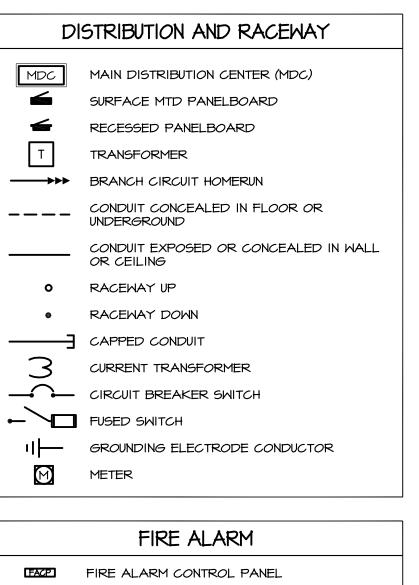
- WHERE MULTIPLE LINE VOLTAGE DEVICES ARE SHOWN ADJACENT TO EACH OTHER, THEY ARE ALL TO SHARE THE SAME JUNCTION BOX, UP TO FOUR GANGS.
- 2. WHERE MORE THAN FOUR DEVICES ARE SHOWN ADJACENT TO EACH OTHER. DEVICES ARE TO STACK VERTICALLY ABOVE ONE ANOTHER IN TWO ROWS IN AS SMALL OF GANG BOXES AS POSSIBLE. I.E. SIX DEVICES WILL USE TWO THREE GANG BOXES, FIVE DEVICES WILL USE ONE THREE GANG AND ONE TWO GANG BOX.
- 3. SEPARATELY GANGED DEVICES ARE NOT ALLOWED TO BE INSTALLED ADJACENT TO ONE ANOTHER HORIZONTALLY WITHIN THE SAME STUD BAY.
- 4. AUDIBLE/VISUAL FIRE ALARM DEVICES SHOWN ARE TO BE MOUNTED AT 90" OR 6" BELOW CEILING, WHICHEVER IS LOWER. ADA STROBES TO BE MOUNTED AT 80" AFF OR 6" BELOW CEILING, WHICHEVER IS LOWER.
- 5. THE E.C. SHALL REFER TO INTERIOR DESIGN ELEVATIONS TO COORDINATE ALL COUNTER HEIGHTS. ALL "AC" DEVICES SHALL HAVE BOTTOM OF BACK-BOX MOUNTED 4" ABOVE THE BACK/SIDE SPLASH.

MOUNTING HEIGHTS DETAIL



LIGHTING FIXTURES

MALL MOUNTED LUMINAIRE

RECESSED LUMINAIRE

DOWNLIGHT LUMINAIRE

PENDANT LUMINAIRE

► STRIP LUMINAIRE

WALLWASH LUMINAIRE

SURFACE CEILING LUMINAIRE

EMERGENCY LUMINAIRE - SHADED

WIRING DEVICES

SWITCHED DUPLEX RECEPTACLE

SPECIAL PURPOSE RECEPTACLE

PORCELAIN LAMP HOLDER

STEP LIGHT TYPE LUMINAIRE

EXTERIOR AREA LIGHT

**₩** DUPLEX RECEPTACLE

RECEPTACLE

JUNCTION BOX

ENCLOSURE

MOTOR

RELAY

TIME CLOCK

PHOTOCELL

SURFACE RACEWAY

CLOCK RECEPTACLE

WALL MOUNTED J-BOX

FLOOR MOUNTED JUNCTION BOX

NON-FUSED DISCONNECT SWITCH

FUSED DISCONNECT SMITCH

THERMAL OVERLOAD SWITCH

SINGLE POLE SWITCH

KEY OPERATED SWITCH

3-WAY SWITCH

4-WAY SWITCH

DIMMER SWITCH

\$DOOR RECESSED DOOR SWITCH

FOUR PLEX RECEPTACLE

SINGLE RECEPTACLE

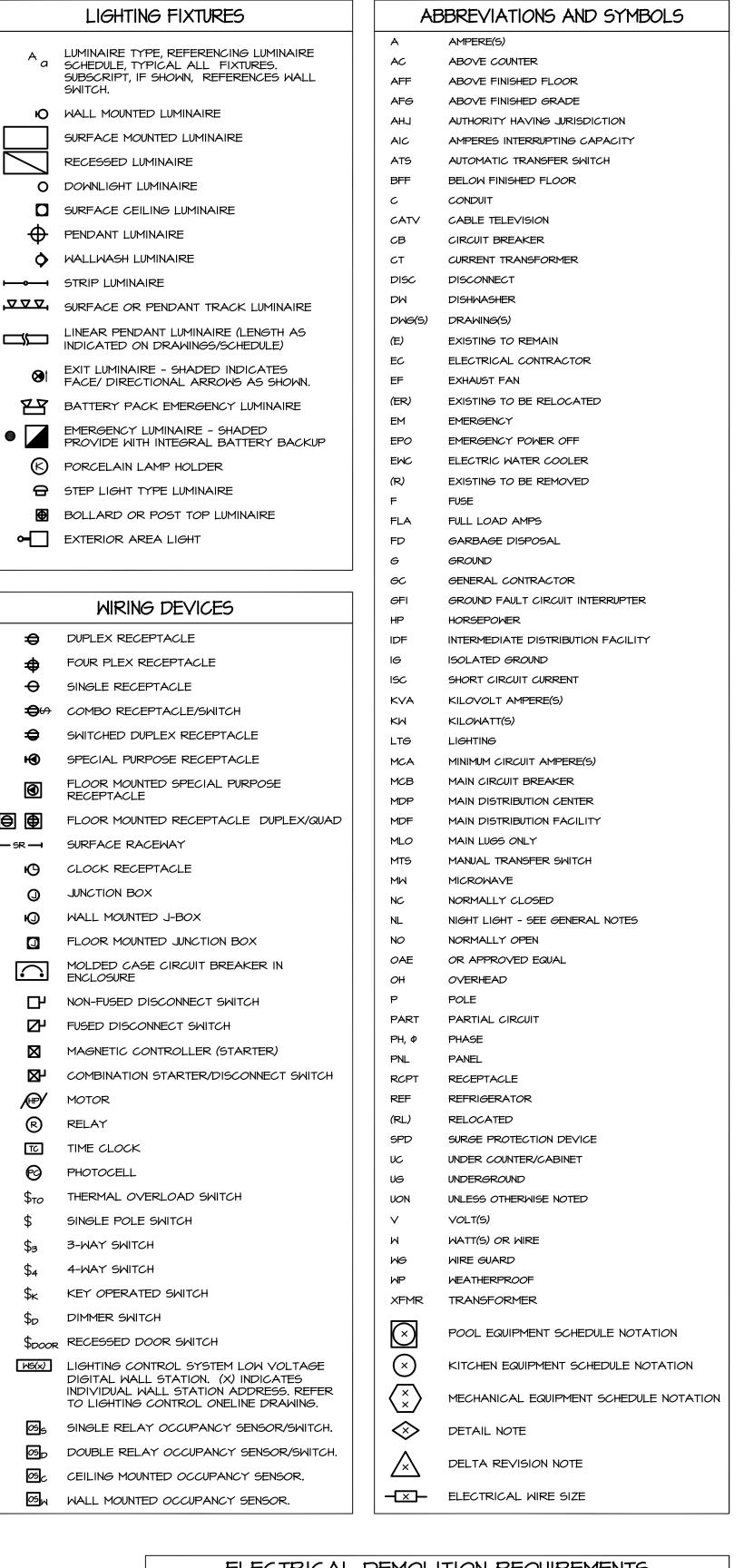
COMBO RECEPTACLE/SWITCH

SURFACE MOUNTED LUMINAIRE

# FIRE ALARM ANNUNCIATOR/GRAPHIC MAP FIRE ALARM REMOTE POWER SUPPLY CONTROL MODULE MONITOR MODULE MANUAL PULLDOWN STATION WALL MOUNTED ADA STROBE ADA HORN OR SPEAKER WITH STROBE MINI HORN / STROBE ELECTROMAGNETIC DOOR HOLD OPEN SPRINKLER FLOW SWITCH SPRINKLER TAMPER SWITCH THERMAL DETECTOR PHOTOELECTRIC SMOKE DETECTOR DUCT SMOKE DETECTOR, SUPPLY OR RETURN REMOTE INDICATING LIGHT (TEST SWITCH) 120V. MOTORIZED SMOKE DAMPER RESCUE ASSISTANCE PHONE

FIRE FIGHTERS PHONE JACK

# TTB, MDF OR IDF SYSTEM BACKBOARD TELECOMMUNICATION OUTLET FLOOR MOUNTED TELECOMMUNICATION OUTLET TELEVISION OUTLET SPEAKER - PAGING AND OR SOUND SYSTEM (x) - INDICATES SPEAKER ZONE MICROPHONE OUTLET VOLUME CONTROL PUSH BUTTON CLOSED CIRCUIT TELEVISION CAMERA CABLE TRAY (LENGTH AS INDICATED ON DRAWINGS)



# ELECTRICAL DEMOLITION REQUIREMENTS

- THE BASIS OF THESE DRAWINGS WERE SITE OBSERVATIONS, ORIGINAL BUILDING DRAWINGS AND VARIOUS OTHER SOURCES. EVERY ATTEMPT HAS BEEN MADE TO DOCUMENT THE ACTUAL CONDITIONS. HOWEVER, THE CONTRACTOR SHALL CAREFULLY EXAMINE THE CONTRACT DOCUMENTS, VISIT THE SITE, AND THOROUGHLY BECOME FAMILIAR WITH THE BUILDING STANDARDS, THE BUILDING'S EXISTING CONDITION AND LOCAL CONDITIONS RELATING TO THE WORK. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATIONS OF THE CONTRACT.
- THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER/OWNER OF ANY MATERIALS OR APPARATUS BELIEVED TO BE INADEQUATE, UNSUITABLE, IN VIOLATION OF LAWS, ORDINANCES, RULES OR REGULATIONS OF AUTHORITIES HAVING
- THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS COST THE REMOVAL OF ALL EXISTING ELECTRICAL DEVICES, CONDUITS, FIXTURES AND EQUIPMENT. DISCARD ALL EQUIPMENT AS REQUIRED, UNLESS NOTED OTHERWISE.
- EXISTING DEVICES NOT NOTED AS EXISTING (E) OR INDICATED ON PLANS SHALL REMAIN, AS THEY PRESENTLY EXIST. FOR DEMOLISHED DEVICES IN WALLS WHICH ARE TO REMAIN, THE ELECTRICAL CONTRACTOR SHALL INSTALL A BLANK FACE PLATE ON THE BACKBOX. FOR DEMOLISHED DEVICES INSTALLED IN THE FLOOR, THE ELECTRICAL CONTRACTOR SHALL CUT THE FLOOR BOX FLUSH WITH THE FLOOR AND FILL WITH CONCRETE; COORDINATE WITH THE GENERAL CONTRACTOR.
- THE DEMOLITION OF SOME DEVICES MAY INTERRUPT POWER TO DEVICES DOWN STREAM. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REWORKING THESE CIRCUITS TO MAINTAIN POWER TO THE DOWN STREAM DEVICES WHICH WILL REMAIN.
- ALL UNENERGIZED/DEMOLISHED CIRCUITRY SHALL HAVE THE CONDUCTORS REMOVED FROM THE CONDUIT AND THE CONDUIT SHALL BE MARKED "EMPTY" WITH INDELIBLE

#### ELECTRICAL GENERAL NOTES

- THE CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL NECESSARY FOR A COMPLETE AND FUNCTIONING
- MATERIALS AND INSTALLATION SHALL COMPLY WITH CODES, LAWS AND ORDINANCES OF FEDERAL, STATE AND LOCAL GOVERNING BODIES HAVING JURISDICTION.
- MATERIALS AND EQUIPMENT SHALL BE LISTED AND/OR LABELED BY U.L., ETL, CSA OR ANOTHER RECOGNIZED TESTING LAB.
- ALL WORK REQUIRED FOR THE INSTALLATION AS SHOWN ON DRAWINGS INCLUDING LABOR, EQUIPMENT AND MATERIALS SHALL BE IN STRICT COMPLIANCE WITH THE BUILDING STANDARDS, EXCEPT AS NOTED OTHERWISE.
  - THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, GOVERNMENTAL FEES, TAXES AND LICENSES NECESSARY
- FOR THE PROPER EXECUTION AND COMPLETION OF THE ELECTRICAL WORK. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO GOVERNMENTAL AGENCIES AND UTILITY COMPANIES SHOP DRAWINGS,
- WHICH ARE REQUIRED BY THESE AGENCIES, FOR THEIR APPROVAL. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER/OWNER OF ANY MATERIALS OR APPARATUS BELIEVED TO BE
- INADEQUATE, UNSUITABLE, IN VIOLATION OF LAWS, ORDINANCES, RULES OR REGULATIONS OF AUTHORITIES HAVING FOR ALL JOBS THAT INCLUDE DEMOLITION WORK BY THE ELECTRICAL CONTRACTOR, DURING AND AFTER DEMOLITION, EC SHALL MAINTAIN CIRCUIT CONTINUITY TO ALL EXISTING DEVICES THAT ARE TO REMAIN. EC SHALL REMOVE, RELOCATE,
- AND/OR REMORK ANY CONDUIT AND WIRING TO FACILITATE THE NEW CONSTRUCTION SCOPE OF WORK. FOR A LUMINAIRES THAT ARE EXISTING TO REMAIN OR EXISTING TO BE RELOCATED, EC SHALL CLEAN LENSES AND REPLACE ALL
- THE CONTRACTOR SHALL CAREFULLY EXAMINE THE CONTRACT DOCUMENTS, VISIT THE SITE, AND THOROUGHLY BECOME FAMILIAR WITH THE BUILDING STANDARDS AND LOCAL CONDITIONS RELATING TO THE WORK. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATIONS OF THE CONTRACT.
- ALL MATERIALS, AND EQUIPMENT SHALL BE ERECTED, INSTALLED, CONNECTED, CLEANED, ADJUSTED, TESTED, CONDITIONED, AND PLACED IN SERVICE IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS.
- ALL CUTTING, DRILLING AND PATCHING OF MASONRY, STEEL OR IRON WORK BELONGING TO THE BUILDING MUST BE DONE BY THIS CONTRACTOR IN ORDER THAT HIS WORK MAY BE PROPERLY INSTALLED, BUT UNDER NO CONDITIONS MAY STRUCTURAL WORK BE CUT, EXCEPT AT THE DIRECTION OF THE ARCHITECT-DESIGNER OR THEIR REPRESENTATIVE.
- E.C. IS TO REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ALL FIRE RATED PENETRATION INSTALLATION REQUIREMENTS. E.C. IS TO NOTIFY ENGINEER AND ARCHITECT PRIOR TO INSTALLING ANY FIXTURES WITHIN A FIRE RATED CEILING OR WALL. FIRE RATING MUST BE MAINTAINED FOR THIS TYPE OF INSTALLATION WITH DRYWALL TENTING.
- E.C. SHALL PROVIDE COORDINATION STUDY OF NEW AND/OR NEW GEAR COMBINED WITH EXISTING GEAR DURING THE
- SHOP DRAWINGS SHALL INCLUDE MANUFACTURER'S NAMES, CATALOG NUMBERS, CUTS, DIAGRAMS AND OTHER SUCH DESCRIPTIVE DATA AS MAY BE REQUIRED TO IDENTIFY AND REVIEW THE EQUIPMENT. SUBMITTALS SHALL BE IN LOGICAL GROUPS, FOR EXAMPLE, ALL LIGHTING FIXTURES, PARTIAL SUBMITTALS WILL NOT BE REVIEWED.
- SUBMIT (3) COPIES OF THE FOLLOWING SHOP DRAWINGS FOR REVIEW. SWITCH BOARD, PANELBOARDS, AND METERING EQUIPMENT

  - LIGHT FIXTURES LIGHTING CONTROLS
  - TRANSFORMERS PROVIDE "AS-BUILT" DRAWINGS AND SUBMIT TO ARCHITECT/DESIGNER.
- ALL MATERIAL, EQUIPMENT, WIRING DEVICES, ETC. SHALL BE NEW, UNLESS SPECIFICALLY INDICATED AS EXISTING TO BE
- CONTRACTOR IS TO SUBMIT A COMPLETE CONSTRUCTION DRAWING SET TO THE ELECTRICAL UTILITY COMPANY WITHIN IO DAYS OF AWARD OF CONTRACT. COORDINATE TIMELINE OF THE REVIEW, APPROVAL, ALL ASSOCIATED DOWN TIME, CONSTRUCTION SCHEDULING, DELIVERY, AND INSTALLATION OF THE UTILITY TRANSFORMER. NOTIFY OWNER OF SCHEDULING

CONTRACTOR SHALL OBTAIN AND VERIFY EXACT UTILITY COMPANY DRAWINGS AND REQUIREMENTS. ELECTRICAL

- ALL NEW CIRCUIT BREAKERS FOR NEW OR EXISTING PANELBOARDS SHALL MATCH EXISTING BUILDING PANELBOARD MANUFACTURER AND BREAKER TYPE. THE CONTRACTOR SHALL PROVIDE NEW TYPE WRITTEN PANEL DIRECTORIES FOR ALL NEW PANELS AND EXISTING PANELS WHICH HAVE CHANGED, PANELBOARD SHALL BE MARKED WHERE THE SOURCE OF POWER SUPPLY ORIGINATES, AND IF SERIES COMBINATION SYSTEMS ARE UTILIZED AND THEIR LISTED AMPERE RATING.
- DO NOT SHARE NEUTRAL CONDUCTORS FOR MULTIWIRE BRANCH CIRCUITS. WHERE THE E.C. PROPOSES THE USE OF SHARED NEUTRAL CONDUCTORS OR SHARED NEUTRAL CONDUCTORS ARE REQUIRED (SUCH AS POWERED FURNITURE SYSTEMS), HANDLE TIES SHALL BE PROVIDED ON THE CIRCUIT BREAKERS, WITH SHARED NEUTRALS, SUCH THAT IT WILL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS. ALL HANDLE TIES ARE REQUIRED TO BE INDICATED ON THE PANELBOARD SHOP DRAWINGS.
- 20. SHOULD ACTUAL FIELD CONDITIONS REQUIRE INDICATED CIRCUIT DESIGNATIONS TO VARY, INDICATE THE CIRCUIT NUMBER USED ON THE "AS-BUILT" DRAWINGS.
- ALL SERVICE EQUIPMENT (OTHER THAN IN DWELLING UNITS) SHALL BE LEGIBLY MARKED IN THE FIELD BY THE ELECTRICAL CONTRACTOR WITH THE MAXIMUM AVAILABLE FAULT CURRENT AS INDICATED WITHIN THESE DOCUMENTS. THE FIELD MARKING(S) SHALL COMPLY WITH ELECTRICAL SPECIFICATIONS FOR READABILITY AND DURABILITY.
- PROVIDE COMPLETE METAL RACEWAY SYSTEMS AND ENCLOSURES FOR ALL WIRING THROUGHOUT THE EXTENT OF THE A. UTILIZE RIGID POLYVINYL CHLORIDE CONDUIT (PVC) IN THE FOLLOWING LOCATIONS:
  - a. UNDERGROUND UTILIZE ELECTRICAL METALLIC TUBING (EMT), MINIMUM SIZE OF 3/4", IN THE FOLLOWING LOCATIONS:
  - a. SERVICE AND FEEDERS b. POWER CIRCUIT HOMERUN
  - BRANCH CIRCUITS IN CONCEALED OR EXPOSED LOCATIONS d. TELEPHONE/DATA/CATY ROUGH-IN
  - UTILIZE METAL-CLAD CABLE (MC) IN THE FOLLOWING LOCATIONS: BRANCH CIRCUIT IN CONCEALED LOCATIONS
  - FINAL CONNECTION TO RECESSED LIGHTING FIXTURES FINAL CONNECTION TO STEP-DOWN TRANSFORMERS
- 22. ALL NEW CIRCUITS SHALL HAVE A GROUND WIRE INSTALLED.
- 23. ALL WIRING NOT INSTALLED IN CONDUIT AND INSTALLED IN THE CEILING SPACE SHALL BE PLENUM RATED.
- 24. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SPECIAL OUTLET BOXES THAT MAY BE REQUIRED TO ENCLOSE
- 25. EACH SWITCH, LIGHT, RECEPTACLE AND OTHER MISCELLANEOUS DEVICE SHALL BE PROVIDED WITH A GALVANIZED OR PRESSED STEEL OUTLET BOX OF THE KNOCKOUT TYPE, OF NOT LESS THAN NO. 14 U.S. GAUGE STEEL. CONDUITS SHALL BE FASTENED WITH LOCKNUTS AND BUSHINGS AND ALL UNUSED KNOCKOUTS MUST BE LEFT SEALED. THERE MUST BE SUFFICIENT ROOM FOR WIRES AND BUSHINGS AND DEEP BOXES SHALL BE INSTALLED WHERE REQUIRED. BOXES SHALL BE SECURELY
- 26. IN SUSPENDED CEILINGS, SUPPORT CONDUIT AND JUNCTION BOXES DIRECT FROM THE STRUCTURAL SLAB, DECK, OR FRAMING PROVIDED FOR THAT PÜRPOSE. LIGHTING BRANCH CIRCUIT CONDUITS SHALL NOT BE CLIPPED TO THE CEILING SUPPORT WIRES OR SPLINE UNLESS THE CEILING SYSTEM HAS BEEN SPECIFICALLY DESIGNED FOR THAT PURPOSE.
- 27. WHERE FLOOR FITTINGS REQUIRE PENETRATION OF THE FLOOR SLAB, THEY SHALL BE STANDARD DEVICE LISTED BY UL FOR THE PURPOSE AND HAVE A UL FIRE RATING EQUAL TO THE FLOOR RATING. FLOOR SERVICE BOXES SHALL BE MODULAR, ADJUSTABLE FLUSH TYPE, DUAL SERVICE UNITS SUITABLE FOR WIRING METHOD USED. COMPARTMENT BARRIERS SHALL SEPARATE POWER FROM LOW YOLTAGE CABLING. PROVIDE RECTANGULAR SERVICE PLATE WITH SATIN FINISH.
- 29. ALL RECEPTACLES SHALL BE SPECIFICATION GRADE NEMA 5-20R, UNLESS OTHERWISE NOTED.
- 30. ALL LIGHT SMITCHES SHALL BE SPECIFICATION GRADE, QUIET OPERATION RATED 120/277 VOLT, 20 AMPS, UNLESS
- 31. ALL FACE PLATE AND DEVICE COLORS SHALL BE APPROVED BY ARCHITECT OR OWNER/LEASEE.
- 32. PROVIDE LUMINAIRES SHOWN AS SHADED WITH EMERGENCY BATTERY BALLASTS. EMERGENCY LUMINAIRES SHALL SENSE UNSWITCHED POWER TO THE SPACE AND OPERATED AUTOMATICALLY UPON LOSS OF NORMAL POWER. ALL SHADED LUMINAIRES WITH 2' AND 4' LAMPS OR LONG BIAX LAMPS SHALL HAVE ONE (1) 90 MINUTE. TWO LAMP, 1400 LUMEN EMERGENCY BALLAST. ALL SHADED LUMINAIRES WITH COMPACT FLUORESCENT LAMPS SHALL HAVE A FACTORY INSTALLED 90 MINUTE EMERGENCY BALLAST. ALL EMERGENCY LUMINAIRES SHALL HAVE REMOTE TEST SWITCHES AND VISIBLE INDICATING LIGHTS. CONNECT THE EMERGENCY BATTERY BALLAST TO THE UN-SWITCHED LEG OF THE LIGHTING
- 33. ALL BATTERY BACKUP EMERGENCY LIGHTING AND EXIT LIGHTS SHALL BE WIRED AHEAD OF ANY LOCAL SWITCHING, UON. 34. UNLESS OTHERWISE NOTED, LUMINAIRES DESIGNATED AS NIGHT LIGHT (NL) SHALL BE CONNECTED AHEAD OF LOCAL
- SWITCHING AND REMAIN ON 24 HOURS A DAY. 35. ALL DIMMED LIGHTING CIRCUITS ARE TO RECEIVE DEDICATED NEUTRALS. DO NOT SHARE NEUTRALS ON DIMMED LIGHTING
- 36. WHERE DUAL LEVEL SWITCHING IS INDICATED, THE SWITCH CLOSEST TO THE DOOR SHALL CONTROL ALL OUTER LAMPS IN
- THE INDICATED LUMINAIRE AND THE ADJACENT SWITCH SHALL CONTROL ALL INNER LAMP(S) IN THE INDICATED LUMINAIRES, 37. PROVIDE OWNER WITH A COMPLETE LISTING OF ALL LAMPS UTILIZED ON THE PROJECT INCLUDING MANUFACTURER AND
- CATALOG INFORMATION. PROVIDE A SUGGESTED SOURCE, INCLUDING CONTACT NAME AND PHONE NUMBER, FOR
- 38. THE CONTRACTOR SHALL VERIFY THE CEILING TYPE BEFORE ORDERING LIGHTING FIXTURES.
- ROUGH-IN FOR MECHANICAL EQUIPMENT SHALL ONLY OCCUR AFTER MECHANICAL EQUIPMENT SUBMITTALS ARE THOROUGHLY REVIEWED FOR CHANGES. NOTIFY ENGINEER OF ANY DISCREPANCIES.
- FINAL LAYOUT AND QUANTITY OF ALL FIRE ALARM DEVICES SUBJECT TO APPROVAL OF LOCAL AUTHORITY HAVING
- COORDINATE ELECTRIC WATER COOLER RECEPTACLE PLACEMENT SUCH THAT THE RECEPTACLE IS ACCESSIBLE, YET CONCEALED BY COOLER, RECEPTACLE TO BE GFCI TYPE.
- THE POWER AND CONTROL REQUIREMENTS FOR ALL EQUIPMENT CONNECTIONS SHALL BE CONFIRMED WITH APPROVED SHOP DRAWINGS PRIOR TO ELECTRICAL ROUGH-IN. FINAL POWER REQUIREMENTS, DIMENSIONED ROUGH-IN LOCATIONS, LOW
- VOLTAGE SYSTEM CONNECTIONS, ETC. SHALL BE CONFIRMED AND MODIFIED AS REQUIRED.
- ALL DEVICES IN OR ABOVE COUNTERS SHALL HAVE LOCATIONS AND MOUNTING HEIGHTS CONFIRMED WITH ARCHITECTURAL ELEVATIONS & OWNER PRIOR TO ROUGH-IN. ANY ADJUSTMENTS TO MOUNTING HEIGHTS REQUIRED BY LACK OF COORDINATION WILL BE AT THE CONTRACTOR'S EXPENSE.
- 44. ALL EXISTING ELECTRICAL SERVICES NOT SPECIFICALLY INDICATED TO BE REMOVED OR ALTERED SHALL REMAIN AS THEY PRESENTLY EXIST.
- G.C. SHALL INCLUDE IN HIS COST THE REMOVAL OF ALL EXISTING ELECTRICAL DEVICES, CONDUITS, FIXTURES AND EQUIPMENT. TURN EQUIPMENT OVER TO OWNER AS INDICATED OR RECYCLE/DISCARD ALL EQUIPMENT AS REQUIRED. E.C. SHALL BE RESPONSIBLE FOR DISCONNECTING PRIMARY SERVICE AND TEMPORARY POWER
- WHERE EXISTING CEILINGS ARE REVISED FROM ACCESSIBLE TO NON-ACCESSIBLE, CONTRACTOR IS TO INCLUDE IN HIS BID THE COSTS ASSOCIATED WITH RELOCATING ALL ELECTRICAL EQUIPMENT REQUIRING ACCESS ABOVE THE EXISTING CEILING TO A NEW ACCESSIBLE CEILING LOCATION APPROVED BY ARCHITECT AND ENGINEER. THE USE OF ACCESS PANELS IN THE NEW CEILING TO AVOID RELOCATION OF THIS EQUIPMENT IS NOT ACCEPTABLE.
- 47. CONTRACTOR TO CONDUCT FUNCTIONAL TESTING OF LIGHTING CONTROLS EQUIPMENT AS REQUIRED BY IECC 2012/2015, SECTION C408.3. AFTER THIS TESTING IS OBSERVED AND COMPLETED, THE REGISTERED DESIGN PROFESSIONAL OR COMMISSIONING AUTHORITY SHALL PROVIDE DOCUMENTATION TO THE AHJ THAT CERTIFIES THAT THE INSTALLATION MEETS THE DOCUMENTED PERFORMANCE CRITERIA OF SECTION C405.A

NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further

cooperation among the owner, his or her contractor

consultants have performed their services with due

care and diligence, they cannot guarantee perfection. Communication is imperfect and every

or discrepancy discovered by the use of these

contingency cannot be anticipated. Any ambiguity

plans shall be reported immediately to the architect Failure to notify the architect compounds

misunderstanding and increases construction costs

responsibility for all consequences. Changes mad

from the plans without consent of the architect are

unauthorized and shall relieve the architect from all consequences arising out of such changes.

A failure to cooperate by a simple notice to the

architect shall relieve the architect from

Permit Set

Revisions:

Date: 08/02/2016

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**ELECTRICAL** COVER SHEET

Drawing Number:



GENERAL NOTES

- A. DEVICES CIRCUITED TO BRANCH PANEL:
- CI-## PANEL C-I C2-## - PANEL C-2 SEE MECHANICAL SCHEDULE ON DRAWING

E50 FOR ALL MECHANICAL LOAD AND BRANCH CIRCUITING.

KEYNOTE LEGEND

- ELEVATOR ALL-IN-ONE CONTROL SWITCH, CONFIRM VOLTAGE AND RATING, EATON SERIES #ES.
- 2. PROVIDE LOCKABLE OVERCURRENT DISCONNECT FOR CAB LIGHTING AND FAN. COORDINATE WITH ELEVATOR VENDOR.
- 3. JUNCTION BOX FOR LOW VOLTAGE COMMUNICATIONS CABLING CONNECTION TO THE ELEVATOR CONTROLLER. PROVIDE (I) CAT6 CABLE IN 3/4"C FROM TELEPHONE BACKBOARD PUNCH DOWN BLOCKS AND TERMINATE AT ELEVATOR CONTROLLER.
- 4. EC TO RELOCATE AND RE-INSTALL ONE EXISTING SCREEN AND PROJECTOR SYSTEM TO THE COLVIN COMMONS SPACE. WORK TO INCLUDE NEW RECEPTACLE IN CEILING, INSTALLATION OF SPEAKER SYSTEM, AND OTHER WORK AS REQUIRED BY OWNER.
- COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS REGARDING EXPANSION OF SOUTH EAST MECHANICAL ROOM
- 6. EC SHALL PROVIDE SPECIALTY RECEPTACLE NEMA 6-30R FOR CONNECTION TO ELECTRIC CLOTHES DRYER. EC SHALL VERIFY ELECTRICAL REQUIREMENTS WITH MANUFACTURER BEFORE ROUGH-IN.

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NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further cooperation among the owner, his or her contractor, and the architect. Design and construction are complex. Although the architect and his/her consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for all consequences. Changes made from the plans without consent of the architect are unauthorized and shall relieve the architect from all consequences arising out of such changes.

ELECTRICAL LOWER LEVEL POWER PLAN

Drawing Number:



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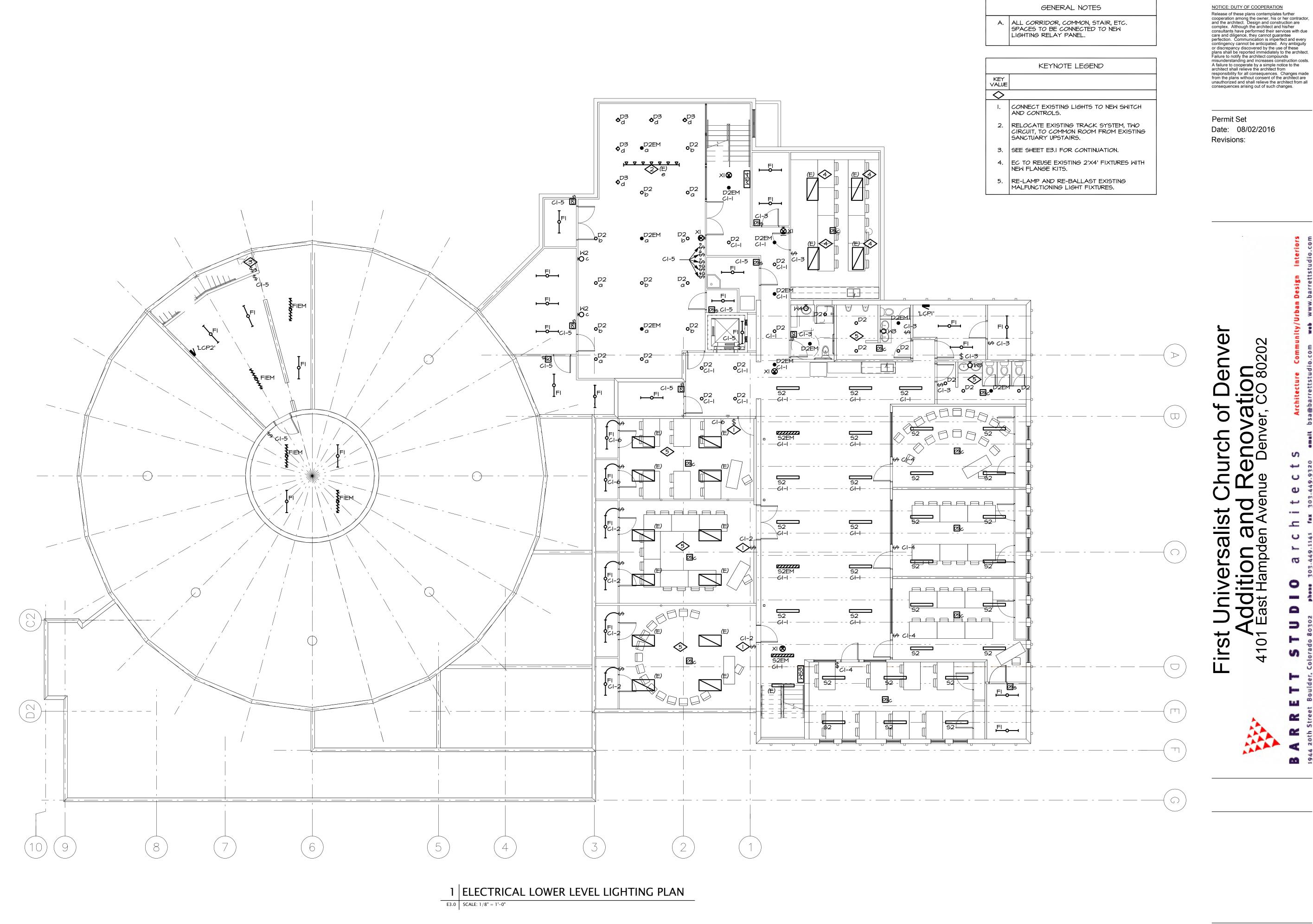
GENERAL NOTES

A. ADDITIONAL COORDINATION WITH SELECTED

**ELECTRICAL** 

MAIN LEVEL POWER PLAN Drawing Number:





ELECTRICAL LOWER LEVEL LIGHTING PLAN Drawing Number:



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1 ELECTRICAL MAIN LEVEL LIGHTING PLAN

E3.1 SCALE: 1/8" = 1'-0"

ELECTRICAL
MAIN LEVEL LIGHTING PLAN

Drawing Number:



E3.1

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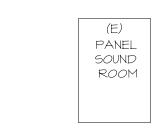
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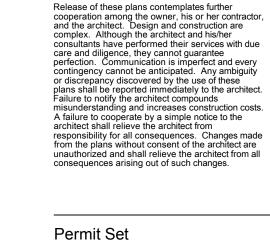
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Revisions:

Date: 08/02/2016

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NOTICE: DUTY OF COOPERATION

File:

Permit Set Date: 08/02/2016 Revisions:

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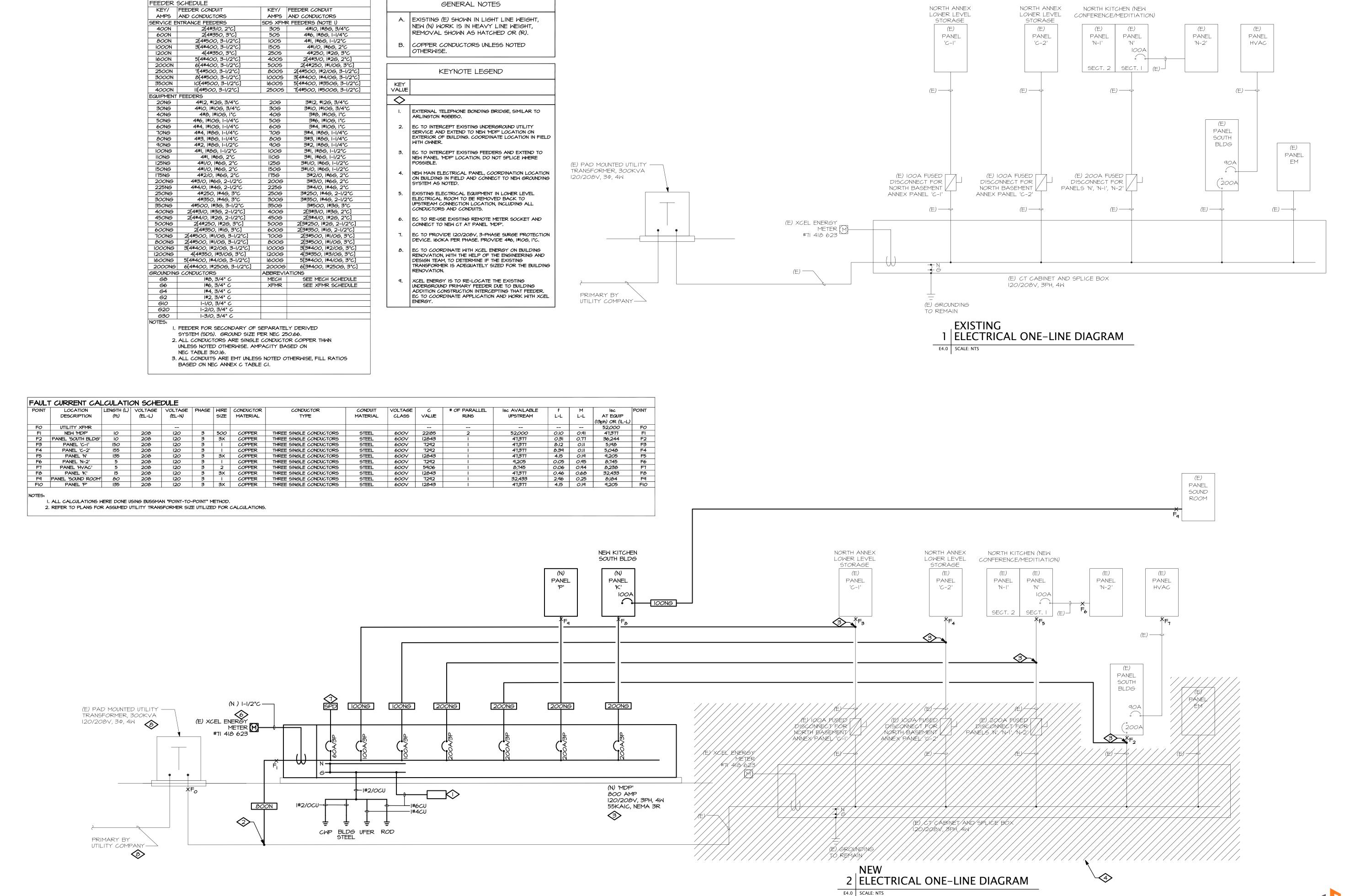
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**ELECTRICAL** 

ONE-LINE DIAGRAM Drawing Number:

**AE DESIGN** Integrated Lighting and Electrical Solutions 1900 Wazee Street #350 | Denver, CO 80202 | 303.296.3034 ©Copyright 2015 Barrett Studio Architects Project #:3251.00 aedesign-inc.com



	IG FIXTURE SCHEDULE				. 1						
TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLTAGE		LAMP WATT	TYPE	MAX WATTS		INFORMATION BOF/RFD/OFH	NOTES
DI	RECESSED SLOPED CEILING DOWNLIGHT, 3500 LUMENS	PHILIPS-LIGHTOLIER	C7L35NIVBZIOV	120	I	35	LED	41	SURFACE	DOI / NI D/OI II	
D2	RECESSED DOWNLIGHT, GENERAL, 1500 LUMENS WET LOCATION LISTED	PHILIPS-LIGHTOLIER	L6RAEUVA, L4RI5835VA L4RDD	120	ı	16	LED	16	RECESSED		
D2EM	RECESSED DOWNLIGHT, WITH EMER	PHILIPS-LIGHTOLIER	L6RAEUVA, L4RI5835VA L4RDD, EM BATTERY	120	I	16	LED	16	RECESSED		
D3	RECESSED WALL WASHER	PHILIPS-LIGHTOLIER	L4RAEU, L4RAO6835W	120	ı	16	LED	16	RECESSED		
D4	SLIM SURFACE DOWNLIGHT	PHILIPS-LIGHTOLIER	S5R-8-35K-7	120	1	9.5	LED	9.5	SURFACE		
FI	4' FLUORESCENT STRIP	PHILIPS-DAYBRITE	T232-UNV-EB	120	2	32	T8	61	SURFACE		
F2	2' FLUORESCENT STRIP	PHILIPS-DAYBRITE	T2I7-UNV-EB	120	2	17	T8	33	SURFACE		
LI	LINEAR WALL WASH	12 SYSTEMS	SI205A-46CBC LL-205-IOV, E05P, SLA-I	120	ı	24	LED	24	SURFACE		
RI	RECESSED 2X4	PHILIPS-DAYBRITE	2AVG3-ACR-UNV-XXX	120	3	32	T8	86.2	RECESSED		
RIEM	RECESSED 2X4 WITH EMER BALLAST	PHILIPS-DAYBRITE	2AVG3-ACR-UNV-XXX	120	3	32	T8	86.2	RECESSED		
51	KITCHEN LIGHT, SURFACE MOUNTED	PHILIPS-DAYBRITE	WB4B332UNV-XX	120	3	32	T8	86.2	SURFACE		
SIEM	KITCHEN LIGHT, SURFACE MOUNTED WITH EMER BALLAST	PHILIPS-DAYBRITE	WB4B332UNV-XX	120	3	32	T8	86.2	SURFACE		
52	SURFACE MOUNT VOLUMETRIC	AXIS LIGHTING	DIAI4VLT82WUNVEISM	120	2	32	T8	62	SURFACE		
S2EM	SURFACE MOUNT VOLUMETRIC, WITH EMER BALLAST	AXIS LIGHTING	DIAI4VLT82WUNVEISMB	120	2	32	T8	62	PENDANT		
53	SURFACE MOUNT, COAT CLOSET	OCL LIGHTING	RFI-CINA-16-MW-SNK-2QDI3-120	120	2	13	CFL	26	SURFACE		
54	SURFACE MOUNT, 2X4, LUMINOUS SIDES	HE WILLIAMS	15 4 232 F Al2l25 EB2 I20	120	2	32	T8	62	SURFACE		
PI	DECORATIVE PENDANT, LIBRARY AND LOUNGE	PHILIPS-FORECAST	190213836	120	3	100	INC	300	PENDANT		
P2	DECORATIVE PENDANT, RECEPTION DESK	PHILIPS-FORECAST	190215836	120	I	75	INC	75	PENDANT		
P3	16' LINEAR DIRECT/INDIRECT PENDANT	AXIS LIGHTING	LTS8T82 APOOUNVDICCA36 B	120	2	32	T8	62	PENDANT		
TI	SANCTUARY TRACK LIGHTING	PHILIPS	9530BK	120	6	75	INC	450	SURFACE		
MI	SANCTUARY CEILING WASH	MAC	WP-LED336-30-WT	120	ı	75	LED	75	SURFACE WALL		
W2	DECORATIVE WALL SCONCE	THOMAS LIGHTING	#5KL853I22	120	ı	100	INC	100	SURFACE WALL		
МЗ	46" BATHROOM VANITY	PHILIPS-DAYBRITE	VLW4X48 NI32-UNV-I/IEB	120	ı	32	T8	33.2	SURFACE WALL		
M4	24" BATHROOM VANITY	PHILIPS-DAYBRITE	VLW4X24 NII7-UNV-I/IEB	120	ı	17	T8	18.3	SURFACE WALL		
M5	6' LINEAR WALL MOUNT	AXIS LIGHTING	PRWLEDB3MF500803596WI20DI	120	I	33	LED	33	SURFACE WALL		
M6	8' LINEAR WALL MOUNT	AXIS LIGHTING	PRWLEDB3MF500803558WI20DI	120	ı	44	LED	44	SURFACE WALL		
XI	LED EXIT SIGN WITH GREEN LETTERING, WHITE HOUSING AND INTEGRAL BATTERY	PHILIPS	VERGWEM	120			LED		SURFACE		
ΥI	LED EMERGENCY LIGHT WITH INTEGRAL BATTERY	PHILIPS	TBD	120	I	20	LED	20	SURFACE		
EMI	EXTERIOR WALLPACK AT BUILDING ENTRY	LIGMAN	UAU-30591	120	ı	20.4	LED	20.4	SURFACE WALL		
EWIEM	EXTERIOR WALLPACK AT BUILDING ENTRY WITH REMOTE BATTERY PACK	LIGMAN	UAU-3059I-EMR	120	ı	20.4	LED	20.4	SURFACE WALL		
EW2	EXTERIOR WALLSCONCE, UP/DOWN CYLINDER	SLV LIGHTING	322 <i>8</i> 525U	120	2	9	LED	18	SURFACE		

ABBREVIATIONS: BOF - BOTTOM OF FIXTURE, RFD - RECESSED FIXTURE DEPTH, OFH - OVERALL FIXTURE HEIGHT A. ALL FLUORESCENT LAMPS TO BE 3500K COLOR TEMPERATURE AND A MINIMUM OF 82CRI, UNLESS NOTED OTHERWISE.

BATTERY BALLAST TO THE UN-SWITCHED LEG OF THE LIGHTING CIRCUIT INDICATED.

B. ALL REFLECTOR LAMPS TO BE PROVIDED AS WIDE FLOOD DISTRIBUTION, UNLESS NOTED OTHERWISE. C. ALL FLUORESCENT LUMINAIRES THAT UTILIZE DOUBLE-ENDED LAMPS AND CONTAIN BALLASTS THAT CAN BE SERVICED IN PLACE SHALL HAVE A

DISCONNECTING MEANS AS DESCRIBED IN NEC 410.130(G).

D. PROVIDE LUMINAIRES SHOWN AS SHADED WITH EMERGENCY BATTERY BALLASTS. EMERGENCY LUMINAIRES SHALL SENSE UN-SWITCHED POWER TO THE SPACE AND OPERATED AUTOMATICALLY UPON LOSS OF NORMAL POWER. ALL SHADED LUMINAIRES WITH 2FT AND 4FT LAMPS SHALL HAVE ONE (I) 90 MINUTE RATED, TWO LAMP, 1400 LUMEN EMERGENCY BALLAST. ALL SHADED LUMINAIRES WITH COMPACT FLUORESCENT LAMPS SHALL HAVE A FACTORY INSTALLED 90 MINUTE EMERGENCY BALLAST. ALL EMERGENCY LUMINAIRES SHALL HAVE REMOTE TEST SWITCHES AND VISIBLE INDICATING LIGHTS. CONNECT THE EMERGENCY

MECHANICAL EQUIDMENT SCHEDULE

KEY	DESCRIPTION	VOLTS	PH	LOAD	MOCP/	FEEDER	DISCONNECT	CIRCUIT	NOTE
				HP,W,A	MFS				
HP I	HEAT PUMP	208	3	31.4MCA 11315	50A/3P	3#6,  #  <i>06</i> ,  "C	60A/3P	C2-32,34,36	
HP 2	HEAT PUMP	208	3	31.4MCA 11315	50A/3P	3#6,  #  <i>0</i> 6,  "C	60A/3P	C2-38,40,42	
HP 3	HEAT PUMP	208	3	31.4MCA 11315	50A/3P	3#6,  # 0 <del>6</del> ,  "C	60A/3P	P-1,3,5	
HP	HEAT PUMP	208	1	12MCA	15A/2P	2#I2, I#I2G, 3/4"C	30A/2P	P-7,9	
4	5KM HEATING ELEMENT	208	l i	5kM HEAT	30A/2P	2#10,1#10, 3/4"0	30A/2P	P-11,13	1, 2
HP	HEAT PUMP	208	3	ITMCA	25A/3P	3#IO, I#IOG, 3/4"C	30A/3P	P-15,17,19	<u> </u>
5	5kM HEATING ELEMENT	208	3	5kW HEAT	20A/3P	3#12, I#126, 3/4"C	30A/3P	P-21,23,25	1, 2
HP	HEAT PUMP	208	3	ITMCA	25A/3P	3#IO, I#IOG, 3/4"C	30A/3P	P-27,29,31	1
6	5km Heating Element	208	3	5kM HEAT	20A/3P	3#12, I#126, 3/4°C	30A/3P	P-33.35.37	1, 2
HP 7	HEAT PUMP	208	3	40MCA 14410	60A/3P	3#4,  #  <i>0</i> 6,  "C	60A/3P	5-2,4,6	
HP	HEAT PUMP	208	3	40MCA	60A/3P	3#4, I#IOG, I"C	60A/3P	N-1,3,5	
8				14410					
HP	HEAT PUMP	208	3	20MCA	30A/3P	3#IO, I#IOG, 3/4"C	30A/3P	5-8,10,12	
9	IOKW HEATING ELEMENT			IOKW HEAT	35A/3P	3#8, I#IO, I"C	60A/3P	5-14,16,18	1, 2
HP	HEAT PUMP	208	3	20MCA	30A/3P	3#IO, I#IOG, 3/4"C	30A/3P	N-7,9,II	
10	IOKW HEATING ELEMENT			IOKW HEAT	35A/3P	3#8, I#IO, I"C	60A/3P	N-13,15,17	1, 2
ERV I	ENERGY RECOVERY VENTILATOR	208	3	26MCA 9370	30A/3P	3#IO, I#IOG, 3/4"C	30A/3P	P-2,4,6	
ERV 2	ENERGY RECOVERY VENTILATOR	120	I	1/5 HP 530	I5A/IP	2#12,  #12 <del>6</del> , 3/4"C	\$TO	P-8	
ERV 3	ENERGY RECOVERY VENTILATOR	208	3	11.9MCA 4290	15A/3P	3#I2, I#I26, 3/4"C	30A/3P	P-10,12,14	
ERV 4	ENERGY RECOVERY VENTILATOR	208	3	11.9MCA 4290	15A/3P	3#I2, I#I26, 3/4"C	30A/3P	5-7,9,11	
ERV 5	ENERGY RECOVERY VENTILATOR	208	3	15MCA 54 <i>0</i> 5	15A/3P	3#I2, I#I2G, 3/4"C	30A/3P	N-8,10,12	
P	PUMP	208	3	3 HP 3825	15A/3P	3#I2, I#I2G, 3/4"C	30A/3P	P-26, 28, 30	3
P 2	PUMP	208	I	1 HP 1840	15A/2P	2#I2, I#I2G, 3/4"C	30A/2P	P-32,34	3
EF I	FAN	208	3	2.6AMPS 940	20A/3P	3#I2, I#I2G, 3/4"C	30A/3P	K-12,14,16	
MAU I	MAKEUP AIR UNIT	208	3	5.9AMPS 2l30	30A/3P	3#IO, I#IOG, 3/4"C	30A/3P	K-II,I3,I5	
NH I	GAS WATER HEATER	120	I	50 W	I5A/IP	2#I2, I#I2G, 3/4"C	\$T <i>O</i>	C2-8	

A. REFER TO MECHANICAL PLANS FOR SPECIFIC EQUIPMENT LOCATIONS AND REQUIREMENTS.

B. PRIOR TO ROUGH-IN, COORDINATE ALL MECHANICAL EQUIPMENT POWER AND CONNECTION REQUIREMENTS WITH MECHANICAL CONTRACTOR'S FINAL SHOP DRAWINGS.

C. PROVIDE ALL 120V CONTROL WIRING, REFER TO SPECIFICATIONS FOR FURTHER CONTROL WIRING CLARIFICATION. D. FOR ANY VAV SYSTEM COORDINATE POWER REQUIREMENTS WITH MECHANICAL CONTRACTOR AND PROVIDE 120V CONNECTIONS AT EACH VAY BOX, OR AT CENTRAL CONTROL PANEL LOCATION(S) AS REQUIRED. IF EXACT QUANTITIES AND LOCATIONS FOR CONTROL PANELS ARE NOT KNOWN AT BID TIME, E.C. IS TO INCLUDE ONE 120V CONNECTION AT EACH VAV DEVICE IN THE BASE BID PRICE AND PROVIDE A CREDIT DURING CONSTRUCTION IF LESS CONNECTIONS ARE REQUIRED.

E. EXTERIOR DISCONNECT SWITCHES ARE TO BE PROVIDED AS NEMA 3R EQUIPMENT UNLESS OTHERWISE NOTED. F. PROVIDE WEATHERPROOF 120 VOLT GFCI RECEPTACLES WITHIN 25' OF ALL ROOFTOP HEATING, VENTILATING, AND AIR CONDITIONING EQUIPMENT. CIRCUIT TO SPARE CIRCUIT ON NEAREST 120V PANELBOARD OR AS INDICATED ON PLANS. G. PROVIDE DUCT DETECTION ON ALL RETURN AIR SYSTEMS OF 2,000 CFM OR GREATER, AND FOR ALL SUPPLY AIR SYSTEMS 15,000 CFM OR GREATER, INCLUDING THOSE SYSTEMS SERVING MULTIPLE FLOORS. PROVIDE ADDITIONAL

DUCT DETECTORS AND INSTALL REMOTE INDICATOR LIGHTS AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION. H. FOR ANY BOILER MECHANICAL SYSTEM, E.C. IS TO PROVIDE AN EMERGENCY PUSHBUTTON OFF AND ANY CONTROL WIRING REQUIRED. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTRACTOR AND EQUIPMENT PRIOR TO INSTALLATION. I. EC TO PROVIDE HAND/OFF/AUTO STARTERS FOR ALL MOTORS WHEN NOT INDICATED AS TO BE PROVIDED BY THE MECHANICAL

# CONTRACTOR ON THE MECHANICAL PLANS." SIZE OF STARTER TO BE BASED UPON SIZE OF MOTOR HORSEPOWER INDICATED.

I. EC TO REVIEW MECHANCIAL AND PLUMBING DRAWINGS FOR REQUIRED ELECTRICAL CONNECTIONS. PROVIDE ALL NECESSARY CIRCUIT BREAKERS, CONDUCTORS, CONDUIT, AND LINE-VOLTAGE CONTROLS WIRING. 2. EC TO PROVIDE SECOND ELECTRICAL CONNECTION FOR SUPPLIMENTAL HEATING ELEMENTS PER MECHANICAL PLANS.

3. VERIFY PUMP LOCATION WITH MECHANICAL ENGINEER

NOTICE: DUTY OF COOPERATION NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further cooperation among the owner, his or her contractor, and the architect. Design and construction are complex. Although the architect and his/her consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for all consequences. Changes made from the plans without consent of the architect are unauthorized and shall relieve the architect from all consequences arising out of such changes.

Permit Set Date: 08/02/2016 Revisions:

ELECTRICAL SCHEDULES



Integrated Lighting and Electrical Solutions

1900 Wazee Street #350 | Denver, CO 80202 | 303.296.3034

aedesign-inc.com Project #:3251.00

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		1	208	• • •		-	EXISTI ATION:		CONFERENCE/MEDITATION					TYPE: MOUNTING:		3PH/4W SURFACE
	DLTAGE L DLTAGE L		120				RATING:		200 AMPS				I	MOUNTING: NOTES:		SURFACE EXISTING
	PE:	-1 <b>X</b> :	3PH/4W			MAIN			M.L.O.				'	NOTES:		LAISTING
	DUNTING:		RECESSED				RATING:		IOK AIC				CIR.	CCT	LOAD	LOAD
	TES:		EXISTING				FROM:		FEED-THROUGH FROM PANEL	'N'			NO.	TYPE	VA	DESCRIPTION
110	123.		EXISTING			I LD	1 101 11		TEED THROUGHT ROTH AREE	- 13			1	5	8896	PANEL HVAC
JR.	CCT	LOAD	LOAD	CIRCUIT	BRKR	BUS	CIRCUIT	BRKR	LOAD	LOAD	ССТ	CIR	3	5	8696	
I .	TYPE	VA	DESCRIPTION	POLE	TRIP		TRIP		DESCRIPTION	VA	TYPE	NO	5	5	7196	
$\top$	L	1500	LTG SANCTUARY WALL		20(*)	A	20		LTG. LOBBY	500	L	2	7	M	1430	ERV-4
3	L	1600	LTG SANCTUARY	1	20(*)	В	20	1	SPARE			4	9	M	1430	
5	L	1200	LTG SANCTUARY TRACK		20(*)	C	20	1	LTG. OFF & CORRIDOR	250	L	6	l ii	M	1430	
7	L	475	LTG OPEN OFFICE		20(*)	A	20	1	LTG. OFFICES	250	L	8	13			SPARE
9	L		LTG LIBRARY/LOUNGE		20(*)	В	20		LTG. OFFICES	250	L	10	15			SPARE
Ti	L	1760	LTG KITCHEN/NURSERY		20(*)	c	20		SPARE			12	17			SPARE
13	L	210	LTG EXTERIOR	1	20(*)	Ā	20(*)	i	RECEPT. SANCTUARY	900	R	14	19			SPARE
15	L	300	LTG VESTIBULE	T i	20(*)	В	20(*)	i	RECEPT, SANCTUARY	1080	R	16	21			SPARE
17	L		LTG OFFICES	T i	20(*)	c	20(*)	i	RECEPT. SANCTUARY	1080	R	18	23			SPARE
19	R	720	RECEPT. SANCTUARAY	T i	20(*)	Ā	20(*)	i	RECEPT, SANCTUARY	1080	R	20	25			SPARE
21	R	1260	RECEPT, SANCTUARAY	T i	20(*)	В	20(*)	i	RECEPT. SANCTUARY	1260	R	22	27			SPARE
23	R	1080	RECEPT. VESTIBULE	T i	20(*)	- c	20(*)	i	RECEPT. BATHROOM	1080	R	24	29			SPARE
25	R	1080	RECEPT. VESTIBULE	T i	20(*)	Ā	30(**)	i	DRYER	1200	R	26	31			SPARE
27	R	900	RECEPT. NURSERY	<del>l i</del>	20(*)	В	20(*)	i	RECEPT. LIBRARY/LOUNGE	1080	R	28	33			SPARE
29	R	720	RECEPT. LOUNGE	<del>i i</del>	20(*)	- C	20(*)	i	RECEPT. EXTERIOR	360	R	30	35			SPARE
31			SPARE	<del>i i</del>	20	Ā			BUSSED SPACE			32	37			SPARE
33			BUSSED SPACE			В			BUSSED SPACE			34	39			SPARE
35			BUSSED SPACE			c			BUSSED SPACE			36	41			SPARE
37			BUSSED SPACE			Ā			BUSSED SPACE			38				131 / H L
39			BUSSED SPACE			В			BUSSED SPACE			40	CCT T			9, R=RECEPTACLE
41			BUSSED SPACE			6			BUSSED SPACE			42	CCT T	—	LOAD	MULT DEM/
<del></del>			D033ED 31 / (CE						DOSSED STREE	l	l		LIGHT		C	
CT TYF	PE: I	L=LIGHTING	5, R=RECEPTACLE, M=MOTO	R, LM=LA	ARGEST	MOTO	DR, E=EQ	UIPMEN	Γ, KE=KITCH EQUIP, S=SUBFEEI	D PANEL				PTACLE:	C	
CT TYF		LOAD	MULT DEMANDED LO	_					TOTAL CONNECTED LOADS					OVER IOK:	C	•
.IGHTING	_	10730	1.25 13413	3 VA					A	В	C		MOTO		35970	
RECEPT		10000							VA 7915	9165	<i>8</i> 530		I	MOTOR:	C	
	/ER IOK:	4880							TOTAL DEMANDED LOADS					MENT:	C	
10T0R:		0		VA					Α	В	C			EQUIP:	C	•
. <i>6</i> 5T M		0		VA					VA 7832	9146	8874		SUBFE	ED PNL:	24788	1.0
:QUIPME		0		VA					AMPS 65	76	74		NOTES	<u> </u>		
ITCH E		0		VA					TOTAL ON		KVA		1		XISTING TO	REMAIN, NEW LO
UBFEED	O PNL:	0	1.0	VA					PANEL:	72	AMP5					KISTING LOADS A
OTES:																IG CIRCUIT BREAK

A. PANEL IS EXISTING TO REMAIN. NEW LOAD SHOWN IN BOLD LINEWEIGHT AND EXISTING SHOWN IN LIGHT LINEWEIGHT. EC TO VERIFY ALL EXISTING LOADS AND MARK ANY UNUSED CIRCUITS AS SPARE. (\*) NEW LOAD ON EXISTING CIRCUIT BREAKER.

(\*\*) NEW LOAD ON NEW CIRCUIT BREAKER.

						PANE	L 'P'	(NEW)						
	VOLTAGE L	L:	208				LOCA	ATION:		CONFERENCE/MED	DITATION			
	VOLTAGE L	N:	120				BUS F	RATING:		200 AMPS				
	TYPE:		3PH/4W				MAIN	CB:		M.L.O.				
	MOUNTING:		RECESSED				S.C. 1	RATING:		IOK AIC				
	NOTES:		NEW				FED	FROM:		200A/3P CB IN F	PANEL MOP	ıı		
CIR.	ССТ	LOAD	LOAD		CIRCUIT	T BRKR	BUS	CIRCUIT	BRKR	LOAD		LOAD	ССТ	CIF
NO	TYPE	VA	DESCRIPTION		POLE	TRIP	1	TRIP		DESCRIPTION		VA	TYPE	No
ï	M	3780	HP-3		3	30	A	30	3	ERV-I		3130	M	1 2
3	M	3780					В					3130	M	4
5	M	3780					- c					3130	М	6
7	M	1250	HP-4		2	50	À	15	1	ERV-2		530	M	8
ġ	M	1250					В	15	3	ERV-3		1430	M	10
Ti I	M	2500	5KW HEAT FOR	HP-4	2	30	0					1430	М	12
13	M	2500					Ā					1430	м	14
15	M	2050	HP-5		3	25	В			BUSSED SPACE		1100		16
17	M	2050					0			BUSSED SPACE				18
19	M	2050					Ā			BUSSED SPACE				20
21	M	1670	5kW HEAT FOR	HP-5	3	20	В			BUSSED SPACE				22
23	M	1670		111 5			6			BUSSED SPACE				24
25	M	1670					Ā	15	3	P-I		1280	м	26
27	M	2050	HP-6		3	25	В					1280	М	28
29	<u></u> М	2050					6			 		1280	М	30
31	M	2050					Ā	15	2	P-2		920	<u></u> М	32
33	E	1670	5kW HEAT FOR	HP-6	3	20	В					920	M	34
35	E	1670		111 0			6			BUSSED SPACE		120	''	36
37	E	1670					A			BUSSED SPACE				38
39	<u> </u>	1010	BUSSED SPACE	:			В			BUSSED SPACE				40
41			BUSSED SPACE				6			BUSSED SPACE				42
	TYPE:	L - LIGHTIN	C D-DECEDTACI	E M-MOTOR	2   14-1	ADCECT		D E-E0		T, KE=KITCH EQUIP,	G_GUREEE	DANE	l	
	TYPE:	L-LIGHTING LOAD	<u> </u>	-E, M=MOTOR MANDED LOA	• •	ROLDI	MOTO	/K, E=E0	UIFITEN	TOTAL CONNECTE		) PANEL		
					_					TOTAL CONNECTE				
	TING:	0		_	VA						A 2226.0	B	C 10560	
	PTACLE:	0			VA						22260	19230	19560	
	OVER IOK:	54040		56040	VA					TOTAL DEMANDE				
MOTO		56040									A	В	C	
	MOTOR:	5010		_	VA						22260	19230	19560	
	PMENT:	5010		5010						AMPS	186	160	163	
	HEQUIP:	C		_	VA					TOTAL ON			KVA	
5UBF	EED PNL:	C	) I.O	0	VA					PANEL:		169	AMPS	

\ T 1	/OLTAGE L /OLTAGE L YPE: 1OUNTING: IOTES:		208 120 3PH/4W SURFACE EXISTING			BUS F MAIN S.C. F	ATION: RATING: CB: RATING: FROM:		SOUND ROOM 200 AMPS M.L.O. IOK AIC IOOA/3P CB IN PANE	≣L 'K'			
CIR.	CCT	LOAD	LOAD		BRKR	BUS	CIRCUIT				LOAD	CCT	CIR
NO	TYPE	VA	DESCRIPTION	POLE	TRIP		TRIP		DESCRIPTION		VA	TYPE	NO
	L	500	SOUND RM. LTGS/ELE		20	A	20	I	LIGHTS FORUM		600	L	2
3	L	600	FORUM LTGS S. SPO		20	В	20	- 1	FORUM LTGS THEATE		900	L	4
5	L	600	FORUM CENTER LTGS		20	C	20	I	FORUM LTGS THEATE		900		6
7	L	600	FORUM CENTER LTGS	b I	20	Α	20	I	FORUM LTGS THEATE		900	L	8
9	L	600	FORUM LIGHTS WEST	1	20	В	20	I	FORUM SOUND RECE	PT.	720	R	10
Ш	L	500	FORUM LIGHTS CENT	ER I	20	C	20	- 1	FORUM RECEPT.		720	R	12
13	L	500	FORUM ENTRY LIGHT	S I	20	A	20	1	FORUM ARCHIVES RI	ECEPT.	540	R	14
15	L	500	FRIENDSHIP HALL LT	GS 1	20	В	20	1	RECEPT.		720	R	16
17	L	900	FORUM LIGHTS NORT	H	20	C	20	- 1	MINISTER'S STUDY		900	R	18
19	L	900	FRIENDSHIP HALL LT	GS 1	20	Α	20	1	SEC OFFICE LTGS		600	L	20
21	L	500	WORKROOM LIGHTS	1	20	В	20	1	MINISTER'S STUDY		600	R	22
23	L	500	R.E. OFFICE LIGHTS	1	20	C	20	1	SEC OFFICE RECEPT	г.	540	R	24
25	E	200	SOUND RM TIME CLO	CK I	20	Α	20	- 1	MINISTER'S STUDY		720	R	26
27	E	1500	A/C FOR OFFICE	2	20	В	20	2	SPARE				28
29	E	1500				C							30
31	L	500	FORUM LTG WEST	1	20	Α	20	1	SPARE				32
33			BUSSED SPACE			В	20	1	SPARE				34
35			BUSSED SPACE			C			BUSSED SPACE				36
37			BUSSED SPACE			A			BUSSED SPACE				38
39			BUSSED SPACE			В			BUSSED SPACE				40
41			BUSSED SPACE			c			BUSSED SPACE				42
CCT T	YPE:	LOAD	9, R=RECEPTACLE, M= MULT DEMANDE	ED LOAD	ARGEST	МОТС	R, E=EQ	UIPMENT	TOTAL CONNECTED	LOADS			
	NG: PTACLE: DVER IOK:	11600 5460	1.0	14500 VA 5460 VA 0 VA					· ·	60 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	B 6640	C 7060	
MOTO!		0		0 VA							В		
	K: MOTOR:	0		0 VA					· ·	4 935	7415	7910	
LOS I EQUIPI		3200		3200 VA						150 15	62	1910 66	
	EQUIP:	9200	**=	0 VA					TOTAL ON	,,,		KVA	
	EQUIP: ED PNL:	0	=	0 VA					PANEL:			AMPS	

EC TO VERIFY ALL EXISTING LOADS AND MARK ANY UNUSED CIRCUITS AS SPARE. (\*) NEW LOAD ON EXISTING CIRCUIT BREAKER. (\*\*) NEW LOAD ON NEW CIRCUIT BREAKER.

				PANEL '	SOUTH	BLI	26' (E	XISTI	<b>16)</b>			
	VOLTAGE	L-L:	208				TION:		LOWER LEVEL SOUTH ELEC	CTRICAL ROOM	1	
\	VOLTAGE	L-N:	120			BUS F	RATING:		200 AMPS			
٦	TYPE:		3PH/4W			MAIN	CB:		200 A/3P			
١	MOUNTING:		SURFACE			S.C. F	RATING:		IOK AIC			
١	NOTES:		EXISTING			FED I	FROM:		200A/3P CB IN PANEL 'MI	OP'		
CIR.	ССТ	LOAD	LOAD	CIRCUIT	BRKR	BUS	CIRCUIT	BRKR	LOAD	LOAD	ССТ	CI
NO	TYPE	VA	DESCRIPTION	POLE	TRIP	1	TRIP	POLE	DESCRIPTION	VA	TYPE	No
1	5	8896	PANEL HVAC	3	90	Α	60(**)	3	HP-7	4810	М	2
3	5	8696				В				4810	М	4
5	5	7196				C				4810	М	6
7	М	1430	ERV-4	3	15(**)	Α	30(**)	3	HP-9	2410	М	8
9	М	1430				В				2410	М	IC
11	М	1430				C				2410	М	12
13			SPARE	1	20	Α	35(**)	3	IOKW HEAT FOR HP-9	3340	М	4
15			SPARE	I	20	В				3340	М	16
17			SPARE	I	20	C				3340	М	18
19			SPARE	1	20	Α	20	1	SPARE			20
21			SPARE	I	20	В	20	- 1	SPARE			2:
23			SPARE	1	20	C	20	1	SPARE			24
25			SPARE	1	20	Α	20	- 1	SPARE			20
27			SPARE	1	20	В	20	- 1	SPARE			28
29			SPARE	1	20	C	20	1	SPARE			30
31			SPARE	1	20	Α	20	- 1	SPARE			3:
33			SPARE	1	20	В	20	- 1	SPARE			34
35			SPARE	1	20	C	20	I	SPARE			36
37			SPARE	1	20	Α	20	- 1	SPARE			38
39			SPARE	1	20	В	20	- 1	SPARE			40
41			SPARE	I	20	C	20	I	SPARE			4:
сст т	YPE:	L=LIGHTIN	IG, R=RECEPTACLE, M=M	OTOR, LM=LA	ARGEST	МОТО	R, E=EQ	UIPMEN1	T, KE=KITCH EQUIP, S=SUBFE	ED PANEL		
CCT T	YPE:	LOAD	MULT DEMANDED	LOAD					TOTAL CONNECTED LOAD	5		
LIGHTI	ING: PTACLE:		) 1.25 ) 1. <i>0</i>	0 VA 0 VA					A VA 20886	B 20686	C 19186	

TOTAL DEMANDED LOADS

VA 20886

174

20686 19186

169 AMPS

SUBFEED PNL: 24788 1.0 24788 VA PANEL: A. PANEL IS EXISTING TO REMAIN. NEW LOAD SHOWN IN BOLD LINEWEIGHT AND EXISTING SHOWN IN LIGHT LINEWEIGHT. EC TO VERIFY ALL EXISTING LOADS AND MARK ANY UNUSED CIRCUITS AS SPARE. (\*) NEW LOAD ON EXISTING CIRCUIT BREAKER.

O VA 35970 VA

O VA

O VA

O VA

				PA	NEL 'C	<u>-2'</u> (	<b>EXIS</b> T	ING)				
	VOLTAGE L	-	208				ATION:	_	LOWER LEVEL STORAGE NO	RTH		
	VOLTAGE L	N:	120				RATING:		100 AMPS			
	TYPE:		3PH/4W			MAIN			M.L.O.			
	MOUNTING:		SURFACE				RATING:		IOK AIC			
1	NOTES:		EXISTING			FED	FROM:		100A/3P CB IN PANEL 'MDP	1		
CIR.	CCT	LOAD	LOAD	CIRCUI	T BRKR	BUS	CIRCUIT	BRKR	LOAD	LOAD	CCT	CIR
NO	TYPE	VA	DESCRIPTION	POLE	TRIP		TRIP	POLE	DESCRIPTION	VA	TYPE	NO
1			SPARE	2	50	Α	20	1	SPARE			2
3						В	20	1	BASEMENT LTS	200	L	4
5			SPARE	2	50	C	20(*)	I	RECEPT. BASEMENT	1080	R	6
7						Α	20(*)		RECEPT. BASEMENT	1080	R	8
9	R	180	RECEPT TELE BB	1	20(*)	В	20(*)	I	RECEPT. BASEMENT	1080	R	10
Ш	R	180	RECEPT TELE BB	1	20(*)	C	20(*)		RECEPT. BASEMENT	1260	R	12
13	L	200	FURNACE RM LTS	1	20	Α	20(*)	- 1	RECEPT. BASEMENT	1080	R	14
15	R	180	RECEPT EX	1	20(*)	В	20(*)	-	RECEPT. BASEMENT	1080	R	16
17			BUSSED SPACE			C	20(*)	-	RECEPT. BASEMENT	1080	R	18
19			SPARE	2	30	Α	40	2	SPARE			20
21						В						22
23	R	900	RECEPT BASEMENT	1	20(*)	C	30	2	SPARE			24
25	R	720	RECEPT BASEMENT	1	20(*)	Α						26
27			BUSSED SPACE			В	30	2	SPARE			28
29			BUSSED SPACE			C						30
31			BUSSED SPACE			Α	60(**)	3	HP-I	3780	М	32
33			BUSSED SPACE			В				3780	М	34
35			BUSSED SPACE			C				3780	М	36
37			BUSSED SPACE			Α	60(**)	3	HP-2	3780	М	38
39			BUSSED SPACE			В				3780	М	40
41			BUSSED SPACE			C				3780	М	42
CCT T	YPE:	L=LIGHTING	5, R=RECEPTACLE, M=MOT	OR, LM=L	ARGEST	MOTO	PR, E=EQ	UIPMENT	T, KE=KITCH EQUIP, S=SUBFEE	D PANEL		
CCT T		LOAD	MULT DEMANDED L						TOTAL CONNECTED LOADS			
LIGHT		400		00 VA					A	В	C	
	PTACLE:	9900		00 VA					VA 10640	10280	12060	
	OVER IOK:	0		O VA					TOTAL DEMANDED LOADS			
мото	R:	22680	1.0 2268	30 VA					Α	В	C	

10690 10330 12060 LGST MOTOR: O VA O VA TOTAL ON KITCH EQUIP: O VA SUBFEED PNL: O VA PANEL: 92 AMPS A. PANEL IS EXISTING TO REMAIN. NEW LOAD SHOWN IN BOLD LINEWEIGHT AND EXISTING SHOWN IN LIGHT LINEWEIGHT. EC TO VERIFY ALL EXISTING LOADS AND MARK ANY UNUSED CIRCUITS AS SPARE.

(\*) NEW LOAD ON EXISTING CIRCUIT BREAKER.

(\*\*) NEW LOAD ON NEW CIRCUIT BREAKER.

					PAI	VEL 'N	-2' (	EXIST	ING)					
	VOLTAGE I	-	208 120			<u> </u>	LOCA	ATION: RATING:		CONFERENCE/N	MEDITATION			
	TYPE:	L−IN:	IPH/3W				MAIN			M.L.O.				
	MOUNTING:		RECESSE	<b>7</b>				RATING:		IOK AIC				
	NOTES:		EXISTING					FROM:		100A/2P CB IN	PANEL 'N'			
CIR.	ССТ	LOAD	LOAD		CIRCUIT	T BRKR	BUS	CIRCUIT	T BRKR	LOAD		LOAD	CCT	CIR
NO	TYPE	VA	DESCRIPT	TION	POLE	TRIP	1	TRIP	POLE	DESCRIPTION		VA	TYPE	NO
			HEAT REL	.AY	2	30	Α	30	2	HEAT RELAY				2
3							В							4
5			HEAT REL	.AY	2	30	Α	30	2	HEAT RELAY				6
7							В							8
9			HEAT REL	.AY	2	30	Α	20		LTG. OFFICES		1000	L	10
П							В	20	1	SPARE				12
13	L	1000	POLE LTG	÷	2	20	Α	20	1	SPARE				14
15	L	1000	POLE LTG	è			В	20	1	SPARE				16
17			SPARE		-	20	Α	20	1	SPARE				18
19			DE-ICING	CONTROL BOX	- 1	20	В			BUSSED SPACE				20
21			BUSSED S	PACE			Α	20	1	SPARE				22
23			BUSSED S	PACE			В	50	2	SPARE				24
25			BUSSED S	PACE			Α							26
27			BUSSED S	PACE			В			BUSSED SPACE				28
29			BUSSED S	PACE			Α			BUSSED SPACE				30
ССТ	TYPE:	L=LIGHTIN	IG, R=RECE	PTACLE, M=MOTO	R, LM=LA	ARGEST	МОТО	PR, E=EQ	UIPMENT	, KE=KITCH EQU	IP, S=SUBFEEI	2 PANEL		
CCT	TYPE:	LOAD	MULT	DEMANDED LO	AD					TOTAL CONNEC	TED LOADS			
LIGH	TING:	3000	) I.2	5 3750	VA						Α	В		
RECE	PTACLE:		) I.O	) (	VA					VA	2000	1000		
	OVER IOK:		o o.		VA					TOTAL DEMAN	DED LOADS			
MOT			) I.G	-	) VA						A	В		
	MOTOR:		o 1.2		VA					VA ∨A	2500	1250		
	PMENT:	(	) I.G	-	VA					AMPS	21	10		
	H EQUIP:		-	-	VA					TOTAL ON			KVA	
SUBF	EED PNL:	(	) I.C	) (	) VA					PANEL:		18	AMPS	

A. PANEL IS EXISTING TO REMAIN. NEW LOAD SHOWN IN BOLD LINEWEIGHT AND EXISTING SHOWN IN LIGHT LINEWEIGHT. EC TO VERIFY ALL EXISTING LOADS AND MARK ANY UNUSED CIRCUITS AS SPARE. (\*) NEW LOAD ON EXISTING CIRCUIT BREAKER. (\*\*) NEW LOAD ON NEW CIRCUIT BREAKER.

,	VOLTAGE I	L:	208				LOCA	TION:		UTILITY YARD				
	VOLTAGE I		120					RATING:		800 AMPS				
	TYPE:		3PH/4W				MAIN			M.L.O.				
	MOUNTING:		SURFACE					RATING:		55K AIC				
1	NOTES:		NEMA 3R				FED I	FROM:		TRANSFORMER	2			
CIR.	CCT	LOAD	LOAD		CIRCUI	T BRKR	BUS	CIRCUIT	T BRKR	LOAD		LOAD	CCT	Т
NO	TYPE	VA	DESCRIPTION		POLE	TRIP	1	TRIP	POLE	DESCRIPTION		VA	TYPE	
1	5	2377	PANEL 'C-I'		3	100	Α	200	3	PANEL SOUTH	BLDG'	20886	5	$\top$
3	5	3118					В					20686	5	T
5	5	10045					C					19186	5	T
7	5	10640	PANEL 'C-2'		3	100	Α	200	3	PANEL 'K'		12225	5	T
9	5	10280					В					13905	5	
П	5	12060					C					9755	5	T
13	5	20335	PANEL 'N'		3	200	Α	60	3	SPD			5	T
15	5	22285					В						5	T
17	5	19450					C						5	T
19	5	22260	PANEL 'P'		3	200	Α			BUSSED SPACE				T
21	5	19230					В			BUSSED SPACE	=			T
23	5	19560					C			BUSSED SPACE	<b>=</b>			
СТ Т	YPE:	L=LIGHTIN	G, R=RECEPTAC	CLE, M=MOTOF	R, LM=L/	AR <i>G</i> EST	мото	R, E=EQ	UIPMENT	, KE=KITCH EQL	JIP, S=SUBFEE	D PANEL		_
CCT T	YPE:	LOAD	MULT DE	EMANDED LOA	Ð					TOTAL CONNEC	CTED LOADS			
_I <i>G</i> HT	ING:	C	1.25	0	VΑ						Α	В	C	
RECE	PTACLE:	C	) I.O	0	VA					VA	88723	89504	90056	
(	OVER IOK:	C	0.5	0	VA					TOTAL DEMAN	DED LOADS			
40T0	R:	C	) I.O	0	VΑ						Α	В	C	
_ <del>6</del> 5T	MOTOR:	C	1.25		VA					VA	88723	89504	90056	
EQUIP	MENT:	C	) I <i>.O</i>	0	VA					AMPS	739	746	750	
<itch< td=""><td>EQUIP:</td><td>C</td><td>0</td><td>0</td><td>VA</td><td></td><td></td><td></td><td></td><td>TOTAL ON</td><td></td><td>268</td><td>KVA</td><td></td></itch<>	EQUIP:	C	0	0	VA					TOTAL ON		268	KVA	
	ED PNL:	268283	3 I <i>.</i> O	268283	VA					PANEL:		745	AMPS	

					PAI	VEL 'C	⊱ ' (1	EXISTI	NG)					
	VOLTAGE L	L:	208				LOCA	ATION:		LOWER LEVEL STOP	RAGE NORTH			
	VOLTAGE L	N:	120				BUS F	RATING:		100 AMPS				
	TYPE:		3PH/4W				MAIN	CB:		M.L.O.				
	MOUNTING:		SURFACE				5.C. F	RATING:		IOK AIC				
	NOTES:		EXISTING				FED	FROM:		100A/3P CB IN PAN	NEL 'MDP'			
CIR.	CCT	LOAD	LOAD		CIRCUIT	BRKR	BUS	CIRCUIT	BRKR	LOAD	L	OAD	ССТ	CI
NO	TYPE	VA	DESCRIPTION		POLE	TRIP	1	TRIP	POLE	DESCRIPTION		VA	TYPE	No
- 1	L	1072	LTG EDUCATION CENT	ER	1	20(*)	Α	20(*)		LTG CLASSROOMS	l l	305	L	2
3	L	1088	LTG RESTROOMS		1	20(*)	В	20(*)	- 1	LTG CLASSROOMS	l:	280	L	4
5	L	1740	LTG COMMONS/STORA	AGE	1	20(*)	C	20(*)		LTG CLASSROOMS		655	L	6
7			SPARE		1	20	Α	20	- 1	SPARE				8
9			SPARE		1	20	В	20	- 1	SPARE				10
Ш			SPARE		1	20	C	20		SPARE				12
13			SPARE			20	Α	20		SPARE				14
15			SPARE			20	В	20		SPARE				16
IT			SPARE			20	C	20	_	SPARE				18
19			SPARE		- 1	20	Α	20		SPARE				20
21	Ŕ	750	WASHER/DRYER		2	30(**)	В	20		SPARE				22
23	Ŕ	750					C	40(**)	I	ELEVATOR .	6	900	E	24
CCT -	TYPE:	L=LIGHTING	9, R=RECEPTACLE, M=1	MOTOR, L	M=LAR	GEST M	OTOR	E=EQUIF	PMENT, I	KE=KITCH EQUIP, S=9	SUBFEED PAN	EL		
	TYPE:	LOAD	MULT DEMANDE							TOTAL CONNECTED				
LIGH1	–	7140		8925							A	В	C	
	PTACLE:	1500		1500								3118	10045	
	OVER IOK:	0		0						TOTAL DEMANDED				
MOTO		0	***	0							Α	В	C	
	MOTOR:	0		0								3710	10644	
	PMENT:	6900	**=	6900							25	31	89	
	+ EQUIP:	0	=	0						TOTAL ON			KVA	
SUBFI	EED PNL:	0	1.0	0.	VA					PANEL:		48	AMPS .	

A. PANEL IS EXISTING TO REMAIN. NEW LOAD SHOWN IN BOLD LINEWEIGHT AND EXISTING SHOWN IN LIGHT LINEWEIGHT. EC TO VERIFY ALL EXISTING LOADS AND MARK ANY UNUSED CIRCUITS AS SPARE. (\*) NEW LOAD ON EXISTING CIRCUIT BREAKER. (\*\*) NEW LOAD ON NEW CIRCUIT BREAKER.

(\*\*) NEW LOAD ON NEW CIRCUIT BREAKER.

	VOLTAGE I VOLTAGE I TYPE: MOUNTING: NOTES:		208 120 3PH/4W SURFACE EXISTING			BUS F MAIN S.C. F	ATION: RATING: CB: RATING: FROM:		LOWER LEVEL 100 AMPS M.L.O. 10K AIC 90A/3P CB IN			М	
CIR.	CCT	LOAD	LOAD		T BRKR	BUS	CIRCUIT				LOAD	CCT	CIR
NO.	TYPE	VA	DESCRIPTION	POLE			TRIP		DESCRIPTION		VA	TYPE	NO
	E	2000	A/C	3	40	A	40	3	A/C		2000	E	2
3	E	2000				В					2000	E	4
5	E	2000				C					2000	E	6
7	E	2000	A/C	3	40	A	20		PUMP EQUIPME		1196	E	8
9	E	2000				В	20		PUMP EQUIPME		1196	E	10
	E	2000				C	20		PUMP EQUIPME	NT	1196	E	12
13	E	1500	HEATER	2	20	A	20	l	TIME CLOCK		200	E	14
15	E	1500				В			BUSSED SPACE				16
17			BUSSED SPACE			C			BUSSED SPACE	=			18
CCT	TYPE:	L=LIGHTIN	G, R=RECEPTACLE	. M=MOTOR. LM=L	ARGEST	MOTO	DR. E=EQ	UIPMENT	r. KE=KITCH EQL	JIP. S=SUBFE	ED PANEL		
	TYPE:	LOAD		NDED LOAD			.,		TOTAL CONNEC				
	TING:			0 VA						Α	В	С	
RECE	PTACLE:		0 1.0	O VA					VA .	8896	8696	7196	
	OVER IOK:	Č	0.5	O VA					TOTAL DEMAN	DED LOADS			
MOTO	R:	Č	) I.O	O VA						Α	В	C	
L <i>G</i> ST	MOTOR:		) 1.25	O VA					VA	8896	8696	7196	
FOUR	PMENT:	24788		24788 VA					AMPS	74	72	60	
LOOH	+ EQUIP:	(	0	O VA					TOTAL ON		25	KVA	
		,	) I <i>.O</i>	O VA					PANEL:		69	AMPS	

**(1)** 0

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NOTICE: DUTY OF COOPERATION

Permit Set

Revisions:

Date: 08/02/2016

NOTICE: DUTY OF COOPERATION

Release of these plans contemplates further cooperation among the owner, his or her contractor, and the architect. Design and construction are complex. Although the architect and his/her consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to the architect. Failure to notify the architect compounds misunderstanding and increases construction costs. A failure to cooperate by a simple notice to the architect shall relieve the architect from responsibility for all consequences. Changes made from the plans without consent of the architect are unauthorized and shall relieve the architect from all consequences arising out of such changes.

**ELECTRICAL** SCHEDULES



Project #:3251.00

aedesign-inc.com

CHX Bxx Pxx

CHX Bxx Pxx

'WS3'

Location:

CHX Bxx Pxx

E.C. TO NOTE MODEM PHONE NUMBER ON TELEPHONE JACK I LIGHTING CONTROL ONE-LINE DIAGRAM

Basement Elect. Rm

#GRI416 LT INT 8NCL

REMOTE DV

E6.0 SCALE: NONE

#GRI416 LT ENC SM NEI

DTC 2400

DIGITAL TIME CLOCK &

#GR2400 DTC DV SM NEI

(4) #24 AWG TO TELEPHONE BACKBOARD. CONTRACTOR TO

MOUNT A TELEPHONE RECEPT

Basement Storage

REMOTE DV

#GRI416 LT ENC SM NEI

#GR1416 LT INT 8NCL

2nd Fl S. Elect. Rm

LOCATOR LIGHT -ON LINE INDICATOR 2 LINES OF ENGRAVING 8 CHARACTERS / 2 RJ45 BUS PILOT LIGHT CONNECTORS PUSH BUTTONS - TERMINATOR

'WS2'

Location:

CHX Bxx Pxx

'MSI' Location:

CHX BXX PXX

## SWITCH NOTES

- I. LIGHTING CONTROL SYSTEM SHALL BE DIGITAL AND CONSIST OF A MASTER LCP WITH SLAVE PANEL CONNECTION. SWITCH BUTTONS SHALL BE FACTORY ENGRAVED.
- 2. PUSH BUTTONS MAY CONTROL ANY RELAY(S) IN ANY COMBINATION.

CHELSEA TYPE DIGITAL SWITCH

- 3. LED PILOT LIGHTS INDICATE STATUS.
- 4. SMITCH LINKED TO THE GR 1400 DIGITAL BUS VIA CAT. 5 PATCH CABLE WITH RJ45 CONNECTORS.
- 5. PROVIDE KEYENABLE DIGITAL KEY SWITCH FOR LOCATIONS AS INDICATED.
- 6. DECORA STYLE FACE PLATE BY CONTRACTOR.



GENERAL NOTES: BUILDING WIDE LIGHTING CONTROL SYSTEM

- LIGHTING CONTROL SYSTEM SHALL BE DIGITAL AND CONSIST OF A MASTER LCP WITH 16 INDIVIDUAL RELAYS, DIGITAL SWITCHES AND DIGITAL INTERFACE CARDS. THERE WILL ALSO BE THREE ADDITIONAL 16 RELAY PANELS THAT WILL ALL COMMUNICATE WITH EACH OTHER. EACH RELAY SHALL BE SWITCHABLE. ALL SYSTEM COMPONENTS SHALL CONNECT IN A "DAISY CHAIN" STYLE CONFIGURATION AND BE CONTROLLED VIA CATEGORY 5 PATCH CABLE WITH RJ45 CONNECTORS, PROVIDING REAL-TIME TWO-WAY COMMUNICATION WITH EACH SYSTEM COMPONENT. ANALOG SYSTEMS ARE NOT ACCEPTABLE. ALL CABLES SUPPLIED BY CONTRACTOR.
- RELAY PANELS SHALL BE PRE-WIRED, PRE-ASSEMBLED, PREPROGRAMMED AND LISTED TO UL 916 (NORMAL) OR ETL LISTED TO UL924 (EMERGENCY). PANELS SHALL BE PROVIDED WITH DUAL VOLTAGE POWER SUPPLY AND 16 GAGE BARRIERS TO SEPARATE HIGH AND LOW VOLTAGE, NORMAL AND EMERGENCY POWER.
- ELECTRICAL CONTRACTOR SHALL COORDINATE PRE-PROGRAMMING SCHEDULE OF OPERATION WITH OWNER PRIOR TO PREPARING SUBMITTALS.
- 4. STANDARD RELAYS SHALL HAVE NORMALLY CLOSED (NC) CONTACTS RATED FOR 120/2171V 20A TUNGSTEN, BALLAST OR HID. STANDARD RELAYS SHALL BE ZERO-CROSS TYPE. NO EXCEPTIONS. OPTIONAL 600V, 2-POLE RELAY, NO OR NC, AND 347 SINGLE POLE RELAY SHALL BE AVAILABLE.
- 5. ALL INCANDESCENT LIGHTING CIRCUITS SHALL BE CONTROLLED BY A NC/SOFTSTART RELAY. NO EXCEPTIONS.
- 6. RELAY PANEL ELECTRONICS SHALL PROVIDE CURRENT VISUAL STATUS AND CONTROL OF EACH RELAY OR ZONE. ALL SYSTEM CONTROL ELECTRONICS SHALL STORE PROGRAMMING IN A NON-VOLATILE MEMORY AND PROVIDE IO YEAR BATTERY BACK UP FOR TIME OF DAY.
- LIGHTING CONTROL SYSTEM SHALL CONSIST OF MASTER AND SLAVE PANEL(S) CONTROLLED BY A 32-CHANNEL DIGITAL TIME CLOCK (DTC) THAT CONTROLS AND PROGRAMS THE ENTIRE LIGHTING CONTROL SYSTEM. THE DTC SHALL SUPPLY ALL TIME FUNCTIONS AND ACCEPT OTHER INPUTS. THE DTC SHALL ACCEPT CONTROL LOCALLY USING BUILT IN BUTTON PROMPTS AND USE OF AN & LINE 21-LETTER DISPLAY, FROM A COMPUTER, MODEM, ETHERNET OR INTERNET. ALL COMMANDS SHALL BE IN PLAIN ENGLISH. HELP PAGES SHALL DISPLAY ON THE DTC SCREEN.
- 8. ALL SWITCHES SHALL COMMUNICATE VIA RS 485, CAT 5 PATCH CABLE WITH RJ45 CONNECTORS. CONTACT CLOSURE STYLE SWITCHES ARE NOT ACCEPTABLE. ANY SWITCH BUTTON FUNCTION SHALL BE ABLE TO BE CHANGED LOCALLY (AT THE DTC OR A PC) OR REMOTELY, VIA MODEM, ETHERNET OR INTERNET. REFER TO SINGLE LINE DIAGRAM FOR WIRING DETAILS. SWITCHES WHICH CANNOT BE PROGRAMMED REMOTELY SHALL NOT BE ACCEPTABLE.
- 9. LIGHTING CONTROL SYSTEM INTERFACES TO INCLUDE A DRY CONTACT INPUT INTERFACE, BMS INTERFACE, DIMMING SYSTEM INTERFACE, ETHERNET/INTERNET INTERFACE AND AN INTERFACE TO SMARTBREAKER PANEL BOARDS. VERIFY AND INSTALL ONLY THOSE INTERFACES INDICATED ON THE
- IO. TELEPHONE FACTORY DIAL-UP SUPPORT SHALL BE AVAILABLE AT NO ADDITIONAL COST TO THE EC OR OWNER BOTH DURING AND AFTER THE 3 YEAR WARRANTY PERIOD. FACTORY TO PREPROGRAM THE LIGHTING CONTROL SYSTEM PER PLANS AND APPROVED SUBMITTAL. THE LIGHTING CONTROL MANUFACTURER, AT NO ADDED COST, SHALL PROVIDE ADDITIONAL PROGRAMMING VIA MODEM AS REQUIRED BY THE EC OR OWNER FOR THE OPERATIONAL LIFE OF THE SYSTEM. MANUFACTURER WARRANTS THAT THE DTC SOFTWARE CAN BE UPGRADED AND MONITORED REMOTELY. NO EXCEPTIONS.
- SHOP DRAWINGS: SUBMIT DIMENSIONED DRAWINGS OF LIGHTING CONTROL SYSTEM AND ACCESSORIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, RELAY PANELS, SWITCHES, DTC, PHOTOCELLS AND OTHER INTERFACES. DRAWINGS SHALL INDICATE EXACT LOCATION AND PROGRAMMING OF EACH DEVICE. INDICATE ALL TIME SCHEDULES AND SWITCH BUTTON ENGRAVING.
- 12. BUILDING LIGHTING CONTROL SYSTEM SHALL INCLUDE A MINIMUM OF 4 HOURS OF MANUFACTURER'S REPRESENTATIVE TIME ON SITE FOR SYSTEM CHECK-OUT AND OWNER TRAINING. ELECTRICAL CONTRACTOR SHALL VIDEO TAPE TRAINING SESSION AND PROVIDE COPY OF THAT VIDEO TO OWNER AS PART OF PROJECT COMPLETION SUBMITTALS.

PANEL	NAME:	LCP2			MANUFAC	TURER:	WATTSTOPPER, LC&D, OR	EQUAL	
PANEL	LOCATION:	BASEMENT SANCTUARY STO	ORAGE		CATALOG	∍ #:			
SUPPLY	CIRCUIT:								
CONT	LINE FEED	LOAD DESCRIPTION	RELAY	RELAY	NUMBER	RELAY	LOAD DESCRIPTION	LINE FEED	CONT
SEQ			TYPE			TYPE			SEQ
CI	NI-3	SANCTUARY SEATING	120V/IPOLE	1	2	120V/IPOLE	SANCTUARY DAIS	NI-3	CI
CI	NI-I	OUTER CEILING LIGHTS	120V/IPOLE	3	4	120V/IPOLE	INNER CEILING LIGHTS	NI-I	CI
CI	NI-5	TRACK HOUSE LEFT	120V/IPOLE	5	6	120V/IPOLE	TRACK HOUSE RIGHT	NI-5	CI
		SPARE	120V/IPOLE	7	8	120V/IPOLE	SPARE		
		SPARE	120V/IPOLE	9	10	120V/IPOLE	SPARE		
		SPARE	120V/IPOLE	II	12	120V/IPOLE	SPARE		
		SPARE	120V/IPOLE	13	14	120V/IPOLE	SPARE		
		SPARE	120V/IPOLE	15	16	120V/IPOLE	SPARE		
NOTES:	•	•	•	•	•	•		•	•
CONTRO	OL SEQUENCE								

PANEL NAME: LCPI PANEL LOCATION: BASEMENT MECH/ELEC ROOM		LCPI			MANUFACTURER:		WATTSTOPPER, LC&D, OR EQUAL			
			CATALOG #:							
SUPPLY	CIRCUIT:									
CONT	LINE FEED	LOAD DESCRIPTION	RELAY	RELAY	NUMBER	RELAY	LOAD DESCRIPTION	LINE FEED	CONT	
SEQ			TYPE			TYPE			SEQ	
C2	NI-15	ENTRY VESTIBULE	120V/IPOLE	I	2	120V/IPOLE	FRIENDSHIP HALL	EXISTING	CI	
CI	NI-9	LOUNGE/LIBRARY	120V/IPOLE	3	4	120V/IPOLE	BASEMENT CORRIDOR	C2-I2	CI	
CI	NI-9	LOUNGE/LIBRARY EM	120V/IPOLE	5	6	120V/IPOLE	BASEMENT CORRIDOR EM	C2-I2	CI	
CI	C2-I2	EDUCATION CENTER	120V/IPOLE	7	8	120V/IPOLE	OPEN OFFICE/WORK ALCOVE	NI-7	CI	
CI	C2-I2	EDUCATION CENTER EM	120V/IPOLE	9	10	120V/IPOLE	OPEN OFFICE EM	NI-7	CI	
		SPARE	120V/IPOLE	ll ll	12	120V/IPOLE	SPARE			
		SPARE	120V/IPOLE	13	14	120V/IPOLE	SPARE			
		SPARE	120V/IPOLE	15	16	120V/IPOLE	SPARE			
NOTES:										
	OL SEQUENCE	OFF AT LODIA CONFIDMANTIN ON	IN IEEO							
CI	•	OFF AT IOPM. CONFIRM WITH OW	INEK.							
C2	UN AT DUSK	, OFF AT DAWN.								

**ELECTRICAL** LIGHTING CONTROLS



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NOTICE: DUTY OF COOPERATION Release of these plans contemplates further cooperation among the owner, his or her contractor, and the architect. Design and construction are complex. Although the architect and his/her consultants have performed their services with due care and diligence, they cannot guarantee perfection. Communication is imperfect and every contingency cannot be anticipated. Any ambiguity or discrepancy discovered by the use of these

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unauthorized and shall relieve the architect from all consequences arising out of such changes.

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Revisions:

Date: 08/02/2016

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#### Section 1: Project Information

Energy Code: 2009 IECC Project Type: Alteration

Construction Site: Designer/Contractor:

# Section 2: Interior Lighting and Power Calculation

A	В	C	D	
Area Category	Floor Area (ft2)	Allowed Watts / ft2	Allowed Watt (B x C)	
101-Sanctuary (Religious Building)	23306	1.3	30298	
	То	tal Allowed Watts =	30298	

#### Section 3: Interior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Bailast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	(C X D)
101-Sanctuary ( Religious Building 23306 sq.ft.)				
LED 1; D1; High Ceiling LED Downlight; Other;	1	39	41	1599
LED 4: W1: Ceiling wash: Other:	1	20	75	1500
LED 2: D2: Recessed Gen DL: Other:	1	90	16	1440
LED 3: D3: Recessed Wallwasher: Other:	1	9	16	144
LED 5: W5: 6' LINEAR WALL MOUNT: Other:	1	3	33	99
LED 6: W6: B LINEAR WALL MOUNT: Other:	1	2	44	88
LED 7: D4: SURFACE DOWNLIGHT: Other:	1.1	28	10	280
Linear Fluorescent 1; F1; 4' Fluor Strip; 48" T8 32W (Super T8); Electronic;	2	43	67	2881
Incandescent 2: P2: Deco Reopt: Incandescent 75W:	1	2	75	150
LED 16: L1: Linear Wall wash: Other:	1.1	6	24	144
LED 17: (E): 18W LED Par replacement: Other:	1	31	18	558
Incandescent 3: W2: Deco wall sconce: Incandescent 100W:	1	7	100	700
Linear Fluorescent 9: P3: 4' section D/I linear pendant: 48" T8 32W: Electronic:	1	4	32	128
Linear Fluorescent 5; S1; Kitchen Light: 48" T8 32W (Super T8): Electronic:	3	9	100	900
Incandescent 7: (E): 100W Can Light: Incandescent 100W:	1	31	100	3100
Incandescent 8: (E): 60W Can Light: Incandescent 60W:	7	2	60	120
Linear Fluorescent 6; S2; Surface Mount, Volumetric; 48" T8 32W (Super T8); Electronic;	2	32	67	2144
Linear Fluorescent 8: S4: 2x4 Surface Mount,: 48" T8 32W (Super T8): Electronic:	2	8	67	536
Linear Fluorescent 11: W4: 24" Bath vanity: 24" T8 17W: Electronic:	1	2	18	36
Linear Fluorescent 10: W3: 48" Bath vanity: 48" T8 32W (Super T8): Electronic:	1	4	34	136
Linear Fluorescent 10: (E): Existing 2x4, 4x32T8: 48" T8 32W (Super T8): Magnetic:	4	16	131	2096
Incandescent 1; P1: Deco Library Lounge: Incandescent 100W:	1	2	100	200
Compact Fluorescent 1: S3: Surface Mount, Coat: Quad 4-pin 13W: Electronic:	2	2	32	64
	Total Proposed Watts			19043

#### Section 4: Requirements Checklist

#### Lighting Wattage:

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ata filename: J:\3251.00 - First Universalist Church of Denver\Ltg Calcs\325100 - ComCheck 2009 IECC.cok	Page 1 of 4



## Section 1: Project Information

Energy Code: 2009 IECC Project Type: Alteration

Exterior Lighting Zone: 2 (Residential mixed use area)

Construction Site: Owner/Agent: Designer/Contractor;

## Section 2: Exterior Lighting Area/Surface Power Calculation

A Exterior Area/Surface	B Quantity	Allowed Watts / Unit	D Tradable Wattage	Allowed Watts (B x C)	F Proposed Watts
Entry Canopy (Entry canopy)	409 ft2	0.25	Yes	102	128
Entry Doors (Other door (not main entry))	12 It of door width	20	Yes	240	81
		Total Trac	lable Watts* =	342	210
	Total Allowed V		owed Watts -	342	
	Total Allow	ed Suppleme	ntal Watts** =	600	

"Wattage tradeoffs are only allowed between tradable areas/surfaces. \*\* A supplemental allowance equal to 600 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

## Section 3: Exterior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	(C X
Entry Canopy   Entry canopy 409 (t2): Tradable Wattage				
LED 1: EW1: Other:	1	1	20.4	20
LED 2: EW2: Other:	1	6	18	1
Entry Doors ( Other door (not main entry) 12 ft of door width): Tradable Wattage				
LED 4: EW1: Other:	1	4	20.4	81
	Total Tradak	le Propose	ed Watts -	- 2

## Section 4: Requirements Checklist

## Lighting Wattage:

1. Within each non-tradable area/surface, total proposed watts must be less than or equal to total allowed watts. Across all tradable areas/surfaces, total proposed watts must be less than or equal to total allowed watts. Compliance: Passes.

## Controls, Switching, and Wiring:

- 2. All exemption claims are associated with fixtures that have a control device independent of the control of the nonexempt lighting. 3. Lighting not designated for dusk-to-dawn operation is controlled by either a a photosensor (with time switch), or an astronomical time
- 4. Lighting designated for dusk-to-dawn operation is controlled by an astronomical time switch or photosensor.
   5. All time switches are capable of retaining programming and the time setting during loss of power for a period of at least 10 hours.

## Exterior Lighting Efficacy:

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1. Total proposed watts must be less than or equal to total allowed watts.

#### Controls, Switching, and Wiring:

- Daylight zones under skylights more than 15 feet from the perimeter have lighting controls separate from daylight zones adjacent to
- 3. Daylight zones have individual lighting controls independent from that of the general area lighting.

#### Exceptions:

Contiguous daylight zones spanning no more than two orientations are allowed to be controlled by a single controlling device. Daylight spaces enclosed by walls or ceiling height partitions and containing two or fewer light fixtures are not required to have a

separate switch for general area lighting. 4. Independent controls for each space (switch/occupancy sensor).

Exceptions:

Areas designated as security or emergency areas that must be continuously illuminated.

Lighting in stairways or corridors that are elements of the means of egress.

 5. Master switch at entry to hotel/motel guest room. 6. Individual dwelling units separately metered.

7. Medical task lighting or art/history display lighting claimed to be exempt from compliance has a control device independent of the control

a. Each space required to have a manual control also allows for reducing the connected lighting load by at least 50 percent by either controlling all luminaires, dual switching of alternate rows of luminaires, alternate luminaires, or alternate lamps, switching the middle lamp luminaires independently of other lamps, or switching each luminaire or each lamp.

Exceptions:

Only one luminaire in space.

An occupant-sensing device controls the area.

The area is a corridor, storeroom, restroom, public lobby or sleeping unit.

Areas that use less than 0.6 Watts/sq.ft.

9. Automatic lighting shutoff control in buildings larger than 5,000 sq.ft.

Sleeping units, patient care areas; and spaces where automatic shutoff would endanger safety or security. 10.Photocell/astronomical time switch on exterior lights.

Exceptions:

 Lighting intended for 24 hour use. 11.Tandem wired one-lamp and three-lamp ballasted luminaires (No single-lamp ballasts).

☐ Electronic high-frequency ballasts; Luminaires on emergency circuits or with no available pair.

#### Section 5: Compliance Statement

Compliance Statement: The proposed lighting alteration project represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting alteration project has been designed to meet the 2009 IECC, Chapter 8, requirements in COMcheck Version 4.0.3.0 and to comply with the mandatory requirements in the Requirements Checklist.

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☐ 6. All exterior building grounds luminaires that operate at greater than 100W have minimum efficacy of 60 lumen/watt.

Lighting that has been claimed as exempt and is identified as such in Section 3 table above.

☐ Lighting that is specifically designated as required by a health or life safety statue, ordinance, or regulation. Emergency lighting that is automatically off during normal building operation.

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Lighting that is controlled by motion sensor.

## Section 5: Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 2009 IECC requirements in COMcheck Version 4.0.3.0 and to comply with the mandatory requirements in the Requirements Checklist.

Name - Title Signature

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**ELECTRICAL** LIGHTING CONTROLS

Drawing Number:

Integrated Lighting and Electrical Solutions 1900 Wazee Street #350 | Denver, CO 80202 | 303.296.3034

aedesign-inc.com

Project #:3251.00