













DRAWING ARE RAWINGS AND FROM ALL CAPACITY OF THE ARE ADEQUATE FOR	2.	LOCATIONS OF DIFFUSERS ARE APPROXIMATES AND SHALL BE ADJUSTED WITHIN THE SPACE TO FIT WITH THE CEILING GRID AND LIGHTS WITHIN EACH SPACE.
THE WORK CONSISTS SYSTEM TO WALL MODIFICATIONS. E MAXIMUM USE OF SIZING SHALL BE IN	3.	EACH SPACE SHALL HAVE A CEILING RETURN GRILLE, PRIMARILY LOCATED IN CLOSE PROXIMITY TO THE DOOR TO THAT SPACE. OPEN AREAS SHALL HAVE ADEQUATE RETURN GRILLES TO ACCOMMODATE THE SUPPLY AIR TO THAT SPACE.
SIGN PRACTICES, USING JCT. DUCT SIZING FOR MUM FOR UP TO	4.	FINAL LAYOUT OF DIFFUSERS AND GRILLES SHALL BE COORDINATED WITH THE ARCHITECT AND/OR ENGINEER.
01-200CFM; & 10"	5.	FINAL BALANCE SHALL BE DOCUMENTED AND A FINAL BALANCE REPORT PROVIDED TO THE ARCHITECT AND/OR ENGINEER.

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1	FLOOR KEY NOTES
1.	NEW UNIT. MATCH EXISTING UNITS FOR MANUFACTURER AND MODEL.

					MEC	CHANICA	AL ROOF TO	<u>PUNITSC</u>	HEDULE	-				
		FLOW R	ATE	STATIC PRESSURE	ELI	ECTRICA	AL DATA	DX COC	LING	GAS	HEATING			
TAG	COOLING TONS	SUPPLY	OA	EXTERNAL	МСА	MOCP	VOLTAGE	SENSIBLE	TOTAL	INPUT	OUTPUT	BASIS	OF DESIGN	N
		CFM	CFM	IN WG	AMPS	AMPS		MBH	MBH	MBH	MBH	MANUFACTURER	MODEL OR SERIES	1
RTU-01	7 1/2	0	0	0	0.0	0	480/3/60	0	0	0	0		48DJE008600	
RTU-02	5	0	0	0	0.0	0	480/3/60	0	0	0	0		48DJE06610	
RTU-03	10	0	0	0	0.0	0	480/3/60	0	0	0	0		48DJE012600	
RTU-04	5	0	0	0	0.0	0	480/3/60	0	0	0	0		48DJE06610	
RTU-05	10	0	0	0	0.0	0	480/3/60	0	0	0	0		48DJE012600	
RTU-06	5	0	0	0	0.0	0	480/3/60	0	0	0	0		48DJE06610	
RTU-07	5	0	0	0	0.0	0	480/3/60	0	0	0	0		48DJE06610	
RTU-08	5	0	0	0	0.0	0	480/3/60	0	0	0	0		48DJE06610	
RTU-09	5	0	0	0	0.0	0	480/3/60	0	0	0	0		48DJE06610	
RTU-10	7 1/2	0	0	0	0.0	0	480/3/60	0	0	0	0		48DJE008600	
RTU-11	7 1/2	0	0	0	0.0	0	480/3/60	0	0	0	0		48DJE008600	
RTU-12	6	0	0	0	0.0	0	480/3/60	0	0	0	0		48TJD007601-	
RTU-13	5	0	0	0	0.0	0	480/3/60	0	0	0	0		48TJD006601GA	
RTU-14	12 1/2	0	0	0	0.0	0	480/3/60	0	0	0	0		48TJD006601GA	
RTU-15	6	0	0	0	0.0	0	480/3/60	0	0	0	0		48TJD007601-	
RTU-16	6	0	0	0	0.0	0	480/3/60	0	0	0	0		48TJD007601-	
RTU-17	6	0	0	0	0.0	0	480/3/60	0	0	0	0		48TJD007601-	
RTU-18	5	0	0	0	0.0	0	480/3/60	0	0	0	0		48TFD006-A-611	
RTU-19	5	0	0	0	0.0	0	480/3/60	0	0	0	0		48DJE06610	

GENERAL NOTES LOCATIONS OF EXISTING UNITS SHOWN ARE BASED UPON EXISTING DRAWINGS AND ON-SITE OBSERVATION. NO CHANGE TO EXISTING UNITS. NEW UNIT SHALL BE LOCATED AND CONFIRMED WITH ARCHITECT AND/OR STRUCTURAL ENGINEER PRIOR TO ROUGH-IN.

RTU-13 RTU-16 RTU-12



RTU-1





RTU-19

_ ①

RTU-15

RTU-17 RTU-14

NOTES:





94 🖂 B 2X4 LAY-IN 2 32 65 3 2 32 23 🛛 2X2 LAY-IN 65 1 2____ DOWNLIGHT 45 42 \otimes 1 S EX EXIT 5 8 5 1 | 10 🕂 EX1 NEW EXIT 5 5 4 1 | 1 + ELEVATOR JAR 100 100 Q 1 G 1 2X4 2 32 65 6 0 н DOWNLIGHT 45 42 4 0 1

NOTE:

CONTRACTOR TO REFURBISH LIGHTS WITH NEW BALLAST(S) AND LAMPS AS REQUIRED TO BE FUNCTIONAL. POSITION LIGHTS TO GIVE EVEN LIGHT OVER THE SPACE SERVED BY THE FIXTURE(S).
 RELOCATE LIGHT TO AVOID WALL.
 LIGHTS NOT IN THIS CONTRACT.
 NEW EXIT, LED, MATCH EXISTING FOR COLOR AND STYLE.



Property Control Division

Chuck Gara, Division Director Date Lease Record Drawings have been reviewed and approved by the Above Parties. Only upon approval by the Property Control Division will Lease Record Drawings be approved for construction.

Catherine Torres, MD, Cabinet Secretary Date



1) FLOOR KEY NOTES
1. CONTRACTOR TO INSTALL NEW SWITCH AND CONNECT TO LIGHTING CIRCUIT FOR THAT AREA. COORDINATE LIGHT SWITCH WITH DOOR SWING.







SECOND FLOOR LIGHT FIXTURE SCHEDULE															
Quantity		ID	DESCRIPTION	ELECTRIC	AL DATA	LAMP	P DATA	BASIS OF DESIGN							NOTES
Quantity	NE I	U ID		VOLTAMP	VOLTAGE	QTY	WATT	MFG	1 CAT		MFG	2	CAT	2	NULS
70		А	2X4 LAY-IN	105		3	32								1
85	$\cdot \cdot$	A1	2X4 LAY-IN	105		3	32								1,2
36	\bowtie	В	2X4 LAY-IN	65		2	32								1
55	:	B1	2X4 LAY-IN	65		2	32								1,2
35		С	2X2 LAY-IN	65		2	32								1
2	0	C1	2X2 LAY-IN	65		2	32								1,2
2	\otimes	D	DOWNLIGHT	45		1	42								
10	⊗	ΕX	EXIT	5		1	5								
16	•	EX1	NEW EXIT	5		1	5								4

NOTE:

CONTRACTOR TO REFURBISH LIGHTS WITH NEW BALLAST(S) AND LAMPS AS REQUIRED TO BE FUNCTIONAL. POSITION LIGHTS TO GIVE EVEN LIGHT OVER THE SPACE SERVED BY THE FIXTURE(S).
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Sarah Chase, Manager Department of Health

Catherine Torres, MD, Cabinet Secretary Date

Property Control Division

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2ND

IGHTING

SHEET NO.

E102

PROJECT NO. 12.05 STATUS: LRD DATE: MAR 27, 2013 CHECKED BY: dae DRAWN BY: dae 52103

Date







1	FLOOR KEY NOTES
1.	EACH POWER POLE TO HAVE 2 DUPLEX RECEPTACLES AND 1 PHONE & 1 DATA CONNECTION.

ELECTRICAL DEVICE SCHEDULE 1ST FLOOR										
					ELECTRI	CAL DATA				
Quantity	ID	KEY	RM NO.	DESCRIPTION	CURRENT	VOLTAGE	NOTES			
					AMPS	VULIAGE				
24		D		NEW POWER DROP	3.0	120/1/60	5			
2				TELEPHONE	_	—				
27		۲		NOT IN CONTRACT	3.0	120/1/60	4			
43				EXISTING TO REMAIN	3.0	120/1/60	1			
48		•		EXISTING PP RELOCATED	3.0	120/1/60	2			
2	F			FIRE ALARM PULL	_	—				
1	Н	0		HEAT DETECTOR	_	—				
2	HS	Å		HORN STROBE RELOCATED	_	—				
10	HS			HORN STROBE EXISTING	_	_				
18	S	0		SMOKE DETECTOR	_	_				

РМ 6:39:53 3/27/2013

GENERAL NOTES
1. EXISTING POWER POLE LOCATIONS ARE APPROXIMATIONS BASED ON EXISTING DRAWINGS. CONTRACTOR TO ADJUST POWER POLES TO BE ADJACENT TO WALLS AS REQUIRED. CONTRACTOF VERIFY LOCATION OF POWER POLES WITH OWNER PIROR TO INSTALLATION.











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4

E 2N	D FLOOR								
	ELECTRICAL DATA								
	CURRENT	VOLTAGE	NOTES						
	AMPS	VULTAGE							
	3.0	120/1/60	3						
C	3.0	120/1/60	5						
IAIN	3.0	120/1/60	1						
TED	3.0	120/1/60	2						
N									
ATED	_	_							
	_	_							

other use.

	ELECTRICAL	_ SY	'MBOLS
A = O $A = O$ $A =$	TYPE "A" WALL MOUNTED FIXTURE TYPE "A" CEILING MOUNT FIXTURE TYPE "A" FLUORESCENT FIXTURE TYPE "A" FLUORESCENT FIXTURE TYPE "A" EMERGENCY LIGHT TO REMAIN ON FOR 2 HRS. TYPE "EM" EMERGENCY LIGHT FAN WITH OR WITHOUT LIGHT COMPUTER/TELEPHONE OUTLET TELEPHONE OUTLET TELEPHONE OUTLET TELEPHONE WALL MTD FLOOR MTD COMPUTER/TELEPHONE OUTLET FLOOR MTD TELEPHONE OUTLET JUNCTION BOX 1 JUNCTION BOX 2 DOOR BUZZER BELL TV OUTLET CAMERA OCCUPANCY SENSOR SINGLE POLE SNAP SWITCH 2 POLE SNAP SWITCH 3-WAY SNAP SWITCH 4-WAY SNAP SWITCH MOTION DETECTOR SWITCH KEY OPERATED SNAP SWITCH FAN SWITCH PILOT SNAP SWITCH PILOT SNAP SWITCH PILOT SNAP SWITCH DIMMER SWITCH PILOT SNAP SWITCH DIMMER SWITCH DIMMER SWITCH		DUPLEX RECEPTACLE GROUND FAULT RECEPTACLE SWITCHED RECEPTACLE FOUR-PLEX RECEPTACLE FOUR-PLEX RECEPTACLE FLOOR RECEPTACLE ELECTRICAL PANEL ELECTRICAL EQUIP SCHED ITEM MOTOR WITH DISCONNECT DISCONNECT SWITCH DISCONNECT SWITCH - FUSED FIRE ALARM REMOTE PANEL FIRE ALARM CONTROL PANEL HORN STROBE SINGLE POLE SNAP SWITCH FIRE ALARM STROBE HEAT DETECTOR MAGNETIC HOLD OPEN MAGNETIC HOLD OPEN MAGNETIC HOLD OPEN - WALL MTD FIRE ALARM HORN MANUAL PULL STATION DUCT SMOKE DETECTOR FIXED TEMPERATURE HEAT DETECTOR

	COMPOSITE LIGHT FIXTURE SCHEDULE													
					ECTRICAL DATA LAMP DATA BASIS OF DESIGN						; N			
Quantity	KEY	ID	DESCRIPTION	VOLTAMP	VOLTAGE	QTY	WATT	MFG		CAT 1	MFG		1	NOTES
216		Α	2X4 LAY-IN	105		3	32							1
98	••	A1	2X4 LAY-IN	105		3	32							1,2
36		В	2X4 LAY-IN	65		2	32							1
94		В	2X4 LAY-IN	65		2	32							3
56	•	B1	2X4 LAY-IN	65		2	32							1,2
58		С	2X2 LAY-IN	65		2	32							1
2	0	C 1	2X2 LAY-IN	65		2	32							1,2
4	\bigcirc	D	DOWNLIGHT	45		1	42							
18		ΕX	EXIT	5		1	5							
26	Ð	EX1	NEW EXIT	5		1	5							4
1	+	L_												
1	Q	G	ELEVATOR JAR	100		1	100							
6	0	H	2X4	65		2	32							
4	0		DOWNLIGHT	45		1	42							

NOTE:

CONTRACTOR TO REFURBISH LIGHTS WITH NEW BALLAST(S) AND LAMPS AS REQUIRED. POSITION LIGHTS TO GIVE EVEN LIGHT OVER THE SPACE SERVED BY THE FIXTURE(S).
 RELOCATE LIGHT TO AVOID WALL.

LIGHTS NOT IN THIS CONTRACT.
 NEW EXIT, LED, MATCH EXISTING FOR COLOR AND STYLE.





Date

Date

Sarah Chase, Manager Department of Health

Catherine Torres, MD, Cabinet Secretary Date

Property Control Division

Chuck Gara, Division Director

Lease Record Drawings have been reviewed and approved by the Above Parties. Only upon approval by the Property Control Division will Lease Record Drawings be approved for construction.



3/27/2013 6:40:29 PM





Approval of Lease Record Drawings: Colgate Properties, LLC

Sarah Chase, Manager Department of Health

Catherine Torres, MD, Cabinet Secretary Date

Property Control Division

Chuck Gara, Division Director

Lease Record Drawings have been reviewed and approved by the Above Parties. Only upon approval by the Property Control Division will Lease Record Drawings be approved for construction.

Date

Date

Lease Record Drawings are submitted for approval during the lease process and are intended to verify compliance with the Request For Proposals. Lease Record Drawings are NOT intended for construction permitting or any other use.

PART 1 - GENERAL

1.01 GENERAL CONDITIONS

A. The general conditions and the special conditions of the architectural specifications shall be considered as an integral part of these electrical specifications.

1.02 DRAWINGS AND DOCUMENTS

A. These specifications and the corresponding drawings form a complete set of plans for the electrical work for this project. What is required by either shall be as binding as if required by both.

1.03 SCOPE OF WORK

- A. The contractor shall furnish all labor, materials, tools, skills, and equipment for the installation of, and install the electrical equipment and the electrical wiring in and about the project; all as shown on the drawings and/or as described in these specifications.
- B. Where connections are to be made to equipment furnished by others, the contractor shall obtain exact location of connection from the equipment supplier.
- C. All circuits specified herein are designed on the basis of load requirements and control procedures as indicated. The contractor shall make the necessary changes to the circuits and control equipment where motors, appliances, and devices furnished by the contractor have other ratings than those indicated. D. The omission of express reference to any parts 1 necessary for, or reasonably incidental to, the complete installation shall not be construed as releasing the contractor from furnishing such parts.

1.04 CODES, INSPECTIONS, AND FEES

- A. The completed electrical installation shall comply with the latest edition of the national electrical code as well as all applicable federal, state, and local codes, regulations, and standards, including interpretations of these by appropriate authorities having jurisdiction. This shall not be construed to permit a lower grade of construction where the drawings and specifications call for workmanship or materials in excess of code or regulatory requirements.
- B. The work specified herein shall be subject to inspection and approval by authorized representatives of the national board of fire underwriters, state and local authorities having jurisdiction, and the engineer. The contractor shall make the necessary arrangements to have the electrical work inspected by the appropriate inspector(s) and shall provide two (2)copies of every final signed "certificate of inspection" to the owner. C. The contractor shall obtain and pay for all licenses and permits, and allfees and charges for all work
- installed by the contractor. The contractor shall also pay all fees and charges for connection to electric services

1.05 INSPECTION OF SITE

A. Before submitting a proposal for the work contemplated, each bidder shall examine the site and become familiar with all existing conditions and limitations. No extra compensation will be allowed because the contractor misunderstood the amount of work involved or lacked knowledge of any existing condition at any location.

1.06 EXISTING WIRING AND EQUIPMENT

- A. All existing wiring, fixtures, and equipment shall remain as installed except where removal is called for in the drawings and specifications or is made necessary by the alterations to the building structure in the remodeled areas. All conduits and wiring uncovered by other contractors within the existing building walls or structure and/or requiring relocation to complete the remodeling shall be relocated or rerouted as part of this contract. For example, where the general contractor removes a wall, or cuts a door or window opening into an existing wall, any conduits uncovered shall be rerouted by electrical contractor at no additional cost to the owner.
- B. All existing work altered during the course of remodeling shall be placed in safe operating condition and shall remain in service unless otherwise noted, and shall be restored to satisfactory operating condition. Connections to and extensions from existing wiring shall be installed in the same manner as called for in new wiring. Where conduit or outlets are removed, the remaining runs of raceway shall be reconnected to form continuous raceways with new conductors installed from last remaining outlet box. Wherever it is necessary to withdraw less than all existing conductors from existing raceways, remaining existing conductors shall be replaced with new.
- C. The contractor shall remove only existing work so noted, specified, or necessary for completion of his work. Owner shall have the option of retaining any item of material removed under this contract. Items or materials not retained by owner shall become the property of the contractor and shall be removed from the premises.
- D. Throughout the construction period, the contractor shall be responsible for maintaining electric service to the existing building for construction.

1.07 ENERGY CONSERVATION REBATES

- A. The electrical contractor shall perform all work required to provide the owner with all electric utility company energy conservation rebates that apply to this project, such as energy efficient fluorescent lamp rebate, energy efficient ballast rebate, etc. The contractor shall provide all forms required to obtain the rebates and provide all information, invoices, etc. As required by the utility company.
- B. The contractor shall provide a letter to the engineer certifying that the rebate requirements have been met.

1.08 MATERIALS AND EQUIPMENT

- A. Unless otherwise specified, all material and equipment shall be new and manufactured by recognized
- manufacturers. All materials and equipment shall meet the requirements of governing codes. B. All material and equipment shall be listed and labeled by underwriters laboratories, inc. (UL) as conforming to its standards in every case where such a standard has been established for that particular type of
- material or equipment. C. Where the term "equal" is used, the manufacturer's name and product identification are used to establish the quality, design features, and performance of the equipment and materials specified. Products manufactured by others will be accepted provided they are equal in quality, features, and performance and are approved by the engineer
- D. The contractor shall obtain written approval from the engineer to use any proposed substitute material or equipment before contracting to purchase such substitutes. The engineer reserves the right to require the removal of any material or equipment which does not have this written approval and which does not comply with the specifications, regardless of the state of installation of such equipment.
- E. Where equipment supplied by the contractor has characteristics other than as specified herein, the contractor shall, at no additional cost to the owner, make all changes in the electrical work necessitated by the substitution.

1.09 WORKMANSHIP

A. The installation specified herein shall be performed in a neat and workmanlike manner by persons experienced and skilled in the trade. Only the best quality workmanship will be accepted. All exposed components of the electrical systems shall be square and true with building lines and surfaces.

1.10 CORRELATION OF WORK

A. The contractor shall:

- Give careful consideration to the work of the general, mechanical, and all other contractors and subcontractors on the project and shall organize the electrical work so that it will not interfere with the work of other trades.
- 2. Consult the drawings and specifications for work of other trades for correlation information and the

general construction drawings for details, dimensions, etc. moving misplaced electrical system components.

1.11 SHOP DRAWINGS

- A. The contractor shall submit shop drawings to the engineer for all major items of electrical equipment. The sets of the reviewed drawings will be retained by the engineer. The remainder will be returned to the
- B. The contractor shall refer to the general conditions of these specifications for any other requirements pertinent to shop drawings. C. Shop drawings shall be detailed dimensioned manufacturers' drawings, documents shall be bound in a permanent manner with a title page giving the project name, project the engineer's stamp. An index page shall also be included in each set.

1.12 MAINTENANCE MANUAL

- equipment provided under this contract. The manuals shall be 3-ring, loose leaf, heavy duty, steel piano hinged notebooks, hytone #8711 or equal and submitted to the architect/engineer for approval. Each manual shall contain the following:
- maintenance services are available for all equipment.
- the maintenance manual.
- 3. Fire alarm system: where a fire alarm system installation or modification is included as a part of the that the system has been installed correctly, is working correctly, and has been thoroughly checked
- 4. As-built drawings: as work progresses, the contractor shall mark a set of construction documents to mark a second set of documents and provide both sets of documents to the owner with the maintenance manuals.

1.13 GUARANTEE

A. The contractor shall furnish the owner with a written guarantee for the period of one (1) year against the failure of any part of the electrical systems installed under the specifications due to faulty material or workmanship. Guarantee period shall start upon substantial completion or as specified under general and

1.14 CUTTING AND PATCHING

- A. The contractor shall be responsible for all cutting and patching necessary for the completion of this project.
- surface equal in strength, durability, and appearance to the original surface. C. Where it is necessary to drill or cut concrete surfaces, the edges shall be sharply defined. Holes shall be
- made with a rotary drill. Cuts shall be made with a concrete saw unless some other method of making specific cuts is approved by the engineer. D. All disturbed areas shall be returned to their original conditions and shall be refinished to match surrounding
- areas. E. Penetrations through smoke, fire, hazardous area, or other rated separations shall be sealed to preserve
- the ratings of the separations.
- trades

1.15 GENERAL RACEWAY REQUIREMENTS

- A. All electrical conductors installed under these specifications shall be in electrical raceway, unless some general requirements.
- B. Raceway shall be complete with necessary couplings, connectors, boxes, supports, fittings and all other components needed for an integral raceway system. The system's components shall be designed for the raceway and conductor manufacturers.
- floors in general.
- D. Sufficient pullboxes and junction boxes of adequate size shall be located as necessary to ensure easy installation and splicing of conductors. Boxes shall be sized to provide adequate free space for all conductors enclosed. Box sizes shall not be determined by scaling the drawings.

1.16 METAL CONDUIT RACEWAY

- A. Metal conduit shall be installed wherever a raceway is required, except where some other type of raceway is specifically indicated. Rigid metal conduit shall be zinc-coated steel conduit coupled with code standard die cut threads.
- B. All components of conduit raceway systems; such as conduit, seal tight conduit, boxes, supports and components of conduit raceway systems shall be hot-dipped galvanized, metallized, sheradized, or zinc-coated by some other approved means. Seal tight conduit shall have separate ground conductor.

1.17 PULLBOXES

A pullboxes shall be installed as required in long runs or when more than four quarter bends occur in any code. Pullboxes shall be recessed in all finished portions of the building.

1.18 OPERATING INSTRUCTIONS & TESTING

- A. Operating instructions: the contractor shall furnish instruction in the care, adjustment, operation, and the owner, at no additional cost to the owner, and at a time acceptable to the owner, just prior to acceptance of the equipment by the owner.
- B. Tests: the contractor shall test the equipment installed under this specification and shall demonstrate its fully prepared, connected, and readied for normal operation. Any equipment damaged by improper or ill-timed operation or testing shall be repaired or replaced, at the contractor's expense, before final inspection and acceptance.

3. Verify the location of all outlets, wiring, and equipment. No additional compensation will be allowed for

drawings shall be reviewed and approved, conditionally approved, or disapproved by the engineer. Two (2) contractor. In the case of disapproval, the contractor shall submit new drawings, corrected as required by the engineer. All shop drawing submittals shall allow for a minimum of 7 working days for engineer review. including schematics where applicable. Drawings and schematics shall be legible, use standard electrical notations, and be prepared in a professional manner. Handwritten schedules are not suitable. Each set of address, and contractor's name, address, and telephone number. A 3"x3" clear space shall be provided for

A. The contractor shall furnish the owner with two (2) manuals covering the operation and maintenance of all

1. Manufacturer data: complete catalog data, manufacturer's literature, wiring diagrams, detailed operating instructions, and a complete listing of suppliers and distributors where replacement parts or 2. Inspection certificates: inspection certificates, signed by the appropriate inspector, shall be furnished in

contract, a letter from the fire alarm system equipment supplier or installer shall be furnished stating

out. A copy of this letter shall be included in each copy of the maintenance manual. show actual circuit routing and makeup, equipment location changes, and any other changes or deviations between project work, as built, and the contract documents. Markings shall be neat, legible, and permanent (ink or indelible pencil). Upon completion of the work, the contractor shall similarly

special conditions. Lamp bulbs shall be operable on the start date of, but excluded from, the guarantee.

No structural members shall be disturbed without obtaining written permission of the engineer. B. Any surface which is disturbed in any way by the contractor shall be repaired and refinished to provide a

F. All cutting, drilling, patching, repairing, and refinishing shall be done by persons skilled in appropriate

G. The contractor shall clean away all rubbish and litter caused by this installation.

other method of installation is specifically indicated. All raceways shall be installed in accordance with these

inter-connection and shall be installed to provide a neat appearing, mechanically firm assembly adhering in every respect to principles of good electrical practice, and conforming with pertinent recommendations of

C raceway runs shall originate and terminate at locations approximately as shown on the drawings. Runs shall be straight and true with elbows, offsets and bends, uniform and symmetrical. In general, exposed runs of raceway shall be parallel or perpendicular to surrounding building lines and surfaces. Runs shall be installed so that they do not interfere with the use of aisles, passageways, doorways, hatchways, working areas, and

fittings shall meet in every respect the latest applicable standard of underwriters laboratories, inc. All steel

conduit run. All pullboxes shall be sized to conform to the requirements of article 370 of the national electric

maintenance of all parts of the electrical equipment. Instruction shall be given to employees designated by

proper operation to the engineer. No equipment shall be tested or operated for any purpose until it has been

1.19 EXCAVATION AND BACKFILLING

- A. The contractor shall perform all excavation and backfilling for the installation of all electrical work installed in earth, including all conduits, direct burial cables, ducts, and manholes shown on the drawings. All conduit or cables below grade exterior to the buildings shall be 24 inches minimum below finish grade or as noted on the drawings.
- B. The contractor shall determine the location of existing underground utilities in the area of any contemplated excavation. If these utilities are to remain in place, adequate means of protection shall be provided during excavation operations. If incorrectly charted utilities are encountered during excavation, the architect shall be consulted for direction. 1.20 UNDERGROUND MARKING

A. All underground electrical lines exterior to the building shall be marked by the installation of a continuous identifying tape buried in the trench above the line. The tape shall be buried 6 inches below finished grade. The tape shall be made of yellow or orange colored inert plastic, 6 inches wide, with the words "caution buried electric line below" repeatedly printed along the length of the tape. The tape shall be griffolyn company "terratape" or equal.

PART 2 - PRODUCTS

2.01 DISCONNECT SWITCHES

- A. The contractor shall furnish and install disconnect switches having the number of poles and ampere ratings as shown on the drawings and as specified in the equipment schedule.
- B. Disconnect switches rated at 30 amperes or more shall be heavy duty, ac, single throw safety switches, built in accordance with nema requirements with a voidable full cover interlock and quick-make, quick-break mechanism. Each switch shall be fusible unless nonfusible (nf) switch is specifically indicated. Switches shall be in nema 1 enclosures, except that switches exposed to the weather shall be in nema 3 enclosures. Disconnect switches shall be equal to "heavy-duty" as manufactured by westinghouse, square-d, or equal.
- C. Disconnect switches rated at 20a shall be general use, 20a, ac, snap switch wiring device. 2.02 fuses a. The contractor shall furnish and install fuses of the types and ratings designated in the drawings and specifications in each fusible device installed by the contractor. In addition, the contractor shall furnish and store, at a location directed by the owner, three (3) spare fuses of each size and type installed during this project. The contractor shall present, typed on his own letterhead, two (2) copies of the spare fuse list to the owner for his records. B. Fuses shall be one-time cartridge fuses of the following types as manufactured by the economy division of fpe co., the bussman division of the mcgraw-edison company, or equal: type designation heavy-duty current limiting, time lag hi cap (hc) two element, current limiting, time lag low peak (lp) single element, current limiting limitron (cl) two element, time lag fusetron (f)

2.03 WIRE AND CABLE

- A. Electrical conductors installed under theses specifications shall be building wire, except where some other type of wire or cable is specifically indicated.
- B. Building wire conductors shall be soft drawn annealed copper, having a conductivity of not less than 98% pure copper. Conductor sizes are american wire gauge (awg), except where conductors mcm is indicated. No conductors smaller than #12 shall be used unless specifically permitted by the plans or specifications.
- Conductors larger than #10 shall be stranded. C. Building wire insulation shall be code grade 600. In general, all conductors shall have thhn insulation unless specifically noted otherwise.

2.04 WIRING DEVICES

- A. Wiring devices shall be installed in metal conduit device boxes.
- B. Switches and receptacles shall be arrow-hart, general electric, hubbell, pass & seymour, leviton or
- approved equal. Unless otherwise specified below, color shall be as specified by the architect. C. All switches, except as noted herein, shall be specification grade, ac quiet type, 20a, 120/277v, with silver alloy contacts, equal to hubbell #1221.
- D. General purpose duplex receptacles shall be specification grade nema 5-20r, 20a, 125v, 3-wire grounding type devices, equal to hubbell #5362, with the third pole grounded to the outlet box. Each receptacle shall be rigidly positioned within the box so that the exposed face of the receptacle protrudes beyond the face of the cover plate.
- E. Isolated ground duplex receptacles shall be specification grade, 20a, 125v devices, equal to hubbell #ig5362, orange color.
- F. GFI receptacles: ground fault circuit interrupter duplex receptacles shall be specification grade, 20a devices, equal to hubbell #gf5362, installed so that each unit is self contained. Gfi receptacles shall not be connected to feed-thru unless specifically so noted on the drawings.
- G. Weatherproof duplex receptacles shall be gfi receptacles with stainless steel or cast aluminum

weatherproof cover plates equal to sierra #wp-8 or #wpd-8 or hubbell #wp26. Device height shall be as follows, unless otherwise noted on the plans (height is to center of outlet above finished floor or grade):

mis	neu noor or grade).	
	Switches	-4'-0"
2.	Convenience outlets	2'-0"
3.	Telephone outlets	2'-0"
ŀ.	Weatherproof receptacles (above grade)	2'-0"
5.	Thermostats	-5'-0"
	MDO	0.0"

2.05 WALL AND COVER PLATES

A. The contractor shall furnish and install new wall plates for all new flush mounted wiring devices and all flush mounted special system outlets. Sectional wall plates shall not be used. Blank plates shall be installed over all outlets provided for future use or outlets abandoned but not removed. Wall plates shall be decors series Leviton. Wall plates shall be secured with matching screws. Engraved wall plates shall have black fill. B. Cover plates for telephone, computer, television, and other special outlets shall be as specified by owner.

2.06 MAGNETIC STARTERS

- A. Starters shall be built in accordance with nema requirements. They shall contain motor over-current protective devices as well as the necessary number of contacts to open each ungrounded motor branch circuit conductor. Over-current devices shall be externally operated manually reset thermal overload relays sized in accordance with motor nameplate data to provide motor running current overload protection. Each starter controlling a 3-phase motor shall be equipped with three (3) over-load protective devices.
- B. Starters shall be installed in surface mounting nema 1 enclosures unless some other type of enclosure is indicated. Starters exposed to the weather shall be in nema 3 enclosures. Starters mounted in finished areas shall be in flush mounting enclosures, equipped with suitable cover plates.
- C. Magnetic starters shall be across-the-line, full voltage type unless reduced voltage, multi-speed or reversing starters are specifically indicated. Magnetic starters shall provide under voltage protection and shall have auxiliary contacts as necessary for the operation of control and indicating circuits. Where a control transformer is specified, the operating coil and the entire control circuit shall be designed for 120 volt
- operation D. Ac magnetic starters: motor starters shall be rated in accordance with Nema sizes and horsepower ratings.

2.07 MANUAL STARTERS

A. Manual starters shall be toggle switch type starters. Where a red pilot light is indicated, the light shall be a neon bulb integral with the starter. Flush mounting units shall have engraved wall plates. Surface mounting units shall be in nema 1 enclosures, unless some other type of enclosure is indicated. Manual starters shall be cutler hammer bulletin 9101, square-d class 2510, or equal.

2.08 PANELBOARDS

A. Panelboards shall be square d #nqod or equal by challenger, cutler-hammer, general electric, i.t.e., or

Westinghouse.

B. Panelboards shall be dead front safety type with enclosures of code grade steel. Oversize gutters shall be provided for feed through where indicated or required. Where double lugs are not permitted by local code, a suitable pull box or gutter adjacent to panels shall be provided for connections. Top of panelboard tubs shall be 6'-6" above finished floor.

C. Panelboards shall have trim and flat locking doors with both hinges and trim clamps completely concealed. Door locks shall be flush with the cover. All door locks shall be common keyed. Two (2) keys shall be provided for each panelboard. A clear plastic-covered typewritten circuit directory shall be mounted in a card holder attached to the inner side of the door. Panelboards shall have black micarta plates with 1/2-inch high white cut letters stating panelboard number and voltage. Where panelboards are in public areas, identification plates shall be inside door.

D. Buses shall be made from 98 percent electrolytic copper or 55 percent conductivity aluminum and shall be independently supported (without dependence upon the circuit breakers). Solderless lugs only shall be provided in all mains unless noted otherwise in the panelboard schedule. All main lugs shall be crimp compression type. Where breakers and/or switches are listed in the schedules as "space only", this shall include extended bus and mounting provisions

E. Circuit breakers shall be bolt-on and shall have bolted line and load terminals. All branch circuit breakers shall be quick-make, quick-break, thermal magnetic, common trip on all multipole breakers and have a ul short circuit rating of 10,000 symmetrical r.m.s. amperes. Each breaker shall have it's current rating engraved, in easy to read numbers, on the toggle handle. All breakers used for fluorescent lighting switching control shall be ul listed swd switching duty.

F. Panels noted "isolated ground bus" shall contain a factory installed isolated ground bus which is electrically insulated from the panel enclosure and normal conduit grounding system. The contractor shall provide a grounding electrode and an insulated ground wire connection from the isolated ground bus to the grounding electrode for branch circuit requirements.

G. Circuit numbers appearing on drawings shall be used for reference only. Actual connections shall be in accordance with phasing of the cabinet, load balance and common neutral requirements. Room numbers or names used for circuit identification shall correspond to name plates installed on room doors by the general contractor or as selected by the owner and shall be verified as these may not be the same as room titles on the drawings.

2.09 LIGHTING FIXTURES

A. Lighting fixtures, complete with lamps, shall be furnished and installed where shown on the drawings. All fixtures shall be ul listed for the intended use.

B. Lamps shall be as manufactured by general electric, sylvania, westinghouse, or equal. General service lamps shall be rated at 120 volts and shall be inside frosted. C. All fluorescent ballasts shall have thermosetting ballast compound which will not soften or flow at elevated

temperatures, shall be rated for voltage as indicated, shall be high power factor, cbm-etl certified, shall have individual automatic-resetting thermal protection (ul class p) and shall have a sound rating of "a" for rapid start lamps and highest sound rating available for other lamps.

D. All high intensity discharge lamp ballasts shall be high power factor, 90 or higher with a crest factor of 1.75 or lower

E. Finish of all fixtures shall be in first class condition and shall be guaranteed for a period of one (1) year from date of acceptance when lamped not larger than manufacturer's recommendations F. Capital letters adjacent to the outlets indicate fixture type; lower case letters indicate manner of switching.

2.10 GROUNDING SYSTEMS

A. Circuits, metal raceway systems, and all other permanently installed electrical equipment shall be solidly grounded in accordance with the national electrical code to form a continuous, permanent and effective grounding system.

B. Grounding conductor connections shall be made with solderless pressure type fittings. Where welded connections are practical, connections may be made by the use of a suitable welding process. All connections shall be made in strict conformance with the manufacturer's recommendations. C. To maintain uninterrupted electrical continuity, flexible raceway sections must have conductance equal to that of the system's inflexible raceway. Raceway fittings used must be such as to ensure existence of a permanent bond. Grounding bushings shall be provided to ground conduits to control center ground. All new equipment shall be grounded to the existing grounding system.

2.11 IDENTIFICATION AND LABELING OF ELECTRICAL EQUIPMENT

A. All control devices and device enclosures shall be labeled with individual name plates or legend plates. B. Individual name plates or legend plates shall be one of the following types:

Black laminated plastic or micarta with white cut letters. Corrosion-resistant metal plates with engraved or raised letters and black fill.

E. Paper, foil, or tape markers attached with adhesives shall not be used.

2.12 SERVICE TO ELECTRICALLY-POWERED EQUIPMENT

A. The contractor shall furnish and install outlets for and make connections to all motors and power-operated equipment indicated on the equipment schedule.

B. All items of electrically powered equipment, together with their circuit requirements, are listed in the equipment schedule. In general, equipment listed under "description" in the schedule will be furnished under other divisions of the specifications. All other components listed in the schedule shall be furnished

and installed under this section of the specifications. C. The "conduit and wire" listed in the schedule is the branch circuit wiring. The branch circuit shall terminate in an outlet box, a disconnect switch, a starter, or a receptacle, as indicated in the equipment schedule. The contractor shall furnish and install all necessary power and control wiring and make connections to the item of equipment, unless otherwise indicated in the schedule.

a. Each fusible "disconnect switch" (disc.) Listed in the schedule shall be equipped with dual element fuses except where some other type of fuse is indicated in the schedule or on the drawings.

D. The "starter size" listed in the schedule is nema size of the magnetic starter to be installed. The designation "man" indicates the installation of a manual starter. Where a manual starter is located within sight of the motor, it shall be used as the motor disconnect switch as well as overcurrent protection.

E. The contractor shall obtain exact information pertaining to location, electrical characteristics, and wiring for equipment furnished by others from the contractor furnishing the equipment. This information shall be verified by examining nameplates and manufacturer's wiring diagrams. Any discrepancy between the equipment requirements and the provisions made by these specifications shall be reported. Equipment damaged as a result of the contractor's failure to observe manufacturer's requirements shall be replaced or repaired by the contractor. The thermal protection elements in magnetic and manual starters shall be rechecked with name plate data at the site before operation of the equipment. Where necessary, the thermal protection elements shall be changed to properly protect the equipment.

Approval of Lease Record Drawings:	
Colgate Properties, LLC	

Sarah Chase, Manager Department of Health

Catherine Torres, MD, Cabinet Secretary Date

Property Control Division

Chuck Gara, Division Director

Lease Record Drawings have been reviewed and approved by the Above Parties. Only upon approval by the Property Control Division will Lease Record Drawings be approved for construction.

Date

Date

