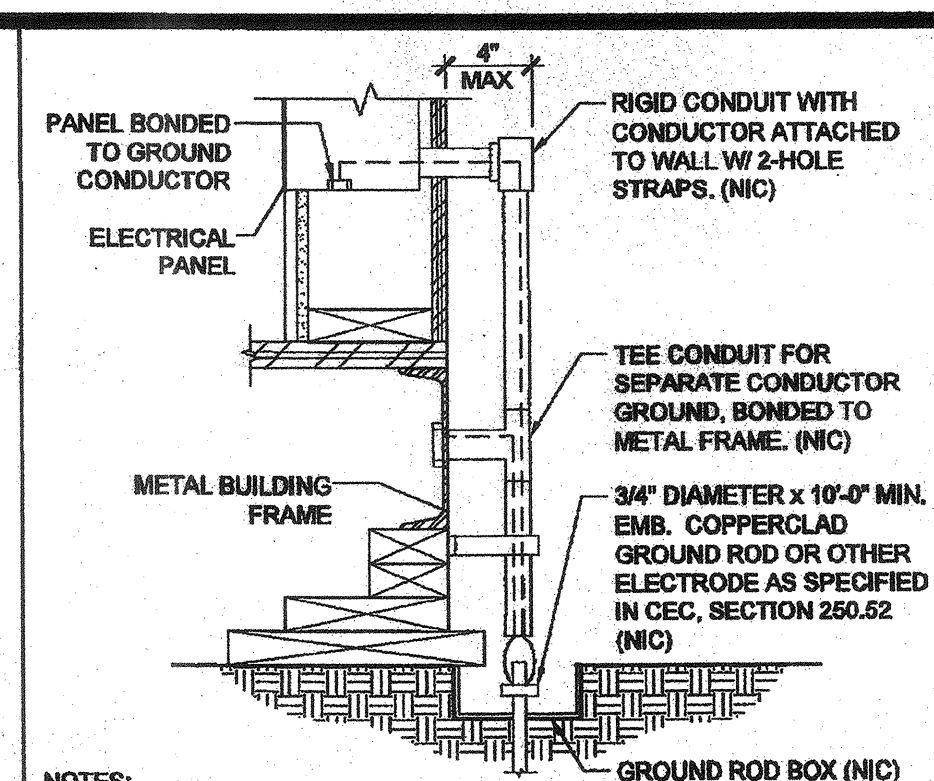
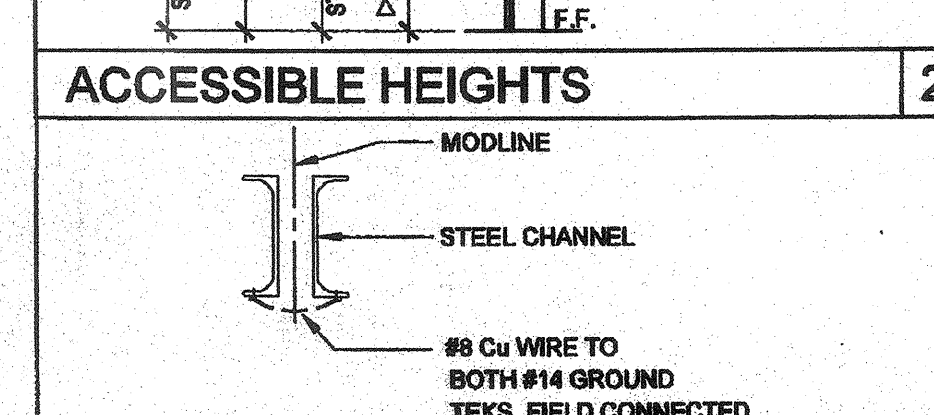
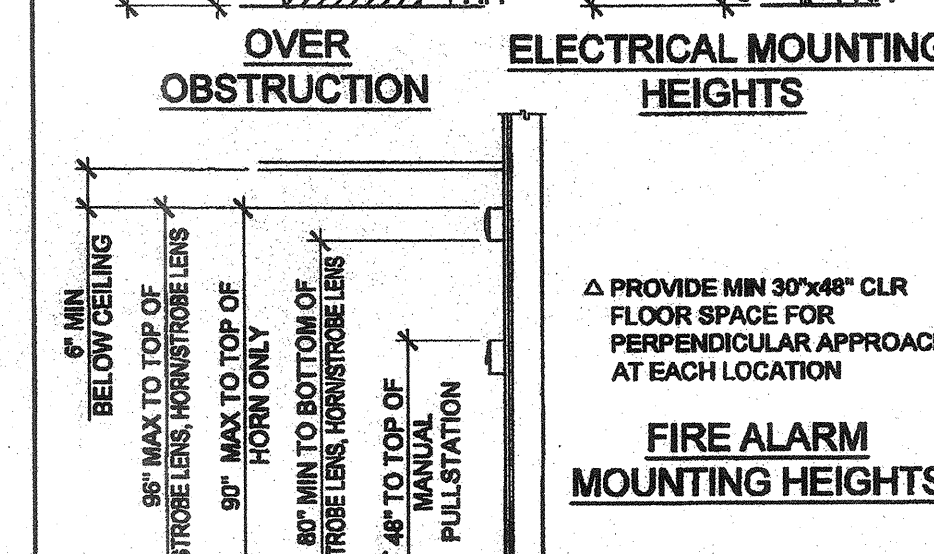
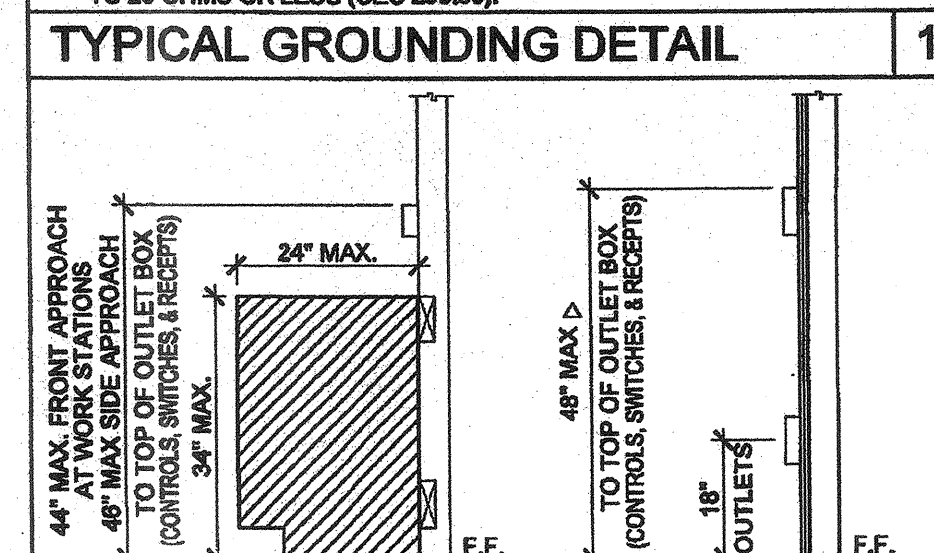


**ELECTRICAL PLAN**  
WALL MOUNTED HVAC

VOLTS: 120/208 V	PANEL: "A"	FEED: REAR	VOLTS: 120/208 V	PANEL: "A"	FEED: REAR
MAIN: 100 A	LOCATION: INTERIOR ACCESS	MOUNTING: FLUSH	MAIN: 100 A	LOCATION: INTERIOR ACCESS	MOUNTING: FLUSH
LOAD		LOAD		LOAD	
RECEPTACLES	QTY: 4	RECEPTACLES/CLOCK	QTY: 5	RECEPTACLES/CLOCK	QTY: 5
INTERIOR AND EXTERIOR LIGHTING	QTY: 13	INTERIOR LIGHTING	QTY: 12	INTERIOR LIGHTING	QTY: 12
INTERIOR LIGHTING	QTY: 12	ROOF RECEPTACLE	QTY: 1	ROOF RECEPTACLE	QTY: 1
GFI RECEPTACLE	QTY: 1				
A = 8430 WATTS / PHASE	1590 1350	B = 8230 WATTS / PHASE	6840 6880	A = 5870 WATTS / PHASE	1590 1350
TOTAL = 16,860 WATTS	70.0 AMPS	TOTAL = 11,540 WATTS	48.0 AMPS	TOTAL = 11,540 WATTS	48.0 AMPS



- NOTES:**
- SIZE OF CONDUCTORS SHALL COMPLY WITH CEC TABLE 250.68
  - ELEC. TRADE SHALL CHECK AREA FOR EXISTING CONDUITS, SEWER, GAS & WATER PIPING BEFORE DRIVING GROUND RODS.
  - BOND SEPARATE CONDUCTORS FROM GROUND ROD TO ELECTRICAL PANEL & TO METAL BUILDING FRAME (CEC 250.52) IN ADDITION TO THE DETAIL SHOWN ABOVE. BOND THE ELECTRICAL GROUND TO METAL UNDERGROUND WATER PIPE IN DIRECT CONTACT WITH THE EARTH FOR 10 FT. OR MORE, IF AVAILABLE (CEC 250.52)
  - ALL MODULES OF METAL FRAME BLDGS. SHALL BE ELECTRICALLY BONDED TOGETHER (BOLTING ONLY IS NOT ACCEPTABLE BONDING). BONDING SHALL INCLUDE METAL RAMP.
  - CHECK RESISTANT TO GROUND ROD, IF RESISTANCE EXCEEDS 25 OHMS, INSTALL ADDITIONAL GROUND RODS WITH CONDUCTORS AS SHOWN SEPARATED AT LEAST 6'-0" UNTIL RESISTANCE IS REDUCED TO 25 OHMS OR LESS (CEC 250.58)



**GROUND JUMPER AT MODLINE**

**GENERAL GROUNDING NOTES**

EACH BUILDING SHALL BE SEPARATELY GROUNDING WITH A 3/4" RD. X 8' COPPERCLAD STEEL GROUND ROD, WHERE ROCK BOTTOM IS ENCOUNTERED, ROD SHALL BE DRIVEN AT AN ANGLE NOT TO EXCEED 45 DEGREES FROM THE VERTICAL OR SHALL BE BURIED IN A TRENCH THAT IS AT LEAST 30" DEEP (BY SITE ELECTRICAL).

TESTING: TEST FOR RESISTANCE TO GROUND, IF RESISTANCE EXCEEDS 25 OHMS, INSTALL ADDITIONAL GROUND RODS SEPARATED AT LEAST 6'-0" UNTIL RESISTANCE IS REDUCES TO 25 OHMS OR LESS. (BY SITE ELECTRICAL).

APPROVAL OF THIS PLAN DOES NOT CONSTITUTE APPROVAL OF THIS FIRE ALARM FOR ALL SITES. THE FIRE ALARM SYSTEM AND/OR COMPONENTS MAYBE REQUIRED TO BE CHANGED DUE TO SITE LOCATION EXISTING CONDITIONS OR INCOMPATIBLE COMPONENTS.

GROUND MG TEST SHALL BE DONE IN THE PRESENCE OF THE PROJECT INSPECTOR. ALL GROUNDING SHALL BE IN ACCORDANCE WITH CEC ARTICLE 250.

**SCHOOL EQUIPMENT ANCHORAGE**

ALL MECHANICAL, PLUMBING AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2010 CBC, SECTIONS 1615A.1.12 THROUGH 1615A.1.22 AND ASCE 7-05 CHAPTER 6 AND 13.

- ALL PERMANENT EQUIPMENT AND COMPONENTS.
- TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
- MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE ATTACHMENT OF THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

- COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
- COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

**PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE**

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-05 SECTION 13.3 AS DEFINED IN ASCE 7-05 SECTION 13.5.5, 13.5.7, 13.6.5.5 AND 2010 CBC SECTIONS 1615A.1.20, 1615A.1.21 AND 1615A.1.22.

THE BRACING AND ATTACHMENTS TO THE STRUCTURE SHALL BE DETAILED ON THE APPROVED DRAWINGS OR THEY SHALL COMPLY WITH ONE OF THE OSHPD PRE-APPROVALS (ORA #) AS MODIFIED TO SATISFY ANCHORAGE REQUIREMENTS OF ACI 318, APPENDIX D.

COPIES OF THE MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF HANGING AND BRACING OF THE PIPE, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS.

THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
APPO3 117549  
ACW FLS/MS TH  
DATE OCT 14 2010

**FIRE ALARM NOTES**

- SMOKE AND HEAT DETECTOR SHALL BE CONNECTED TO FIRE ALARM SYSTEM BY OTHERS
- PROVIDE DEDICATED FIRE ALARM 120 VOLT CIRCUIT CONNECTED TO LOCKED-ON BREAKER. THE CIRCUIT BREAKER SHALL BE LOCKED-ON WITH APPROVED LOCKING DEVICE, MARKED RED AND IDENTIFIED AS "FIRE ALARM CONTROL CIRCUIT". NFPA 72 4.4.1.4.2.2

**CONDUIT FILL AND CONDUCTOR CAPACITY TABLE**

(ALL CONDUCTORS SHALL BE TYPE THHN/THWN 75°C, COPPER)

WIRE SIZE	CAPACITY	WIRE TYPE	NO. OF CONDUCTORS PERMITTED			
		1/2" C	3/4" C	1" C	1 1/4" C	
#12	20A	THHN	9	16	25	45
#10	30A	THHN	5	10	16	28
#8	45A	THHN	2	5	8	14
#6	65A	THHN	1	3	5	10
#4	85A	THHN	1	2	4	7

**JUNCTION BOX SIZE TABLE**

BOX	SIZE	CU. IN.	MAX. NO. OF CONDUCTORS		
			#12	#10	#8
4SS	1 1/4" x 4" SQ	18.0	8	7	6
4S	1 1/2" x 4" SQ	21.0	9	8	7
4SD	2 1/8" x 4" SQ	30.5	13	12	10
4SK	2 7/8" x 4" SQ	43.5	23	21	17
5SD	2 1/8" x 4 1/16" SQ	42.0	18	16	14
5SK	3 7/8" x 4 1/16" SQ	86.0	38	34	28
664	4" x 6" SQ	144.0	64	57	48

\* DEDUCT ONE CONDUCTOR FOR (1) OR MORE GROUNDING CONDUCTORS ENTERING THE BOX

**LEGEND**

- 2x4 CEILING LIGHT WITH (3) T-8 LAMPS, LAY-IN FLUORESCENT LIGHT FIXTURE WITH ELECTRONIC BALLAST
- OPTIONAL 1x4 CEILING LIGHT WITH (1) T-8 LAMP, LAY-IN FLUORESCENT LIGHT FIXTURE WITH ELECTRONIC BALLAST
- WALL MOUNTED HVAC UNIT. SEE MECHANICAL DWGS
- ROOF MOUNTED HVAC UNIT-SEE MECHANICAL DWGS
- ELECTRICAL PANEL AT +60" AFF TO TOP OF ELECTRICAL PANEL WITH 1 1/2" DIA POWER STUB OUT
- DUAL CEILING OCCUPANCY SENSOR. WATTSTOPPER DT-300 OR EQUAL. SENSOR TO BE CONNECTED TO LIGHT SWITCHES FOR MANUAL OVERRIDE AND USE FOR OPEN ROOM OVER 100 SQ FT W/ (2) CIRCUITS.
- ULTRASONIC CEILING OCCUPANCY SENSOR. WATTSTOPPER W-500A OR EQUAL. SENSOR TO BE CONNECTED TO KEYED LIGHT SWITCHES FOR MANUAL OVERRIDE AND USE FOR RESTROOM W/ PARTITIONS.
- SINGLE SWITCH WALL OCCUPANCY SENSOR. WATTSTOPPER PW-100 OR EQUAL. SENSOR TO BE MOUNTED AT +44" AFF AND USE FOR OPEN ROOM (OR RESTROOM) LESS THAN 100 SQ FT W/ (1) CIRCUIT.
- DUAL SWITCH WALL OCCUPANCY SENSOR. WATTSTOPPER PW-200 OR EQUAL. SENSOR TO BE MOUNTED AT +44" AFF AND USE FOR OPEN ROOM OVER 100 SQ FT W/ (2) CIRCUITS.
- LIGHT SWITCH. MOUNT AT +48" AFF TO TOP OF OUTLET BOX
- 3-WAY LIGHT SWITCH. MOUNT AT +48" AFF TO TOP OF OUTLET BOX
- DUPLEX (WALL MOUNTED) RECEPTACLE 15A - 120V - 3 WIRE. MOUNT AT +18" AFF U.O.N. TO CENTERLINE OF DEVICE
- EXTERIOR WEATHER PROOF GFI RECEPTACLE AT +24" AFF FOR A/C SERVICES (MAX 25'-0" FROM UNITS)
- GROUND FAULT CIRCUIT INTERRUPT RECEPTACLE WITHIN 6'-0" OF ALL SINKS
- ROOF MOUNTED WEATHER PROOF GFI RECEPTACLE
- EXTERIOR LIGHT FIXTURE. MOUNT AT +93" AFF
- CLOCK OUTLET AT +90" AFF TO CENTERLINE OF DEVICE
- EXIT SIGN WITH BATTERY BACK UP. EXIT SIGN REQUIRED FOR CLASSROOMS WITH TWO OR MORE EXTERIOR DOORS. CLASSROOMS WITH ONE EXTERIOR DOOR - OPTIONAL
- 4SD J-BOX FOR FIRE ALARM PULLSTATION (DEVICE BY OTHERS). MOUNT AT +48" AFF TO TOP OF OUTLET BOX WITH 3/4" CONDUIT TO FIRE ALARM STROBE WITH PULLSTRING
- 4SD J-BOX FOR FIRE ALARM STROBE (DEVICE BY OTHERS). BOTTOM OF LENS SHALL BE BETWEEN 8" TO 98" AFF WITH 3/4" CONDUIT TO EXTERIOR FIRE ALARM HORN WITH PULLSTRING
- 4SD J-BOX FOR EXTERIOR FIRE ALARM HORN (DEVICE BY OTHERS). MOUNT AT +80" AFF TO TOP OF DEVICE WITH 3/4" CONDUIT TO FIRE ALARM BACKBOX WITH PULLSTRING
- RECESSED 4SD J-BOX W/ COVER PLATE FOR FUTURE FIRE ALARM SYSTEM BY OTHERS. MOUNT AT +18" AFF U.O.N. TO CENTERLINE OF BOX AND PROVIDE 1" CO STUB TO ATTIC SPACE WITH PULLSTRING
- 4SD J-BOX IN ATTIC FOR CEILING MOUNTED SMOKE DETECTOR (DEVICE BY OTHERS). DETECTORS SHALL BE PLACED SO THAT THERE IS A DETECTOR WITHIN 15'-0" FROM ADJACENT WALL(S), AND 21'-0" FROM ANY POINT IN ROOM. DETECTORS SHALL BE PLACED 30'-0" O.C. MAX. PROVIDE A 6'-0" CONDUIT FROM EACH J-BOX TO SMOKE DETECTOR LOCATION. PROVIDE 3/4" CONDUIT FROM J-BOX TO FIRE ALARM BACKBOX WITH PULLSTRING (ALARM NOTE #1)
- 4SD J-BOX IN ATTIC FOR ATTIC MOUNTED HEAT DETECTOR (DEVICE BY OTHERS). DETECTORS SHALL BE PLACED SO THAT THERE IS A DETECTOR WITHIN 25'-0" FROM ADJACENT WALL(S), 35'-0" FROM ANY POINT IN ATTIC. DETECTORS SHALL BE PLACED 50'-0" O.C. MAX. PROVIDE A 6'-0" CONDUIT FROM EACH J-BOX TO HEAT DETECTOR LOCATION. PROVIDE 3/4" CONDUIT FROM J-BOX TO FIRE ALARM BACKBOX WITH PULLSTRING (ALARM NOTE #1)
- 4SD J-BOX FOR WATER HEATER LOCATE ABOVE CEILING W/ COVER PLATE, HARD WIRE TO UNIT
- 100 CFM CEILING MOUNTED EXHAUST FAN. INTERLOCKED WITH LIGHT SWITCH
- 2x4 CEILING LIGHT WITH (3) T-8 LAMPS, LAY-IN FLUORESCENT LIGHT FIXTURE WITH ELECTRONIC BALLAST
- ORACLE LIGHTING - MODEL 24.0T.332.2.T8A12L41K.C4 WATTAGE: 32W T8 (4FT LG) OR EQUAL
- EACH LIGHT FIXTURE WHICH IS INDICATED AS BEING AN EMERGENCY LIGHT SHALL HAVE A BALLAST BATTERY PACK INSTALLED ON THE FIXTURE. THE BATTERY PACK SHALL PROVIDE POWER TO A SINGLE LAMP WITHIN THE FIXTURE FOR NO LESS THAN 90 MINUTES. ANY LIGHT FIXTURE EQUIPPED WITH A BATTERY PACK SHALL BE WIRED IN SUCH A MANNER THAT THE BATTERY WILL BE ACTIVATED IMMEDIATELY UPON LOSS OF POWER TO THE FIXTURE. ADDITIONALLY THE BATTERY PACK SHALL BE WIRED SUCH THAT WHEN THE FIXTURE IS BEING OPERATED USING BATTERY POWER THE LIGHTING CONTROL SWITCHES AND SENSORS SHALL NOT BE ABLE TO SHUT THE FIXTURE OFF.
- OPTIONAL 4SD J-BOX W/ 3/4" CONDUIT INTO ATTIC SPACE HEIGHTS (SEE D.D. LOCATIONS AS REQUIRED)

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**SILVER CREEK**  
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PROJECT NAME:  
**CLASS LEASING CLASSROOMS BLDG'S**

SHEET TITLE:  
**ELECTRICAL PLAN AND SCHEDULE**  
30' x 32'

**TAVARES ASSOCIATES**  
REGISTERED ARCHITECT  
16. C-8855  
HR: 03-91-2813  
12/23/2011

ARCHITECT OF RECORD SUBMISSION  
REGISTERED ARCHITECT  
ROBERT A. WOODRUFF  
C101320  
2-25-10

PROJECT SPECIFIC STATE AGENCY APPROVAL  
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04 117850  
DATE AUG 28 2010

ORIGINAL PC STATE AGENCY APPROVAL  
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DIV. OF THE STATE ARCHITECT  
OFFICE OF REGULATION SERVICES  
PC 04-112070  
DATE DEC 28 2010

REVISIONS

SILVER CREEK INDUSTRIES  
30' x 32' PC  
PROJECT NO:  
DRAWN BY:  
SCALE: AS NOTED  
DATE: 8-17-11  
P.C. SHEET NUMBER  
**E-1.01**