

LIGHTING SEQUENCE OF OPERATION

A COMPLETE AND OPERATIONAL LIGHTING CONTROL SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS (SECTION 260923) AND AS INTENDED ON THESE PLANS. ALL CONTROL POINTS AND EQUIPMENT SEQUENCES OF OPERATION LISTED IN SPECIFICATION SECTION 260923 SHALL BE CONSIDERED IN ADDITION TO THOSE LISTED HERE. IN THE EVENT THAT THE VERBIAGE IS IN CONFLICT OR CONTRADICTS THE REQUIREMENTS LISTED HERE, THE QUESTION SHALL BE ASKED PRIOR TO BIDDING OR THE MORE STRINGENT SHALL APPLY.

SYSTEM DESCRIPTION:
LIGHTING CONTROLS ARE BASED ON A RELAY-BASED LIGHTING CONTROL SYSTEM WITH INTERGRATION AND FULL CONTROL VIA THE BUILDING AUTOMATION SYSTEM FOR PROGRAMMING AND CONTROL.

OCCUPANCY SENSORS:
ALL OCCUPANCY SENSORS SHALL BE PROGRAMMED FOR AUTOMATIC ON (FULL LEVELS) AND AUTOMATIC OFF.

TIMER SETTINGS:
A. WALL SWITCH PASSIVE INFRARED: 2 MINUTES FOR INDIVIDUAL RESTROOMS AND STORAGE ROOMS.
B. WALL SWITCH OCCUPANCY SENSORS OFFICES: 5 MINS.
C. WALL SWITCH AND/OR CEILING OCCUPANCY SENSORS CONFERENCE: 10 MINS

BAS INTEGRATION:
A. EXTERIOR LIGHTING ZONE, TIME SCHEDULE CONTROL, OFF.
B. INTERIOR LIGHTING:
- CORRIDORS
- LOBBIES
- OPEN OFFICE AREAS

COMMISSIONING AND COORDINATION OF BAS:
1. BAS CONTROL SHALL BE THE PRIORITY SYSTEM.
2. LIGHTING SYSTEM SHALL ALSO BE INDEPENDENTLY CONTROLLED BY A SOFTWARE BASED SYSTEM.
3. LIGHTING SYSTEM IS CONNECTED TO THE BAS VIA BACNET PROTOCOL OR EQUAL COORDINATE LANGUAGE REQUIREMENTS WITH MECHANICAL CONTROLS CONTRACTOR SUPPLYING BUILDING AUTOMATION SYSTEM.

LIGHTING COORDINATION AND QUALITY CONTROL:
1. ELECTRICAL CONTRACTOR SHALL HAVE A PRE-CONSTRUCTION MEETING WITH CONTROLS SUPPLIER PRIOR TO CONDUIT ROUGH-IN TO VERIFY SENSORS, CABLES, PATHS, AND GENERAL LIGHTING CONTROL STRATEGY FOR INSTALLATION.
2. ELECTRICAL CONTRACTOR SHALL HAVE A POST-SUBMITTAL MEETING WITH CONTROLS SUPPLIER TO IDENTIFY LINE AND LOW VOLTAGE ROUTING, SEQUENCE OF LIGHTING CONTROL DESIGN, AND GENERAL CONSTRUCTION STRATEGY.

TIME SCHEDULES:
A. TIME SCHEDULES ARE TO BE DETERMINED BY THE OWNER. THIS SHALL BE COORDINATED AND DIRECTED BY OWNER AND INPUT BY THE LIGHTING PROGRAMMER AND THE BAS PROGRAMMER.
B. MANUAL LOW-VOLTAGE OVERRIDE SWITCHES SHALL BE LOCATED WITHIN EACH ZONE AND WILL PROVIDE TEMPORARY OVERRIDE OF LIGHTING CONTROL SYSTEM DURING "OFF" HOURS.

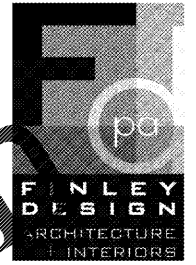
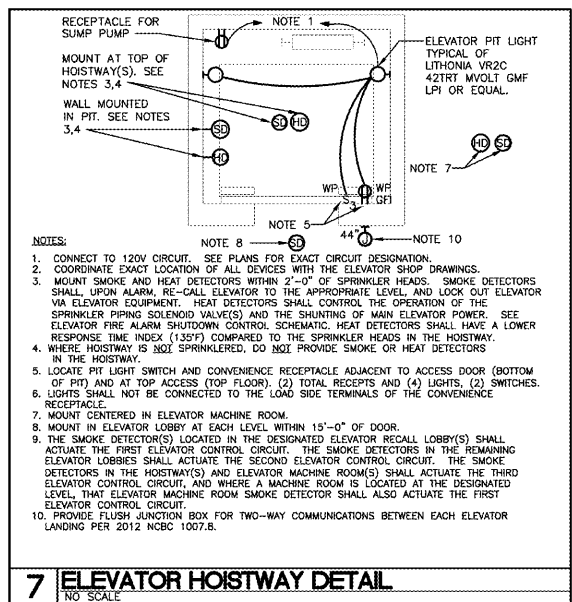
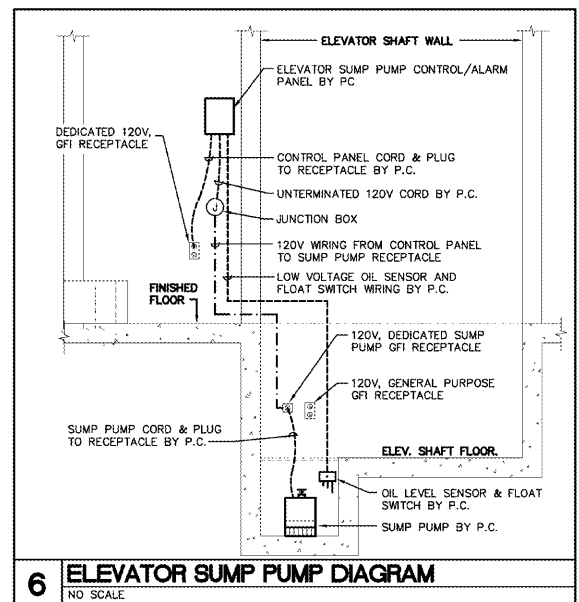
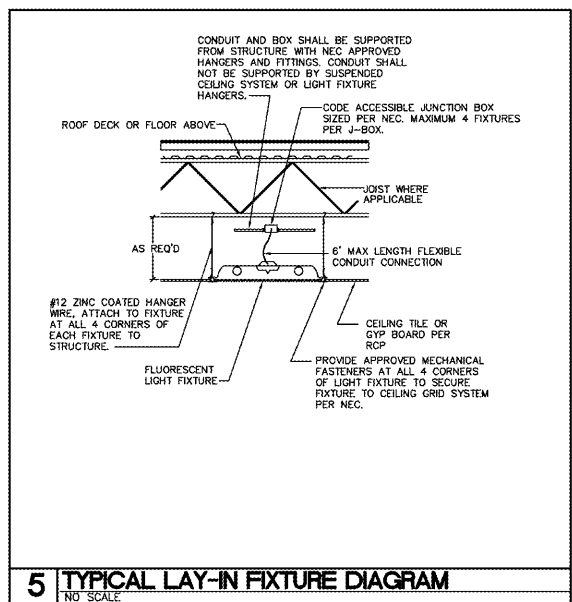
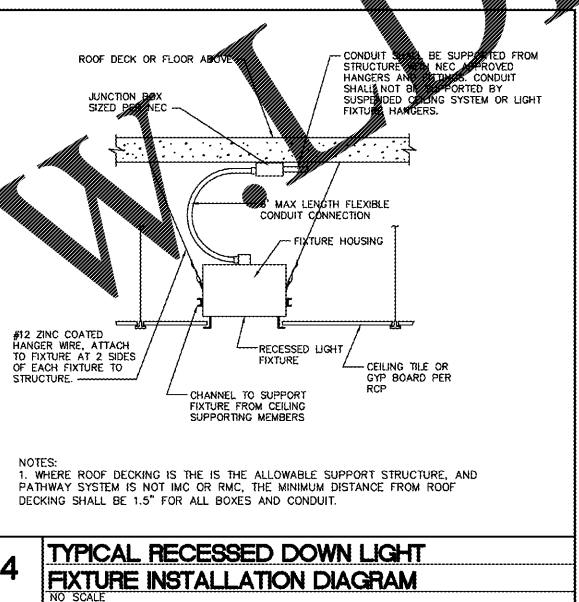
INDIVIDUAL AREAS INTENT OF CONTROL:
- GROUP RESTROOMS: CEILING MOUNTED OCCUPANCY SENSORS, WITHOUT MANUAL OVERRIDE, INDEPENDENT LIGHTING CONTROL SYSTEM.
- CORRIDORS/HALLWAYS: TIME SCHEDULE ON/OFF BY ZONE. EMERGENCY LIGHTING SHALL SUPPLEMENT THIS AREA VIA NIGHT LIGHTS.
- LOBBY: TIME SCHEDULE ON/OFF BY ZONE. EMERGENCY LIGHTING SHALL SUPPLEMENT THIS AREA VIA NIGHTLIGHTS.
- INDIVIDUAL RESTROOMS: ON/OFF WALL SWITCH OCCUPANCY SENSORS (PASSIVE INFRARED), INDEPENDENT OF THE LIGHTING CONTROL SYSTEM.
- ELECTRICAL ROOMS, MECHANICAL ROOMS, ETC.: MANUAL ON/OFF SWITCH ONLY FOR PERSONNEL USE.
- STORAGE ROOMS: ON/OFF WALL SWITCH OCCUPANCY SENSORS (PASSIVE INFRARED), INDEPENDENT OF THE LIGHTING CONTROL SYSTEM.
- SMALL STORAGE UTILITY ROOMS: ON/OFF WALL SWITCH OCCUPANCY SENSORS (PASSIVE INFRARED), INDEPENDENT OF THE LIGHTING CONTROL SYSTEM.
- EXTERIOR PARKING GARAGE LIGHTING: ON/OFF VIA TIME SCHEDULE CONTROL.
- EXTERIOR CANOPY LIGHTING: ON VIA PHOTOCELL, OFF VIA TIME SCHEDULE CONTROL.
- EXTERIOR WALL PACKS: ON VIA PHOTOCELL, OFF VIA TIME SCHEDULE CONTROL.
- EXTERIOR LIGHTING: ON VIA PHOTOCELL, OFF VIA TIME SCHEDULE CONTROL.

LIGHTING SYSTEM NOTES:
1. SYSTEM ARCHITECTURE SHALL BE DESIGNED BY RESPECTIVE CONTROLS PROVIDER. SYSTEM SHALL BE PROVIDED WITH 25% ADDITIONAL CAPACITY FOR ENTIRE SYSTEM.
2. SEE VENDOR DRAWINGS/DETAILS FOR ALL 0-10V DIMMING WIRING.

EXTERIOR LIGHTING CONTROL:
A. EXTERIOR LIGHTING CONTROL IS VIA PHOTOCELL. SCHEDULED TIME CONTROL. LIGHTS WILL TURN ON VIA PHOTOCELL AND OFF AT SCHEDULED TIME.

EMERGENCY LIGHTING CONTROL:
A. EXTERIOR LIGHTING CONTROL IS VIA SCHEDULED TIME CONTROL.
B. EXTERIOR EMERGENCY LIGHTING IS VIA MAN IN THE DARK EMERGENCY BATTERY PACK. UPON LOSS OF NORMAL POWER, BATTERY PACK WILL CONTINUE TO ENERGIZE FIXTURE FOR A MINIMUM OF 90 MINUTES.
C. MULTIPLE FIXTURES ARE USED TO MEET REQUIRED EGRESS PATH ILLUMINATION.
D. INTERIOR EMERGENCY LIGHTING IS VIA NIGHTLIGHTS, NON-SWITCHED ALWAYS "HOT" FIXTURES. INTERIOR BATTERY PACKS WILL CONTINUE TO ILLUMINATE FIXTURE UPON LOSS OF POWER FOR A MINIMUM OF 90 MINUTES.

FINISH NOTES (ADDITIONAL ALL DEVICES AND INSTALLATION BELOW SHALL NOT BE SUPPLIED OR INSTALLED UNTIL DIRECTION FROM OWNER OR ENGINEER. THE BELOW SHALL BE PART OF THIS BASE BID):
A. TO PROVIDE (5) ADDITIONAL TYPE "???" FIXTURES AND INSTALLATION OF UP TO 100' (EACH FIXTURE) FROM LOCAL PANEL.
B. TO PROVIDE (5) ADDITIONAL "???" FIXTURES AND INSTALLATION OF UP TO 200' (EACH) FROM LOCAL PANEL.
C. TO PROVIDE (5) ADDITIONAL EXIT SIGNS AND INSTALLATION OF UP TO 100' (EACH EXIT SIGN) FROM LOCAL PANEL.
D. TO PROVIDE (2) SWITCHES ADDITIONAL AND RE-LOCATE (2) SWITCHES A TOTAL DISTANCE OF 10' (EACH) FROM EXISTING LOCATION POST INSTALLATION AS REQUIRED BY OWNER. ARCHITECT TO APPROVE ALL EXTERIOR FIXTURE LOCATIONS. E.C. TO MARK OFF LOCATIONS WITH TEMPORARY "CHALK" OUTLINE AND PLAN FOR ARCHITECT ON-SITE APPROVAL OF LOCATIONS BEFORE INSTALLATION. E.C. TO CONTACT ARCHITECT WITH (1) WEEK PRIOR NOTICE.
E. TO PROVIDE (5) ADDITIONAL POWER PACKS AND INSTALLATION OF UP TO 200' (EACH) FROM LOCAL PANEL.
F. E.C. TO PROVIDE (2) ADDITIONAL SWITCHES OF EACH TYPE SPECIFIED FROM PROJECT.



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REVISIONS

NO.	DESCRIPTION

PROJECT: 1342
DATE: 11/11/16
DRAWN BY: ASA
CHECKED BY: MDH

ELECTRICAL DETAILS
E0.5
5 OF 24
OPTIMA # 16-0104