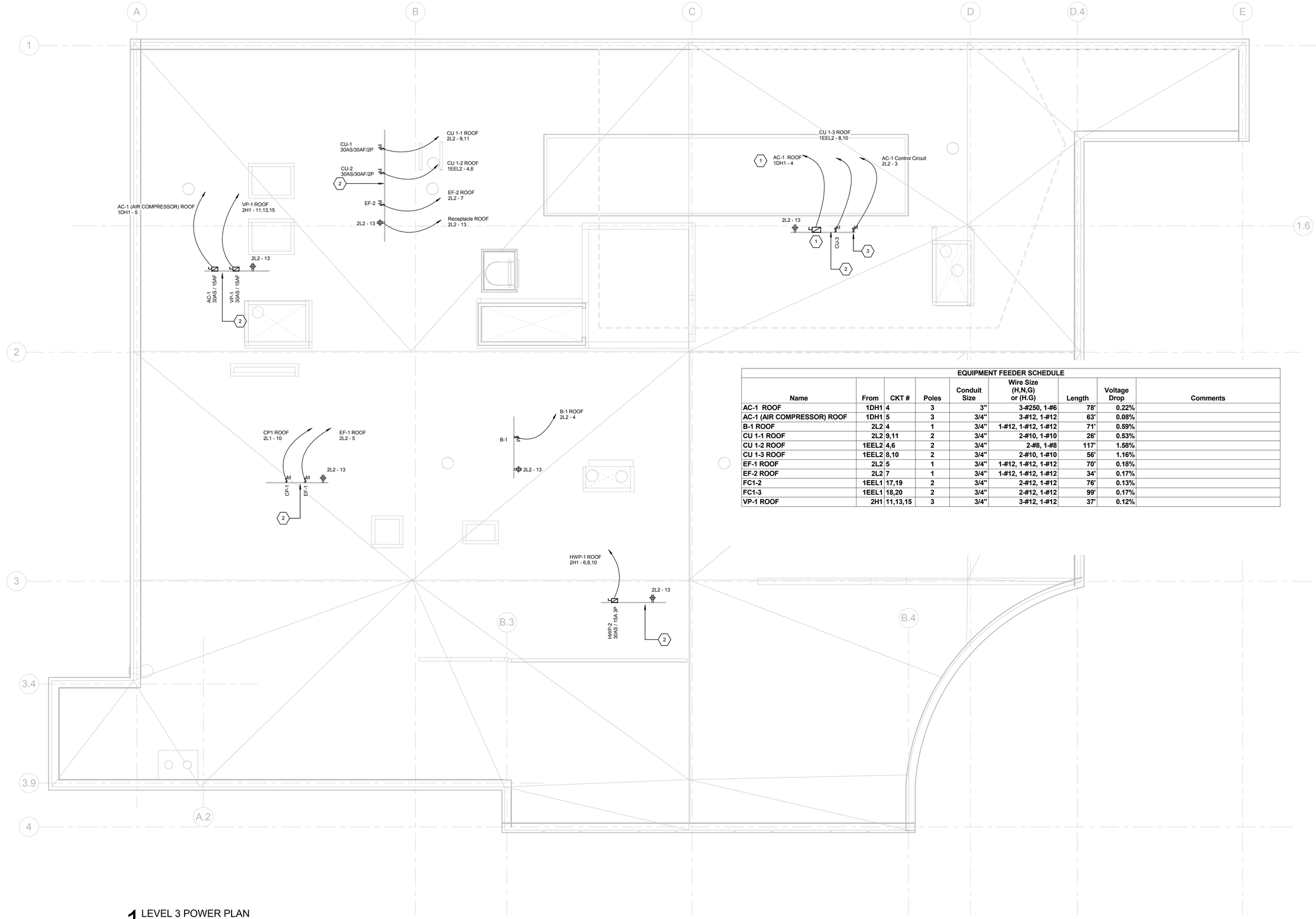

EQUIPMENT FEEDER SCHEDULE								
Name	From	CKT #	Poles	Conduit Size	Wire Size (H,N,G) or (H.G)	Length	Voltage Drop	Comments
AC-1 ROOF	1DH1	4	3	3"	3-#250, 1-#6	78'	0.22%	
AC-1 (AIR COMPRESSOR) ROOF	1DH1	5	3	3/4"	3-#12, 1-#12	63'	0.08%	
B-1 ROOF	2L2	4	1	3/4"	1-#12, 1-#12, 1-#12	71'	0.59%	
CU 1-1 ROOF	2L2	9,11	2	3/4"	2-#10, 1-#10	26'	0.53%	
CU 1-2 ROOF	1EEL2	4,6	2	3/4"	2-#8, 1-#8	117'	1.58%	
CU 1-3 ROOF	1EEL2	8,10	2	3/4"	2-#10, 1-#10	56'	1.16%	
EF-1 ROOF	2L2	5	1	3/4"	1-#12, 1-#12, 1-#12	70'	0.18%	
EF-2 ROOF	2L2	7	1	3/4"	1-#12, 1-#12, 1-#12	34'	0.17%	
FC1-2	1EEL1	17,19	2	3/4"	2-#12, 1-#12	76'	0.13%	
FC1-3	1EEL1	18,20	2	3/4"	2-#12, 1-#12	99'	0.17%	
VP-1 ROOF	2H1	11,13,15	3	3/4"	3-#12, 1-#12	37'	0.12%	

KEY NOTES:

1. REFER TO SINGLE LINE FOR FEEDER REQUIREMENT
2. MOUNTED ON UNISTRUT. REFER TO MECH FOR EXACT LOCATION.
3. CONTROL CIRCUIT FOR AC-1

SHEET NOTES:

1. WHERE HOMERUN IS UNLABLED, REFER TO DEVICE TAG THAT CONTAINS PANEL NAME AND CIRCUIT
2. ALL OUTDOOR EQUIPMENT AND DEVICES SHALL BE WEATHER PROOF.
3. MAX 3 CIRCUITS IN EACH HOMERUN.
4. FEEDER LENGTHS SHOWN FOR VOLTAGE DROP CALCULATION ONLY., AND SHALL NOT BE USED FOR TAKE-OFF LENGTHS OR BIDDING PURPOSES.
5. REFER TO EQUIPMENT FEEDER SCHEDULE ON THIS SHEET FOR ADDITIONAL REEDER REQUIREMENTS. PROVIDE UNMARKED PER DRAWINGS AND SPECS CAN REQUIRE.

1 LEVEL 3 POWER PLAN
1/4" = 1'-0"

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CONSULTANTS:

SYSKA HENNESSY GROUP
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Syska Hennessy Group, Inc.
425 California Street
Suite 700
San Francisco, CA 94104
Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

ARCHITECT/ENGINEERS:

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251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

Drawing Title: **ROOF - ELECTRICAL POWER PLAN**

Approved: Project Director

Project Title: **MEDICAL SPECIALTIES BUILDING 648**

Location: VA MATHER

Date: **05/12/2014** | Checked: **M.H.** | Drawn: **LTA**

Project Number: **612-122**

Building Number: **648**

Drawing Number: **E-203**

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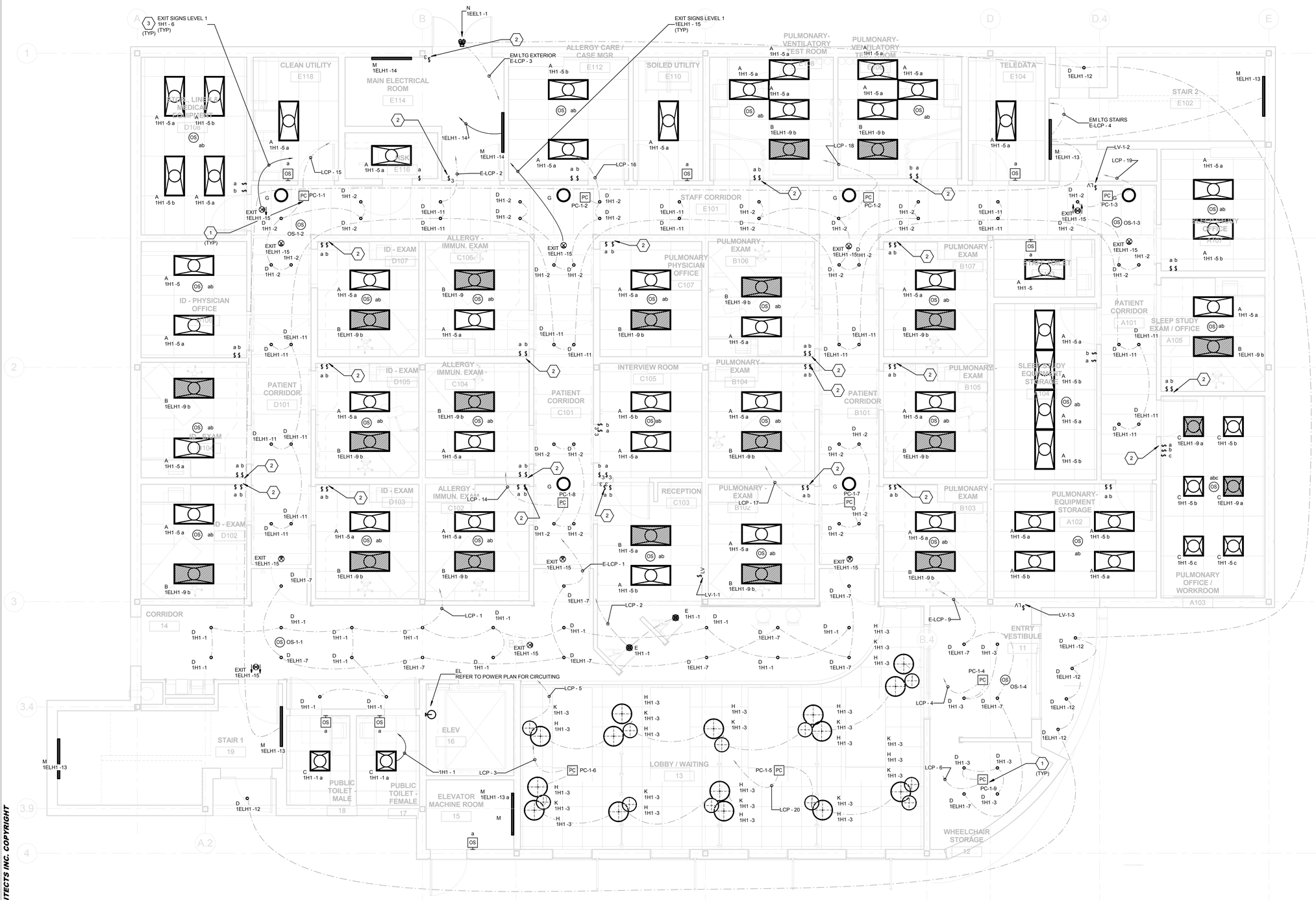

1 LEVEL 1 LIGHTING CEILING PLAN
1/4" = 1'-0"

KEY NOTES:

1 PHOTOCELL CONNECTION TO LIGHTING CIRCUIT SHOWN TO ASSIST IN PROGRAMMING OF LIGHTING CONTROL PANEL. PROVIDE SEPARATE LOW VOLTAGE CONNECTION FROM PHOTOCELL TO DESIGNATED LCP AND PROGRAM TO CONTROL CONNECTED BRANCH. TYPICAL FOR ALL PHOTOCELLS SHOWN.

2 PROVIDE SHUNT TRIP DEVICE

3 PROVIDE NORMAL POWER TO ALL EXIT SIGNS ON LEVEL 1 TO THIS CKT. (TYP)

SHEET NOTES:

1 WHERE HOMERUN IS UNLABLED, REFER TO DEVICE TAG THAT CONTAINS PANEL NAME AND CIRCUIT

2 ALL OUTDOOR EQUIPMENT AND DEVICES SHALL BE WEATHER PROOF.

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Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

ARCHITECT/ENGINEERS:

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HILLIARD ARCHITECTS, INC
251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
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Drawing Title: **FLOOR 1 - ELECTRICAL LIGHTING PLAN**

Approved: Project Director

Project Title: **MEDICAL SPECIALTIES BUILDING 648**

Location: VA MATHER

Date: **05/12/2014** | Checked: **M.H.** | Drawn: **LTA**

Project Number: **612-122**

Building Number: **648**

Drawing Number: **E-301**

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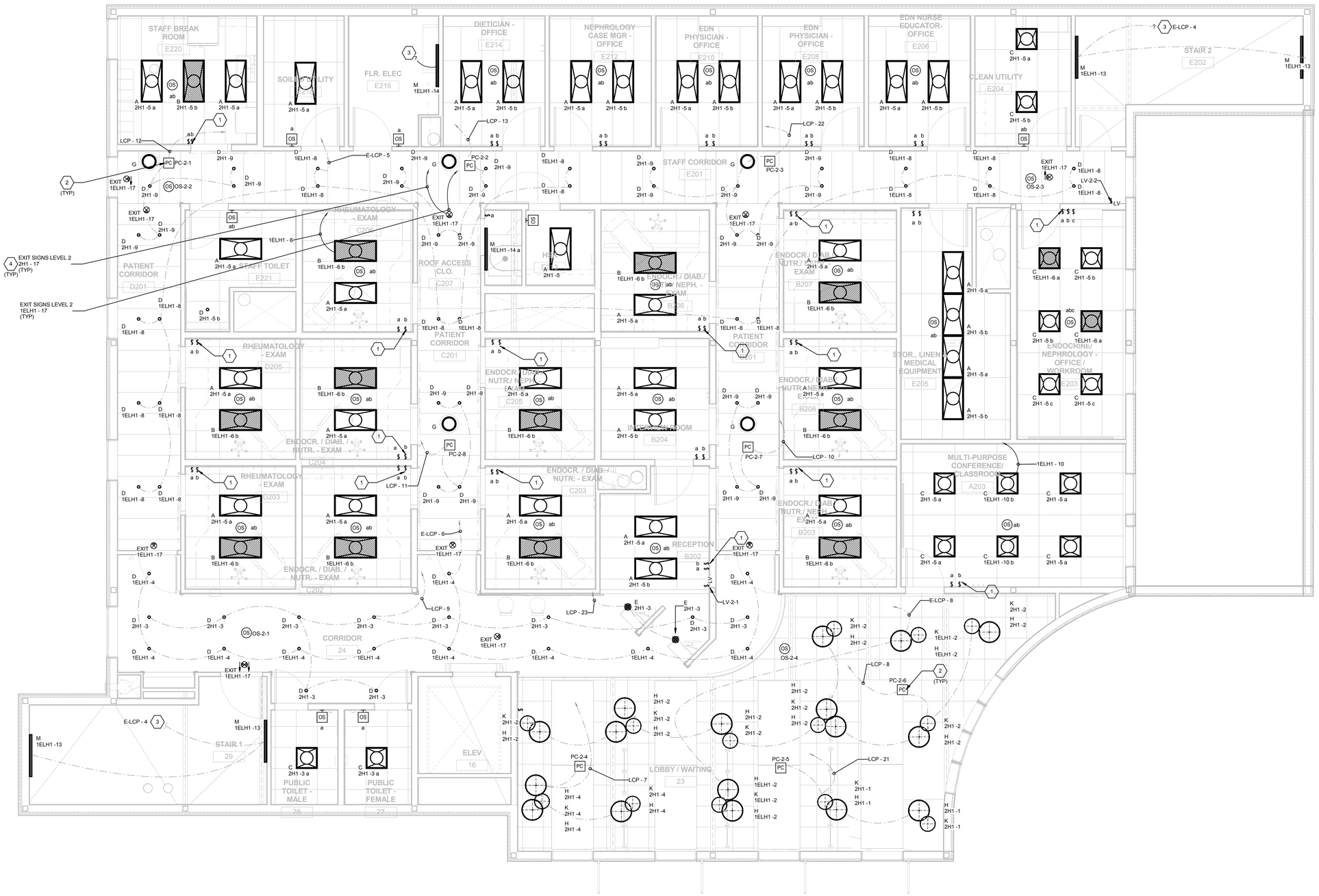

1 LEVEL 2 LIGHTING CEILING PLAN
1/4" = 1'-0"

KEY NOTES:

1. PROVIDE SHUNT TRIP DEVICE
2. PHOTOCELL CONNECTION TO LIGHTING CIRCUIT SHOWN TO ASSIST IN PROGRAMMING OF LIGHTING CONTROL PANEL. PROVIDE SEPARATE LOW VOLTAGE CONNECTION FROM PHOTOCELL TO DESIGNATED LCP AND PROGRAM TO CONTROL CONNECTED BRANCH. TYPICAL FOR ALL PHOTOCELLS SHOWN.
3. CONNECTED AND CONTROLLED TO SAME CIRCUIT SHOWN ON FLOOR BELOW.
4. PROVIDE NORMAL POWER TO ALL EXIT SIGNS ON LEVEL 2 TO THIS CKT. (TYP)

SHEET NOTES:

1. WHERE HOMERUN IS UNLABLED, REFER TO DEVICE TAG THAT CONTAINS PANEL NAME AND CIRCUIT
2. ALL OUTDOOR EQUIPMENT AND DEVICES SHALL BE WEATHER PROOF.

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Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

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251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

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Project Title	MEDICAL SPECIALTIES BUILDING 648
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Date	05/12/2014
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Drawn	LTA
Project Number	612-122
Building Number	648
Drawing Number	E-302
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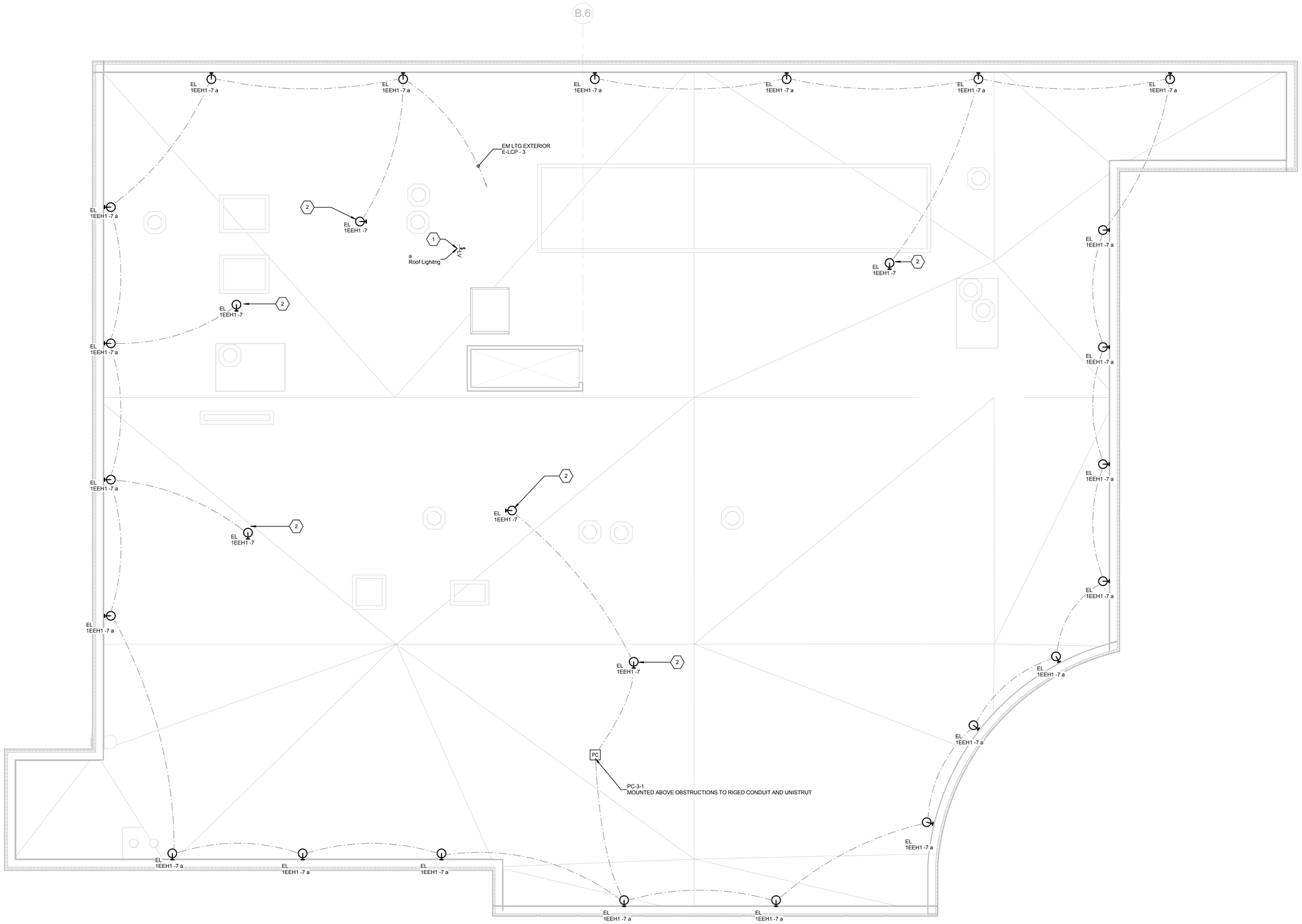

1 LEVEL 3 LIGHTING PLAN
1/4" = 1'-0"

KEY NOTES:

1 MOUNTED ON UNISTRUT OR RIGID CONDUIT.
2 MOUNT ON UNISTRUT.

SHEET NOTES:

1 WHERE HOMERUN IS UNLABLED, REFER TO DEVICE TAG THAT CONTAINS PANEL NAME AND CIRCUIT
2 ALL OUTDOOR EQUIPMENT AND DEVICES SHALL BE WEATHER PROOF.

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Suite 700
San Francisco, CA 94104
Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

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HILLIARD ARCHITECTS, INC
251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

Drawing Title: **ROOF - ELECTRICAL LIGHTING PLAN**

Approved: Project Director

Project Title: **MEDICAL SPECIALTIES BUILDING 648**

Location: VA MATHER

Date: **05/12/2014** | Checked: **M.H.** | Drawn: **LTA**

Project Number: **612-122**

Building Number: **648**

Drawing Number: **E-303**

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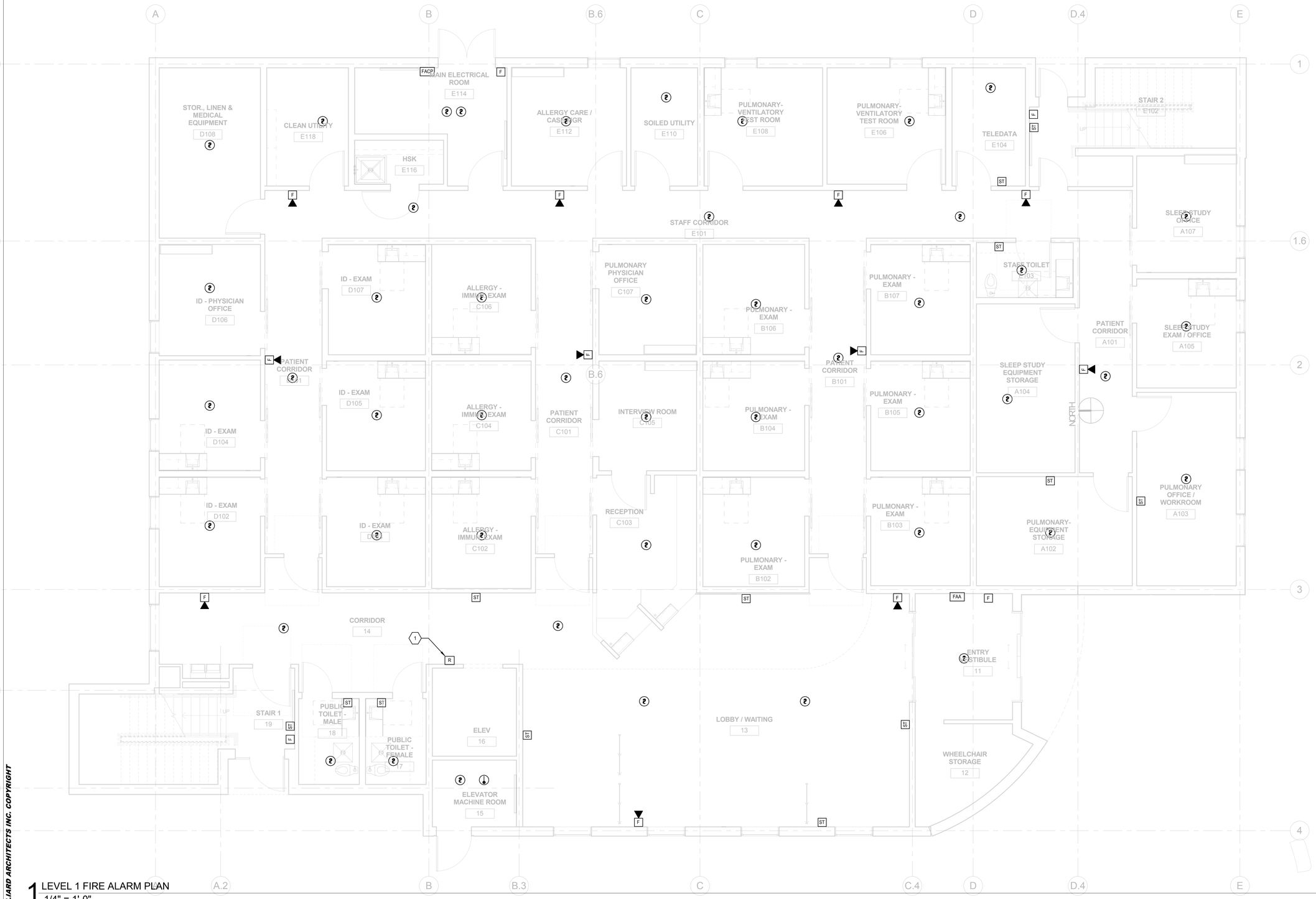

1 LEVEL 1 FIRE ALARM PLAN
1/4" = 1'-0"

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KEY NOTES:

1 PROVIDE RELAY TO CONTROL ELEVATOR SMOKE DOORS AND FOR ELEVATOR RECALL.

SHEET NOTES:

1 ALL STROBE DEVICES SHALL BE FIELD SELECTABLE CANDELA RATINGS.

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Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

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HILLIARD ARCHITECTS, INC
251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

Drawing Title: **ELECTRICAL FIRE ALARM PLAN**

Approved: Project Director

Project Title: **MEDICAL SPECIALTIES BUILDING 648**

Location: VA MATHER

Date: **05/12/2014** | Checked: **M.H.** | Drawn: **Author**

Project Number: **612-122**

Building Number: **648**

Drawing Number: **E-401**

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

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KEY NOTES:

1 MOUNT AT TOP OF ELEVATOR SHAFT.
2 PROVIDE RELAY TO CONTROL ELEVATOR SMOKE DOORS AND FOR ELEVATOR RECALL.

SHEET NOTES:

1 ALL STROBE DEVICES SHALL BE FIELD SELECTABLE CANDELA RATINGS.

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SYSKA HENNESSY GROUP
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425 California Street
Suite 700
San Francisco, CA 94104
Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

ARCHITECT/ENGINEERS:

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HILLIARD ARCHITECTS, INC
251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

Drawing Title: **ELECTRICAL FIRE ALARM PLAN**

Approved: Project Director

Project Title: **MEDICAL SPECIALTIES BUILDING 648**

Location: VA MATHER

Date: **05/12/2014** | Checked: **M.H.** | Drawn: **Author**

Project Number: **612-122**

Building Number: **648**

Drawing Number: **E-402**

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DB-6E
480/277V, 3PH, 4W
FED FROM DB-EG2

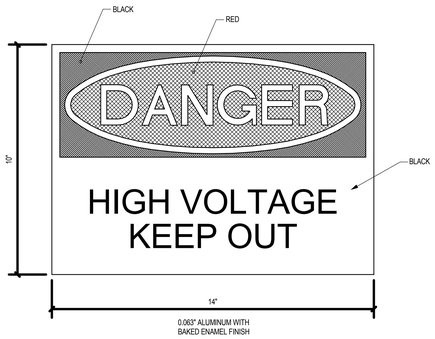
1. PROVIDE ENGRAVED LAMINATED PLASTIC NAMEPLATES, 1.5"x5", SCREWED ON TO EQUIPMENT.
LINE DESIGNATION AND HEIGHT OF LETTERING ARE:

LINE ONE 1/2" LETTERS:	EQUIPMENT DESIGNATION
LINE TWO 3/8" LETTERS:	VOLTAGE, PHASE, NUMBER OF WIRES
LINE THREE 3/8" LETTERS:	SOURCE IDENTIFICATION

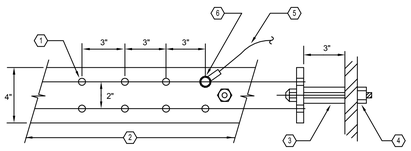
2. USE THE FOLLOWING COLOR CODING FOR THE NAMEPLATE WITH WHITE ENGRAVED LETTERING:

NORMAL =	BLACK BACKGROUND
EMERGENCY =	RED BACKGROUND
ISOLATED GROUND (CLEAN POWER) ON NORMAL	= YELLOW
ISOLATED GROUND (CLEAN POWER) ON UPS	= GREEN

DISTRIBUTION BOARD / PANEL BOARD NAME PLATE (8)



DANGER SIGN (7)



NOTES:

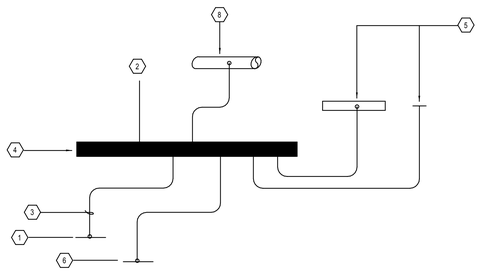
1. DRILLED HOLE 7/16" DIAMETER
2. BAR LENGTH AS REQUIRED, 1/4" THICK COPPER
3. FASTENER, 3'-0" ON CENTERS, MIN. TWO
4. BOLTED TO STRUCTURAL STEEL COLUMN
5. GROUNDING CABLE CONNECTED TO RACKS, PEDESTALS, ETC.
6. 3/8" NUT, BOLT, LOCKWASHER AND CABLE TERMINAL ASSEMBLY

COPPER GROUND BUS (6)

NOT TO SCALE

GENERAL NOTES:

ALL TERMINATION SHALL BE EXOTHERMIC OR IRREVERSIBLE U.L. LISTED COMPRESSION GROUNDING FITTINGS.

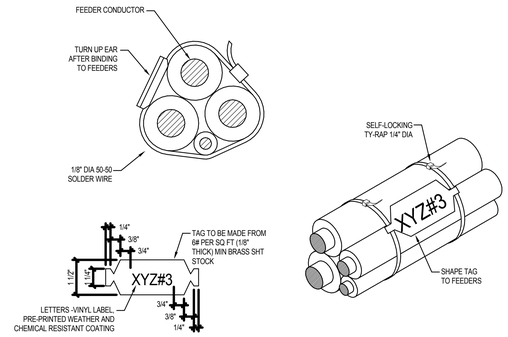


NOTES:

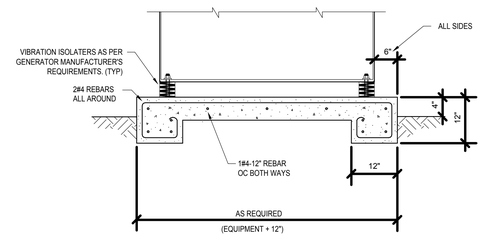
1. "UFER" GROUND
2. BOND TO THE OTHER SERVICE GROUND
3. GROUNDING ELECTRODE CONDUCTOR CONNECTION TO MAIN GROUND BUS (MIN. #3/0 AWG).
4. MAIN GROUND BUS.
5. GROUND BUS IN DISTRIBUTION BOARDS, MCC, DRY TYPE TRANSFORMER, ETC. (TYPICAL).
6. 1#6-1/2"C. INSULATED SOLID COPPER TO MAIN TELEPHONE ROOM. TERMINATE PER TELEPHONE COMPANY REQUIREMENTS
7. BUILDING STEEL.
8. COLD WATER PIPE (METALLIC).

GROUNDING SCHEMATIC (5)

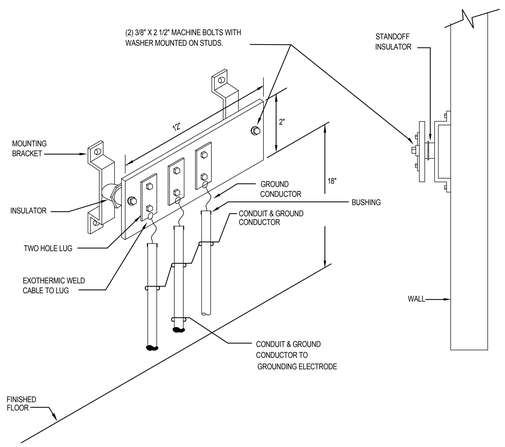
NOT TO SCALE



FEEDER TAG (4)

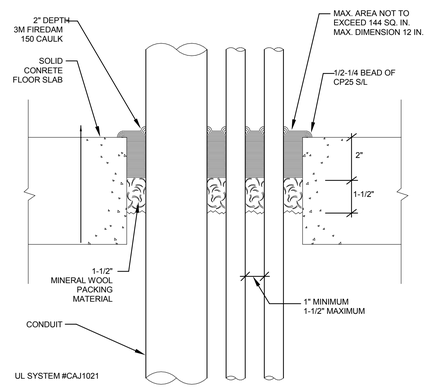


EQUIPMENT PAD AND ISOLATION DETAIL (2)



BUILDING GROUND BUS ASSEMBLY (3)

NOT TO SCALE



FIRE PROOFING THROUGH CONCRETE SLAB (1)

NOT TO SCALE

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Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

ARCHITECT/ENGINEERS:

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HILLIARD ARCHITECTS, INC
251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
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Drawing Title	**ELECTRICAL DETAILS**
Approved: Project Director	
Project Title	**MEDICAL SPECIALTIES BUILDING 648**
Project Number	**612-122**
Building Number	**648**
Location	VA MATHER
Date	**05/12/2014**
Checked	**M.H.**
Drawn	**LTA**
Drawing Number	**E-601**
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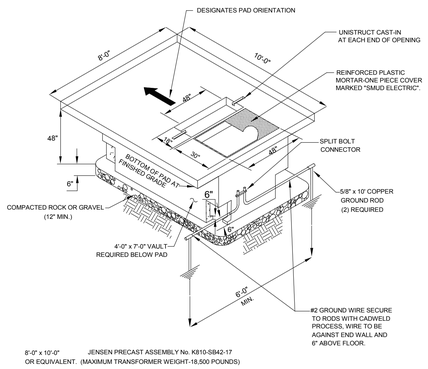
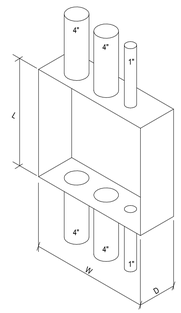


NOTES:

1. PRIOR TO INSTALLATION, CONTACT SMUD TO SCHEDULE INSPECTION AT LEAST 24 HOURS IN ADVANCE.
2. THE CONTRACTOR MUST INSTALL THE GROUND RODS AND GROUNDING SYSTEM CALLED FOR IN THIS STANDARD WHILE IN THE PRESENCE OF THE BWP INSPECTOR AND TO THE SATISFACTION OF THOSE REQUIREMENTS DETAILED IN THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE, ARTICLES 250-83 AND 250-84.
3. BACKFILL SOIL IS TO BE COMPACTED TO PREVENT MOVEMENT OR SLIPPAGE OF THE SLAB OR BOX.

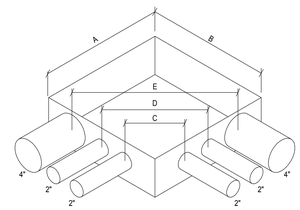
8'x10' THREE PHASE TRANSFORMER PAD DETAILS (TO BE CONFIRMED WITH SMUD) 6



EXAMPLE:
L = 4" x 8 = 32"
W = 4"+4"+1"+6 = 15"
D = 4" x 1.5 = 6"

NOTE:
SIZES MAY NEED TO BE INCREASED TO MEET REQUIREMENTS OF NEC 370-28, COMPLY WITH STANDARD BOX SIZES OR FOR SHIELDED CABLES.

PULL BOX PULLING SIZING ("STRAIGHT" PULLS) 4



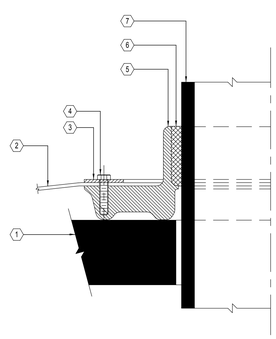
EXAMPLE:
A = (6 x 4") +2"+2" = 28"
B = (6 x 4") +2"+2" = 28"
C = (6 x 2") = 12" MINIMUM
D = (6 x 2") = 12" MINIMUM
E = (6 x 4") = 24"

NOTE:
SIZES MAY NEED TO BE INCREASED TO MEET REQUIREMENTS OF NEC 370-28, COMPLY WITH STANDARD BOX SIZES OR FOR SHIELDED CABLES.

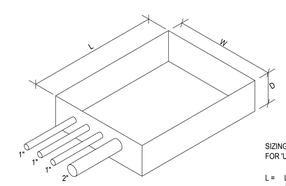
PULL BOX PULLING SIZING ("L" PULLS) 2

NOTES:

1. ROOF STRUCTURE
2. FLASHING OR ROOFING
3. CLAMP RING
4. BRONZE BOLT
5. CAST IRON SLEEVE
6. CAULKING/PACKING
7. RIGID STEEL CONDUIT



ROOF SLEEVE, WATERTIGHT, CAULKED 5



EXAMPLE:
L = 6 x 2" = 12"+1"+1"+1" = 15"
W = 2" + 1" + 1" + 1" = 5 x 2 = 10"
D = 2" x 1.5 = 3"

SIZING JUNCTION BOXES FOR 'U' PULLS

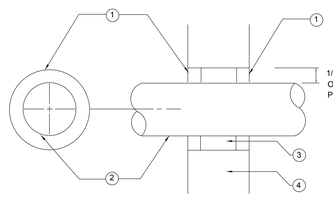
L = LARGEST RACEWAY x 6 + DIAMETER OF ALL OTHER RACEWAYS IN ONE ROW

W = TOTAL DIAMETER OF ALL RACEWAYS IN ONE ROW + TOTAL NUMBER OF RACEWAY IN THAT ROW x 2

D = LARGEST RACEWAY IN EACH ROW x 1.5

NOTE:
SIZES MAY NEED TO BE INCREASED TO MEET REQUIREMENTS OF NEC 370-28, COMPLY WITH STANDARD BOX SIZES OR FOR SHIELDED CABLES.

PULL BOX PULLING SIZING ("U" PULLS) 3



NOTES:

1. 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
2. PENETRATING ITEM - PIPE OR CONDUIT.
3. STUFFED CERAMIC FIBER INSULATION - CENTER 2/3 OF OPENING.
4. WALL OR FLOOR
5. ELECTRICAL CONDUITS PENETRATING FIRE RATED WALLS SHALL BE SEALED IN A SMOKE TIGHT MANNER WITH SEALENT MATERIAL OF THE SAME RATING OF THE WALL FIRE BARRIER HILTI UL SYSTEM NO CAJ1149 FIRE RATING - 2 HOURS.
6. ALL FIRE SEALANT INSTALLATION SHALL BE IN CONFORMANCE WITH UL SYSTEM.

TYPICAL CONDUIT PENETRATION DETAIL 1

1 DETAIL 2
12" = 1'-0"

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251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
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Drawing Title: **ELECTRICAL DETAILS**	Project Title: **MEDICAL SPECIALTIES BUILDING 648**		Project Number: **612-122**
Approved: Project Director	Location: VA MATHER		Building Number
	Date: **05/12/2014**	Checked: **M.H.** / Drawn: **LTA**	Drawing Number: **E-602**
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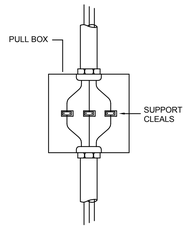
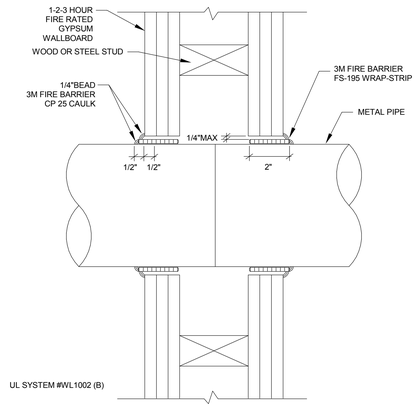


CONDUCTORS		
AWG OR CIRCULAR-MIL SIZE OF WIRE	SUPPORT OF CONDUCTORS IN VERTICAL RECEWAYS	COPPER
18 AWG THROUGH 8 AWG	NOT GREATER THAN	100 FEET
6 AWG THROUGH 1/0 AWG	NOT GREATER THAN	100 FEET
2/0 AWG THROUGH 4/0 AWG	NOT GREATER THAN	80 FEET
OVER 4/0 AWG THROUGH 350 KCMIL	NOT GREATER THAN	60 FEET
OVER 350 KCMIL THROUGH 500 KCMIL	NOT GREATER THAN	50 FEET

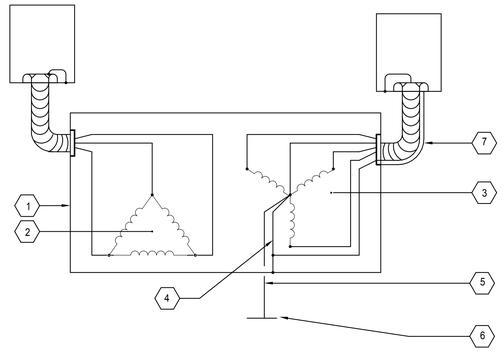
SUPPORTING CONDUCTORS IN VERTICAL RACEWAYS

6



FIREPROOFING THROUGH GYPSUM WALL

4



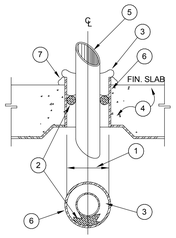
NOTES:

1. ENCLOSURE
2. PRIMARY WINDING
3. SECONDARY WINDING
4. BOND TO ENCLOSURE
5. GROUNDING ELECTRODE CONDUCTOR
6. BUILDING MAIN GROUND BUS
7. FLEXIBLE CONDUIT WITH GROUNDING CONDUCTOR

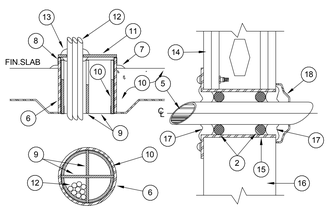
TRANSFORMER GROUNDING

SCALE : NONE

2



CONDUIT AND SLEEVE THRU FLOOR SLAB



CABLE & SLEEVE THRU FLOOR SLAB

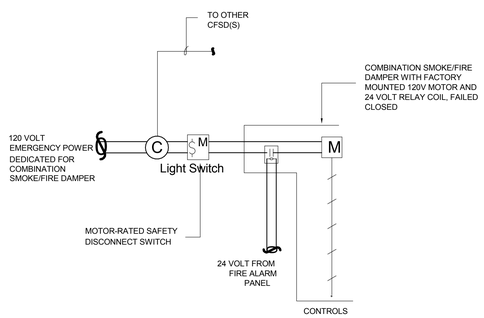
CONDUIT & SLEEVE THRU WALL

NOTES:

1. 6" MAXIMUM DIAMETER SLEEVE. SLEEVE TO BE SIZED TO ALLOW ~8" OF ANNULAR SPACE AROUND CONDUIT.
2. BACKER ROD SET SO THAT TOP OF ROD IS 1" INTO OPENING.
3. APPLY GENEROUS PORTION OF FIRE BARRIER CAULK COVERING ALL EXPOSED EDGES OF SLEEVE AND FILLING ALL VOIDS FROM BACKER ROD TO OUTSIDE EDGE OF SLEEVE AND BETWEEN CONDUIT AND SLEEVE.
4. FLOOR SLAB (CONSTRUCTION VARIES). REFER TO STRUCTURAL DRAWINGS FOR TYPE AND THICKNESS.
5. STEEL CONDUIT (4" MAXIMUM) CENTERED IN OPENING. MAXIMUM (1) ONE CONDUIT PER OPENING.
6. STANDARD WEIGHT STEEL PIPE SLEEVE. SLEEVE TO EXTEND 2" ABOVE FINISHED SLAB.
7. PROVIDE A ~4" BEAD OF FIRE BARRIER CAULK AROUND SLEEVE COLLAR AT FINISHED SLAB.
8. BEND METAL HANGER OVER TOP OF SLEEVE AND POSITION SO THAT TOP OF INTUMESCENT ELASTOMERIC MATERIAL IS RECESSED ~4" TO ~6" BELOW TOP OF COLLAR.
9. INTERLOCKING INTUMESCENT ELASTOMERIC FILL MATERIAL KIT. KIT SIZED FOR OPENING DIAMETER.
10. FILL MATERIAL WALL WRAP SET INTO SLEEVE COLLAR WITH ALUMINUM FOIL SIDE SHOWING. INSIDE WALL OF SLEEVE TO BE CAULKED WITH FIRE BARRIER CAULK PRIOR TO INSTALLING WALL WRAP.
11. END CAP OF INTUMESCENT ELASTOMERIC MATERIAL CUT TO FIT IN FIELD AND CAULKED AROUND EDGE TO SECURE CAP TO SLEEVE COLLAR.
12. COMMUNICATION SYSTEM CABLES. MAXIMUM 30% FILL. CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF OPENING. WHERE SLEEVES ARE FOR FUTURE CABLES, PROVIDE END CAPS.
13. CAULK BEADS AROUND CABLES ON BOTH SIDES OF END CAP. APPLY SEVERAL BEADS OF CAULK AROUND MULTIPLE LAYERS OF CABLES.
14. DRY WALL PARTITION WITH ONE OR TWO LAYERS OF GYPSUM WALL BOARD. REFER TO ARCHITECTURAL DRAWINGS FOR WALL CONSTRUCTION.
15. STEEL PIPE SLEEVE WITH ANCHOR TABS ON ONE SIDE SECURED TO WALL WITH TOGGLE BOLTS (DRYWALL) OR LEAD EXPANSION ANCHOR (MASONRY OR CONCRETE). PROVIDE SLEEVES FOR ALL CONDUITS AT EXTERIOR WALL ABOVE GRADE AND ALL CONDUITS 1.25" TO 4" DIAMETER THROUGH INTERIOR WALLS. FOR CONDUITS LESS THAN 1.25" PENETRATING FIRE AND/OR SMOKE PARTITIONS ON BUILDING INTERIOR, SLEEVE MAY BE OMITTED.
16. MASONRY OR CONCRETE PARTITION. REFER TO ARCHITECTURAL DRAWINGS.
17. INTUMESCENT ELASTOMERIC CAULKING COMPOUND FORCED INTO ANNULAR SPACE WITH A MINIMUM ~4" BEAD APPLIED TO PIPE AND OVER EDGE OF SLEEVE AT SLEEVE/WALL JOINT.
18. ESCUTCHEON AT WALL CONDUITS WHERE EXPOSED TO VIEW.
19. 16 GAUGE ROUND SHEET METAL. DAM EXTENDED 2" ABOVE FINISHED SLAB.
20. 6" MAXIMUM DIAMETER CORED HOLE SIZED TO ALLOW ~8" OF ANNULAR SPACE AROUND CONDUIT. OBTAIN WRITTEN APPROVAL FROM ARCHITECT PRIOR TO CORE DRILLING STRUCTURAL MEMBERS.

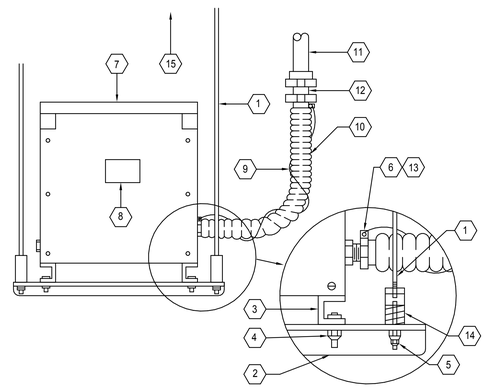
CABLE and CONDUIT PENETRATIONS

5



COMBINATION FIRE SMOKE DAMPER WIRING DIAGRAM

3



NOTES:

1. 1/2"D. THREADED STEEL ROD SUPPORT FROM STRUCTURE ABV.
2. ANGLE IRON SUPPORT 3" X 3" 2 REQ'D., LENGTH TO SUIT
3. TRANSFORMER BASE CHANNEL
4. 1/2"D. NUT,BOLT & LOCKWASHER 4 REQUIRED
5. 1/2"D. NUT,LOCKNUT & LOCKWASHER 4 REQUIRED
6. SECONDARY CONNECTION DETAIL, PRIMARY - SIMILAR
7. TRANSFORMER
8. NAMEPLATE-CONNECTION DIAGRAM TO FACE CLOSET ENTRANCE
9. EXTERNAL COPPER BONDING WIRE
10. LIQUID TIGHT FLEXIBLE METAL CONDUIT 18" MIN.
11. RIGID CONDUIT
12. COMBINATION COUPLING
13. GROUND CONNECTOR
14. VIBRATION ELIMINATOR 4 REQ'D
15. PROVIDE MISCELLANEOUS STEEL AS REQ'D. TO CONN. TO STRUCTURE

TRANSFORMER SUSPENSION DETAIL

1

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Revisions:	Date

CONSULTANTS:

SYSKA HENNESSY GROUP
A member company of SH Group, Inc.

Syska Hennessy Group, Inc.
425 California Street
Suite 700
San Francisco, CA 94104
Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

ARCHITECT/ENGINEERS:

ESTABLISHED 1988 HILLIARD ARCHITECTS GOING GREEN

HILLIARD ARCHITECTS, INC
251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

Drawing Title: **ELECTRICAL DETAILS**

Approved: Project Director

Project Title: **MEDICAL SPECIALTIES BUILDING 648**

Location: VA MATHER

Date: **05/12/2014** | Checked: **M.H.** | Drawn: **LTA**

Project Number: **612-122**

Building Number:

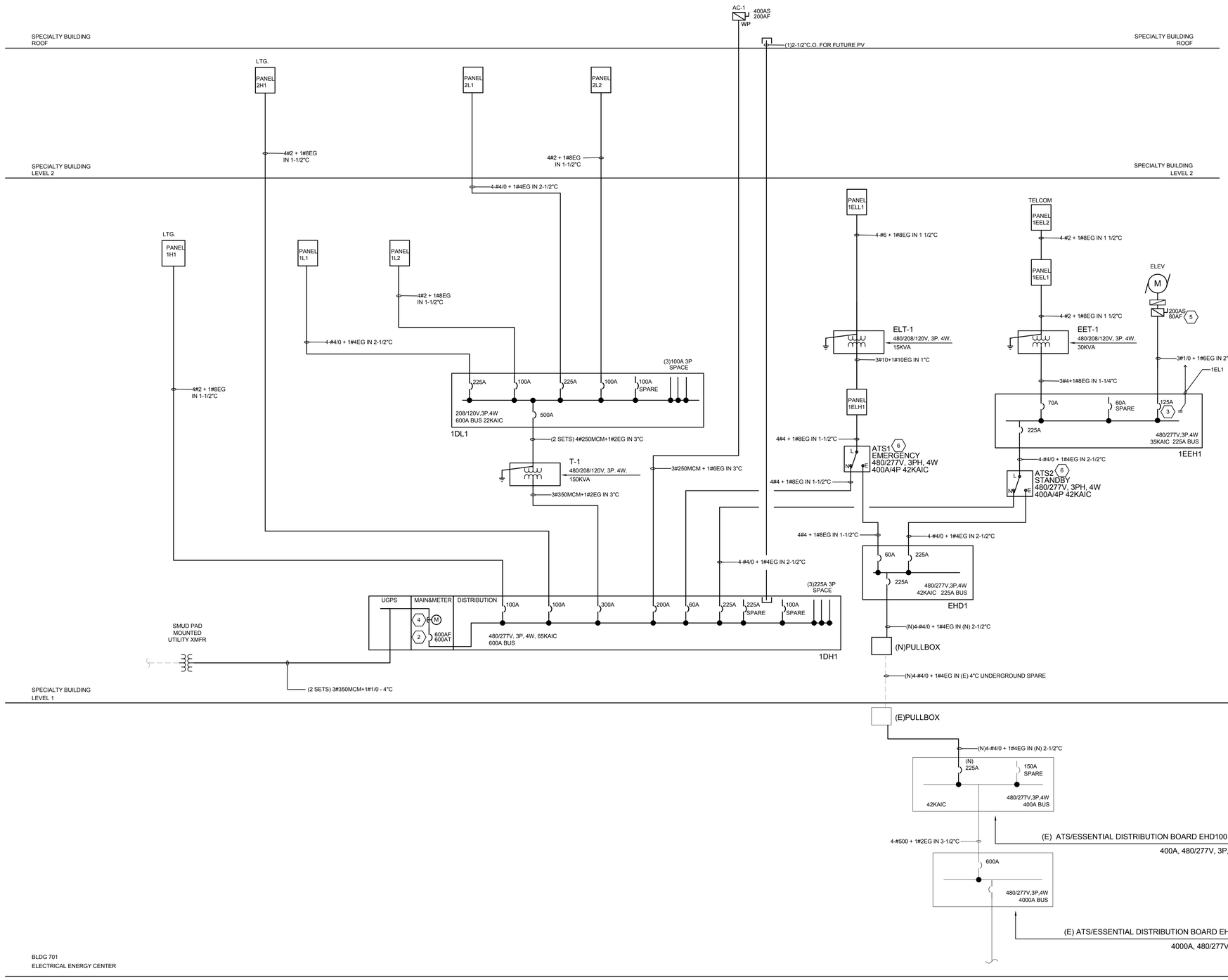
Drawing Number: **E-603**

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



TRANSFORMER SCHEDULE (AS APPLICABLE)							
	PRIMARY			SECONDARY			
KVA	VOLT	PHASE	WIRE	VOLT	PHASE	WIRE	GROUND
15	480	3	3	208/120	3	4	1#8, 1/2"C
30	480	3	3	208/120	3	4	1#8, 1/2"C
45	480	3	3	208/120	3	4	1#6, 3/4"C
75	480	3	3	208/120	3	4	1#2, 3/4"C
112.5	480	3	3	208/120	3	4	1#1/0, 3/4"C
150	480	3	3	208/120	3	4	1#1/0, 3/4"C
300	480	3	3	208/120	3	4	1#3/0, 1"C
500	12.47	3	3	480/277	3	4	1#3/0, 1"C
750	12.47	3	3	208/120	3	4	1#3/0, 1"C
1000	12.47	3	3	480/277	3	4	1#3/0, 1"C

GENERAL NOTES:

1. PROVIDE SHORT CIRCUIT AND ARCH FLASH COORDINATION STUDY PREFORMED BY THE EQUIPMENT MANUFACTURE. ALL DEVICES SHALL BE ADJUSTED AND LABELS APPLIED AS A RESULT OF STUDIES. FINAL EQUIPMENT RATINGS SHALL BE BASED OF STUDY RESULTS.
2. DISTRIBUTION SYSTEM SHALL BE FULLY RATED, SERIES RATING IS NOT ACCEPTABLE.
3. PANEL BOARDS SHALL HAVE 225A MINIMUM BUS UNLESS OTHERWISE NOTED.
4. ALL TRANSFORMERS SHALL BE 115° RISE COPPER WINDINGS.
5. DISTRIBUTION BOARDS 600A AND ABOVE SHALL BE FLOOR STANDING.
6. AIC RATING OF ALL 120/208V PANELBOARDS SHALL BE 10K AIC & 14K AIC FOR 277/480V PANELBOARDS UNLESS OTHERWISE NOTED.
7. FEEDER LENGTH INDICATED FOR VOLTAGE DROP PURPOSES ONLY AND SHALL NOT BE USED FOR COST ESTIMATING.
8. EVERYTHING SCREENED IS EXISTING.
9. ALL BREAKERS 400A AND ABOVE SHALL BE 100% RATED ELECTRONIC TYPE FULLY ADJUSTABLE.
10. EVERYTHING OUTDOORS SHALL BE WEATHERPROOF NEMA 3R.

SHEET NOTES:

1. PROVIDE NEW BREAKER, SIZE AS SHOWN. MATCH EXISTING TYPE.
2. MAIN CIRCUIT BREAKER TO BE SERVICE RATED.
3. PROVIDE SHUNT TRIP BREAKER. SIZED PER MANUFACTURERS RECOMMENDATION. IT SHALL BE FACTORY INSTALLED WITH CONTROL KIT FOR REQUIRED CONTROL POWER (120V) . CONTROL POWER SHALL BE TAKEN FROM LINE SIDE OF CIRCUIT BREAKER PER MANUFACTURER RECOMMENDATIONS. PROVIDE CONTROL WIRING AND HEAT DETECTOR TO SHUT-OFF POWER WHEN HEAT DETECTOR IS ENERGIZED . IT IS REQUIRED TO HAVE A "HEAT DETECTOR" IN THE ELEVATOR MACHINE ROOM (ADDITIONAL DEVICES AS REQUIRED) THAT WOULD CAUSE SHUNT-TRIP CIRCUIT BREAKER TO DISCONNECT THE MAIN LINE POWER TO THE AFFECTED ELEVATORS PRIOR TO THE APPLICATION OF WATER (SPRINKLER HEAD DISCHARGE)
4. UTILITY METER PER UTILITY COMPANY REQUIREMNTS.
5. FUSE TO BE SIZED PER SELECTED ELEVATOR MOCP REQUIREMENTS.
6. PROVIDE CONNECTION FROM EACH ATS TO GENERATOR SYNCHRONIZED BOARD IN EXISTING BUILDING 701 FOR GENERATOR START-UP AND SHUT-DOWN. PROVIDE NEW 1" CONTROL CONDUIT FROM EACH ATS TO NEW PULL BOX. UTULIZE COMMON 4"C AS POWER AND ATS COMMUNICATION WITH THROUGHOUT INNERDUCT TO PROTECT FEEDERS.

EQUIPMENT LOADS		
NAME	LOAD (KVA)	CURRENT (A)
1DH1	304.7 kVA	366.5 A
1DL1	95.3 kVA	264.5 A
T1	95.3 kVA	264.5 A
EHD1	62.4 kVA	75.1 A
1EEH1	55.4 kVA	66.7 A
ATS2	55.4 kVA	66.7 A
EET1	20.8 kVA	57.7 A
ATS1	7.0 kVA	8.4 A
ELT1	1.5 kVA	4.1 A

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Revisions:	Date

CONSULTANTS:

SYSKA HENNESSY GROUP
A member company of SH Group, Inc.

Syska Hennessy Group, Inc.
425 California Street
Suite 700
San Francisco, CA 94104
Tel: 415.288.9060
Fax: 415.835.0385
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251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

Drawing Title: **ELECTRICAL SINGLE LINE DIAGRAM**

Approved: Project Director

Project Title: **MEDICAL SPECIALTIES BUILDING 648**

Location: VA MATHER

Date: **05/12/2014** | Checked: **M.H.** | Drawn: **LTA**

Project Number: **612-122**

Building Number: **648**

Drawing Number: **E-701**

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

Emergency Life Safety Panel: 1ELH1

Location: MAIN ELECTRICAL ROOM E114
Supply From: ATS1
Mounting: Surface
Enclosure: Type 1
Volts: 480/277 Wye
Phases: 3
Wires: 4
A.I.C. Rating: 14K
Mains Type: MLO
MCB Rating:
Bus: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	ELT1	70 A	3	642 VA	324 VA					1	20 A	Lighting Room 24 *	2
3	--	--	--			427 VA	220 VA			1	20 A	EM Lighting Corridor 24 *	4
5	--	--	--					359 VA	822 VA	1	20 A	EM Lighting Offices LVL 2*	6
7	Lighting Circulation*	20 A	1	240 VA	400 VA					1	20 A	EM Corridors *	8
9	EM Lighting Offices LVL 1*	20 A	1			1312	52 VA			1	20 A	EM Lighting MP/Conf/ClassRm A203 *	10
11	EM Lighting Patient Hallway *	20 A	1					400 VA	120 VA	1	20 A	Exterior Lighting	12
13	Lighting STAIR 1 29 *	20 A	1	259 VA	148 VA					1	20 A	Lighting Room E114, E204	14
15	EXIT SIGNS LEVEL 1	20 A	1			55 VA	0 VA			1	20 A	Spare	16
17	EXIT SIGNS LEVEL 2	20 A	1					50 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Space	--	--	0 VA	0 VA					--	--	Space	26
27	Space	--	--			0 VA	0 VA			--	--	Space	28
29	Space	--	--					0 VA	0 VA	--	--	Space	30
31	Space	--	--	0 VA	0 VA					--	--	Space	32
33	Space	--	--			0 VA	0 VA			--	--	Space	34
35	Space	--	--					0 VA	0 VA	--	--	Space	36
37	Space	--	--	0 VA	0 VA					--	--	Space	38
39	Space	--	--			0 VA	0 VA			--	--	Space	40
41	Space	--	--					0 VA	0 VA	--	--	Space	42
		Total Load:		2013 VA		2066 VA		1751 VA					
		Total Amps:		7 A		8 A		6 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	4534 VA	125.00%	5668 VA		
Non-Continuous	1295 VA	100.00%	1295 VA	**Total Conn. Load:**	5829 VA
Receptacle	0 VA	0.00%	0 VA	**Total Est. Demand:**	6963 VA
Kitchen	0 VA	0.00%	0 VA	**Total Conn.:**	7 A
				Total Est. Demand:	8 A

Notes:
* PROVIDE LOCK ON DEVICE

Emergency Life Safety Panel: 1ELL1

Location: MAIN ELECTRICAL ROOM E114
Supply From: ELT1
Mounting: Surface
Enclosure: Type 1
Volts: 120/208 Wye
Phases: 3
Wires: 4
A.I.C. Rating: 10K
Mains Type: MCB
MCB Rating: 60 A
Bus: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	FACP MAIN ELEC RM. *	20 A	1	100 VA	127 VA					1	20 A	CSFD	2
3	Lighting ELEVATOR MACHINE ROOM 15 *	20 A	1			100 VA	127 VA			1	20 A	CSFD	4
5	ELEV PIT Lighting Room 17, 16-1 *	20 A	1					32 VA	127 VA	1	20 A	CSFD	6
7					127 VA					1	20 A	CSFD	8
9	ELEV Fire Curtain Level 1	20 A	1			200 VA	0 VA			1	20 A	Spare	10
11	ELEV Fire Curtain Level 2	20 A	1					200 VA	0 VA	1	20 A	Spare	12
13	CFSD	20 A	1	288 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Space	--	--	0 VA	0 VA					--	--	Space	20
21	Space	--	--			0 VA	0 VA			--	--	Space	22
23	Space	--	--					0 VA	0 VA	--	--	Space	24
25	Space	--	--	0 VA	0 VA					--	--	Space	26
27	Space	--	--			0 VA	0 VA			--	--	Space	28
29	Space	--	--					0 VA	0 VA	--	--	Space	30
31	Space	--	--	0 VA	0 VA					--	--	Space	32
33	Space	--	--			0 VA	0 VA			--	--	Space	34
35	Space	--	--					0 VA	0 VA	--	--	Space	36
37	Space	--	--	0 VA	0 VA					--	--	Space	38
39	Space	--	--			0 VA	0 VA			--	--	Space	40
41	Space	--	--					0 VA	0 VA	--	--	Space	42
		Total Load:		642 VA		427 VA		359 VA					
		Total Amps:		5 A		4 A		3 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	132 VA	125.00%	165 VA		
Non-Continuous	1295 VA	100.00%	1295 VA	**Total Conn. Load:**	1427 VA
Receptacle	0 VA	0.00%	0 VA	**Total Est. Demand:**	1460 VA
Kitchen	0 VA	0.00%	0 VA	**Total Conn.:**	4 A
				Total Est. Demand:	4 A

Notes:
* PROVIDE LOCK ON DEVICE

Branch Panel: 1H1

Location: MAIN ELECTRICAL ROOM E114
Supply From: 1DH1
Mounting: Surface
Enclosure: Type 1
Volts: 480/277 Wye
Phases: 3
Wires: 4
A.I.C. Rating: 22K
Mains Type: MLO
Bus: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Lighting CIRCULATION 14	20 A	1	360 VA	600 VA					1	20 A	Lighting Patient Hallway	2
3	Lighting LOBBY/WAITING 13	20 A	1			1732	0 VA			1	20 A	Spare	4
5	LTG OFFICES EXAM ROOMS	20 A	1					3534	55 VA	1	20 A	EXIT SIGNS LEVEL 1	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Space	--	--					0 VA	0 VA	--	--	Space	24
25	Space	--	--	0 VA	0 VA					--	--	Space	26
27	Space	--	--			0 VA	0 VA			--	--	Space	28
29	Space	--	--					0 VA	0 VA	--	--	Space	30
31	Space	--	--	0 VA	0 VA					--	--	Space	32
33	Space	--	--			0 VA	0 VA			--	--	Space	34
35	Space	--	--					0 VA	0 VA	--	--	Space	36
37	Space	--	--	0 VA	0 VA					--	--	Space	38
39	Space	--	--			0 VA	0 VA			--	--	Space	40
41	Space	--	--					0 VA	0 VA	--	--	Space	42
		Total Load:		960 VA		1732 VA		3589 VA					
		Total Amps:		3 A		7 A		13 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	6281 VA	125.00%	7851 VA		
Non-Continuous	0 VA	0.00%	0 VA	**Total Conn. Load:**	6281 VA
Receptacle	0 VA	0.00%	0 VA	**Total Est. Demand:**	7851 VA
Kitchen	0 VA	0.00%	0 VA	**Total Conn.:**	8 A
				Total Est. Demand:	9 A

Notes:

Branch Panel: 1L1

Location: MAIN ELECTRICAL ROOM E114
Supply From: 1DL1
Mounting: Surface
Enclosure: Type 1
Volts: 120/208 Wye
Phases: 3
Wires: 4
A.I.C. Rating: 10K
Mains Type: MLO
MCB Rating:
Bus: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Non-Continuous PULMONARY - EXAM B106	20 A	1	100 VA	1990					1	20 A	Receptacle ALLERGY - IMMUN. EXAM C102	2
3	Non-Continuous PULMONARY - EXAM B106	20 A	1			200 VA	1810			1	20 A	Receptacle ALLERGY - IMMUN. EXAM C104	4
5	Receptacle CIRCULATION 14	20 A	1					540 VA	810 VA	1	20 A	Receptacle PULMONARY - VENTILARY TEST	6
7	Receptacle ID - EXAM D107	20 A	1	1940	1000					1	20 A	Receptacle STOR., LINEN & MEDICAL	8
9	Receptacle Room D101, E101, C101, B101	20 A	1			1080	1000			1	20 A	Receptacle STOR., LINEN & MEDICAL	10
11	Receptacle ALLERGY - IMMUN. EXAM C106	20 A	1					1810	1000	1	20 A	Receptacle STOR., LINEN & MEDICAL	12
13	Receptacle SLEEP STUDY EQUIPMENT	20 A	1	180 VA	180 VA					1	20 A	Receptacle SLEEP STUDY EQUIPMENT	14
15	Receptacle SLEEP STUDY EQUIPMENT	20 A	1			180 VA	180 VA			1	20 A	Receptacle SLEEP STUDY EQUIPMENT	16
17	Receptacle STOR., LINEN & MEDICAL	20 A	1					1000	180 VA	1	20 A	Receptacle SLEEP STUDY EQUIPMENT	18
19	Receptacle LOBBY	20 A	1	560 VA	810 VA					1	20 A	Receptacle PULMONARY - VENTILARY TEST	20
21	Receptacle LOBBY	20 A	1			540 VA	360 VA			1	20 A	Receptacle Room E106, E108	22
23	Receptacle PULMONARY - EXAM C103	20 A	1					540 VA	1810	1	20 A	Receptacle SLEEP STUDY EXAM / OFFICE A105	24
25	Receptacle RECEPTION B102	20 A	1	1810	1810					1	20 A	Receptacle PULMONARY - EXAM B107	26
27	Receptacle RECEPTION B102	20 A	1			900 VA	900 VA			1	20 A	Receptacle PULMONARY - EXAM C105	28
29	Receptacle SLEEP STUDY OFFICE A107	20 A	1					940 VA	900 VA	1	20 A	Receptacle PULMONARY PHYSICIAN OFFICE	30
31	Receptacle PULMONARY - EXAM B103	20 A	1	1810	940 VA					1	20 A	Receptacle ID - PHYSICIAN OFFICE D106	32
33	Receptacle PULMONARY - EXAM B105	20 A	1			1810	1810			1	20 A	Receptacle INTERVIEW ROOM B104	34
35	Receptacle PULMONARY - EXAM B106	20 A	1					1810	900 VA	1	20 A	Receptacle PULMONARY - EQUIPMENT	36
37	Receptacle ID - EXAM D103	20 A	1	1810	900 VA					1	20 A	Receptacle ALLERGY CARE / CASE MGR E112	38
39	Receptacle ID - EXAM D104	20 A	1			1810	1540			1	20 A	Receptacle CLEAN UTILITY E118	40
41	Receptacle ID - EXAM D105	20 A	1					1810	1810	1	20 A	Receptacle ID - EXAM D102	42
		Total Load:		15840 VA		14120 VA		15860 VA					
		Total Amps:		134 A		118 A		134 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	0 VA	0.00%	0 VA		
Non-Continuous	27700 VA	100.00%	27700 VA	**Total Conn. Load:**	45820 VA
Receptacle	18120 VA	77.59%	14060 VA	**Total Est. Demand:**	41760 VA
Kitchen	0 VA	0.00%	0 VA	**Total Conn.:**	127 A
				Total Est. Demand:	116 A

Notes:

Branch Panel: 1L2

Location: MAIN ELECTRICAL ROOM E114
Supply From: 1DL1
Mounting: Surface
Enclosure: Type 1
Volts: 120/208 Wye
Phases: 3
Wires: 4
A.I.C. Rating: 10K
Mains Type: MLO
MCB Rating: 100 A
Bus: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LCP MAIN ELEC RM	20 A	1	0 VA	540 VA					1	20 A	Receptacle	2
3	CONDENSATE PUMP (FC 1-1)	15 A	1			250 VA	1260			1	20 A	Receptacle STAFF HALLWAY E101	4
5	Receptacle PULMONARY OFFICE / WORKROOM	20 A	1					1140	1180	1	20 A	Receptacle SOILED UTILITY E110	6
7	Receptacle Room 160, 161	20 A	1	720 VA	200 VA					1	20 A	VAV'S PATIENT HALLWAY D101	8
9	Receptacle SLEEP STUDY EQUIPMENT	20 A	1			180 VA	200 VA			1	20 A	VAV'S PATIENT HALLWAY D101	10
11	FC1-1	15 A	2					144 VA	200 VA	1	20 A	VAV'S PATIENT HALLWAY C101	12
13	--	--	--	144 VA	200 VA					1	20 A	VAV'S PATIENT HALLWAY C101	14
15	VAV'S PATIENT HALLWAY B101	20 A	1			200 VA	760 VA			1	20 A	Receptacle PULMONARY OFFICE / WORKROOM	16
17	VAV'S PATIENT HALLWAY B101	20 A	1					200 VA	1000	1	20 A	Receptacle STOR., LINEN & MEDICAL	18
19	Receptacle Room E103, E102	20 A	1	280 VA	1000					1	20 A	Drinking Fountain CIRCULATION 14	20
21	Receptacle PULMONARY - VENTILATORY TEST	20 A	1			360 VA	0 VA			1	20 A	E-LCP *	22
23	Receptacle PULMONARY OFFICE / WORKROOM	20 A	1					760 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	360 VA	1	20 A	Receptacle	30
31	Receptacle	20 A	1	360 VA	360 VA					1	20 A	Receptacle	32
33	Receptacle	20 A	1			360 VA	360 VA			1	20 A	Receptacle	34
35	Receptacle	20 A	1					360 VA	360 VA	1	20 A	Receptacle	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
		Total Load:		3804 VA		3930 VA		5704 VA					
		Total Amps:		32 A		33 A		48 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	0 VA	0.00%	0 VA		
Non-Continuous	9018 VA	100.00%	9018 VA	**Total Conn. Load:**	13438 VA
Receptacle	4420 VA	100.00%	4420 VA	**Total Est. Demand:**	13438 VA
Kitchen	0 VA	0.00%	0 VA	**Total Conn.:**	37 A
				Total Est. Demand:	37 A

Notes:

Branch Panel: 2H1

Location: FLR. ELEC E204
Supply From: 1DH1
Mounting: Surface
Enclosure: Type 1
Volts: 480/277 Wye
Phases: 3
Wires: 4
A.I.C. Rating: 22K
Mains Type: MCB
MCB Rating: 100 A
Bus: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LTG Lobby/Waiting	20 A	1	224 VA	984 VA					1	20 A	LTG LOBBY/WAITING 23	2
3	LTG CIRCULATION 24	20 A	1			280 VA	324 VA			1	20 A	LTG LOBBY/WAITING 23	4
5	LTG OFFICES LVL 2	20 A	1					2730	497 VA	3	15 A	HWP-1 ROOF	6
7	Spare	20 A	1	0 VA	497 VA					--	--	--	8
9	LTG Corridors LVL 2	20 A	1			520 VA	497 VA			--	--	--	10
11	VP-1 ROOF	20 A	3					1243	0 VA	1	20 A	Spare	12
13	--	--	--	1243	0 VA					1	20 A	Spare	14
15	--	--	--			1243	0 VA			1	20 A	Spare	16
17	EXIT SIGNS LEVEL 2	20 A	1					50 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Space	--	--					0 VA	0 VA	--	--	Space	24
25	Space	--	--	0 VA	0 VA					--	--	Space	26
27	Space	--	--			0 VA	0 VA			--	--	Space	28
29	Space	--	--					0 VA	0 VA	--	--	Space	30
31	Space	--	--	0 VA	0 VA					--	--	Space	32
33	Space	--	--			0 VA	0 VA			--	--	Space	34
35	Space	--	--					0 VA	0 VA	--	--	Space	36
37	Space	--	--	0 VA	0 VA					--	--	Space	38
39	Space	--	--			0 VA	0 VA			--	--	Space	40
41	Space	--	--					0 VA	0 VA	--	--	Space	42
		Total Load:		2948 VA		2864 VA		4520 VA					
		Total Amps:		11 A		10 A		16 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	5112 VA	125.00%	6390 VA		
Non-Continuous	5220 VA	100.00%	5220 VA	**Total Conn. Load:**	10332 VA
Receptacle	0 VA	0.00%	0 VA	**Total Est. Demand:**	11610 VA
Kitchen	0 VA	0.00%	0 VA	**Total Conn.:**	12 A
				Total Est. Demand:	14 A

Notes:

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CONSULTANTS:

SYSKA HENNESSY GROUP
A member company of SH Group, Inc.

Syska Hennessy Group, Inc.
425 California Street
Suite 700
San Francisco, CA 94104
Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

ARCHITECT/ENGINEERS:

ESTABLISHED 1988 HILLIARD ARCHITECTS GOING GREEN

HILLIARD ARCHITECTS, INC
251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

Drawing Title: **ELECTRICAL PANEL SCHEDULES**

Approved: Project Director

Project Title: **MEDICAL SPECIALTIES BUILDING 648**

Location: VA MATHER

Date: **05/12/2014** | Checked: **M.H.** | Drawn: **LTA**

Project Number: **612-122**

Building Number: **648**

Drawing Number: **E-801**

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

Branch Panel: 2L1

Location: FLR. ELEC E204
Supply From: 1DL1
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10K
Mains Type: MCB
MCB Rating: 225 A
Bus: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Non-Continuous ENDOCR./ DIAB./ NUTR./ NEPH.	20 A	1	200 VA	200 VA					1	20 A	Non-Continuous ENDOCR./ DIAB./ NUTR./ NEPH.	2
3	Kitchen STAFF BREAK ROOM E220	20 A	1			1000	1000			1	20 A	Kitchen STAFF BREAK ROOM E220	4
5	Receptacle STAFF TOILET E221	20 A	1					385 VA	1080	1	20 A	Receptacle Room C201, B201, 24, E201	6
7	Kitchen STAFF BREAK ROOM E220	20 A	1	360 VA	1080					1	20 A	Receptacle MULTI-PURPOSE CONFERENCE /	8
9	Receptacle ENDOCRINE / NEPHROLOGY -	20 A	1			1140	600 VA			1	20 A	CP1 ROOF	10
11	Receptacle STOR., LINEN & MEDICAL	20 A	1					180 VA	540 VA	1	20 A	Receptacle STAFF HALLWAY E201	12
13	Receptacle MAIN ELEC	20 A	1	180 VA	540 VA					1	20 A	Receptacle HSK E213	14
15	Receptacle STOR., LINEN & MEDICAL	20 A	1			180 VA	540 VA			1	20 A	Receptacle RECEPTION B202	16
17	Receptacle Room 27, 28	20 A	1					720 VA	740 VA	1	20 A	Receptacle LOBBY WAITING	18
19	Receptacle LOBBY/WAITING	20 A	1	740 VA	1520					1	20 A	Receptacle ENDOCRINE / NEPHROLOGY -	20
21	Receptacle RECEPTION B202	20 A	1			720 VA	720 VA			1	20 A	Receptacle INTERVIEW ROOM B204	22
23	Receptacle Room 24, D201, E221, E220	20 A	1					900 VA	1785	1	20 A	Receptacle RHEUMATOLOGY - EXAM C206	24
25	Receptacle RHEUMATOLOGY - EXAM D203	20 A	1	1785	2040					1	20 A	Receptacle FLR. ELEC E204	26
27	Receptacle RHEUMATOLOGY - EXAM D205	20 A	1			1785	900 VA			1	20 A	Receptacle NEPHROLOGY CASE MGR - OFFICE	28
29	Receptacle ENDOCR./ DIAB./ NUTR./ NEPH. -	20 A	1					1785	1785	1	20 A	Receptacle ENDOCR./ DIAB./ NUTR./ NEPH. -	30
31	Receptacle ENDOCR./ DIAB./ NUTR./ NEPH. -	20 A	1	1785	1785					1	20 A	Receptacle ENDOCR./ DIAB./ NUTR. - EXAM	32
33	Receptacle ENDOCR./ DIAB./ NUTR./ NEPH. -	20 A	1			1785	1785			1	20 A	Receptacle ENDOCR./ DIAB./ NUTR./ NEPH. -	34
35	Receptacle ENDOCR. / DIAB. / NUTR. - EXAM	20 A	1					1785	900 VA	1	20 A	Receptacle EDN PHYSICIAN - OFFICE E210	36
37	Receptacle EDN NURSE EDUCATOR- OFFICE	20 A	1	1100	900 VA					1	20 A	Receptacle DIETICIAN - OFFICE E214	38
39	Receptacle ENDOCR. / DIAB. / NUTR. - EXAM	20 A	1			1785	900 VA			1	20 A	Receptacle EDN PHYSICIAN - OFFICE E208	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	14215 VA		14840 VA		12585 VA					
			Total Amps:	121 A		126 A		105 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	0 VA	0.00%	0 VA		
Non-Continuous	20740 VA	100.00%	20740 VA	**Total Conn. Load:**	41640 VA
Receptacle	18900 VA	76.46%	14450 VA	**Total Est. Demand:**	37190 VA
Kitchen	2000 VA	100.00%	2000 VA	**Total Conn.:**	116 A
				Total Est. Demand:	103 A

Notes:

Branch Panel: 2L2

Location: FLR. ELEC E204
Supply From: 1DL1
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10K
Mains Type: MCB
MCB Rating: 100 A
Bus: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	FRIDGE STAFF BREAK ROOM E220	20 A	1	1000	1000					1	20 A	Receptacle CIRCULATION 24	2
3	AC-1 Control Circuit	20 A	1			250 VA	600 VA			1	15 A	B-1 ROOF	4
5	EF-1 ROOF	15 A	1					186 VA	0 VA	1	20 A	Spare	6
7	EF-2 ROOF	20 A	1	373 VA	720 VA					1	20 A	Receptacle SOILED UTILITY E218	8
9	CU 1-1 ROOF	30 A	2			1872	200 VA			1	20 A	VAV'S PATIENT HALLWAY D201	10
11	--	--	--					1872	200 VA	1	20 A	VAV'S PATIENT HALLWAY D201	12
13	Receptacle ROOF	20 A	1	1080	200 VA					1	20 A	VAV'S PATIENT HALLWAY C201	14
15	VAV'S STAFF HALLWAY E201	20 A	1			200 VA	200 VA			1	20 A	VAV'S PATIENT HALLWAY C201	16
17	VAV'S STAFF HALLWAY E201	20 A	1					200 VA	180 VA	1	20 A	Receptacle STOR., LINEN & MEDICAL	18
19	Receptacle STOR., LINEN & MEDICAL	20 A	1	180 VA	1000					1	20 A	MICROWAVE STAFF BREAK ROOM E220	20
21	Receptacle STOR., LINEN & MEDICAL	20 A	1			180 VA	1000			1	20 A	Receptacle STAFF BREAK ROOM E220	22
23	Receptacle STAFF BREAK ROOM E220	20 A	1					180 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	5553 VA		4502 VA		2818 VA					
			Total Amps:	48 A		40 A		23 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	0 VA	0.00%	0 VA		
Non-Continuous	7353 VA	100.00%	7353 VA	**Total Conn. Load:**	12873 VA
Receptacle	2520 VA	100.00%	2520 VA	**Total Est. Demand:**	12573 VA
Kitchen	3000 VA	90.00%	2700 VA	**Total Conn.:**	36 A
				Total Est. Demand:	35 A

Notes:

Emergency Standby Panel: 1EEL1

Location: MAIN
Supply From: EET1
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10K
Mains Type: MCB
MCB Rating: 100 A
Bus: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EM Lighting Exterior 120V	20 A	1	20 VA	180 VA					1	20 A	Receptacle ELEV-1 16-1	2
3	Receptacle PULMONARY - VENTILATORY TEST	20 A	1			1000	0 VA			1	20 A	Spare	4
5	FA Annunciator ENTRY VESTIBULE 11	20 A	1					100 VA	192 VA	1	15 A	CONDENSATE PUMP (FC 1-3)	6
7	CONDENSATE PUMP (FC 1-2)	15 A	1	192 VA	180 VA					1	20 A	Receptacle ELEVATOR MACHINE ROOM 15	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	CSFD	20 A	1					288 VA	360 VA	1	20 A	Receptacle MAIN ELECTRICAL ROOM E114	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	FC1-2	15 A	2					96 VA	96 VA	2	15 A	FC1-3	18
19	--	--	--	96 VA	96 VA					--	--	--	20
21	Spare	20 A	1			0 VA	497 VA			3	15 A	PWR FOR SEWAGE EJECTOR	22
23	Receptacle PULMONARY - VENTILATORY TEST	20 A	1					1000	497 VA	--	--	--	24
25	PWR FOR SEWAGE EJECTOR	15 A	3	497 VA	497 VA					--	--	--	26
27	--	--	--			497 VA	0 VA			1	20 A	Spare	28
29	--	--	--					497 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Space	--	--					0 VA	0 VA	--	--	Space	36
37	Space	--	--	0 VA	4672					3	50 A	1EEL2	38
39	Space	--	--			0 VA	5544			--	--	--	40
41	Space	--	--					0 VA	3672	--	--	--	42
			Total Load:	6430 VA		7538 VA		6798 VA					
			Total Amps:	54 A		63 A		57 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	20 VA	125.00%	25 VA		
Non-Continuous	20027 VA	100.00%	20027 VA	**Total Conn. Load:**	20767 VA
Receptacle	720 VA	100.00%	720 VA	**Total Est. Demand:**	20772 VA
Kitchen	0 VA	0.00%	0 VA	**Total Conn.:**	58 A
				Total Est. Demand:	58 A

Notes:

Emergency Standby Panel: 1EEL2

Location: TELEDATA E104
Supply From: 1EEL1
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10K
Mains Type: MCB
MCB Rating: 50 A
Bus: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Receptacle TELEDATA E104	20 A	1	800 VA	200 VA					1	20 A	Non-Continuous FLR. ELEC E204	2
3	Receptacle TELEDATA E104	20 A	1			800 VA	1872			2	30 A	CU 1-2 ROOF	4
5	Receptacle TELEDATA E104	20 A	1					1000	1872	--	--	--	6
7	Receptacle TELEDATA E104	20 A	1	1000	1872					2	30 A	CU 1-3 ROOF	8
9	Receptacle TELEDATA E104	20 A	1			1000	1872			--	--	--	10
11	Receptacle TELEDATA E104	20 A	1					800 VA	0 VA	1	20 A	Spare	12
13	Receptacle TELEDATA E104	20 A	1	800 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Space	--	--	0 VA	0 VA					--	--	Space	26
27	Space	--	--			0 VA	0 VA			--	--	Space	28
29	Space	--	--					0 VA	0 VA	--	--	Space	30
31	Space	--	--	0 VA	0 VA					--	--	Space	32
33	Space	--	--			0 VA	0 VA			--	--	Space	34
35	Space	--	--					0 VA	0 VA	--	--	Space	36
37	Space	--	--	0 VA	0 VA					--	--	Space	38
39	Space	--	--			0 VA	0 VA			--	--	Space	40
41	Space	--	--					0 VA	0 VA	--	--	Space	42
			Total Load:	4672 VA		5544 VA		3672 VA					
			Total Amps:	40 A		47 A		31 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	0 VA	0.00%	0 VA		
Non-Continuous	13888 VA	100.00%	13888 VA	**Total Conn. Load:**	13888 VA
Receptacle	0 VA	0.00%	0 VA	**Total Est. Demand:**	13888 VA
Kitchen	0 VA	0.00%	0 VA	**Total Conn.:**	39 A
				Total Est. Demand:	39 A

Notes:

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CONSULTANTS:

SYSKA HENNESSY GROUP
A member company of SH Group, Inc.

Syska Hennessy Group, Inc.
425 California Street
Suite 700
San Francisco, CA 94104
Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

ARCHITECT/ENGINEERS:

ESTABLISHED 1988 HILLIARD ARCHITECTS GOING GREEN

HILLIARD ARCHITECTS, INC
251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

Drawing Title: **ELECTRICAL PANEL SCHEDULES**	Project Title: **MEDICAL SPECIALTIES BUILDING 648**		Project Number: **612-122**	Office of Construction and Facilities Management
			Building Number: **648**	
Approved: Project Director	Location: VA MATHER		Drawing Number: **E-802**	
	Date: **05/12/2014**	Checked: **M.H.** / Drawn: **LTA**	Dwg. of	Department of Veterans Affairs

VA FORM 08-6231

LTG Control Panel: LCP

Location:

CKT	Circuit Description	Circuit Number	Occupancy Sensor	Low Voltage	Photocell
1	LTG CIRCULATION 14	1H1-1	OS-1-1	LV-1-1	-
2	LTG RECEPTION	1H1-2	OS-1-1	LV-1-1	-
3	LOBBY/WAITING 13	1H1-3	-	-	PC-1-6
4	LTG ENTRY	1H1-3	OS-1-4	LV-1-3	PC-1-4
5	LTG LOBBY WAITING 13	1H1-3	OS-1-1	LV-1-1	PC-1-6
6	LTG WHEELCHAIR STORAGE	1H1-3	OS-1-4	LV-1-3	PC-1-9
7	LTG LOBBY WAITING	2H1-4	-	-	PC-2-4
8	LTG LOBBY/WAITING	2H1-8	OS-2-4	-	PC-2-5
9	LTG CIRCUILATION	2H1-3	-	LV-2-1	-
10	LTG PATIENT HALLWAY L2	2H1-11	OS-2-2, OS-2-3	LV-2-1	PC2-7
11	LTG PATIENT HALLWAY L2	2H1-9	OS-2-2, OS-2-3	LV-2-1	PC2-8
12	LTG PATIENT HALLWAY L2	2H1-9	OS-2-2	LV-2-1	PC-2-1
13	LTG PATIENT HALLWAY L2	2H1-9	OS-2-2, OS-2-3	-	PC-2-2
14	PC CONTROLLED LTG PATIENT HALLWAY C101	1H1-2	OS-1-2	LV-1-3	PC-1-8
15	PC CONTROLLED LTG STAFF HALLWAY E101	1H1-2	OS-1-2	LV-1-1	PC-1-1
16	LTG STAFF HALLWAY E101	1H1-2	OS-1-2, OS-1-3	LV-1-3	PC-1-2
17	LTG PATIENT COORIDOR	1H1-2	OS-1-1	LV-1-1	PC-1-7
18	LTG STAFF HALLWAY E101	1H1-2	OS-1-2	LV-1-3	PC-1-2
19	LTG STAFF HALLWAY E101	1H1-2	OS-1-3	LV-1-2	PC-1-3
20	LOBBY/WAITING 13	1H1-3	-	-	PC-1-5
21	LOBBY/WAITING 23	2H1-1	-	-	PC-2-5
22	LTG STAFF HALLWAY E201	2H1-9	OS2-2, OS-2-3	LV-2-1, LV-2-2	PC-2-3
23	LTG RECEPTION B202	2H1-3	-	LV-2-1	-
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Notes:

EM LTG Control Panel: E-LCP

Location:

CKT	Circuit Description	Circuit Number	Occupancy Sensor	Low Voltage	Photocell
1	EM LTG CIRCULATION 14 *	1ELH1-7	OS-1-1	LV-1-1	-
2	EM LTG PATIENT HALLWAYS LEVEL 1	1ELH1-11	OS-1-2, OS-1-3	LV-1-1	-
3	EM LTG EXTERIOR	1EEH1-7	-	-	PC-3-1
4	EM LTG STAIRS	1ELH1-13	-	-	-
5	EM LTG PATIENT HALLWAYS LEVEL 2	1ELH1-8	OS2-2, OS-2-3	LV-2-1	-
6	EM LTG CIRCULATION 24	1ELH1-4	OS-2-1	LV-2-1	-
7	EM LTG MULTIPURPOSE RM A203	1ELH1-12	-	-	-
8	EM LTG LOBBY WAITING	1ELH1-2	OS-2-4	LV-1-1	PC-2-5
9	EM LTG LOBBY	1ELH1-7	OS-1-4	LV-1-3	PC-1-4
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20					

Notes:

LIGHTING GENERAL NOTES

1 FIXTURES SHALL BE U.L. LISTED/LABELED OR LISTED BY VA APPROVED ELECTRICAL TESTING LABORATORY AND INSTALLED IN ACCORDANCE WITH ANY INSTRUCTIONS INCLUDED IN THE LISTING/LABELING.

2 REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FIXTURE LOCATION AND MOUNTING DETAIL. CONTRACTOR SHALL VERIFY AND COORDINATE WITH ARCHITECT AND LIGHTING DESIGNER FIXTURE MOUNTING DETAILS BASED ON FINAL SPECIFIED CEILING SYSTEM AND FIELD CONDITIONS. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING DIMENSIONS, QUANTITY AND DETAILS.

3 VERIFY ALL SPECIFIED FINISHES WITH ARCHITECT PRIOR TO ORDERING.

4 ELECTRICAL CONTRACTOR TO CONFIRM FIXTURE VOLTAGE FROM CIRCUITING SHOWN ON DRAWING

5 THE CONTRACTOR SHALL BE RESPONSIBLE FOR EQUIPPING ALL FIXTURES WITH THE EXACT LAMPS SPECIFIED IN THE FIXTURE SCHEDULE.

6 ALL BALLASTS TO HAVE TOTAL HARMONIC DISTORTION <10%.

7 FOR 277V FIXTURES CONTRACTOR TO PROVIDE A PERMANENT RED WARNING LABEL NEAR BALLAST TO READ "CAUTION 277V BALLAST"

8 VERIFY THE TYPE OF CEILING SYSTEM WITH THE GENERAL CONTRACTOR OR CEILING CONTRACTOR. PROVIDE FIXTURES WHICH ARE COMPATIBLE WITH THE CEILING SYSTEM AND INCLUDE ALL REQUIRED MOUNTING ACCESSORIES AND HARDWARE.

9 PROVIDE LIGHTING FIXTURES COMPLETE WITH ALL NECESSARY COMPONENTS, AS REQUIRED FOR EACH TYPE OF MOUNTING. FIXTURE CATALOG NUMBERS DO NOT NECESSARILY DENOTE SPECIFIC MOUNTING ACCESSORIES. ACQUIRE ALL NECESSARY ACCESSORIES TO SUCCESSFULLY COMPLETE INSTALLATION.

10 THE FIXTURE WATTAGES SHALL NOT EXCEED WATTAGES SHOWN IN FIXTURE SCHEDULE.

11 REMOTE TRANSFORMER/DRIVERS FOR LOW VOLTAGE AND LED LIGHTING FIXTURES SHALL BE LOCATED IN NEAREST ACCESSIBLE SPACE. DISTANCE FROM TRANSFORMER/DRIVER TO FIXTURE SHALL BE MINIMIZED TO COMPLY WITH MAXIMUM ALLOWED PER MANUFACTURER'S RECOMMENDATION. PROVIDE SECONDARY FUSING AS REQUIRED. COORDINATE EXACT LOCATION OF REMOTE TRANSFORMER WITH ARCHITECT PRIOR TO INSTALLATION.

LIGHT FIXTURE SCHEDULE

FIXTURE TYPE	DESCRIPTION	VOLTAGE	LAMP	WATTS	MANUFACTURER	NOTES
A	2'X4' LED TROFFER LENS	277 V	LED	70 W	COOPER #24EN-LD1-67-UNV-L835-CD1-U	
B	2'X4' LED TROFFER LENS - EMERGENCY POWER	277 V	LED	70 W	COOPER #24EN-LD1-67-UNV-L835-CD1-U	
C	2'X2' LED TROFFER FIXTURE	277 V	LED	26 W	COOPER # 2EN-LD1-25-UNV-L835-CD-1	
D	3" LED DOWNLIGHT	277 V	LED	20 W	CALCULITE # FRAME IN KIT - C3L085N LIGHT ENGINE - C3L085DL-01 MTG2 LED 30K 8 80 TRIM KIT - C3LDL-M-CCD-P	
E	12" HIGH LED PENDANT	277 V	LED	14 W	LINDSLEY WILLOW PENDANT	
EL	JELLY JAR WALL MOUNT	120V/277V **	LED	32 W	Cooper Crouse-Hinds EVLEDBX2C701	**UNIVERSAL CONNECTION VOLTAGE TO EITHER 120V OR 277V 20A 1P˙
EXIT	EXIT SIGN RECESSED MOUNT	120V/277V ***	LED	5 W	REURA18R(SINGLE FACE) - REURA28R(DOUBLE FACE)	***UNIVERSAL CONNECTION VOLTAGE TO EITHER 120V OR 277V 20A 1P˙ DUAL POWER INPUT
G	Solatube 290DS Optiview Diffuser - White Trim	N/A	NONE	0 W	Solatube International Inc.	
H	CYLINDRO 650 PENDANT LAMP	277 V	LED	100 W	DELRAY	
K	GLOBE LED PENDANT LAMP	277 V*	LED	12 W	SynergyLED	* PROVIDE UL LISTED 277 - 120V SETP DOWN XFMR WITH INTEGRAL PROTECTION AT EACH FIXTURE.
M	COOPER 22DIW LINEAR LED, WALL MOUNT	277 V	LED	37 W	Cooper Industries, Inc.	
N	WALL MOUNT LED FLOOD LIGHT	120 V	LED	20 W	Acuity Brands Lighting	

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CONSULTANTS:

SYSKA HENNESSY GROUP
A member company of SH Group, Inc.

Syska Hennessy Group, Inc.
425 California Street
Suite 700
San Francisco, CA 94104
Tel: 415.288.9060
Fax: 415.835.0385
www.syska.com

ARCHITECT/ENGINEERS:

ESTABLISHED 1988 HILLIARD ARCHITECTS GOING GREEN

HILLIARD ARCHITECTS, INC
251 Post Street, Suite 620
San Francisco, CA 94108-5017
Tel 415 989 6400, Fax 415 989 3056
www.HilliardArchitects.com

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Approved: Project Director

Project Title: **MEDICAL SPECIALTIES BUILDING 648**

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