

**OPTIMUM CARE
SUGAR LAND, TEXAS
GENERAL NOTES AND ELECTRICAL SPECIFICATIONS**

26 05 00 BASIC ELECTRICAL REQUIREMENTS:

A. Code Compliance: The codes, ordinances and standards listed herein will be referred to in the design of electrical systems. The Engineer will select appropriate sections to be applied in accordance with established engineering principles and practices. All codes, ordinances and standards shall be subject to interpretation and enforcement as provided by City of Sugar Land, Fort Bend County, the State of Texas and Federal Agencies.

1. The current City of Sugar Land Electrical Code, including the 2008 National Electrical Code (NFPA 70).
2. 2009 International Building Code with City of Sugar Land Amendments. Occupancy for this facility is a business occupancy, as indicated in the Architectural Drawings.
3. Texas Accessibility Standards (TAS).
4. Accessibility Guidelines (ADAAG) of Title III, Americans with Disabilities Act (ADA) of 2010. Note that ADA is Federal civil rights law. Enforcement of ADA is by Federal Agencies specified in the Act. Owner(s) should obtain appropriate legal counsel to determine methods of compliance for the specific Work of this Project.
5. Fire Alarm Rules of Texas Commission on Fire Protection.
6. Texas Energy Code (IECC 2009; ASHRAE/IESNA 90.1 – 2007).
7. Licensing Standards for Assisted Living Facilities as described in the Texas Administrative Code, Title 40, Chapter 92 and as administered by the Texas Department of Aging and Disability Services (DADS). Texas Administrative Code Rules and Statutes (rule 92.61 thru 92.64) as apply to a type "B-small" facility.

B. Permits and Codes: Obtain and pay for all necessary permits and required inspections. Comply with all national, state and municipal laws, codes and ordinances relating to building and public safety. Provide any required temporary power and utilities for all trades and all construction trailers. Provide temporary construction lighting and power. Electrical Contractor shall include Temporary Electric: All temporary electric shall be in accordance with OSHA Construction standards 29FCR, Part 1926 and Article 590 of the 2008 National Electrical Code. Temporary lighting and power shall be provided in accordance with OSHA standards. The OSHA minimum illumination is 5 footcandles in general construction areas, and 10 FC in mechanical/electrical rooms and workrooms. Included are connections to all construction trailers. The cost of this work is to be included in the base electrical bid for the project.

C. Visiting the Jobsite: Visit the site of the proposed construction in order to fully understand the facilities, difficulties and restrictions attending the execution of the work. No additional compensation will be allowed this Contractor for work or items omitted from his original proposal due to his failure to inform himself regarding such matters affecting the performance of the work in this contract or necessary for the installation and completion of the work included herein.

D. Terminology: "Provide," "Furnish" and "Install": Unless otherwise noted, the term "furnish" as used in these Drawings and Specifications is intended to mean procure and deliver to the jobsite in a condition that is ready to fit into the final location. Furnish shall include submittal of shop drawings and procuring any related warranties, ready to assign to the Owner. Unless otherwise noted, the term "install" as used in these Drawings and Specifications is intended to mean mounting the equipment and permanently affixing it into the designated location and making all necessary final connections so as to place the equipment into service. Install shall also include procuring and permanently fixing into place any mounting hardware, fittings and any other appurtenances as required for a complete and workman-like installation as well as performing all required tests on the completed installation. Install shall also mean documenting the installation, such as operation and maintenance manuals and/or as-installed drawings. Unless otherwise noted, the term "provide" as used in these Drawings and Specifications is intended to mean both "furnish" and "install".

E. Drawings: Drawings are diagrammatic in nature. Contractor shall confirm dimensions & locations in the field. If conflicting dimensions are shown, use larger dimensions and verify with the Architect. Refer to Architectural plans and elevations for exact locations of lighting fixtures and mounting heights of all wall mounted devices. In case of conflicts between drawings, or specs and drawings, Contractor shall request clarifications in writing from the Architect and/or the Engineer, otherwise the more stringent requirements shall be provided.

F. Material: All materials shall be new, made in USA and U.L. listed for the intended use. Material installation shall comply with NEC requirements and the installation of such materials shall be performed by craftsmen skilled in this particular work.

G. Equipment Protection: Protect equipment and work from damage during handling and installation until completion of construction.

H. Cooperation With Other Trades: Cooperation with trades of adjacent, related or affected materials or operations, and with trades performing continuations of this work under subsequent contracts, is considered a part of this work in order to effect timely and accurate placing of work and to bring together, in proper and correct sequence, the work of such trades. Provide other trades, as required, all necessary templates, patterns, setting plans and shop details for the proper installation of the work and for the purpose of coordinating adjacent work. Electrical power connections for mechanical and plumbing equipment are specified under this Division unless noted otherwise. Verify electrical characteristics of all equipment with Division 22, Division 23 and any other special Divisions (elevators etc) before roughing in the electrical connections and energizing the equipment.

I. Mechanical/Plumbing/Special Equipment access and clearance areas: Remove any improperly installed electrical equipment and conduit that are limiting proper service and maintenance access for the equipment.

J. Access Panels: Provide access panels or doors for all devices requiring adjustment. Similarly for all junction boxes, pull boxes, etc. that are required to be accessible per Code and/or the local authority having jurisdiction. Appearance of access panels/doors shall be acceptable to the Architect. Panels/doors shall be designed for the fire rating of wall or ceiling in which they are installed. All access panels shall be lockable and shall be keyed alike (same keying as panels from other divisions).

K. Plenums: Plenums may be crowded and not all obstacles are indicated. Allow for conduit offsets and pull boxes not indicated on drawings.

L. Plaster, gypsum board or other non-accessible ceilings: Contractor shall minimize cutting and patching by installing conduit prior to ceiling/wall/partition cover-up.

M. Loss or Damage to New Facilities: The Contractor shall be responsible for loss or damage to the facilities caused by him and his workmen, and shall be responsible for repairing or replacing such loss or damage. The Contractor shall send proper notices, make necessary arrangements, and perform other services required for the care, protection and in-service maintenance of all electrical services for the new facilities. The Contractor shall erect temporary barricades, with necessary safety devices, as required to protect personnel and the general public from injury, removing all such temporary protection upon completion of the work.

O. Clean up: A) Provide for isolation of work areas and daily removal of debris. B) Clean all equipment and fixture lenses. C) Replace all burned out lamps. D) Touch up with paint where required.

R. Submittal Data: Submittals are required but not limited to the following equipment:

1. Lighting Fixtures
2. Distribution Equipment, including Distribution Panelboards, Branch Circuit Panelboards and Safety Disconnect Switches.
3. Devices, including Lighting Switches, Receptacles, Occupancy Sensors and Wall Mounted Dimmers.

4. Lighting Control Relay Panelboards.

5. Grounding Systems, including Grounding Bus Bars, Ground Lugs, Ground Rods, Exothermic Bonding System, Proposed Footings or Beams for UFER Ground, etc.

6. Standby Generator System

7. Fire Alarm System (submit for information purposes only).

8. Conduit/fittings.

9. 600V Building Wire and Cable, including Metal Clad (MC) cable.

S. Shop Drawings: Shop drawings as required shall be provided by the Electrical Contractor at no additional cost to the Architect. These shop drawings shall be prepared to indicate installation at major equipment where special coordination problems may exist.

T. Certification of Overcurrent & Safety Disconnect Devices for HVAC Equipment: Overcurrent (OC) & disconnect devices shown on plans are based on a specific manufacturer of Division 22 and Division 23 equipment. The Contractor may submit other manufacturers and different models or different ratings. It is the responsibility of the Contractor to coordinate OC/Disconnect devices with the submitted Division 23 equipment prior to submitting such devices for the Engineer's review. Any deviations from sizes shown on drawings must be noted in the submittals. The Contractor must certify that he has reviewed and coordinated with Division 22 and Division 23 equipment and that all OC/Disconnect devices submitted match the Division 22 and Division 23 equipment requirements. Shop drawings without such certification will be returned to the Contractor. Only submittals with such certification will be reviewed.

U. Complete Systems: All systems shall be complete and working at completion of construction.

V. Final Inspection and Operating Tests:

1. General: All electrical systems must be checked for proper polarity and sequence, all motors must be checked for proper rotation and all equipment (including HVAC, elevator and special equipment) checked for proper voltage and phasing requirements. Prior to the application of any power, the Contractor must certify that all connected equipment match the characteristics of the supply circuit voltage, phasing and feeder requirements.

2. Inspection Schedule: At the time designated by the Architect, the entire system shall be inspected by the Architect and the Engineer. The Contractor or his representative shall be present at this inspection.

3. Operational Test: After all systems have been completed and put into operation, subject each system to an operating test under design conditions to ensure proper sequence and operation throughout the range of operation. Make adjustments as required to ensure proper functioning of all systems. Special tests on individual systems are specified under individual sections.

4. Final Inspection Working Drawings: The Contractor shall provide a set of working drawings for the final inspection / walk-through to be performed by the Architect and/or the Engineer. After the inspection, any items which are noted as needing to be changed or corrected in order to comply with these specifications and the drawings shall be accomplished without delay.

W. Guarantee: Contractor shall provide a guarantee all work and materials furnished under this contract for a period of one year from the date of acceptance by the Owner and the Architect. Guarantee shall include: All labor, parts, travel/subsistence, software changes / re-programming, etc.

X. Record Drawings: Contractor shall maintain a continuous daily record during the course of construction of all changes and deviations in the work from the accompanying drawings. Record drawings shall show exact dimensions and location for all under-slab conduits including dimensions from key building points and depth of cover. Project record documents shall also include switchgear, panelboards, transformers, connection locations of equipment specified under other Divisions and revised homerun circuit locations. Upon completion of the work, Contractor shall submit Record Drawings for approval. Record Drawings shall be submitted in Autodesk AutoCAD 2010 format or higher. Electronic CAD backgrounds may be available for purchase from the Architect or Redding Linden Burr Engineers.

26 05 05 FIRE STOPPING FOR ELECTRICAL PENETRATIONS:

All penetrations through fire rated floors and walls shall be sealed with intumescent or ablative type fire barrier sealant (foam), to prevent the spread of smoke, flame, toxic gas or water through the penetration either before, during or after a fire. The fire rating of the penetration seal shall be at least that of the floor or wall into which it is installed, so that the original fire rating of the floor or wall is maintained as required by Article 300.21 of the National Electrical Code. Acceptable manufacturers are 3M (3M Fire Barrier Silicone RTV Foam) or Hilti (CP 660 Firestop Foam, CP 657 Firestop Brick, CP 658 Firestop Plug).

26 05 19 BUILDING WIRE AND CABLE (600V):

A. General: All wiring shall be in conduit except plenum rated low voltage cables and metal clad cables. Insulation for all power wiring must be 75°C rated or better, 60°C rated wire shall not be used. Wiring with insulation rated at 90°C may be used but only at the 75°C ampacity. Insulation

B. Conductor: Soft drawn, annealed, bare (uncoated) copper, 98% conductivity. Aluminum wiring is not acceptable.

C. Type: All wire sized #8 AWG and larger shall be stranded. Line voltage #12 AWG and #10 AWG shall be solid. Low voltage fire alarm and security system wiring shall be solid.

D. Minimum Wire Size, Absolute: Minimum wire size for power wiring located inside of building shall be #12 AWG. Minimum wire size for power wiring located outside of building shall be #8 AWG. Minimum size for control wiring shall be #12 AWG. Minimum size for signal wiring (60V class) shall be #18 AWG or larger as recommended by fire alarm and/or security contractor.

E. Power Wiring Minimum Size, Voltage Drop Considerations: Special wire sizes shall be provided for single pole (single phase) circuits based on one-way distance measured along the actual circuit routing including rise and drop from the circuit breaker in the panelboard to the final device along the run. Sizing is based on a 1P-20A breaker loaded to 16 amps.

1. Minimum wire size for 120V, single phase circuits routed inside of building shall be as follows:
 - a. Runs longer than 60' and less than 90', #10 AWG
 - b. Runs longer than 90' and less than 150', #8 AWG.
 - c. Specific 120V runs located inside of building that are longer than 150' shall be as noted on the Drawings.
2. Minimum wire size for 120V wiring inside of building or outside of building shall be as follows:
 - a. Runs longer than 150' and less than 240', #6 AWG.
 - b. Runs longer than 240' and less than 380', #4 AWG.
 - c. Specific 120V runs located outside of building that are longer than 380' shall be as noted on the Drawings (on the Panel Schedules).

F. Insulation: Provide THHN/THWN type insulation for all dry indoor locations. Provide XHHW insulation for all feeders routed underground. Provide THWN insulation for other wet locations such as outdoors, rooftop, final kitchen connections, branch circuits routed underground, etc.

G. MC Cable:

1. General: Type MC Cable (Metal Clad) is acceptable only if approved by the Owner in writing and the Local Authority Having Jurisdiction.

2. Approved uses: MC Cable, if approved, however, may be used only in the following locations:

- a. Drops from ceiling plenum junction boxes to receptacles in the walls.
- b. Drops from ceiling plenum junction boxes to light switches in walls.
- c. Final connection ceiling lighting fixtures from ceiling plenum junction boxes. When used as final connection to lighting fixtures, ceiling plenum junction boxes shall be located such that the whips do not exceed 6-ft in length.

3. Not approved: MC Cable is not approved for home run to panels (final connection to panels). MC Cable is not approved where it would be routed in locations that are not concealed inside of walls or ceilings (exposed structural elements), such as mechanical rooms, electrical rooms, telecomm rooms and other unfinished spaces.

H. AC cable: Type AC cable (trade name "BX") is not allowed for use on this project.

I. Acceptable Manufacturers: Triangle, American Insulated Cable Company or Southwire.

J. Installation, Communication Wire (60V), Fire Alarm, Telephone, HVAC Thermostat, Data, Etc.: Plenum rated low-smoke cable may be used in lieu of wire/conduit type installation. All plenum rated cable shall be properly supported by bridal rings, cable ties, clips etc made by Erico (caddy communication fasteners) or equal. Do not use scrap wire to wrap and support communication wires. Homemade support devices are not acceptable. Do not lay communication cable directly on top of ceiling tiles, install cables a minimum of 12" above ceiling tiles and 12" from HVAC ductwork. Provide minimum 6" separation between power conduit and communication wirings.

26 05 33 CONDUIT RACEWAYS AND BOXES:

A. Conduit, General: Shall be Rigid Galvanized Steel (RGS – National Electrical Code Article 344), PVC coated Rigid Galvanized Steel, Intermediate Metallic Conduit (IMC – N.E.C. Article 342), Polyethylene Vinyl Chloride (PVC – N.E.C. Article 352), Flexible Metal Conduit (FMC – N.E.C. Article 348), or Electrical Metallic Tubing (EMT – N.E.C. Article 358) as manufactured by Allied, Carlon, Rob Roy or Wheatland.

B. Conduit Type:

1. Indoors Above Grade: EMT or RGS conduit
2. Outdoors Above Grade or stub-ups: PVC coated RGS conduit or IMC.
3. Outdoors Below Grade: RGS, Schedule 40 PVC or Schedule 80 PVC conduit.
4. Under Slab: RGS or Schedule 40 PVC conduit
5. Below Drive Lanes or Parking Lots: RGS conduit or Schedule 40 PVC conduit.
6. Poured In Slab: LFNC or EMT

C. Fittings, Coatings and Encasement: Provide transition fittings from PVC (Schedule 40 or Schedule 80) to RGS for all above grade conduit. Compression or set-screw type fittings shall be used for EMT. All underground RGS conduit shall have 40-mil thick external PVC coating for corrosion protection. Provide concrete encasement for the entire length of the underground portion of the incoming service conduit run unless specifically noted otherwise. Provide red detectable warning tape over entire run of service, over the generator feeder run and over other major conduit runs.

D. Minimums: Minimum conduit size for any above ground run is 1/2" C, except that minimum conduit size for home run to panelboard is 3/4" C. Minimum conduit size for any underground conduit run is 1" C. Minimum burial depth for conduit without concrete cover is 24" from finished grade to top of conduit, provide deeper burial depth if required by local codes. Minimum burial depth with at least 4" of concrete cover is 4" below grade.

E. Use Restrictions: Electrical nonmetallic tubing (ENT – N.E.C. Article 362) shall not be used unless specifically approved by the Engineer. EMT may be used for conduits poured in slab, but must be used with concrete-tight compression fittings. Flexible Metallic Conduit or Liquid-tight Flexible Metallic Conduit shall be utilized as final connections (3'-5' only) at the following equipment: motors, lighting fixtures, heater, power supplies, and any other vibration producing equipment. For flexible final connection, utilize minimum size 1/2" Flexible Metallic Conduit and include a green ground wire. Use Liquid-tight Flexible Metallic Conduit (trade name Sealtite) as final connection to equipment in wet locations such as outdoor condensing units, walk-in cooler/freezer, kitchen equipment, rooftop HVAC equipment, etc. Liquid-tight Flexible Metallic Conduit shall not be used in plenum spaces.

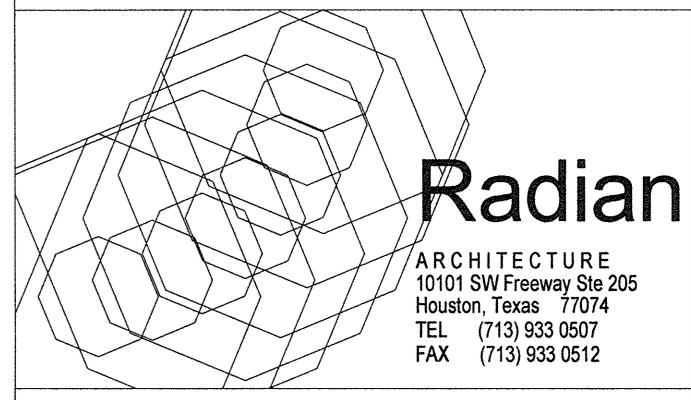
F. Conduit Installations: Conduit shall be supported from structure every 5 feet and within 3 feet of all boxes. Use locknuts inside and out at boxes. Maintain a minimum 12" separation from all high temperature pipes. All conduit runs shall be installed either parallel or perpendicular to major building lines. Route conduit as directly as possible with largest radius bends possible. Make bends with standard ells or bends per NEC. Provide expansions fittings if conduit crosses structural expansion joint. Support any exterior exposed conduit runs at interval not to exceed 10' on center, within 5' of any deflection of conduit and within 5' of junction or device boxes. Clean conduit interior after installation; coat scratches with zinc paint. Provide a pull string in all conduit systems with wiring specified under another division (power, fire alarm, security, telephone and other communication conduit). Provide a pull string in all spare conduits.

G. Project Record Documents: Accurately record actual routing of all underslab and underground conduits; include dimensions from key building points and depth of cover.

H. Outlet Boxes: Outlet boxes shall be galvanized steel suitable for the location. Ceiling outlet boxes shall be 4" octagon. Wall outlet boxes shall be proper design to accommodate the devices required - 4 inch square with raised cover. Outlet boxes installed surface mounted in outdoor locations or surface mounted indoors in wet locations shall be weatherproof type. Outlet boxes to be manufactured by Raco, Steel City or Appleton. All junction boxes, splice boxes and device boxes shall be accessible without damaging the building structure or finish and shall not be permanently closed in by the structure or finish of the building.

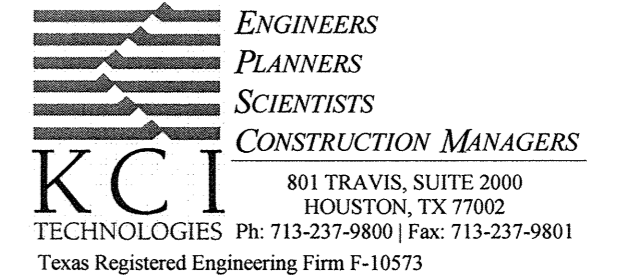
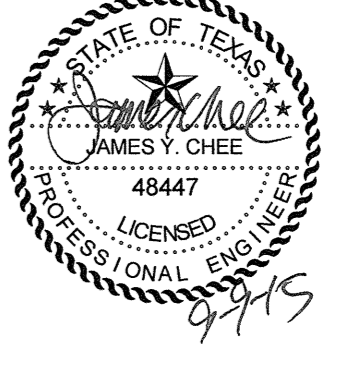
I. Junction and Pull Box Locations: For power conductor raceways, provide a junction or pull box for each segment of a conduit run where run contains equivalent of four "ninety degree bends (360)". For telecommunications conduits (Tele, Data, Security, Fire Alarm, Communications), provide a junction or pull box for each segment of a conduit run where run contains equivalent of three "ninety degree bends (270)". Provide a pull box, pull point or in-grade pull box for each segment of an underground conduit run where segment of conduit run would otherwise exceed 350 feet or for each underground conduit run that contains equivalent of more than one "ninety degree" bend in the horizontal plane.

**OPTIMUM CARE
SUGAR LAND, TEXAS**



Revision Schedule

#	Date	Description
1	12-03-12	PERMIT, PRICING, AND CONSTRUCTION
3	09-04-15	PERMIT REVISIONS



Project No.
ELECTRICAL SPECIFICATIONS
Sheet No.

E0.01

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J. Floor Power Outlets on Grade: For floor signal outlets, slab on grade, provide a rectangular box, flush with the face of finished floor. Box to be non-metallic, to accommodate required power conduit(s). Box and conduit to be cast in floor adjacent to a similar signal outlet box. Power conduits may be daisy chained to similar floor outlets on the same circuit, in the same room. Extend power conduit from the floor outlet location over to rise up inside of a nearby wall or column, riser to transition to EMT conduit with the conduit stubbed into a junction box in accessible ceiling space. Floor box to be similar to Hubbell PFBRG series or Carlon E976 series. Power outlet floor box is to be ganged adjacent to similar signal outlet floor box, arranged to be provided with a single multi-gang coverplate.

K. In-Grade Pull or Junction Boxes: Box to be Oldcastle heavy-duty polymer concrete box, H1118-12 or similar with traffic rated coverplate. Provide label cast into coverplate "ELECTRIC" for site branch circuitry or feeders, provide similar coverplate "TELECOMM" for site conduits with telecom and/or security and/or fire alarm circuitry. Provide one additional collar ring and provide a concrete floor for the in-grade pull or junction box.

26 05 34 EMPTY RACEWAYS FOR COMMUNICATIONS SYSTEMS:

A. General: Unless otherwise noted on the drawings, provide wall outlet device boxes, plaster rings, cover plates and empty 3/4" conduit and pull string stubbed above to an accessible location in the mechanical mezzanine for TV, Telephone, Data, Security, Communications, Audio Visual and Fire Alarm Systems. Wiring for these systems is provided by others.

B. Floor Signal Outlets on Grade: For floor signal outlets on grade, provide a rectangular box flush with grade. Box to be non-metallic, to accommodate a 3/4" signal conduit. Box and conduit to be cast in floor adjacent to similar power outlet box. Extend 3/4" signal conduit from each signal outlet box location over to rise up inside of a nearby wall or column, transition to EMT conduit with the conduit stubbed above to an accessible location in the mechanical mezzanine. Provide a pull string from the floor box to the ceiling space. Floor box to be similar to Hubbell PFBRG series or Carlon E976 series. Signal outlet floor box is to be ganged adjacent to power outlet floor box, arranged to be provided under a single, multi-gang coverplate.

C. Signal Outlet Conduit and Cabling in Mechanical Mezzanine: Extend a conduit from the outlet location(s) indicated over to an accessible location in the mechanical mezzanine area. Signal conduits stubbed shall not extend to the mezzanine located above the kitchen area. Each signal conduit shall be labeled (TV, Telephone, Data, Security, Communications, Audio Visual and Fire Alarm Systems Communication System, etc.) and shall be provided with a pull string. Conduits shall be arranged with a series of "J" hooks mounted for each system, no more than 5' apart and arranged such that when signal cables are pulled, the "J" hooks will allow the cables to be run in the mechanical mezzanine area in a neat and orderly fashion, parallel and perpendicular to the major building lines. From each mechanical mezzanine, provide (3)-3" conduits and (3)-2" conduits from the mezzanine area, stubbed below grade, to extend to the telecommunications closet.

D. Telecomm Entrance: Provide quantity of 4" empty conduits from the telecommunications closet, routed to property edge as indicated on the Drawings. At the property edge, cap conduits and mark the end of the run with a 6"x 6"x 12" concrete marker flush with grade. Label marker "TELE". Stub conduits approximately 3" above floor, provide pull string(s) in conduits. Provide a 3/4" plywood backboard, painted white, where the conduits stub up. Plywood to be 4' x 8' (minimum) or larger as indicated on the Drawings. Provide a grounding bus at the 3/4" plywood where the conduits stub into the room. Provide a 250 Kcmil grounding conductor back to the service entrance grounding point. Grounding conductor to be insulated copper. Where grounding conductor is routed outside of the room, provide a 3/4" conduit, bond the grounding conductor to both ends of the conduit.

26 05 26 GROUNDING AND BONDING:

A. General: All conduit work and electrical equipment shall be effectively and permanently grounded in accordance with NEC requirements. Provide a green equipment grounding conductor in all feeder circuits. Provide a green equipment grounding conductor with all power and receptacle and lighting branch circuit. Green equipment grounding conductor shall be routed throughout the electrical distribution system, from the service entrance ground, through the panel ground bus to final devices. Bond all metallic equipment that may become energized, such as ductwork, cable tray, etc. to the grounding system.

B. Grounding Electrodes: Provide 3/4" x 10-ft long, copper-clad, steel grounding rod. For below-grade connections provide exothermic welded type connections (trade name: Cadweld); for above grade connections provide mechanical bolted-type connections utilizing high conductive copper alloy or bronze lugs or clamps.

C. Service Entrance Ground Resistance: Ground resistance at the service entrance must be less than 25 Ohms. Provide additional ground rods as required to obtain 25 Ohms or less.

D. Ground Bars: Provide a 1/4" thick by 4" high by 24" long grounding bar at the main service entrance and the telecommunications room. Grounding bar to be drilled to accept double-lug type compression connectors. Grounding bar to be mounted on non-conductive stand-offs in a convenient location in the room. Refer to grounding bus detail and grounding schematic for additional information.

26 05 53 ELECTRICAL IDENTIFICATION:

A. Conduit System Identification: Mark all branch conduits with the appropriate circuit numbers at each surface mounted panel location where the conduits enter the panelboard. For recessed panels, mark branch conduit in ceiling plenum just above panels.

B. Conductor Color Code: Conductors insulation colors shall follow the City of Sugar Land existing color codes. If the City of Sugar Land does not enforce conductor insulation color codes, the following conductor insulation color codes shall be used:

	480Y/277V 3 Ph, 4W	208Y/120V 3 Ph, 4W	240/120V 3 Ph, 4W	120/240V 1 Ph, 3W
Phase A	Brown	Black	Black	Black
Phase B	Purple	Red	Orange (High Leg)	Red
Phase C	Yellow	Blue	Blue	--
Neutral	Gray or White	White	White	White
Ground	Green	Green	Green	Green

C. Panelboard Nameplate Designations: All branch circuit and distribution panelboards shall be identified using engraved nameplates with 4 rows of text (letter height shall be 1/4" minimum). Panel nameplates shall be an engraved plaque, three-layer laminated plastic, white letters on black background for normal power. Secure nameplates to the equipment using screws or rivets.

Example:
 PANEL "XX" 225 AMPS MCB, SECTION #1 of 2-SECTION PNL
 208Y/120V, 3 PHASE, 4 WIRE
 FEEDER SIZE 4 # 4/0 THWN, 1 # 4 G, 2 1/2" C.
 FED FROM DIST PANEL "XXX", 1ST FLOOR

D. Equipment Nameplate Designations: All switches, starters, combination starter/disconnect, transformers, wireways, communication cabinets, junction and pull boxes etc. shall be provided with a nameplate, similar to the Panelboard nameplate described above.

26 05 73 ELECTRICAL STUDIES:

Provide short circuit calculation, protective device coordination and arc flash hazard studies. Where emergency system(s) are provided, studies shall include overcurrent devices selective coordination with all supply side overcurrent protective devices. Studies shall encompass electrical distribution system from normal power source or sources to and including (branch breakers in each panelboard). Prepare study prior to ordering distribution equipment to verify equipment ratings required. Submit report with equipment submittals for the Engineer's review.

Perform study with aid of computer software programs. Report shall include: (a) Calculation methods and assumptions, (b) one line diagram, (c) state conclusions and recommendations. Studies and report shall be prepared by a professional engineer licensed in the state of Texas. Contractor shall provide warning labels on electrical equipment indicating incident energy level, level of hazard and the required personal protection equipment. Equipment shall include, but not limited to, switchboards, distribution panels, motor control centers, panels, contactors, disconnect switches and motor starters.

26 09 26 LIGHTING CONTROL PANELBOARDS:

Provide a complete microprocessor based control system for building lighting, made up of modular components and readily programmable on site to achieve flexible, automatic control of identified lighting branch circuits. Panel(s) and switches to be daisy-chained together using Cat. 5 patch cable with RJ45 connectors. A photosensor input to be provided to control exterior lights. Panels in the building to be networked to each other such that a switch input connected to any panel is able to affect the state of lighting relays in any other panel. Each panel to accommodate up to (16) relays. In addition to the quantity of relays indicated on the Drawings, each panel to be provided with a minimum of (4) additional relays. Panel shall include a 32-channel, 365-day/astromonomical time clock. A 21 by 8 character display is to act as programming interface for the system. Non-volatile memory shall hold all programming indefinitely. Panel to provide optional "blink-warn" feature, causing a lighting zone to blink approximately 5 minutes before scheduled "OFF" time. Programming software shall be offered as a standard feature. Programming software is to allow programming of system scheduling via a standard PC. System shall retain programming such that once the system has been programmed, the PC no longer will need to be connected for the schedule program to run. A modem to be included in the panel and lifetime factory programming is to be offered as a standard feature. Manual override feature is to be allowed for individual relays, zones or entire panel. Relays are to be 30A latching type to remain in the last state prior to power outage. Relays are to be UL listed for 18,000 amp short circuit current available at 120V. Lighting control panel to be similar to GR1400 series (Blue Box) as manufactured by Lighting Control & Design. Override switches to be similar to "Chelsea" style, as manufactured by Lighting Control & Design, provide number of switch buttons and zones of control at each location as indicated on the Drawings.

26 21 13 ELECTRICAL SERVICE ENTRANCE:

Contractor shall make arrangements for temporary and permanent service. Comply with all service installation standards of the serving utility. Electrical service characteristics shall be as shown on the electrical one line diagram. Contractor shall coordinate location of service entrance with the Power Company. Provide materials and equipment required to connect the project service to the utility system. Contractor shall submit to the Power Company an application for service. Contractor shall submit service application to the Power Company within 30 days after award of project contract.

Contractor shall secure a Service Outlet and Data Statement ("statement") from the Power Company. Contractor shall verify that the information on the statement is correct, including voltage, phase and number of wires, type of service, service facility arrangements, and location of service outlet. Contractor shall provide a copy of the Service Outlet and Data Statement for the Engineer's review. Failure to submit service application to the Utility or failure to submit the Service Outlet and Data statement in a timely manner may cause project delay and additional cost. All such cost due to Contractor's failure to apply and coordinate for service in a timely manner shall be borne by the Contractor. The Contractor shall coordinate and assist the Owner if application is required to be submitted by the Owner.

26 24 16 PANELBOARDS:

A. General: All panelboards shall have tin plated or silver plated copper buses. At contractor's option, equipment may be provided with tin plated Aluminum buses. Load center type panelboards are not acceptable and shall not be used.

B. Breakers: Provide molded case thermal-magnetic or adjustable trip type circuit breakers which are quick-make and quick-break on both manual and automatic operation. Use a trip-free type circuit breaker which is trip indicating. Thermal-magnetic breakers shall incorporate inverse time characteristic by bimetallic overload elements and instantaneous characteristic by magnetic trip. Adjustable trip type circuit breakers shall use current sensing and on-board computers or combination of sensing, computers and thermal-magnetic trip units to adjust inverse time/current trip curves of the circuit breaker. For 2-pole and 3-pole breakers, use the common-trip type so that an overload or fault on one pole will trip all poles simultaneously. Handle ties or other field installed trip handle devices are not acceptable. All breakers shall be bolt-on type, stab-on type breakers are not acceptable. Tandem type circuit breakers or circuit breakers which are smaller than the standard breaker with which the panelboard has been U.L. listed are not acceptable. All circuit breakers rated 100 amp or less shall be suitable for terminating 75°C wire insulation (breakers rated for only 60°C wire insulation is not acceptable. Refer to specification section 26 05 19 – BUILDING WIRE AND CABLE, 600V).

C. Labeling: All equipment shall be labeled, panelboards shall be labeled both on the panel covers and on the panel interiors. Refer to specification section 26 05 33 ELECTRICAL IDENTIFICATION.

D. Panelboard Directories: Provide a steel directory frame mounted inside the door with a heat-resistant transparent face and a directory card for identifying the loads served. Identify each circuit with load and locations (room names and room numbers) and indicate with typed directories. (Example: 5 duplex receptacles, Office, RM XXX). Install the panelboards such that the center of the switch or circuit breaker in the highest position will not be more than 6 1/2 feet above the floor or working platform.

E. Spare Conduits: For each panel, provide one spare 3/4" conduit for every 6 spares and/or spaces in the panel. Each spare conduit shall be installed with pull string stubbed to a J-box located in accessible mechanical mezzanine space. Install a minimum of one spare 3/4" conduit for every new panel shown on plans, even if there are no spares/spaces in those panels.

F. Acceptable manufacturers are GE, Square D, Eaton, and Siemens

26 27 26 WIRING DEVICES:

A. General: Provide wiring devices where indicated on drawings. All switches and receptacle devices shall be Leviton "Decora" type, or approved equal unless specified otherwise by the Architect. All receptacles shall be specification grade type.

B. Project Standard Color: Project standard color for devices and coverplates shall be white. Confirm the project standard color with the Architect prior to ordering. Duplex receptacles served from homerun designated as "dedicated" (serving computer type outlets and/or sensitive type loads) shall be color grey with project standard color coverplates. Isolated Ground (IG) type power receptacles (if used) shall be orange in color or shall be provided with an orange triangle on the device face.

C. Dimmer Switches: Provide a separate neutral conductor for each dimmer on a dimmer controlled lighting circuit, do not share neutral conductor with any other branch circuit(s). Breaking the fins (heat sinks) off of the dimmer switch causes the dimmer to become de-rated. Do not breaker the fins off of the dimmer switch. (Derated dimmer switches may be used only where specifically approved by the Engineer.) Certain dimmer switches require oversized back-boxes when mounted adjacent to other devices, coordinate the required back-box size for dimmers when mounted adjacent to other devices. For dimmers mounted adjacent, provide a single custom coverplate for the dimmers, up to (4) dimmers under a single custom coverplate. Field cutting multiple single-gang coverplates is not acceptable.

D. Ground Fault Circuit Interrupter (GFCI) Type Receptacle: GFCI type receptacles shall comply with 2006 UL 943 safety standard. GFCI type receptacle shall have integral end-of-life LED indicator light, and continuous sensing and self-testing every 60 seconds. Provide Hubbell GFR-5352 or approved equal. For "faceless" GFCI type receptacle, provide a 20A GFCI trip/reset mechanism with end-of-life indicator light to serve downstream "Ground Fault Protected" receptacle. For "Ground Fault Protected" receptacle that is served from an up-stream GFCI device, in addition to the panel and circuit number serving the receptacle, provide a label on the coverplate indicating "GROUND FAULT PROTECTED" and the room number of the GFCI mechanism that is protecting the receptacle

E. Cover plates: high abuse nylon or stainless steel per the Architect. Provide circuit number label on all power outlet and switch type device plates. For special equipment called out on the Drawing (e.g. COPIER), provide an additional label for the equipment name. For wall mounted switches controlling equipment, such as dish washers, garbage disposals, etc., provide an additional label for the equipment name.

F. Labeling: For required circuit designation and/or device use designation required on the coverplate, provide lettering a minimum of 18 point font, with a label-maker such as Brother P-touch or similar, black lettering on white tape.

G. Fire rated walls: All electrical boxes on opposite sides of corridor wall and fire rated walls must be separated by a horizontal distance of not less than 24 inches.

H. Testing and Certification: Contractor shall deliver a written report certifying that every receptacle has been tested as follows and found acceptable:

1. The physical integrity of each receptacle shall be confirmed by visual inspection.
2. The continuity of the grounding circuit in each electrical receptacle shall be verified.
3. Correct polarity of the hot and neutral connections in each electrical receptacle shall be confirmed.
4. The retention force of the grounding blade of each electrical receptacle (except locking-type receptacle) shall be not less than 115 grams (4oz.).

26 28 16 ENCLOSED SAFETY SWITCHES:

All safety switches shall be heavy-duty type with quick-make, quick-break contacts and suitable for terminating 75°C wire. Provide each switch with a ground lug. Provide a defeatable, front accessible, coin-proof door interlock to prevent opening the door when the switch is in the ON position and to prevent turning the switch ON when the door is open. Provide incoming line terminals with an insulated shield so that no live parts are exposed when the door is open. Voltage rating for all 208V three phase or 208V single phase safety disconnect switches to be 240V. Provide each 208V three phase or 208V single phase switch with an isolated, fully rated neutral block with provisions for bonding the block to the enclosure. Where fusible switches are shown, provide switches with rejection-type fuse holders which are suitable for use with fuses. In general, mount switches so that operating handle is approximately 44 inches above finished floor; where grouped, align tops of switches. Acceptable manufacturers are GE, Square D, Eaton, and Siemens.

26 36 12 GAS-ENGINE DRIVEN GENERATOR SETS:

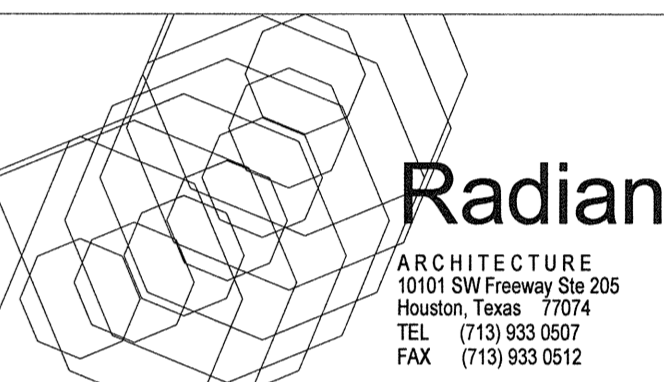
A. General. Provide a spark-ignited (gas-engine) type standby generator. The proposed Standby Generator System shall be classified as Level 2 Emergency Power Supply System, type 60 (60 seconds), per NFPA 110 (Emergency and Standby Power Systems). Engine and alternator shall be assembled in the factory as a unit, to be UL 2200 listed. Fuel system for the engine shall be Natural Gas, approximately 1720 CFH, pressure between 11" and 14" H2O. The generator shall be provided with the following features and requirements:

1. Rating: 100 KW at 0.8 Power Factor, 125 KVA, 208Y/120V, 3 phase, 4 wire, standby rating.
2. Governor: Electronic isochronous type.
3. Fuel System: Natural Gas, down draft type carburetor with secondary fuel regulator and fuel shut-off solenoid. Operating pressure for the generator shall be between 11" and 14" water column.
4. Enclosure: Weatherproof, sound attenuating outdoor type. Access panels to be provided with key type locks, all keyed the same.
5. Exhaust: Critical-type exhaust silencer mounted inside of housing, stainless steel flexible exhaust connector, stainless steel tail pipe and rain cap.
6. Radiator: Unit mounted type with up-scoop for noise attenuation.
7. Vibration Isolation: Minimum 6" deflection vibration isolation. Provide flexible disc coupling between engine and alternator.
8. Mounting Base: Provide a single mounting base for the unit. Pour an 8" housekeeping pad with mounting bolts.
9. Radio Emissions: Provide radio frequency suppression to commercial standards.
10. Output Breaker: Provide a single output circuit breaker, 80% rated, mounted to the frame of the generator.
11. Jacket Heater: Provide a jacket heater (coolant heater) with a thermostat.
12. Battery: Battery to be rated for 32 degree F minimum ambient. Provide a battery heater kit rated for 0 degree F minimum ambient. Provide battery rack and cables. Battery charger to be equalize/float-type
13. Misc. Additional Features:
 - Lifting eye.
 - Load connection kit.
 - Fan and belt guard
 - Oil drain extension to skid.
 - Flexible fuel lines from gas piping on the site to the engine.
 - Solenoid Fuel Shutoff Valve
 - Operating instructions and Operations and Maintenance (O&M) Manual.

B. Controls and Alarms: Generator shall be provided with microprocessor controller console. Consult unit to be mounted on vibration isolators and shall include panel lights. Controller to include the following controls and indicators:

1. Run-Stop-Remote/Auto Switch
2. Remote Start-Stop terminal
3. Oil Pressure Gauge
4. Coolant Temperature Gauge
5. Charge rate Ammeter
6. Solid State engine Monitor with lamp Test Switch, Cycle Cranking, Common Alarm Contact
7. Generator mounted Indicator (annunciator) panel with 12 Lights indicating each of the following alarm and trouble conditions:
 - a. Pre-Low Oil pressure Alarm
 - b. Overcrank Shutdown
 - c. Pre-High Coolant Temperature
 - d. Overspeed Shutdown
 - e. Low Oil Pressure Shut down
 - f. Generator Running
 - g. High Coolant Temp Shut down
 - h. Low Fuel Pressure Shut down
 - i. Low Coolant temperature
 - j. Switch Not in Auto
 - k. Two Customer Selected Faults
8. AC Output Controls, provided with the following controls and indicating the following information:
 - a. AC Voltmeter (dual range, indicated all voltages)
 - b. Voltmeter switch, Phase selector with an Off position
 - c. AC Ammeter (dual range, indicates current each phase Meter Switch, Voltmeter-
 - d. Ammeter Phase
 - e. Selector with an Off Position
 - f. Voltage Adjusting Rheostat
 - g. Frequency Meter
 - h. Run Time Meter
 - i. Exciter Circuit Breaker, Manual Reset
 - j. Fine Speed Control Potentiometer

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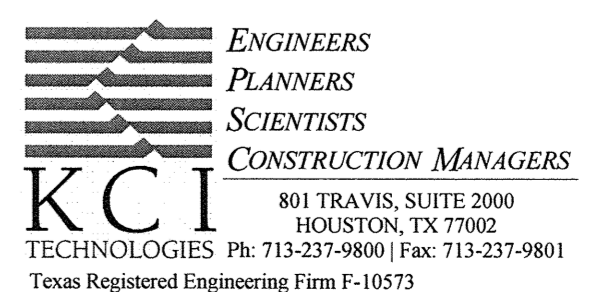
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E0.02



C. Remote Annunciator Panel: In addition, a remote annunciator panel shall be provided. Remote annunciator to be recessed mounted where shown on Drawings. Provide all associated cables for proper operation of the remote indicator panel. Provide a 3/4" conduit from the generator to the remote annunciator for remote annunciator wiring. Remote annunciator shall indicate all alarms and trouble signals required by the generator mounted indicator panel, in addition to the following:

1. Alarm Horn and silencing switch per NFPA 110.
2. Lamp test switch.
3. Two spare panel lamps.

D. Load Connection Kit. Provide an additional set of lugs on the output side of the Generator breaker to allow connection for a temporary load bank, for load bank testing of the generator.

E. Additional Features: Cyclic cranking per NFPA-110, High-Engine-Temp, safety shutdown and lamp (red), Run-Off/reset-(engine start), Remote Start/Stop Button.

F. Warranty: The complete electrical power system (generator set, controls and associated switches, switchgear and accessories), as provided by the single-source manufacturer, shall be warranted by said manufacturer against defects in materials and workmanship for a period of one year from the date of system start-up. Said coverage shall include parts, labor, travel expenses, and labor to remove/re-install said equipment. A 5 year warranty shall be offered as an add-alternate over the base bid.

G. Delivery, Factory Startup, Documentation and Training and Job-Site Testing:

1. Provide factory standard test reports for the generator shipped to the job-site. Provide 5 copies of factory installation, operation and parts manual. Photocopies are not acceptable.
2. Off loading and installation of generator at the job-site by the Generator vendor.
3. Factory representative at job site for start-up and training of Owner's personnel, minimum 2 days (20 hours).
4. Provide a 4-hour 100% load-bank test prior to building full load (transfer and accept load) test. Provide building full load tests in the presence of Owner or his authorized representatives.
5. Provide all required and necessary fluid and oil (coolant, lubricant, etc...). Provide fuel for testing and training. Provide a full tank of fuel after completion of testing and training.

H. Houskeeping Pad: Provide a 6" concrete housekeeping pad for the Generator.

I. Approved manufacturers: Cummins, Caterpillar, Taylor Power Systems, Kohler, Generac.

26 36 23 AUTOMATIC TRANSFER SWITCHES:

A. General: Provide an Automatic Transfer Switch, 3 phase, 3-pole, 4 wire, rated at 400A (minimum), braced for 35,000 AIC. Automatic transfer switch to be provided with voltage and frequency sensors and field adjustable timers for automatic operation of the transfer switch. Transfer switch to initiate "start" and "stop" signals to the Generator. Transfer switch to be provided with break-before-make (open transition) contacts for the phase conductors and a solid neutral. Provide signage at Generator. Note that generator is not a separately derived source (ground and neutral are not bonded at the Generator).

B. Voltage and Frequency Sensors: Provide voltage and frequency sensors to detect failure of Normal side voltage supply and to monitor the Emergency side voltage. Transfer timers to emergency (DROPOUT) to begin when Normal power is below 85% of nominal voltage or more than 0.5 Hz above or below nominal frequency of 60.0 Hz (below 59.5 Hz or above 60.5 Hz). Transfer timers to normal (PICKUP) to begin when Normal power returns to 95% of nominal voltage and within 0.1 HZ of nominal frequency. EMERGENCY FAIL condition is when the Emergency side voltage is less than 65% of nominal voltage or more than 1.5 Hz above or below nominal frequency.

C. Timers: Provide timers to transfer from Normal to Emergency, to transfer from Emergency to Normal and to schedule automatic testing (exercise) of the Generator.

1. Transfer from Normal to Emergency: DROPOUT timer to be field adjustable, from 1 second to 600 seconds, set by Contractor to 15 seconds. Switch to transfer to Emergency power when Normal power is outside of acceptable DROPOUT voltage or frequency for greater than the timed interval.
2. Transfer from Emergency back to Normal: PICKUP timer to be field adjustable, from 1 minute to 60 minutes, set by Contractor to 15 minutes. Switch to transfer from Emergency power back to Normal when Normal power has returned and is stable for greater than the timed interval. PICKUP timer shall be reset if Normal power is outside of acceptable PICKUP frequency or voltage, to re-start the timer when Normal power returns to within the PICKUP values of voltage and frequency. If Emergency power should fail during the re-transfer to Normal timing interval (EMERGENCY FAIL condition when Normal power is available above the DROPOUT limit), the transfer switch shall immediately re-transfer to Normal power.
3. Cool Down: Cool Down timer shall be field adjustable from 1 minute to 59 minutes, set by the Contractor to 15 minutes. Cool down time to allow the Generator to run unloaded (after re-transfer to Normal) for the cool-down interval prior to sending signal to the Generator to "stop". If Normal power voltage or frequency falls outside of the DROPOUT values during the cool-down interval, the transfer switch shall immediately transfer to Emergency power and cool-down timer shall be re-set. After Normal power voltage and frequency returns to within PICKUP values, the "Transfer to Normal" timer shall begin.
4. Exercise: Exercise timer to allow Generator to start, to run unloaded for a specific time interval, and to stop after the cool-down interval. Exercise timer to be field adjustable from once per day to once per year, to be set by Contractor to once per week (Fridays). Exercise timer to allow Generator to start up at a specific time of day, field adjustable in 15 minute intervals, set by Contractor to 3:00 in the afternoon. Exercise timer to allow an interval of generator exercise, field adjustable from 1 minute to four hours, set by Contractor to 5 minutes. After the end of the exercise timer interval, the generator shall cool down for the length of time set by the cool down timer. Exercise timer to utilize a calendar that allows the timer to adjust to daylight savings time. If, during the Exercise timer interval, Normal power is outside of acceptable limits for PICKUP, the transfer switch shall immediately transfer to Emergency power, and after Normal power voltage and frequency returns to within PICKUP values, the "Transfer to Normal" timer shall begin.

26 50 00 LIGHTING:

Provide lighting fixtures as indicated in the LIGHTING FIXTURE SCHEDULE on the Drawings.

28 31 00 FIRE DETECTION AND ALARM SYSTEM:

A. General: The fire alarm system shall be designed by a NICET level III fire alarm system designer employed by the fire alarm system installer, as appropriate for the occupancy types indicated on the Drawings and shall conform to the additional requirements stated herein. Fire alarm contractor shall be responsible for obtaining City of Sugar Land Fire Marshall approval for design, calculations and system approval. Fire alarm system design shall conform to the requirements of UL 72, 2011. Shop Drawings of the fire alarm system design and proposed components shall be submitted to the Engineer for review purposes only. Shop Drawings of the fire alarm system design and proposed components shall be submitted to the Engineer for review purposes only.

B. Fire alarm design drawings, shop drawings and fire alarm O&M manuals must be submitted to Texas Department of Aging and Disability Services (DADS) to comply with DADS licensing requirements. Upon substantial completion, a DADS representative will survey the installed fire alarm system and is required to be provided with specific documentation to demonstrate compliance with DADS licensing requirements. Refer to plan note entitled "TEXAS DEPARTMENT OF AGING AND DISABILITY SERVICES (DADS) LICENSING CONSIDERATIONS" on sheet E0.04 for additional requirements.

C. Shop Drawings of the fire alarm system design and proposed components shall be submitted to the Engineer for review purposes only.

D. Fire alarm system to be provided with an autodialer to dial to a UL remote station. Fire alarm system shall be fully digital type, UL 864 9th edition listed. Detection shall be automatic type throughout, as well as provided with pull stations at the building exits. Fire alarm system to be horn type audio announcement with strobe type visual announcement. Where more than one strobe is visible from any location, strobes shall be synchronized. Fire alarm wiring shall be fully supervised type except that for any device controlled by a relay or actuated by a relay, the relay shall be located within 6' of the device controlled or monitored. Remote power supplies shall be integral to the system and UL 864 listed. All associated components of the fire alarm system shall be listed for operation with the fire alarm system. The main Fire Alarm Control Panel shall be located in the main office location where indicated on the Drawings. Each (14)-bed "pod" shall be provided with (2) remote annunciators. An additional remote annunciator shall be provided in the office area indicated. In each pod, the first remote annunciator shall be provided at the indicated attended station and the second remote annunciator shall be provided in another location as required by the fire marshal. A fire event in one pod shall cause the fire alarm devices in that pod only and in the shared kitchen to annunciate and a fire event in the kitchen shall cause the fire alarm devices in the kitchen and in both pods that are adjacent to that kitchen to annunciate.

E. Refer to general notes on the Plan drawings for occupancy requirements. Verify zoning requirements with the Owner and provide accordingly. All penetrations through fire rated floors and walls shall be sealed with approved fire-sating material.

OPTIMUM CARE SUGAR LAND, TEXAS

GENERAL NOTES (APPLY TO ALL ELECTRICAL SHEETS):

G1 All circuit numbers shown are for reference only. Field verify actual circuit numbers req'd and adjust accordingly. Provide type-written directories reflecting actual circuit numbers used, with field revised/ relocated circuits clearly indicated. Directories shall include date and project description, example: 2015 Optimum Health Care - Building 2

G2 Each circuit is shown with an individual homerun. Contractor may elect to combine two or more circuits in one common conduit and with common neutral where allowed, subject to requirements of National Electrical Code Article 310.15(B)(3). Circuits with high content of harmonic currents, such as equipment with non-linear electronic power supplies such as computers, copiers, printers, etc may not use common. Note: Ampacities of conductors shall be reduced if more than three current carrying conductors are installed in a raceway. See National Electrical Code Article 310.15(B)(3)(a) "Adjustment Factors". Conductors shall be derated if 4 or more wires are installed in one conduit (see related note "G3" on temperature limitation of conductor ampacity), typical examples for 20-amp circuits are shown below:

No. of current carrying conductors	% of values in Tables as adjusted for temperature if necessary	Wire size, 4 or more wires in one conduit 60C wire (e.g. : TW)	Wire size, 4 or more wires in one conduit 75C wire (e.g. : THWN)	Wire size, 4 or more wires in one conduit 90C wire (e.g. : THHN)
4 thru 6	80%	#10	#12	#12
7 thru 9	70%	#10	#10	#12
10 thru 20	50%	#8	#8	#10
21 thru 30	45%	#6	#8	#8
31 thru 40	40%	#6	#8	#8
41 and above	35%	#4	#6	#6

G3 Temperature Limitations on Conductor Ampacity: The ampacity of a conductor shall be selected based on the National Electrical Code Articles 310.15(B)(16) and 110.14(C)(1) and 110.14(C)(2). The temperature limitations noted in 110.14(C)(1) and 110.14(C)(2) may be paraphrased as follows:

(A) Circuits rated 100 amp or less:

Use 60-degree C rated conductors only. 75-degree C and 90-degree C conductor may be used but only at 60-degree C ampacity.

Exceptions: higher temperature cable are allowed provided the equipment is listed and identified for use with the higher rated conductors.

(B) Circuits rated more than 100 amp or conductor larger than #1 AWG:

Use 75-degree C rated conductors only. 90-degree C conductor may be used but only at 75-degree C ampacity.

Exceptions: higher temperature cable are allowed provided the equipment is listed and identified for use with the higher rated conductors.

G4 Wires Oversized to Alleviate Voltage Drop: Where oversized wires are used to alleviate voltage drop, Contractor to provide reducer lugs and/or splices in junction boxes located near the equipment as required to terminate wires in equipment.

G5 All conduit and wire must be concealed from view. Exposed conduit runs are not acceptable, exceptions are the Storage Garage, Mechanical Mezzanine, the Laundry Room Electrical Panel home runs and the Telecomm Closet. Where run exposed, conduits shall be routed parallel and perpendicular to the major building lines and bends and offsets in parallel runs shall be installed in a neat and workmanlike manner.

G6 All wall mounted electrical power, electrical control and communication devices (light switches, receptacles, telephone, data etc.) shall be mounted flush with the wall unless noted otherwise. Switches, disconnects, power receptacles and tele/data receptacles mounted in the mechanical mezzanine need not be flush mounted. Field verify receptacle mounting requirements with the Owner and/or the Architect, mount all vertically oriented duplex power outlets with the "u" ground terminal on top, unless noted otherwise or as required by the Owner and/or the Architect. Mount all horizontally oriented duplex power outlets with the neutral terminal on top.

G7 All outlets on dedicated circuits (marked "DED" or "D" on plans) shall be properly identified by using distinctive color devices (gray). Cover plates for all outlets shall be marked with circuit number(s) used. Cover plates for equipment that is identified on the plans shall be marked with the loads served. Example : Ckt # LA-1 Copy Machine.

G8 Electrical Equipment Dimension Assumptions: Electrical equipment layout is based on Square D and/or Siemens. Equipment by other manufacturers such as GE may have larger dimensions. It is the responsibility of the Contractor to provide equipment with similar dimensions that will fit in the space noted.

GENERAL NOTES (continued):

G9 Verify location of all wall mounted and floor mounted outlets (power & communication) with the Owner and/or the Architect prior to rough-in. The Owner reserves the right to move any outlets 5 feet in any direction prior to rough-in. All receptacles within 6 feet of any wet area (example : sink, dishwasher, etc.) shall be provided with ground fault circuit interrupter (GFCI) protection, whether specifically indicated or not on drawings. Mounting heights of all outlets (receptacles, switches, telephone, data, etc.) in areas with countertop shall be verified with Owner/Architect prior to rough-in. In general, all outlets shown at countertop areas are to be mounted above the countertop except outlets serving under-counter equipment such as disposers, undercounter dishwasher, undercounter refrigerators etc. Refer to Architectural interior elevations for additional information. All weatherproof/wet location and/or outdoor receptacles shall have "weatherproof-in-use" covers (NEC Article 406.8(B)). Provide Raco Bell Rayntite II covers or equal.

G10 Location of Switches/starters for Equipment Specified Under Division 23, Division 22 and Other Divisions: Location of disconnect switches, starters, control stations, etc. are shown diagrammatically on the Division 26 Drawings. Contractor shall install such devices in compliance with National Electrical Code required clearance requirements. All such devices shall be readily accessible after the equipment is installed in place and shall satisfy code clearance requirements. Remove and re-install devices that are inaccessible or with inadequate code clearance. Coordinate installation with actual equipment delivered to the job-site and with requirements specified in other Divisions.

G11 Wire and Disconnecting Means Sizing for Equipment Specified Under Division 22 and Division 23: Overcurrent devices, disconnect switches, conduit/wire sizes shown on the Division 26 Drawings have been selected based on equipment specified under Division 22 and Division 23. Contractor shall field verify ratings of actual equipment delivered to the jobsite and revise electrical distribution components as required to match that equipment. For outdoor pad-mounted air conditioning Equipment, Contractor shall connect the equipment to the in-sight disconnecting means by way of underground rigid conduit feeder stubbed up near equipment connection point. In-sight disconnecting means for air conditioning equipment to be outdoor NEMA 3R safety disconnect switch(es), fused or non-fused as indicated on the Drawings. Extend from underground conduit stub to equipment connection point with Liquidtight Flexible Metallic Conduit (trade name: Sealtite), length of Sealtite to be 5 feet. Sealtite longer than 5 feet is not allowed.

G12 Estimated Loads: Information and data on specialty equipment may not be available during the design process and some loads have been necessarily estimated. Such estimated loads are indicated as (EST.) on plans, riser diagrams and/or panel schedules. Contractor shall bid the project using the estimated feeder/breaker/switches shown on drawings. However, the Contractor is responsible for confirmation and verification of all such estimated loads with the appropriate vendors/suppliers. All shop drawings submitted by the Contractor shall include certification that the Contractor has confirmed/verified any estimated loads shown on the drawings. Contractor will not be due any additional compensation for his failure to verify the estimated loads shown on drawings. Provide credit to the Owner if actual loads are smaller than estimated loads, credit shall be given for size reduction on feeder/ breaker/ switches. Example of equipment loads that are typically estimated: special copy machine, laundry equipment, etc.

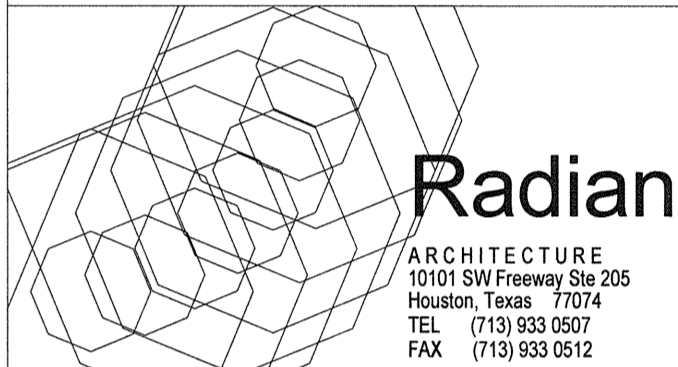
G13 Exhaust Fans: Where exhaust fans are indicated as interlocked with other equipment that has been specified under Division 23, Contractor shall provide all required relays, conduit/control wires etc. as required for a complete and operating system. Coordinate interlock requirements with the sub-contractor providing the Division 23 specified equipment.

G14 Provide a house keeping concrete pad (minimum 4" high) for all floor mounted electrical equipment. Provide all required and necessary galvanized unistrut support for all indoor/outdoor electrical equipment.

G15 Fire Rated Wall: Do not install device boxes or telephone, data outlets etc. back-to-back in fire/smoke partitions or within the same space enclosed by two adjacent studs. Restriction also applies to all corridor walls.

G16 Sleeves Thru Rated Walls: Provide fire rated sleeves thru rated walls for all low voltage and line voltage (120V) wiring. Provide sleeves as required for routing wirings from all outlet locations back to control panels/terminal boards, panels, junction boxes etc. Coordinate sleeve sizing requirements with communication systems contractor(s). Note : For all low voltage outlet devices including telephone, data, security, fire alarm, A/V, etc, the Contractor shall provide outlet back box with single-gang plaster ring. 3/4" conduit stubbed to mechanical mezzanine space and telecomm coverplate. In addition, Contractor shall provide all required and necessary sleeves through all rated walls/floors from accessible ceiling back to control panels/terminal boards, panels, junction boxes etc.

OPTIMUM CARE
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Revision Schedule

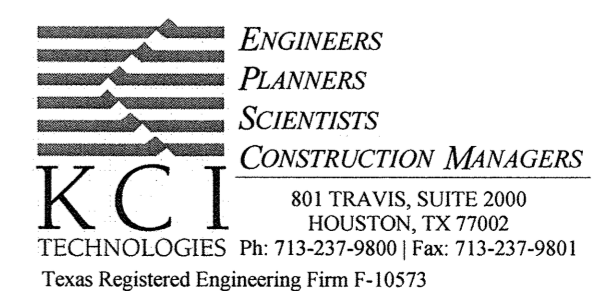
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ELECTRICAL SPECIFICATIONS

Sheet No.

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**OPTIMUM CARE
SUGAR LAND, TEXAS
TEXAS DEPARTMENT OF AGING AND DISABILITY SERVICES
(DADS) CONSIDERATIONS**

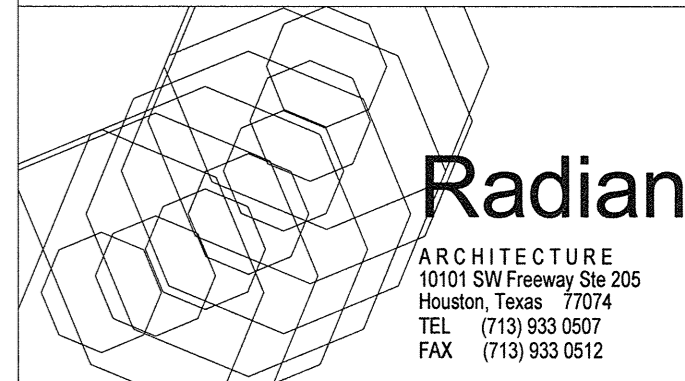
TEXAS DEPARTMENT OF AGING AND DISABILITY SERVICES (DADS) LICENSING CONSIDERATIONS:

A. General: Each pod (14 beds, commons room, dining facility, staff work area) in this facility will be licensed by DADS as a "small B" type facility, separated from other pods, other occupancies and from the kitchen area by 2-hour fire rated partitions. Provide appropriate fire-proofing where conduits, communications cables and ductwork (if any) are routed through fire rated partitions.

B. Drawings: Drawings must be submitted to Texas Department of Aging and Disability Services (DADS) for review prior to start of construction.

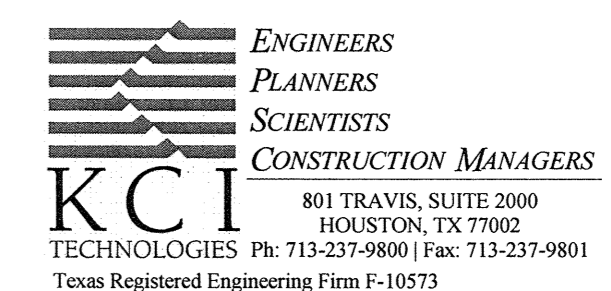
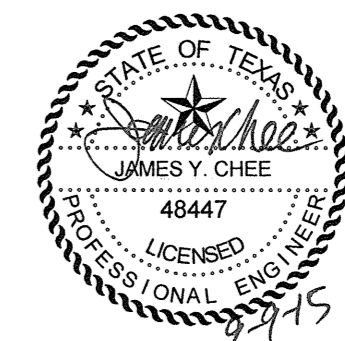
1. Floor plan documents must include room names, numbers and usages; doors (numbered) including swing; windows; legends or clarification of wall types; dimensions; fixed equipment; plumbing fixtures; and kitchen basic layout; and identification of all smoke barrier walls (outside wall to outside wall) or fire walls.
 2. For new construction, an overall plan of the entire building must be drawn or reduced to fit on an 1 1/2 inch by 11 inch sheet; submit two complete sets of reduced plans for fire record as indicated in section D (Reduced Scale Drawings).
 3. Elevations and roof plan must include exterior elevations and any roof top equipment; gas piping and interior elevations where needed for special conditions.
 4. Details must include wall sections as needed (especially for special conditions); cross sections through buildings as needed; and miscellaneous details and enlargements as needed.
 5. Electrical documents must include electrical layout, including lights, convenience outlets, equipment outlets, switches and other electrical outlets and devices; Utility power service entrance, circuiting, distribution and panel diagrams; exit light system (exit signs and emergency egress lighting); emergency electrical provisions (such as generators and panels); and similar systems (such as control panel, devices and alarms); sizes and details sufficient to assure safe and properly operating systems; and a staff communication system.
 6. Plumbing documents must include plumbing layout with pipe sizes and details sufficient to assure safe and properly operating systems, water systems, sanitary systems, gas systems, other systems normally considered under the scope of plumbing, fixtures, and provisions for combustion air supply.
 7. Heating, ventilation, and air-conditioning (HVAC) documents must include sufficient details of HVAC systems and components to assure a safe and properly operating installation including, but not limited to, heating, ventilation, and air-conditioning layout, ducts, protection of duct inlets and outlets, combustion air, piping, exhausts, and duct smoke and/or fire dampers; and equipment types, sizes and locations.
 8. Fire sprinkler system plans and hydraulic calculations must be designed in accordance with and including all the required information on the plan, specified in National Fire Protection Association (NFPA) 13, NFPA 13R or NFPA 13D as applicable and the NFPA documents referenced therein, published by the National Fire Protection Association and be signed by a Responsible Managing Employee, licensed by the State Fire Marshal's Office or sealed by a licensed professional engineer.
 9. Other layouts, plans or details as may be necessary for a clear understanding of the design and scope of the project; including plans covering private water or sewer systems must be reviewed by the local health or wastewater authority having jurisdiction. If no local authority, then the plans will be reviewed by DADS.
 10. Specifications must include installation techniques, quality standards and/or manufacturers, reference to specific code and standards, design criteria, special equipment, hardware, painting and any others as needed to amplify drawings and notes. Include complete materials lists and manufacturers installation instructions where appropriate.
 11. Detailed fire detection and alarm system working plans must be designed in accordance with the applicable sections of the National Fire Alarm and Signaling Code (NFPA 72) and the National Electrical Code (NFPA 70) as published by the NFPA. Plans must signed by an Alarm Planning Superintendent licensed by the State Fire Marshal's Office.
- C. Initial Survey:
1. Upon completion of construction, including grounds and basic equipment and furnishings, an initial architectural inspection of the facility is required to be performed by DADS prior to occupancy. The completed construction must have written approval of the local authorities having jurisdiction, including the fire marshal, health department and building inspector.
 2. The following documents must be available to DADS' surveyor at the time of the survey of the completed building:
 - a. Written approval of the local authorities called for in paragraph 1 above.
 - b. Record drawings of the fire detection and alarm system as installed, signed by an Alarm Planning Superintendent licensed by the State Fire Marshal's office or sealed by a licensed professional engineer, including a sequence of operations, the owner's Operation and Maintenance manuals and the manufacturer's published instructions covering all system equipment, a signed copy of the State Fire Marshal's Office Fire Alarm Installation Certificate and, for software based systems, a record copy of the site-specific software (excluding the system executive software or external programmer software) in non-volatile, non-erasable, non-rewritable memory.
 - c. Record drawings of the fire sprinkler system as installed, signed by a Responsible Managing Employee, licensed by the State Fire Marshal's Office or sealed by a licensed professional engineer, including the hydraulic calculations, alarm configuration, aboveground and underground Contractor's Material and Test Certificate, all literature and instructions provided by the manufacturer describing the proper operation and maintenance of all equipment and devices in accordance with NFPA 25, Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems.
 - d. Service contracts for maintenance and testing of alarm systems, sprinkler systems, etc.
 - e. A copy of gas test results of the facility's gas lines from the meter.
 - f. A written statement from an Architect/Engineer stating that, from periodic onsite observation visits, the facility as constructed is, to the best of his/her knowledge and belief, in substantial compliance with his/her construction documents, the Life Safety Code, DADS licensure standards and local codes.
 - g. The contract documents identified in paragraph B (Drawings) above.
 - D. Reduced Scale Drawings: Copies of reduced size floor plans on an 8 1/2 inch by 11 inch sheet must be submitted in duplicate to DADS for record/file use and for the facility's use for evacuation plan, fire alarm zone identification, etc.. The reduced scale plan must contain basic legible information such as scale, room usage names, actual bedroom numbers, doors, windows and any other pertinent information.

**OPTIMUM CARE
SUGAR LAND, TEXAS**



Revision Schedule

#	Date	Description
3	09-04-15	PERMIT REVISIONS



Project No.

DADS CONSIDERATIONS

Sheet No.

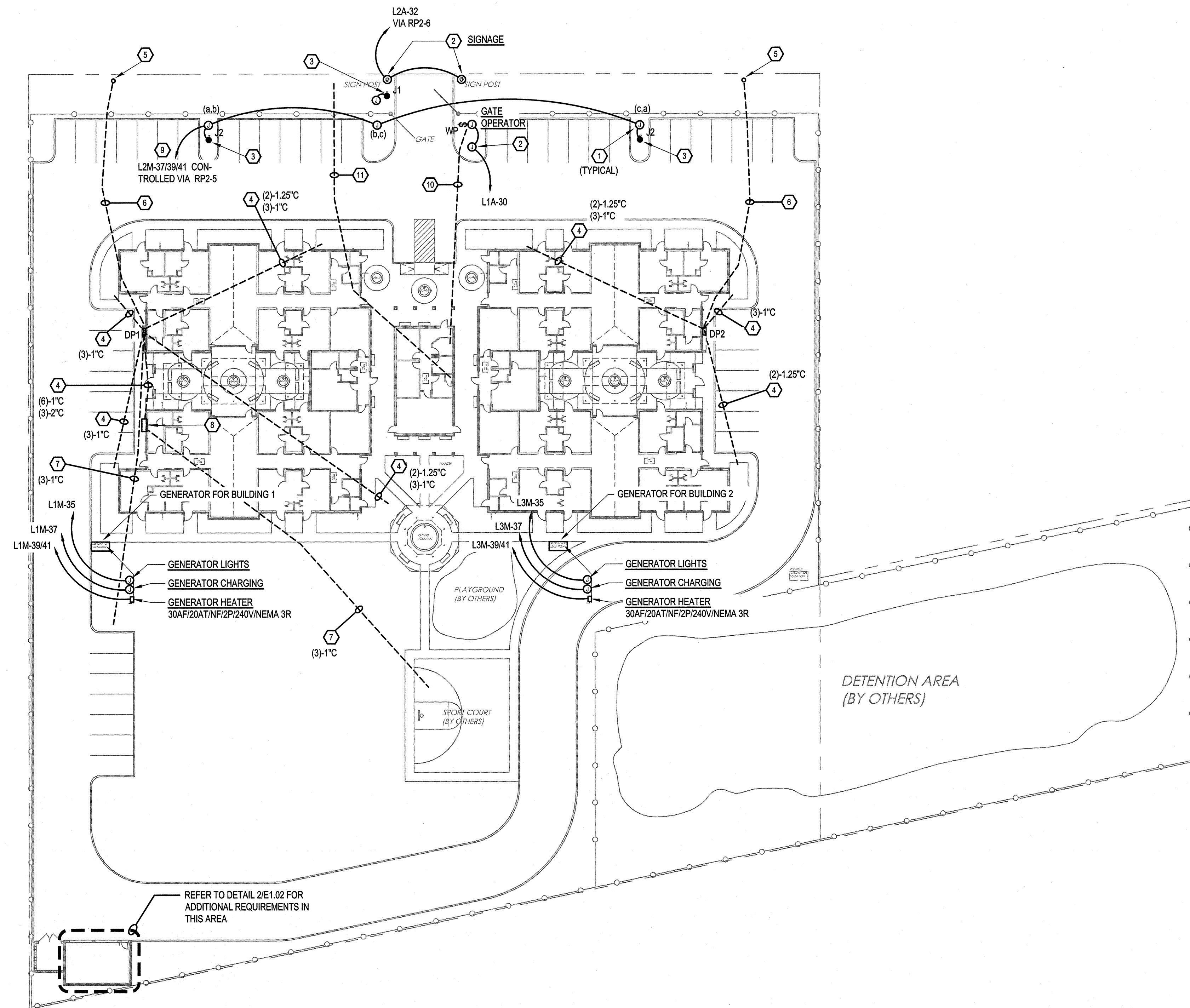
E0.04

SITE ELECTRICAL PLAN GENERAL NOTES:

A. MINIMUM CONDUIT SIZE FOR SITE LIGHTING AND POWER BRANCH CIRCUITS OR FEEDER CIRCUITS SHALL BE 1 1/4" C EXCEPT THAT ANY SINGLE 120V, 20A CIRCUITS MAY BE A MINIMUM SIZE OF 1" C. MINIMUM SIZE FOR EMPTY TELECOMMUNICATIONS CONDUITS SHALL BE 4" C. UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC EXCEPT THAT 90 DEGREE BENDS LESS THAN 3' RADIUS SHALL BE PVC COATED RIGID STEEL CONDUIT WITH PROPER TRANSITION FITTINGS. EMPLOY LONG RADIUS BENDS FOR HORIZONTAL CHANGES IN DIRECTION. ALL EXTERIOR CONDUITS ABOVE GRADE SHALL BE PVC COATED RIGID STEEL CONDUIT UNLESS OTHERWISE NOTED.

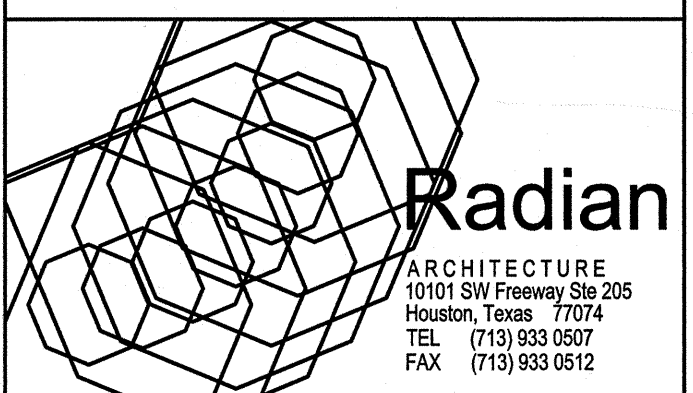
SITE ELECTRICAL PLAN KEYED NOTES:

- 1 IN-GRADE PULL BOX LOCATED ADJACENT TO LIGHT POLE (TYPICAL EACH POLE LOCATION). AT EACH PULL BOX LOCATION, PROVIDE (2) COLLARS SUCH THAT IN-GRADE PULL BOX IS AT LEAST 18" BELOW FINISHED GRADE. PROVIDE A CONCRETE BOTTOM FOR THE BOX. WEEP HOLES IN BOTTOM OF BOX. STUB CONDUITS INTO BOX FROM BELOW THE BOTTOM OF THE BOX. EXTEND FROM BOTTOM OF BOX TO NEARBY POLE. PROVIDE TRAFFIC RATED COVERPLATE LABELED "ELEC".
- 2 IN-GRADE PULL BOX LOCATED ADJACENT TO SIGNAGE OR GATE OPERATOR. AT THIS LOCATION, PROVIDE (2) COLLARS SUCH THAT IN-GRADE PULL BOX IS AT LEAST 18" BELOW FINISHED GRADE. PROVIDE A CONCRETE BOTTOM FOR THE BOX. WEEP HOLES IN BOTTOM OF BOX. STUB CONDUITS INTO BOX FROM BELOW THE BOTTOM OF THE BOX. EXTEND FROM BOTTOM OF BOX TO BOTTOM OF NEARBY SIGN OR BOTTOM OF GATE OPERATOR. PROVIDE TRAFFIC RATED COVERPLATE LABELED "ELEC".
- 3 POLE WITH SINGLE OR DOUBLE-HEAD LIGHTING FIXTURE AND FUSIBLE DISCONNECTING MEANS IN HANDHOLE (TYPICAL). BRANCH CIRCUIT FROM ADJACENT PULL BOX TO LIGHT POLE TO BE 2#12 AWG, #12 AWG GROUND. MINIMUM ROUTED IN 1 1/2" PVC CONDUIT. IN HANDHOLE LOCATION, PROVIDE AN IN-LINE FUSIBLE BOOT WITH WATER-TIGHT DISCONNECTABLE HOUSING, BUSSMAN HEX OR SIMILAR. EXTEND FROM LOAD SIDE OF THE BOOT TO THE LIGHT POLE. CONNECT TO THE TWO PHASES INDICATED, SO AS TO BALANCE LOAD ACROSS THE THREE PHASES OF THE CIRCUIT. REFER TO DETAIL 01/E4.2 FOR ADDITIONAL REQUIREMENTS.
- 4 SPARE CONDUIT STUBS BELOW GRADE FROM ELECTRICAL PANEL LOCATIONS TO APPROXIMATE SITE LOCATIONS INDICATED. STUB CONDUITS BELOW GRADE FROM THE INDICATED PANEL LOCATIONS TO APPROXIMATELY 5' FROM THE EXTERIOR WALL OF BUILDING, PROVIDE PULL STRING AND PROVIDE CAP ENDS. PROVIDE A CONCRETE MARKER BLOCK, 8" X 8" X 12". QUANTITY AND SIZE OF EMPTY CONDUITS INDICATED ADJACENT TO KEYED NOTE. AT PANELBOARD LOCATIONS, STUB CONDUITS TO APPROXIMATELY 3' ABOVE GRADE, CAP AND IDENTIFY CONDUITS AS "SITE SPARE".
- 5 APPROXIMATE LOCATION OF UTILITY POLE WITH TRANSFORMERS TO SERVE THIS BUILDING. COORDINATE EXACT LOCATION WITH UTILITY COMPANY.
- 6 APPROXIMATE ROUTING OF SERVICE ENTRANCE TO THE PANEL INDICATED.
- 7 SPARE CONDUIT STUBS LOCATED BELOW GRADE FROM ELECTRICAL PANEL LOCATIONS OR FUTURE ELECTRICAL PANEL LOCATIONS TO APPROXIMATE SITE LOCATIONS INDICATED. STUB CONDUITS BELOW GRADE TO APPROXIMATE LOCATIONS SHOWN, PROVIDE PULL STRING AND PROVIDE CAP AT BOTH ENDS. PROVIDE A CONCRETE MARKER BLOCK, 8" X 8" X 12". QUANTITY AND SIZE OF EMPTY CONDUITS INDICATED ADJACENT TO KEYED NOTE. AT PANELBOARD LOCATIONS, STUB CONDUITS TO APPROXIMATELY 3' ABOVE GRADE, CAP AND IDENTIFY CONDUITS AS "SITE SPARE".
- 8 APPROXIMATE LOCATION OF FUTURE PANELBOARD.
- 9 CIRCUIT CONTROLLED VIA LIGHTING CONTACTOR. CONTACTOR TO BE 6 POLE, GE CR460 SERIES, MECHANICALLY HELD TYPE WITH 2-WIRE CONTROL IN A NEMA 1 ENCLOSURE LOCATED NEAR CEILING IN LAUNDRY ROOM (ADJACENT TO PANELBOARD SERVING THE CONTACTOR). CONTACTOR TO OBTAIN "OPEN/CLOSE" SIGNAL FROM THE INDICATED RELAY PANEL.
- 10 (1) 1" CONDUIT WITH PULL STRING FROM THE GATE OPERATOR CONTROLLER LOCATION TO THE RECEPTION AREA IN ADMIN BUILDING FOR OPEN/CLOSE/LOCKOUT AND COMMUNICATIONS FEATURES FOR THE GATE OPERATOR. COORDINATE EXACT LOCATION AND EXACT REQUIREMENTS OF CONTROLLER LOCATION WITH GATE INSTALLER. AT RECEPTION AREA, PROVIDE A CUSTOM BACKBOX AS RECOMMENDED BY GATE INSTALLER, CONNECT WITH THE 1" CONDUIT. COORDINATE EXACT REQUIREMENTS AT THE RECEPTION AREA WITH GATE INSTALLER AND ARCHITECT PRIOR TO ROUGH-IN.
- 11 APPROXIMATE ROUTING OF (4) 4" TELECOMMUNICATIONS CONDUITS FROM EDGE OF PROPERTY TO THE TELEPHONE BACKBOARD AT I.T. CLOSET IN ADMIN BUILDING FOR TELECOMMUNICATIONS SERVICE ENTRANCE. COORDINATE EXACT TELEPHONE CONDUIT TERMINATION LOCATION AT PROPERTY EDGE WITH TELEPHONE UTILITY PRIOR TO ROUGH-IN. PROVIDE PULL STRING IN EACH CONDUIT, CAP AT EDGE OF PROPERTY. STUB TO APPROXIMATELY 3' ABOVE FINISHED FLOOR AT I.T. CLOSET. COORDINATE EXACT LOCATION OF CONDUIT STUBS IN THE I.T. CLOSET WITH THE OWNER'S TELECOMM CONSULTANT.



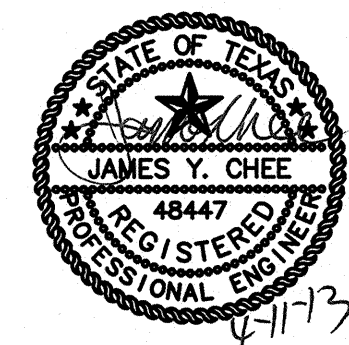
01 ELECTRICAL SITE POWER AND LIGHTING PLAN
SCALE: 1"=30'-0"

OPTIMUM CARE
SUGAR LAND, TEXAS



Revision Schedule		
#	Date	Description

#	Date	Description



CONSULTING ENGINEERS
801 TRAVIS, SUITE 2000
HOUSTON, TEXAS 77002
PH: 713.237.9800
FAX: 713.237.9801

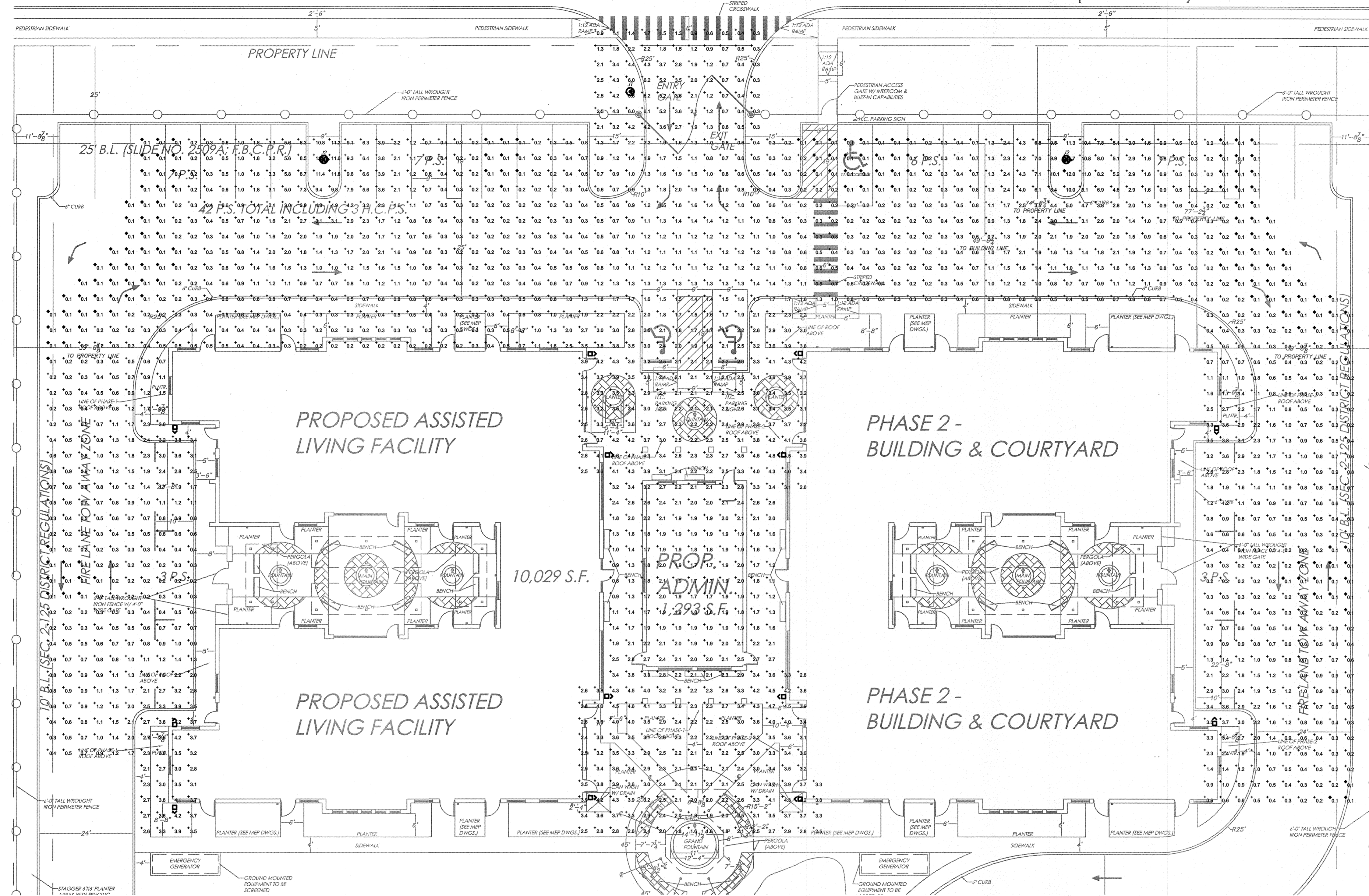
Project No.	
Sheet No.	E1.00

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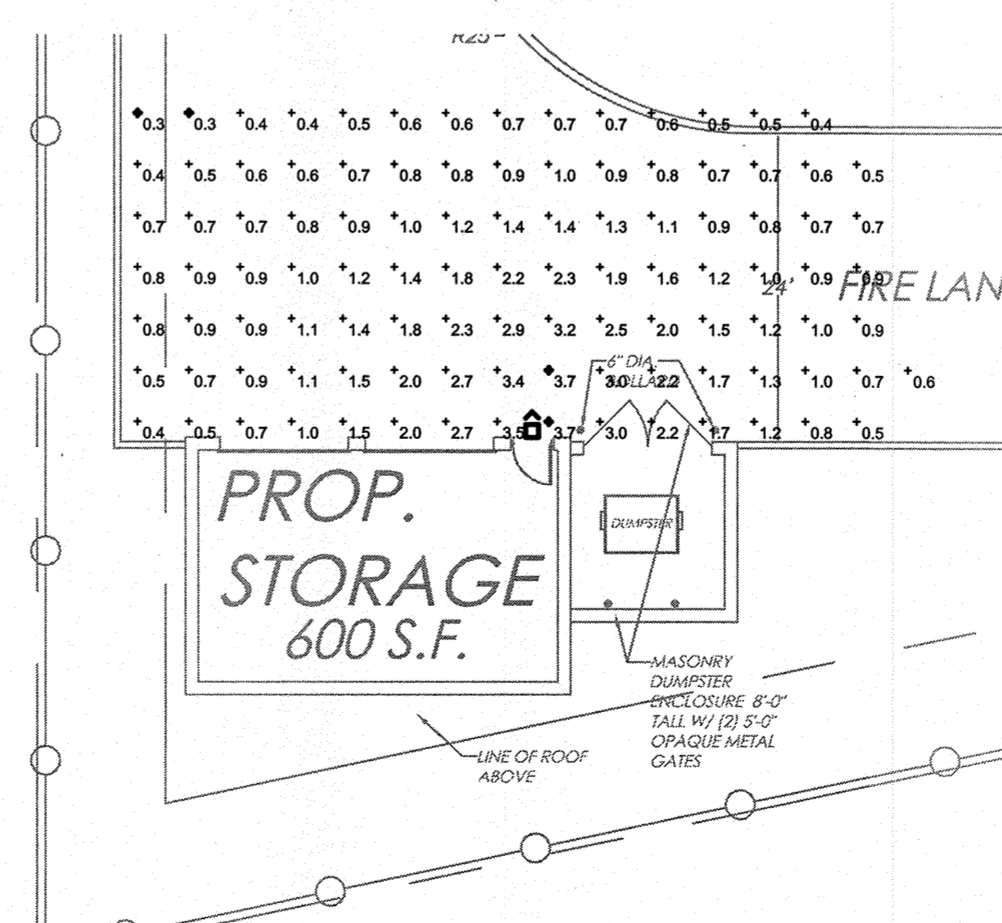
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Date/Time: Apr 11, 2013 - 12:54pm

TEXAS REGISTERED ENGINEERING FIRM F-3113

LAKEVIEW DRIVE (60' R.O.W.)

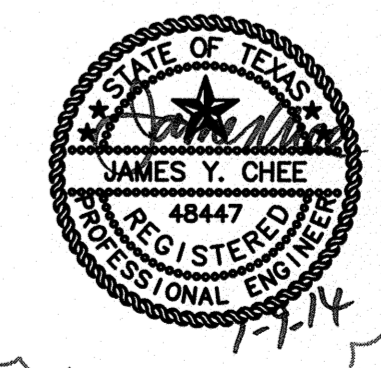


01 SITE PHOTOMETRIC PLAN
SCALE: 1"=15'-0"



02 SITE PHOTOMETRIC PLAN
SCALE: 1"=15'-0"

NOTE:
FIXTURES TO BE CUT-OFF TYPE AS REQUIRED IN FORT BEND COUNTY



OPTIMUM CARE
SUGAR LAND, TEXAS



Revision Schedule	
1	1/9/2014 CITY COMMENTS

Project No.
SITE PHOTOMETRICS PLAN
Sheet No.

REDDING LINDEN BURR
CONSULTING ENGINEERS
801 TRAVIS, SUITE 2000
HOUSTON, TEXAS 77002
PH: 713.237.9800
FAX: 713.237.9801
TEXAS REGISTERED ENGINEERING FIRM F-1313

E1.00a

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PHASE 1 ← → PHASE 2

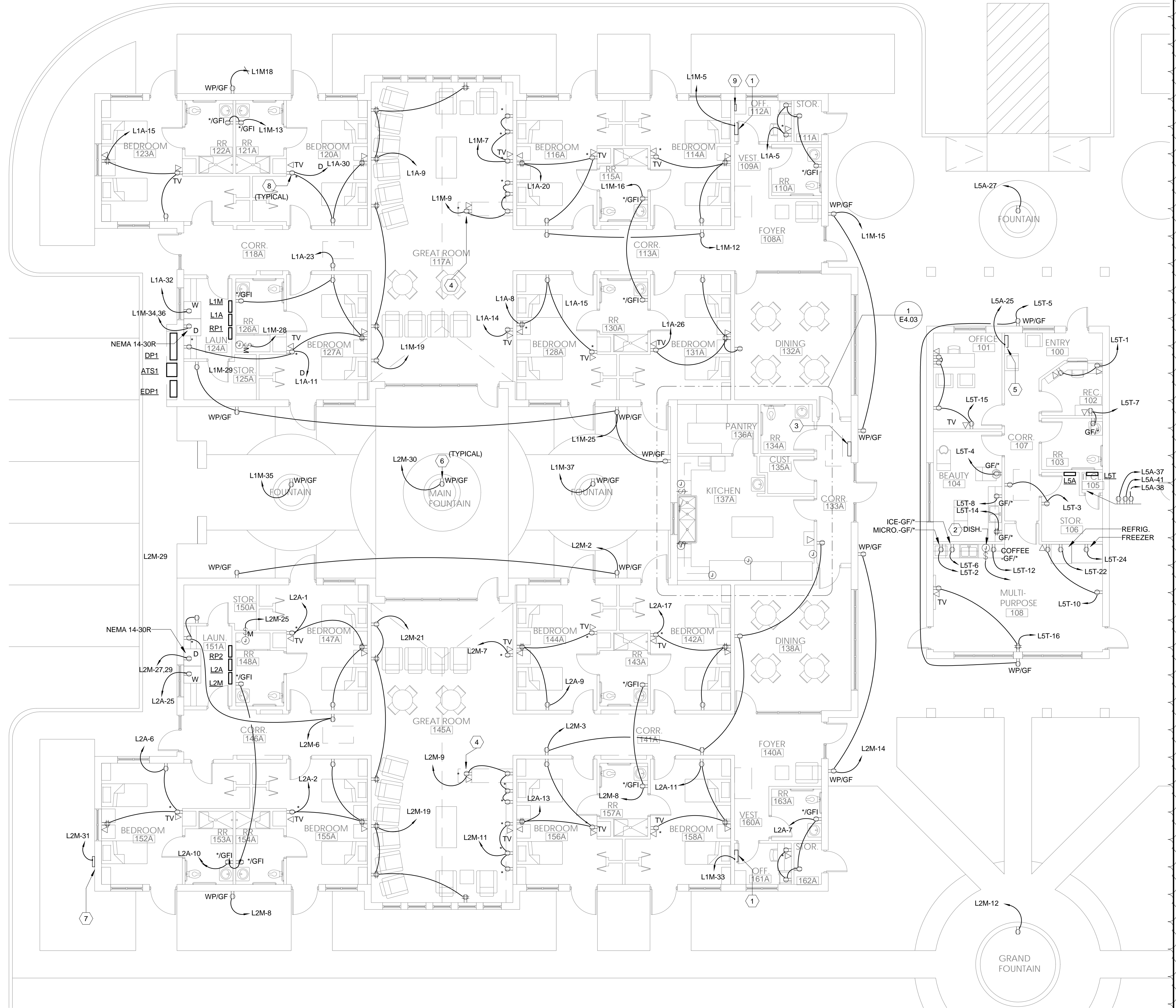
KEYED NOTES

- 1 LOCATION OF FIRE ALARM SYSTEM CONTROL PANEL FOR THIS OCCUPANCY. CONTROL PANEL TO BE INTERCONNECTED WITH OTHER FIRE ALARM SYSTEM CONTROL PANELS SUCH THAT A FIRE IN ONE OCCUPANCY WILL PROVIDE A TROUBLE SIGNAL IN OTHER OCCUPANCIES BUT WILL NOT INITIATE A GENERAL ALARM. COORDINATE EXACT LOCATION WITH FIRE ALARM SYSTEM DESIGNER PRIOR TO FINAL ROUGH-IN.
- 2 POWER FOR DISH WASHER. PROVIDE HARDWIRED CONNECTION TO DISHWASHER, PROVIDE A SWITCH LOCATED ABOVE COUNTER. ENGRAVE COVERPLATE "DISH".
- 3 LOCATION OF FIRE ALARM SYSTEM ANNUNCIATOR PANELS FOR BOTH OCCUPANCIES IN THIS AREA, TOTAL OF (2) ANNUNCIATOR PANELS IN THIS AREA.
- 4 POWER OUTLET FOR FISH TANK. COORDINATE EXACT POWER REQUIREMENTS FOR FISH TANK WITH FISH TANK PROVIDER PRIOR TO ROUGH-IN.
- 5 APPROXIMATE LOCATION OF FIRE ALARM SYSTEM CONTROL PANEL FOR THIS OCCUPANCY AND THE KITCHEN. CONTROL PANEL TO BE INTERCONNECTED WITH OTHER FIRE ALARM SYSTEM CONTROL PANELS SUCH THAT A FIRE IN ONE OCCUPANCY WILL PROVIDE A TROUBLE SIGNAL IN OTHER OCCUPANCIES BUT WILL NOT INITIATE A GENERAL ALARM. COORDINATE EXACT LOCATION WITH FIRE ALARM SYSTEM DESIGNER PRIOR TO FINAL ROUGH-IN.
- 6 APPROXIMATE LOCATION OF POWER CONNECTION FOR FOUNTAIN (TYPICAL ALL FOUNTAINS). COORDINATE EXACT CONNECTION REQUIREMENT WITH FOUNTAIN PROVIDER PRIOR TO ROUGH-IN.
- 7 APPROXIMATE LOCATION OF LANDSCAPE SPRINKLER SYSTEM CONTROLLER. COORDINATE EXACT LOCATION AND EXACT REQUIREMENTS WITH LANDSCAPING CONTRACTOR PRIOR TO ROUGH-IN.
- 8 INDICATES APPROXIMATE LOCATION OF TELEVISION POWER AND SIGNAL OUTLET (TYPICAL). OUTLETS MOUNTED HIGH ON WALL. COORDINATE EXACT MOUNTING REQUIREMENTS WITH ARCHITECT PRIOR TO ROUGH-IN.
- 9 GENERATOR REMOTE ANNUNCIATOR PANEL. MOUNT ANNUNCIATOR PANEL IN WALL THIS APPROXIMATE LOCATION, EXTEND SIGNAL CONDUIT FROM THE GENERATOR. REFER TO SPECIFICATION SECTION 26 36 12 FOR ADDITIONAL INFORMATION.

LIGHTING AND POWER GENERAL NOTES (ALL PLAN SHEETS):

- (A) FOR ALL FLUORESCENT FIXTURES WITH DOUBLE-ENDED LAMPS, PROVIDE A DISCONNECTING MEANS PER 2011 NEC ARTICLE 410.130(G)
- (B) COORDINATE LOCATIONS OF ALL DEVICES AND JUNCTION BOXES WITH THE EQUIPMENT INSTALLER.
- (C) CONTRACTOR SHALL NOT INSTALL MORE THAN THREE CIRCUITS (3 PHASE WIRES, 1 NEUTRAL + 1 GROUND) IN A COMMON CONDUIT, EXCEPT WHERE SPECIFICALLY NOTED AND ALLOWED. WHERE MORE THAN THREE CURRENT CARRYING CONDUCTORS (EXAMPLE: 3 PHASE WIRES + 1 CURRENT CARRYING NEUTRAL CONDUCTOR) ARE INSTALLED IN A COMMON CONDUIT, THE AMPACITY OF ALL CURRENT-CARRYING CONDUCTORS SHALL BE DERATED PER 2011 NEC ARTICLE 310-15 (B)(2) (a). EXAMPLE: (6)-20AMP CKTS WITH 8 CURRENT CARRYING WIRES IN A COMMON CONDUIT MUST USE MINIMUM #10 WIRE 70% X 35A = 24.5 AMPS. PROVIDE COMMON TRIP BREAKERS FOR MULTIWIRED CIRCUITS PER 2011 NEC ARTICLE 210.4 (B).
- (D) SERVE ALL UNSWITCHED EGRESS LIGHTING FIXTURES FROM UNSWITCHED PORTION OF THE LIGHTING CIRCUIT IN THE GENERAL AREA, FROM PORTION OF THE CIRCUIT AHEAD OF LIGHTING SWITCHES. SERVE BATTERY BALLAST OF SWITCHED EGRESS LIGHTING FROM UNSWITCHED PORTION OF THE LIGHTING CIRCUIT SERVING THE LIGHTING FIXTURES. EGRESS LIGHTING FIXTURES AND EGRESS LIGHTING FIXTURE BATTERY PACKS ARE SWITCHED AT THE PANEL ONLY.
- (E) ALL LIGHT SWITCHES TO BE GANGED TOGETHER UNDER A COMMON COVERPLATE WHERE POSSIBLE.

REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL PHASING INFORMATION.



1 ELECTRICAL POWER PLAN - AREA A
1/8" = 1'-0"

OPTIMUM CARE
SUGAR LAND, TEXAS



Revision Schedule		
#	Date	Description
5	10-20-15	ELECTRICAL REVISIONS

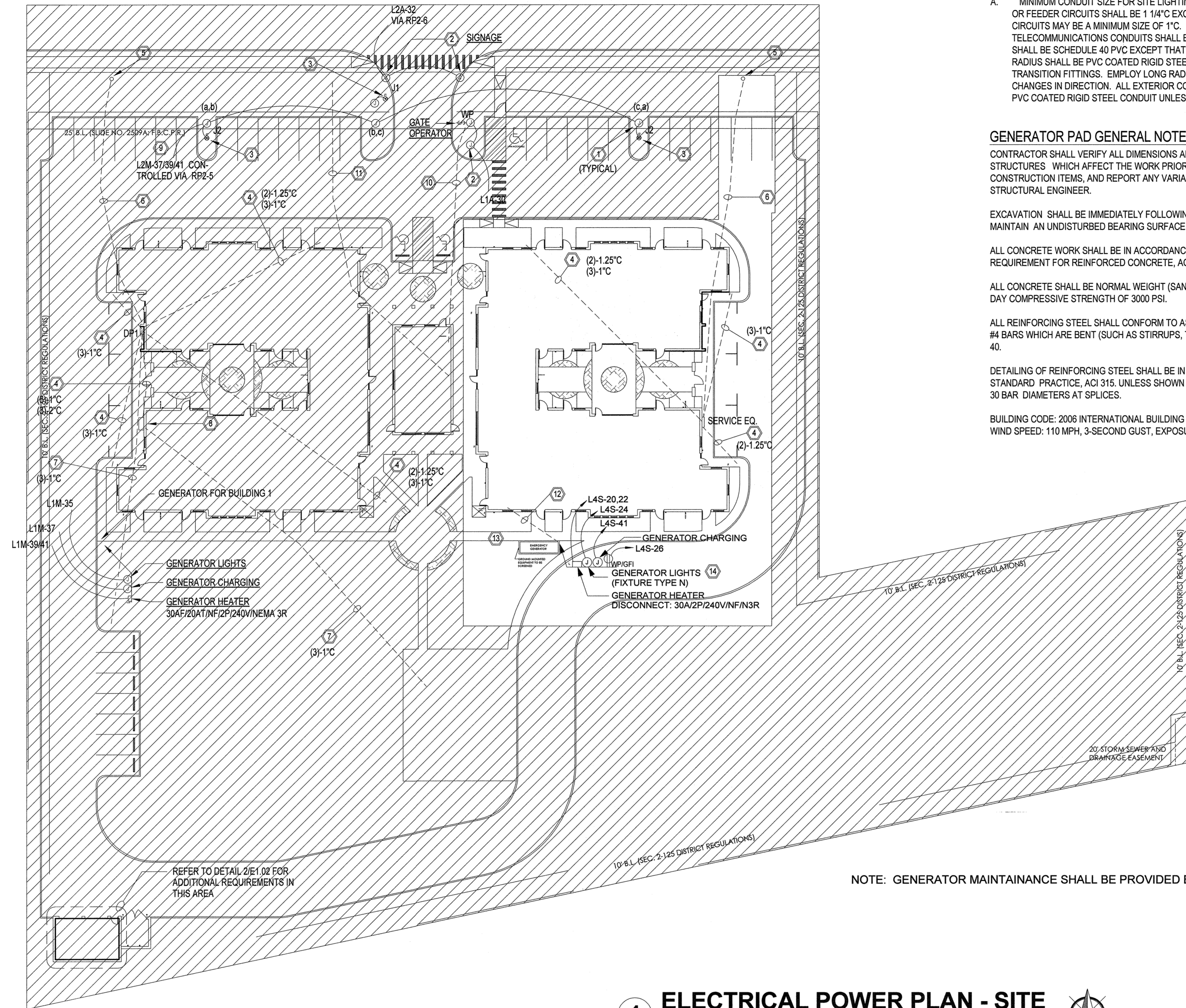


KCI
 TECHNOLOGIES
 Texas Registered Engineering Firm F-10573
 ENGINEERS
 PLANNERS
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 CONSTRUCTION MANAGERS
 801 TRAVIS, SUITE 2000
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 PHONE: 713-237-9800
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Project No.
ELECTRICAL POWER PLAN - AREA A
 Sheet No.

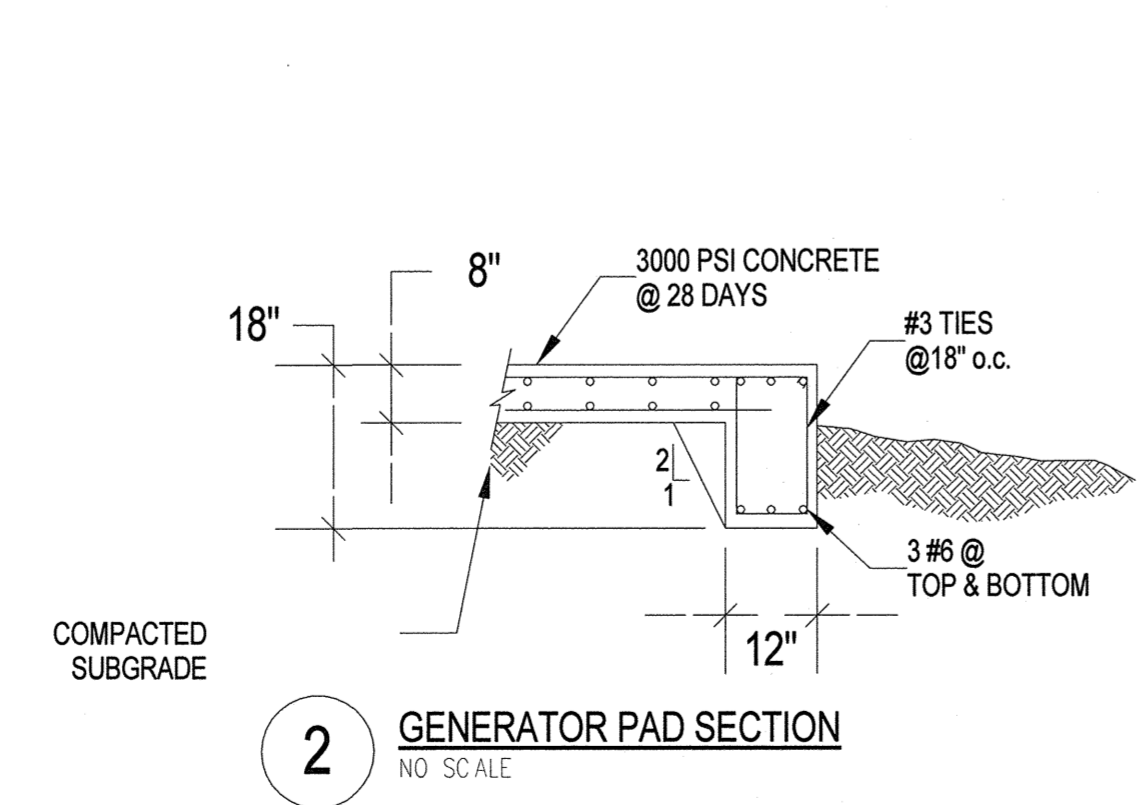
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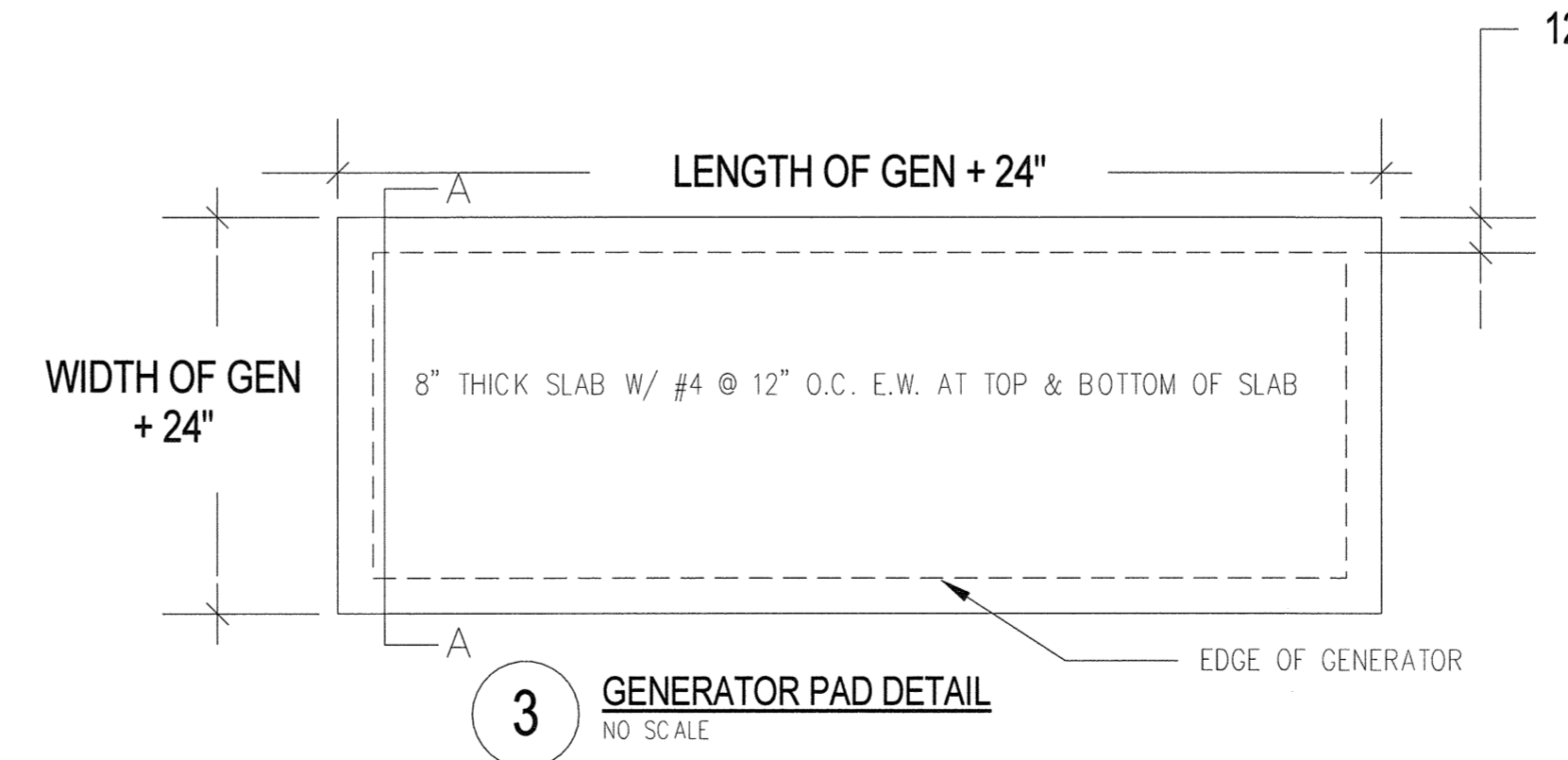


NOTE: GENERATOR MAINTAINANCE SHALL BE PROVIDED BY OWNER.

1 ELECTRICAL POWER PLAN - SITE
 1" = 30'-0"



2 GENERATOR PAD SECTION
 NO SCALE



3 GENERATOR PAD DETAIL
 NO SCALE

REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL PHASING INFORMATION.

SITE ELECTRICAL PLAN GENERAL NOTES:

A. MINIMUM CONDUIT SIZE FOR SITE LIGHTING AND POWER BRANCH CIRCUITS OR FEEDER CIRCUITS SHALL BE 1 1/4" EXCEPT THAT ANY SINGLE 120V, 20A CIRCUITS MAY BE A MINIMUM SIZE OF 1". MINIMUM SIZE FOR EMPTY TELECOMMUNICATIONS CONDUITS SHALL BE 4". UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC EXCEPT THAT 90 DEGREE BENDS LESS THAN 3' RADIUS SHALL BE PVC COATED RIGID STEEL CONDUIT WITH PROPER TRANSITION FITTINGS. EMPLOY LONG RADIUS BENDS FOR HORIZONTAL CHANGES IN DIRECTION. ALL EXTERIOR CONDUITS ABOVE GRADE SHALL BE PVC COATED RIGID STEEL CONDUIT UNLESS OTHERWISE NOTED.

GENERATOR PAD GENERAL NOTES:

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT EXISTING STRUCTURES WHICH AFFECT THE WORK PRIOR TO FABRICATION OF ANY CONSTRUCTION ITEMS, AND REPORT ANY VARIATIONS FROM THE DRAWINGS TO THE STRUCTURAL ENGINEER.

EXCAVATION SHALL BE IMMEDIATELY FOLLOWING EXCAVATION PROTECTED TO MAINTAIN AN UNDISTURBED BEARING SURFACE.

ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH BUILDING CODE REQUIREMENT FOR REINFORCED CONCRETE, ACI 318.

ALL CONCRETE SHALL BE NORMAL WEIGHT (SAND AND GRAVEL) WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI.

ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 EXCEPT #3 AND #4 BARS WHICH ARE BENT (SUCH AS STIRRUPS, TIES, AND DOWELS) SHALL BE GRADE 40.

DETAILING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE, ACI 315, UNLESS SHOWN OTHERWISE, LAP CONTINUOUS BARS 30 BAR DIAMETERS AT SPLICES.

BUILDING CODE: 2006 INTERNATIONAL BUILDING CODE WIND SPEED: 110 MPH, 3-SECOND GUST, EXPOSURE B.

SITE ELECTRICAL PLAN KEYED NOTES:

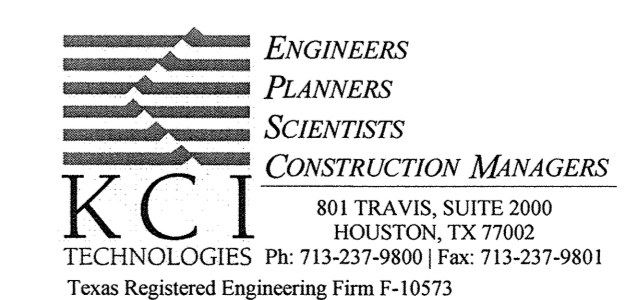
- 1 IN-GRADE PULL BOX LOCATED ADJACENT TO LIGHT POLE (TYPICAL EACH POLE LOCATION). AT EACH PULL BOX LOCATION, PROVIDE (2) COLLARS SUCH THAT IN-GRADE PULL BOX IS AT LEAST 18" BELOW FINISHED GRADE. PROVIDE A CONCRETE BOTTOM FOR THE BOX. WEEP HOLES IN BOTTOM OF BOX. STUB CONDUITS INTO BOX FROM BELOW THE BOTTOM OF THE BOX. EXTEND FROM BOTTOM OF BOX TO NEARBY POLE. PROVIDE TRAFFIC RATED COVERPLATE LABELED "ELEC".
- 2 IN-GRADE PULL BOX LOCATED ADJACENT TO SIGNAGE OR GATE OPERATOR. AT THIS LOCATION, PROVIDE (2) COLLARS SUCH THAT IN-GRADE PULL BOX IS AT LEAST 18" BELOW FINISHED GRADE. PROVIDE A CONCRETE BOTTOM FOR THE BOX. WEEP HOLES IN BOTTOM OF BOX. STUB CONDUITS INTO BOX FROM BELOW THE BOTTOM OF THE BOX. EXTEND FROM BOTTOM OF BOX TO BOTTOM OF NEARBY SIGN OR BOTTOM OF GATE OPERATOR. PROVIDE TRAFFIC RATED COVERPLATE LABELED "ELEC".
- 3 POLE WITH SINGLE OR DOUBLE-HEAD LIGHTING FIXTURE AND FUSIBLE DISCONNECTING MEANS IN HANDHOLE (TYPICAL). BRANCH CIRCUIT FROM ADJACENT PULL BOX TO LIGHT POLE TO BE 2#12 AWG, #12 AWG GROUND, MINIMUM, ROUTED IN 1 1/2" PVC CONDUIT. IN HANDHOLE LOCATION, PROVIDE AN IN-LINE FUSIBLE BOOT WITH WATER-TIGHT DISCONNECTABLE HOUSING, BUSSMAN HEX OR SIMILAR. EXTEND FROM LOAD SIDE OF THE BOOT TO THE LIGHT POLE. CONNECT TO THE TWO PHASES INDICATED, SO AS TO BALANCE LOAD ACROSS THE THREE PHASES OF THE CIRCUIT. REFER TO DETAIL 01/E4.2 FOR ADDITIONAL REQUIREMENTS.
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- 5 APPROXIMATE LOCATION OF UTILITY POLE WITH TRANSFORMERS TO SERVE THIS BUILDING. COORDINATE EXACT LOCATION WITH UTILITY COMPANY.
- 6 APPROXIMATE ROUTING OF SERVICE ENTRANCE TO THE PANEL INDICATED.
- 7 SPARE CONDUIT STUBS LOCATED BELOW GRADE FROM ELECTRICAL PANEL LOCATIONS OR FUTURE ELECTRICAL PANEL LOCATIONS TO APPROXIMATE SITE LOCATIONS INDICATED. STUB CONDUITS BELOW GRADE TO APPROXIMATE LOCATIONS SHOWN, PROVIDE PULL STRING AND PROVIDE CAP AT BOTH ENDS. PROVIDE A CONCRETE MARKER BLOCK, 8" X 8" X 12". QUANTITY AND SIZE OF EMPTY CONDUITS INDICATED ADJACENT TO KEYED NOTE. AT PANELBOARD LOCATIONS, STUB CONDUITS TO APPROXIMATELY 3' ABOVE GRADE, CAP AND IDENTIFY CONDUITS AS "SITE SPARE".
- 8 APPROXIMATE LOCATION OF FUTURE PANELBOARD.
- 9 CIRCUIT CONTROLLED VIA LIGHTING CONTACTOR. CONTACTOR TO BE 6 POLE, GE CR490 SERIES, MECHANICALLY HELD TYPE WITH 2-WIRE CONTROL IN A NEMA 1 ENCLOSURE LOCATED NEAR CEILING IN LAUNDRY ROOM (ADJACENT TO PANELBOARD SERVING THE CONTACTOR). CONTACTOR TO OBTAIN "OPEN/CLOSE" SIGNAL FROM THE INDICATED RELAY PANEL.
- 10 (1) 1" CONDUIT WITH PULL STRING FROM THE GATE OPERATOR CONTROLLER LOCATION TO THE RECEPTION AREA IN ADMIN BUILDING FOR OPEN/CLOSE/LOCKOUT AND COMMUNICATIONS FEATURES FOR THE GATE OPERATOR. COORDINATE EXACT LOCATION AND EXACT REQUIREMENTS OF CONTROLLER LOCATION WITH GATE INSTALLER. AT RECEPTION AREA, PROVIDE A CUSTOM BACKBOX AS RECOMMENDED BY GATE INSTALLER, CONNECT WITH THE 1" CONDUIT. COORDINATE EXACT REQUIREMENTS AT THE RECEPTION AREA WITH GATE INSTALLER AND ARCHITECT PRIOR TO ROUGH-IN.
- 11 APPROXIMATE ROUTING OF (4) 4" TELECOMMUNICATIONS CONDUITS FROM EDGE OF PROPERTY TO THE TELEPHONE BACKBOARD AT I.T. CLOSET IN ADMIN BUILDING FOR TELECOMMUNICATIONS SERVICE ENTRANCE. COORDINATE EXACT TELEPHONE CONDUIT TERMINATION LOCATION AT PROPERTY EDGE WITH TELEPHONE UTILITY PRIOR TO ROUGH-IN. PROVIDE PULL STRING IN EACH CONDUIT. CAP AT EDGE OF PROPERTY. STUB TO APPROXIMATELY 3' ABOVE FINISHED FLOOR AT I.T. CLOSET. COORDINATE EXACT LOCATION OF CONDUIT STUBS IN THE I.T. CLOSET WITH THE OWNER'S TELECOMM CONSULTANT.
- 12 CONDUIT BELOW GRADE FROM GENERATOR ANNUNCIATOR PANEL IN OFFICE. CONTRACTOR SHALL FIELD COORDINATE LOCATION OF STUB UP PRIOR TO ROUGH IN. PROVIDE PULL STRING AND PROVIDE CAP ENDS.
- 13 PROVIDE REMOTE GENERATOR MANUAL STOP STATION. PROVIDE A LABEL CLEARLY MARKING REMOTE MANUAL STOP STATION. FIELD COORDINATE EXACT LOCATION WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN.
- 14 CONTROLS FOR GENERATOR LIGHTS SHALL MATCH EXISTING CONTROLS FOR GENERATOR #1.

THE SCOPE OF THESE DRAWINGS IS LIMITED THE BUILDING IN THE NON-HATCHED REGION (PHASE 2). CONSTRUCTION FOR THE HATCHED REGION (PHASE 1) HAS BEEN COMPLETED.

OPTIMUM CARE
SUGAR LAND, TEXAS



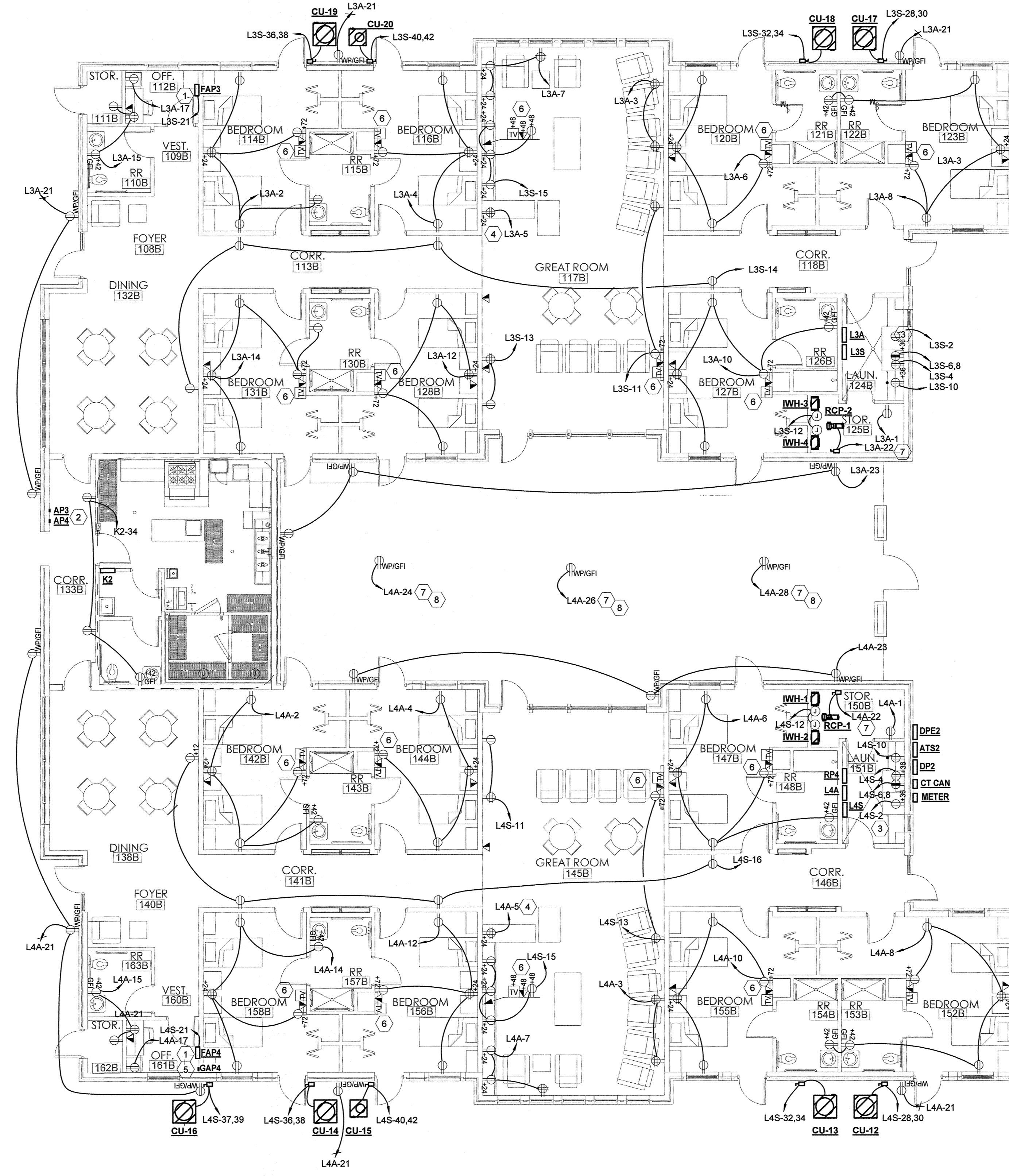
Revision Schedule		
#	Date	Description
3	09-04-15	PERMIT REVISIONS



Project No.
 SITE ELECTRICAL PLAN
 Sheet No.

E1.01

PHASE 1 PHASE 2



1 ELECTRICAL POWER PLAN - AREA B
1/8" = 1'-0"

**LIGHTING AND POWER GENERAL NOTES
(ALL PLAN SHEETS):**

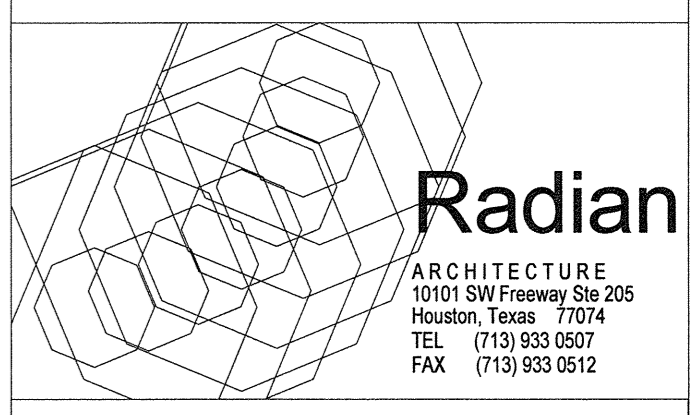
- A. FOR ALL FLUORESCENT FIXTURES WITH DOUBLE-ENDED LAMPS, PROVIDE A DISCONNECTING MEANS PER 2011 NEC ARTICLE 410.130(G)
- B. RECEPTACLES ARE 12" ABOVE THE FINISHED FLOOR OR 6" ABOVE THE COUNTER TOP UNLESS OTHERWISE INDICATED.
- C. COORDINATE LOCATIONS OF ALL OTHER DEVICES AND JUNCTION BOXES WITH THE EQUIPMENT INSTALLER.
- D. CONTRACTOR SHALL NOT INSTALL MORE THAN THREE CIRCUITS (3 PHASE WIRES, 1 NEUTRAL + 1 GROUND) IN A COMMON CONDUIT, EXCEPT WHERE SPECIFICALLY NOTED AND ALLOWED. WHERE MORE THAN THREE CURRENT CARRYING CONDUCTORS (EXAMPLE: 3 PHASE WIRES + 1 CURRENT CARRYING NEUTRAL CONDUCTOR) ARE INSTALLED IN A COMMON CONDUIT, THE CAPACITY OF ALL CURRENT-CARRYING CONDUCTORS SHALL BE DERATED PER 2011 NEC ARTICLE 310-15 (B)(2)(a). EXAMPLE: (6)-20AMP CKTS WITH 8 CURRENT CARRYING WIRES IN A COMMON CONDUIT MUST USE MINIMUM #10 WIRE 70% X 35A = 24.5 AMPS. PROVIDE COMMON TRIP BREAKERS FOR MULTIWIRE CIRCUITS PER 2011 NEC ARTICLE 210.4 (B).
- E. SERVE ALL UNSWITCHED EGRESS LIGHTING FIXTURES FROM UNSWITCHED PORTION OF THE LIGHTING CIRCUIT IN THE GENERAL AREA, FROM PORTION OF THE CIRCUIT AHEAD OF LIGHTING SWITCHES. SERVE BATTERY BALLAST OF SWITCHED EGRESS LIGHTING FROM UNSWITCHED PORTION OF THE LIGHTING CIRCUIT SERVING THE LIGHTING FIXTURES. EGRESS LIGHTING FIXTURES AND EGRESS LIGHTING FIXTURE BATTERY PACKS ARE SWITCHED AT THE PANEL ONLY.
- F. ALL LIGHT SWITCHES TO BE GANGED TOGETHER UNDER A COMMON COVERPLATE WHERE POSSIBLE.

KEYED NOTES

- 1 LOCATION OF FIRE ALARM SYSTEM CONTROL PANEL FOR THIS OCCUPANCY. CONTROL PANEL TO BE INTERCONNECTED WITH OTHER FIRE ALARM SYSTEM CONTROL PANELS SUCH THAT A FIRE IN ONE OCCUPANCY WILL PROVIDE A TROUBLE SIGNAL IN OTHER OCCUPANCIES BUT WILL NOT INITIATE A GENERAL ALARM. COORDINATE EXACT LOCATION WITH FIRE ALARM SYSTEM DESIGNER PRIOR TO FINAL ROUGH-IN.
- 2 LOCATION OF FIRE ALARM SYSTEM ANNUNCIATOR PANELS FOR BOTH OCCUPANCIES IN THIS AREA, TOTAL OF (2) ANNUNCIATOR PANELS IN THIS AREA.
- 3 ALL RECEPTACLES SHALL BE GFI TYPE IN THIS AREA.
- 4 POWER OUTLET FOR FISH TANK. COORDINATE EXACT POWER REQUIREMENTS FOR FISH TANK WITH FISH TANK PROVIDER PRIOR TO ROUGH-IN.
- 5 GENERATOR REMOTE ANNUNCIATOR PANEL. MOUNT ANNUNCIATOR PANEL IN WALL THIS APPROXIMATE LOCATION, EXTEND SIGNAL CONDUIT FROM THE GENERATOR. REFER TO SPECIFICATION SECTION 26 36 12 FOR ADDITIONAL INFORMATION.
- 6 PROVIDE RECEPTACLE, PHONE/DATA OUTLET, AND CABLE TV OUTLET FOR TELEVISION. CONTRACTOR SHALL PROVIDE RECESSED STEEL TV BOX (ARLINGTON # TVBS507 OR SIMILAR) TO ENSURE TV IS MOUNTED FLUSH ON THE WALL. VERIFY EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT/BUILDING REP. PRIOR TO ROUGH-IN AND INSTALLATION.
- 7 CIRCUIT SHALL BE ROUTED THROUGH RELAY PANEL "RP-4".
- 8 APPROXIMATE LOCATION OF POWER CONNECTION FOR FOUNTAIN (TYPICAL ALL FOUNTAINS). COORDINATE EXACT CONNECTION REQUIREMENT WITH FOUNTAIN PROVIDER PRIOR TO ROUGH-IN.

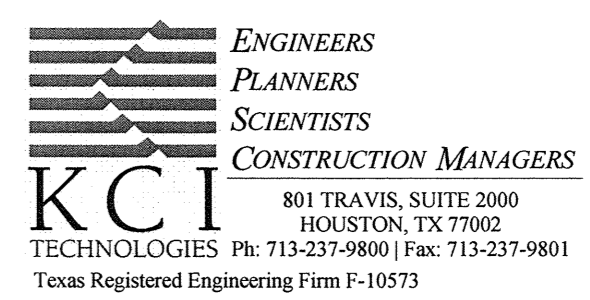
REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL PHASING INFORMATION.

OPTIMUM CARE
SUGAR LAND, TEXAS



Revision Schedule

#	Date	Description
3	09-04-15	PERMIT REVISIONS



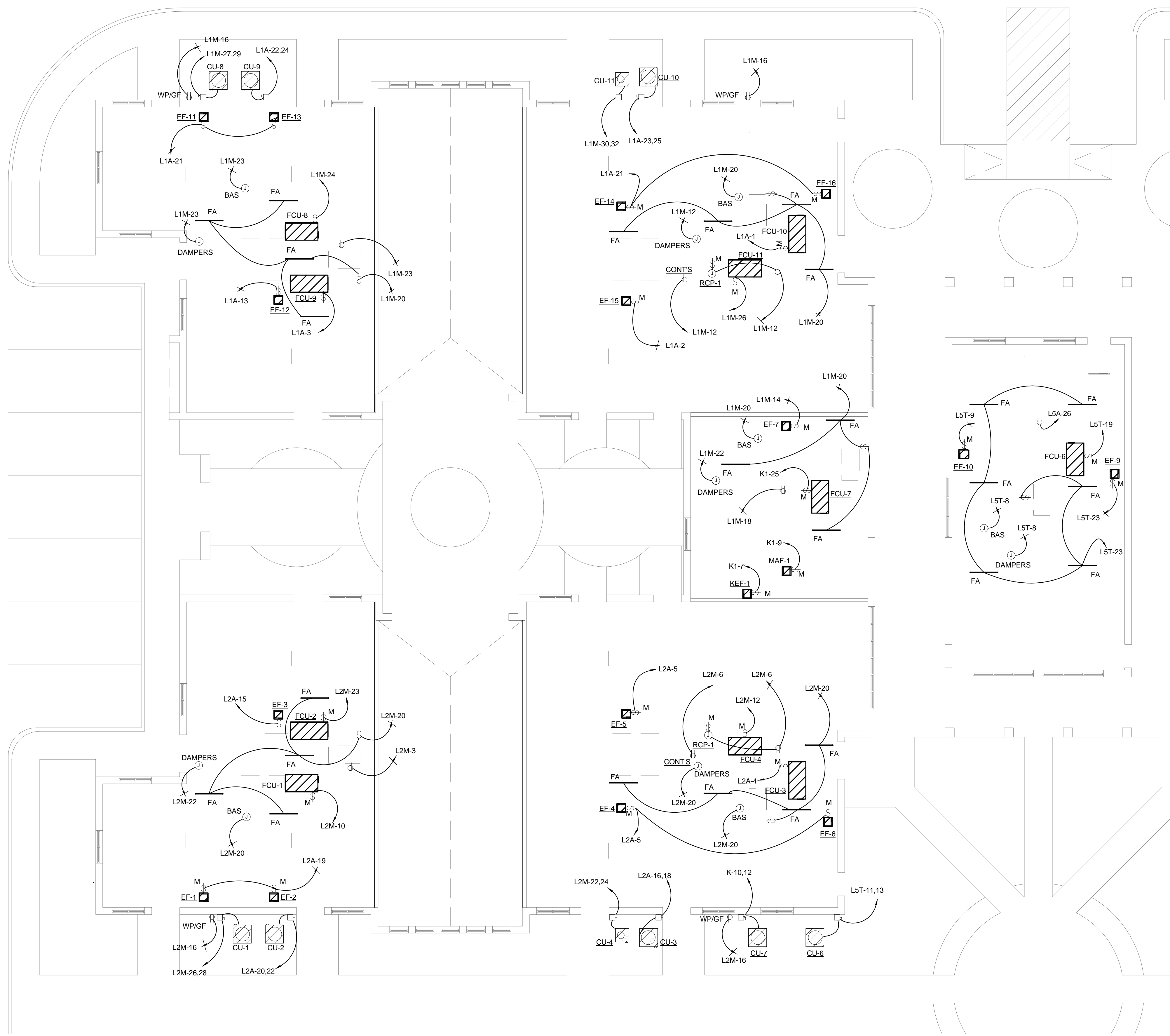
Project No.
ELECTRICAL POWER PLAN - AREA B

Sheet No.
E1.02

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PHASE 1 ← → PHASE 2



1 ELECTRICAL POWER AND LIGHTING PLAN - AREA A - MEZZANINE LEVEL
 1/8" = 1'-0"

REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL PHASING INFORMATION.

OPTIMUM CARE
SUGAR LAND, TEXAS



Revision Schedule		
#	Date	Description
5	10-20-15	ELECTRICAL REVISIONS

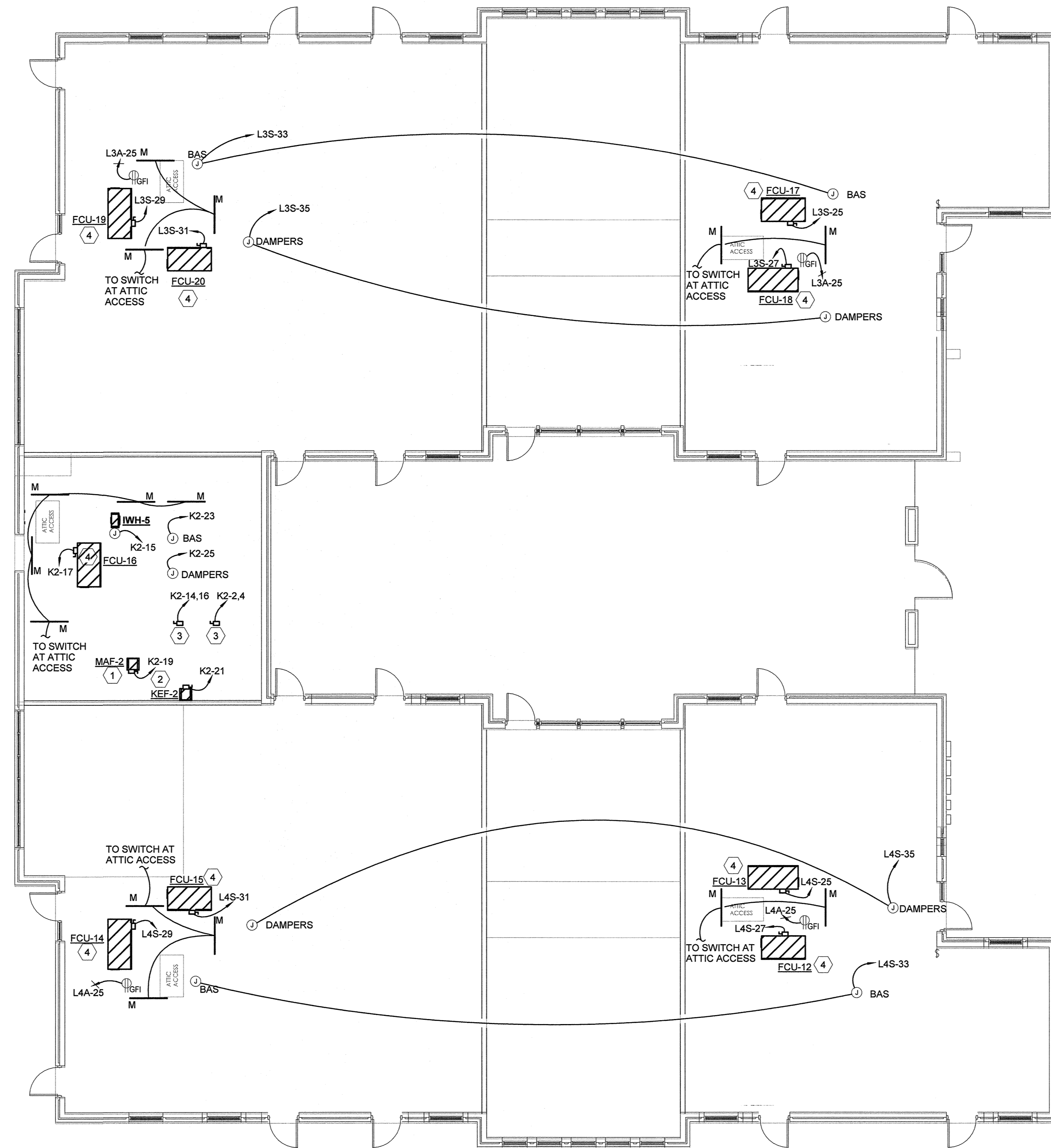


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Project No.
 ELECTRICAL PLAN - AREA A - MEZZ LEVEL
 Sheet No.

E1.03

PHASE 1 PHASE 2



- KEYED NOTES**
- 1 PROVIDE CONNECTION TO MAKE UP AIR FAN (MAF-2). VERIFY WITH MECHANICAL CONTRACTOR IF DISCONNECT IS PROVIDED, IF NOT REFER TO PANEL SCHEDULE FOR DISCONNECT SIZE.
 - 2 PROVIDE CONNECTION TO KITCHEN EXHAUST FAN (KEF-2). VERIFY WITH MECHANICAL CONTRACTOR IF DISCONNECT IS PROVIDED, IF NOT REFER TO PANEL SCHEDULE FOR DISCONNECT SIZE.
 - 3 ELECTRICAL CONTRACTOR SHALL COORDINATE AND PROVIDE CONNECTION TO WALK-IN COOLER/FREEZER CONDENSING EQUIPMENT.
 - 4 PROVIDE CONNECTION TO FAN COIL UNIT. VERIFY WITH MECHANICAL CONTRACTOR IF DISCONNECT IS PROVIDED, IF NOT REFER TO PANEL SCHEDULE FOR DISCONNECT SIZE.

REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL PHASING INFORMATION.

1 ELECTRICAL POWER AND LIGHTING PLAN - AREA B - MEZZANINE LEVEL
 1/8" = 1'-0"



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OPTIMUM CARE
SUGAR LAND, TEXAS



Revision Schedule

#	Date	Description
3	09-04-15	PERMIT REVISIONS

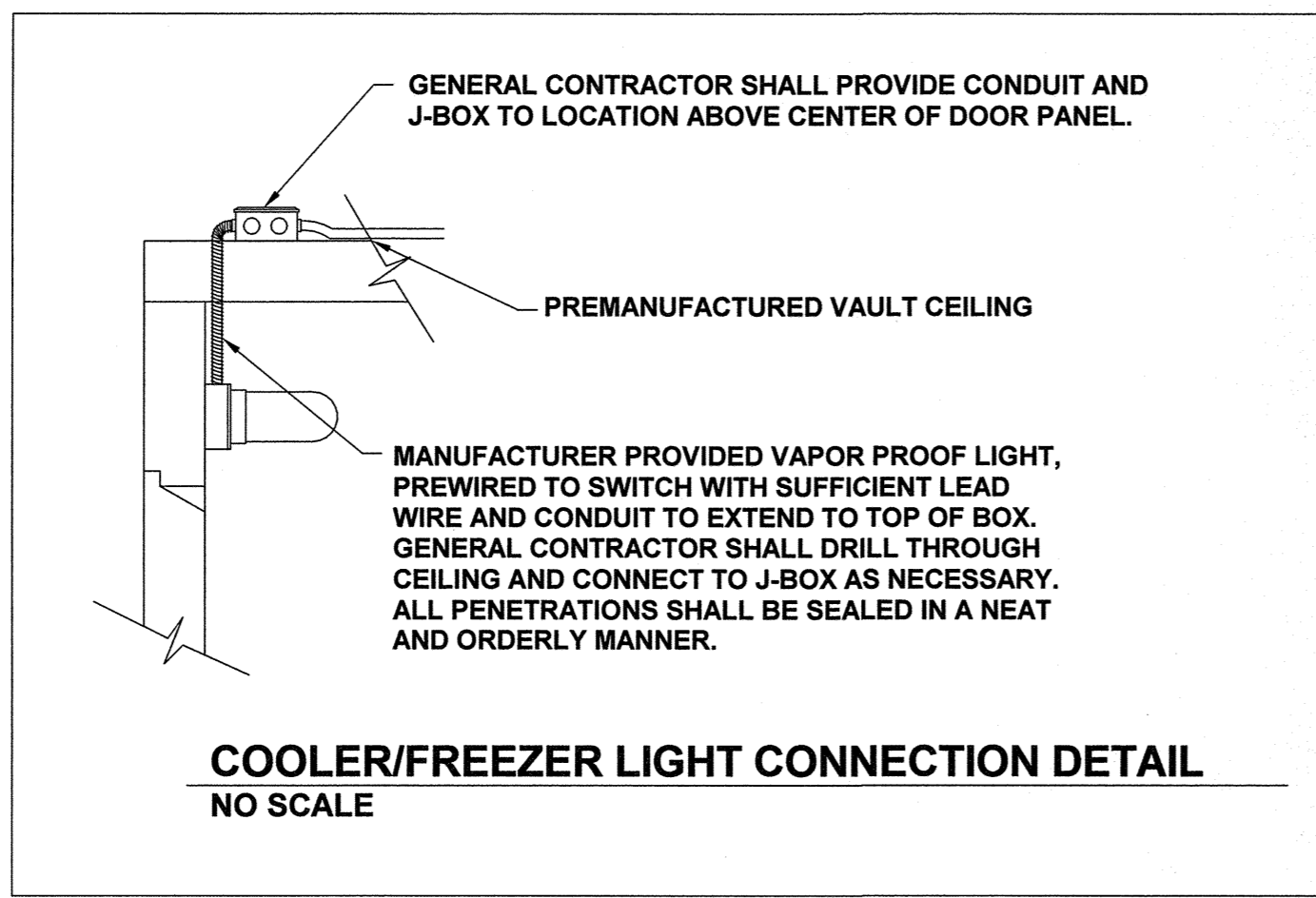


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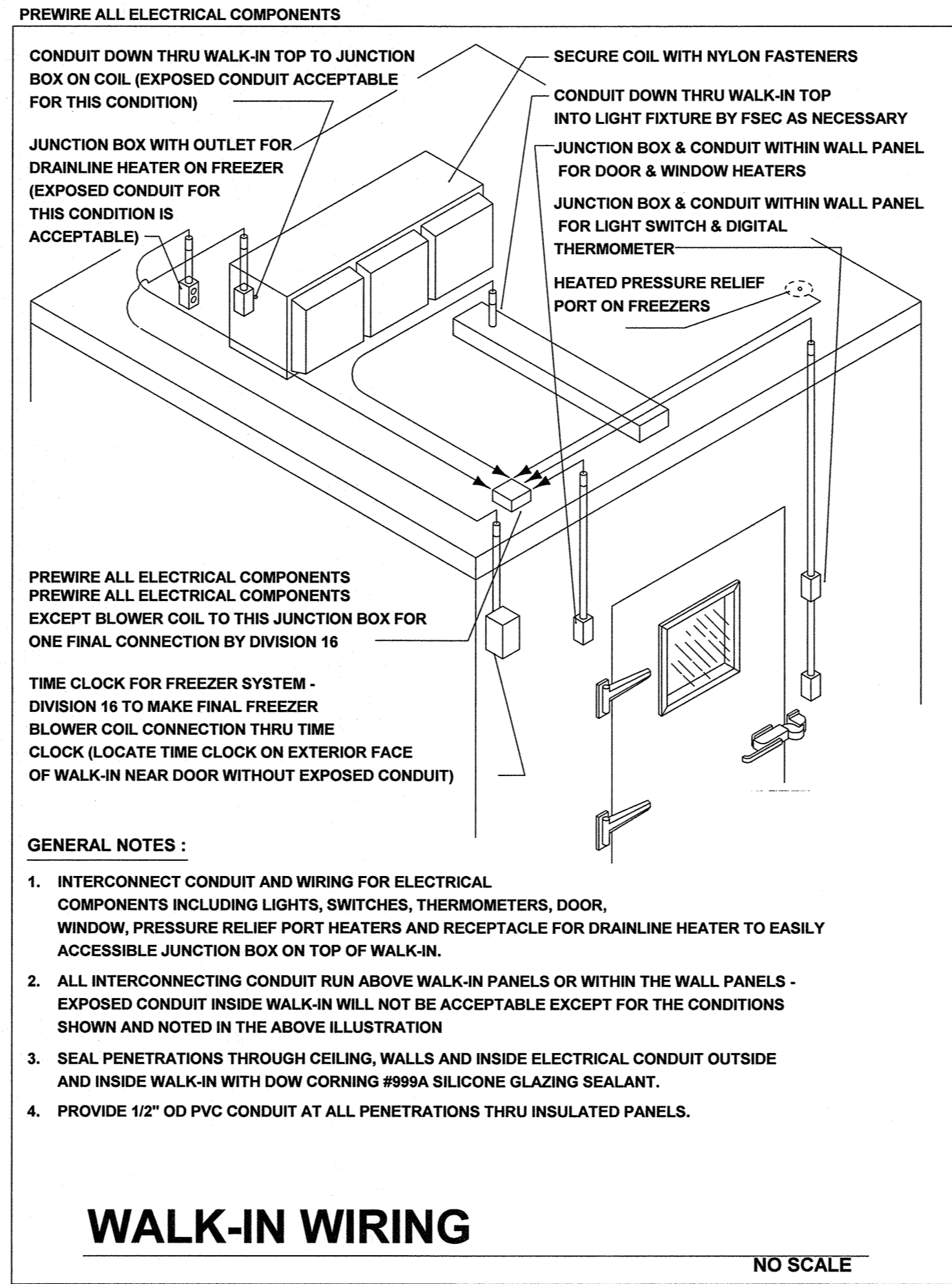
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ELECTRICAL PLAN - AREA B - MEZZ LEVEL

Sheet No.
E1.04

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- ELECTRICAL ROUGH-IN NOTES FOR WALK-IN COOLER/FREEZER:**
- ELECTRICIAN TO SET DISCONNECTS, ONE PER CONDENSING UNIT.
 - ELECTRICIAN TO PULL WIRES TO CONDENSERS, 208V-60-3PH., TO PANEL AS INDICATED ON PLANS.
 - ELECTRICIAN TO PULL WIRES TO EVAPORATORS, 208V-60-1PH., TO PANEL AS INDICATED ON PLANS.
 - ELECTRICIAN TO RUN CONTROL WIRING BETWEEN CONDENSER & EVAPORATOR, 2 PR. @ 14 GA.
 - LIGHT FIXTURES SUPPLIED BY WALK-IN MFG. & INSTALLED BY ELECTRICAL.
 - HEAT STRIP FOR DOOR WIRED TO SAME CIRCUIT AS WALK-IN LIGHTS, BY ELECTRICAL.
 - ELECTRICIAN TO FURNISH AND INSTALL SPIRAL WRAP HEATER TAPE AROUND DRAIN LINE INSIDE OF WALK-IN FREEZER.



NOTE TO HEALTH DEPT. PLAN CHECKER

LIGHTING LEVEL IN KITCHEN:
 (1) ALL WORKING SURFACE: MORE THAN 50 FOOT-CANDLES PROVIDED.
 (2) ALL OTHER SURFACES AND EQUIPMENT IN FOOD PREPARATION, UTENSIL-WASHING, AND HAND-WASHING AREAS, AND IN TOILET ROOMS: AT LEAST 30 FOOT-CANDLES PROVIDED.
 (3) AT LEAST 20 FOOT-CANDLES AT A DISTANCE OF 30 INCHES FROM THE FLOOR IS PROVIDED IN ALL OTHER AREAS.

LIGHTING FIXTURES IN KITCHEN:
 PROTECTIVE SHIELDING FOR ALL FIXTURES: PROVIDE PROTECTIVE SHIELDING FOR ALL LIGHTING FIXTURES LOCATED OVER FOOD STORAGE, PREPARATION, SERVICE, AND DISPLAY FACILITIES AND FACILITIES WHERE UTENSILS AND EQUIPMENT ARE CLEANED AND STORED.

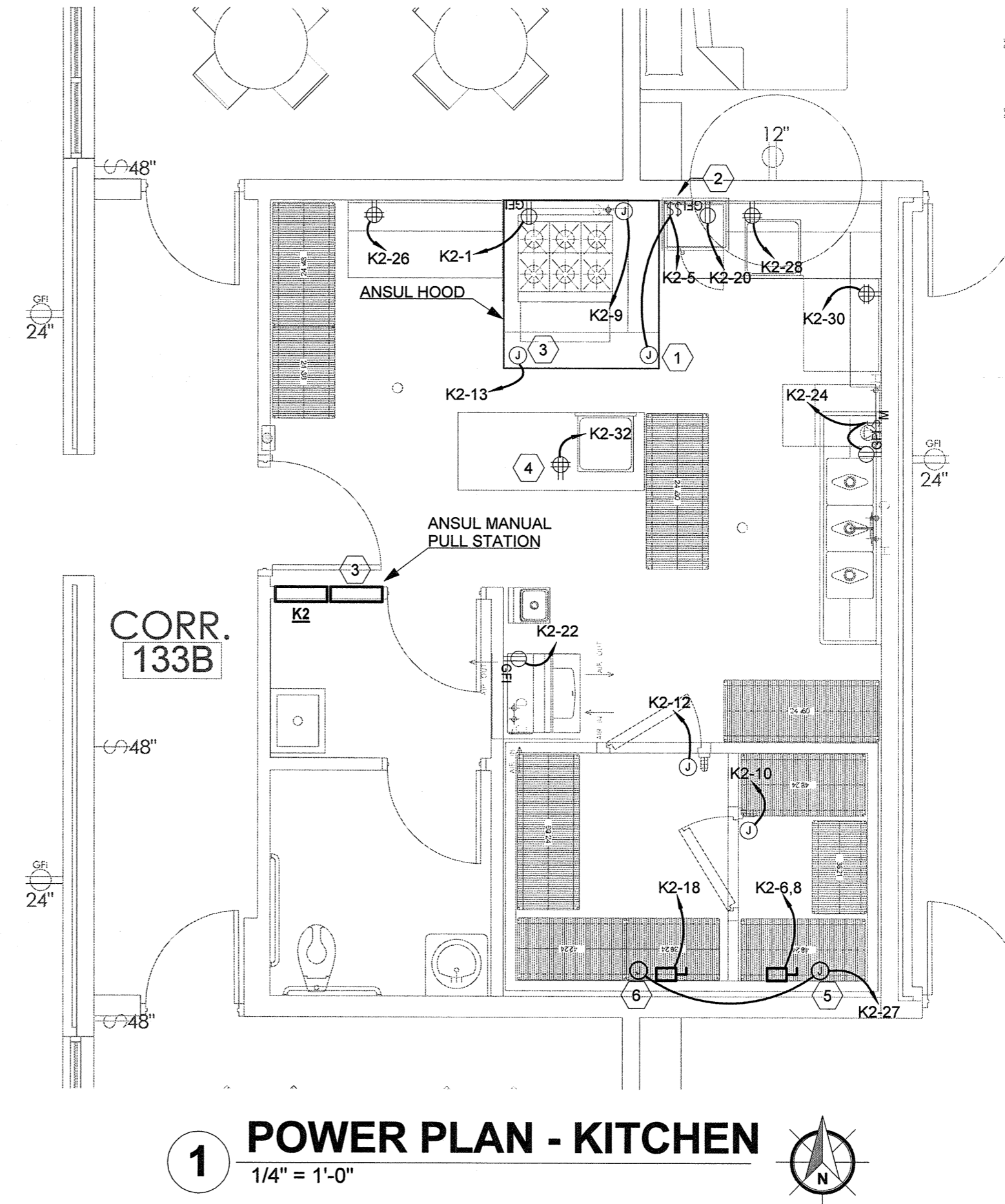
WALK-IN COOLER & FREEZER
 (1) SEAL ALL CONDUIT PENETRATION INTO WALK-IN COOLER & FREEZER WITH APPROVED MATERIAL PER N.E.C. 300.7.A.

ALL 15-AMP & 20-AMP RECEPTACLES IN KITCHEN SHALL BE GFCI TYPE

GENERAL KITCHEN ELECTRICAL NOTES

THE FOLLOWING WORK IS TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR:

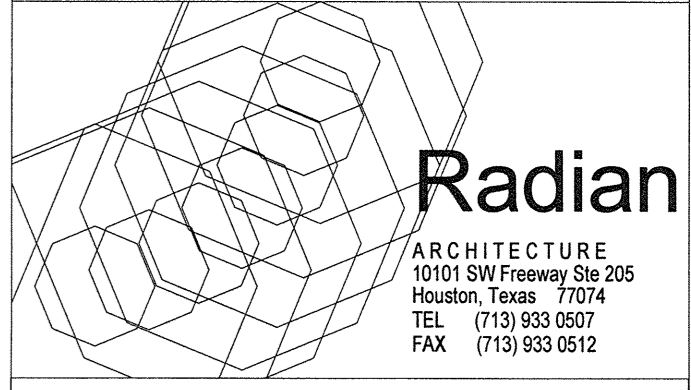
- REFER TO ELECTRICAL EQUIPMENT SCHEDULE FOR CONNECTION REQUIREMENTS OF ALL ELECTRICAL EQUIPMENT.
- ROUGHING-IN AND FINAL CONNECTIONS OF ELECTRICAL SYSTEMS TO FOOD SERVICE EQUIPMENT.
- COMMUNICATION SYSTEMS, CLOCKS AND STAFF TIME CLOCKS IN FOOD SERVICE AREA.
- CONDUIT AND WIRING FROM DISPOSER SWITCH TO TIME DELAY, MAGNETIC STARTER, MOTOR AND SOLENOID VALVES: ALL BELOW COUNTER TOP.
- WALL SWITCH FOR LIGHT FIXTURES IN EXHAUST HOODS.
- WALL SWITCH FOR FAN MOTOR FOR EXHAUST HOOD'S SYSTEM.
- WIRING TO AND INSTALLATION OF ACCESSORIES (IF ANY) WHICH ARE FURNISHED STANDARD WITH FOODSERVICE EQUIPMENT.
- EMERGENCY LIGHTING AND/OR POWER SYSTEMS.
- ALL DISCONNECT SWITCHES AS REQUIRED. (NEMA 4, WATERPROOF SUGGESTED).
- SPECIAL NOTE: ANSUL FIRE SUPPRESSION SYSTEM IS TO BE CONNECTED TO CORRESPONDING SHUNT TRIP BREAKERS FOR SHUT DOWN OF COOKING EQUIPMENT BELOW VENTILATOR DURING FIRE. - IN ADDITION, THE SUPPRESSION SYSTEM SHALL BE REQUIRED TO BE INTERCONNECTED WITH MECHANICAL GAS SHUT OFF DURING FIRE.
- *** DIVISION 16 TO PROVIDE "EMPTY CONDUIT FROM OCTAGONAL JUNCTION BOX IN WALL AT 54" AFF UP THRU WALL TO 6" ABOVE CEILING AND EXIT WALL - FOR FIRE SYSTEM REMOTE PULL.



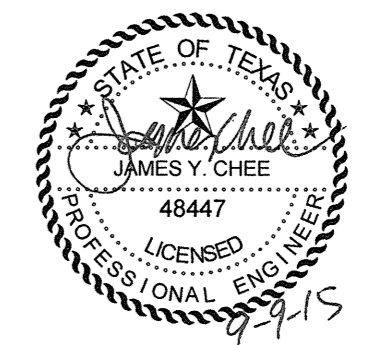
1 POWER PLAN - KITCHEN
1/4" = 1'-0"

- KEYED NOTES**
- CONTRACTOR SHALL FIELD COORDINATE AND INSTALL SWITCH FOR HOOD LIGHT FIXTURES WITH OWNER/ARCHITECT.
 - CONTRACTOR SHALL FIELD COORDINATE AND INSTALL A TOGGLE SWITCH TO OPERATE HOOD EXHAUST FANS. MAF-2 & KEF-2 SHALL BE INTERLOCKED.
 - CONTRACTOR SHALL FIELD COORDINATE ANSUL CONTROL SYSTEM AND MANUAL PULL STATION LOCATION WITH OWNER/ARCHITECT.
 - ALL RECEPTACLES SHALL BE GFI TYPE IN THIS AREA.
 - PROVIDE POWER FOR HEAT TRACE (GFI PER NEC 427.22) ON CONDENSATE DRAIN PIPING FROM WITHIN WALK-IN FREEZER UNIT TO FLOOR DRAIN AT THIS LOCATION. REFER TO PLUMBING DRAWINGS TO FOR EXACT AND COMPLETE WALK-IN FREEZER CONDENSATE PIPING ROUTING. FIELD VERIFY EXACT LOCATION (AND ANY NECESSARY ADDITIONAL LOCATIONS) WITH TENANT/ARCHITECT AND KITCHEN CONSULTANT PRIOR TO ROUGH-IN AND INSTALLATION.
 - PROVIDE POWER FOR HEAT TRACE (GFI PER NEC 427.22) ON CONDENSATE DRAIN PIPING FROM WITHIN WALK-IN REFRIGERATOR UNIT TO FLOOR DRAIN AT THIS LOCATION. REFER TO PLUMBING DRAWINGS TO FOR EXACT AND COMPLETE WALK-IN REFRIGERATOR CONDENSATE PIPING ROUTING. FIELD VERIFY EXACT LOCATION (AND ANY NECESSARY ADDITIONAL LOCATIONS) WITH TENANT/ARCHITECT AND KITCHEN CONSULTANT PRIOR TO ROUGH-IN AND INSTALLATION.

OPTIMUM CARE
SUGAR LAND, TEXAS



Revision Schedule		
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3	09-04-15	PERMIT REVISIONS



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Project No.
ELECTRICAL PLAN - KITCHEN

Sheet No.
E1.05

LUMINAIRE SCHEDULE

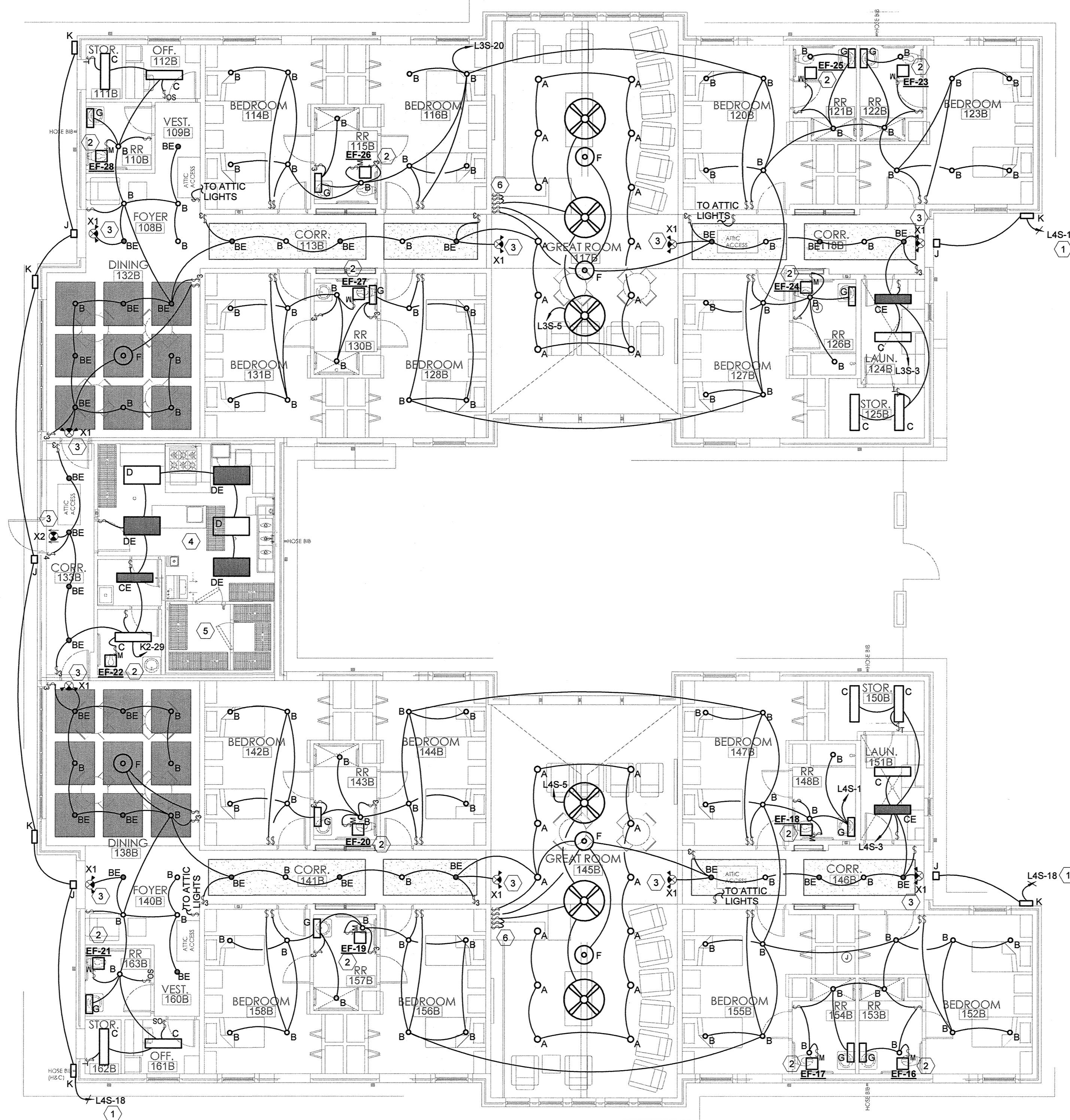
TYPE	MANUFACTURER	DESCRIPTION	MOUNTING	LAMPING	VOLT S	REMARKS
A	CON-TECH LIGHTING : CTL804L2VS-35N-P	LED TRACK HEAD	SURFACE	INTEGRATED LED	120	1,2
B	LITHONIA : 6BPMW HLED 30K90CRI	6" LED DOWNLIGHT	RECESSED	INTEGRATED LED	120	1,2
BE	LITHONIA : 6BPMW HLED 30K90CRI EL14L	6" LED DOWNLIGHT w/ 90 MIN 1400 LUMEN BATTERY BACKUP	RECESSED	INTEGRATED LED	120	1,2
C	LITHONIA : LBL4 60L MVOLT EOHN LP830	1' X 4' LINEAR LED FIXTURE	SURFACE	INTEGRATED LED	120	1,2
CE	LITHONIA : LBL4 60L MVOLT EOHN LP830 EL14L	1' X 4' LINEAR LED FIXTURE w/ 90 MIN 1400 LUMEN BATTERY BACKUP	SURFACE	INTEGRATED LED	120	1,2
D	LITHONIA : 2VTLX4 72L ADP MVOLT LP830	2' X 4' LINEAR LED FIXTURE	RECESSED	INTEGRATED LED	120	1,2
DE	LITHONIA : 2VTLX4 72L ADP MVOLT LP830 EL14L	2' X 4' LINEAR LED FIXTURE w/ 90 MIN 1400 LUMEN BATTERY BACKUP	RECESSED	INTEGRATED LED	120	1,2
F	VISA LIGHTING : MERIDIAN CP5702 L30K	3" DIAMETER LED PENDANT FIXTURE	PENDANT	INTEGRATED LED	120	1,3
G	MODERN FORMS : WS-3226	BATHROOM VANITY FIXTURE	SURFACE	INTEGRATED LED	120	1,2
J	DUAL LITE : PG-W	EXTERIOR NORMAL-OFF EMERGENCY FIXTURE	SURFACE	INTEGRATED LED	120	1
K	LITHONIA : OLWX1 LED 40W 40K DDB	EXTERIOR WALL PACK	SURFACE	INTEGRATED LED	120	1,2
M	LITHONIA : C132 MVOLT GEB10RS	4' FLUORESCENT STRIP FIXTURE WITH WIRE GUARD	SURFACE	1 , 32W T8	120	1
N	TBD	GENERATOR LIGHT: FIXTURE & MOUNTING MATCHES FIXTURE USED FOR GENERATOR #1	-	-	120	1
X1	TBD	SINGLE FACED EXIT SIGN w/ EMERGENCY LIGHT	SURFACE	INTEGRATED LED	120	1
X2	TBD	TWO SIDED EXIT SIGN	SURFACE	INTEGRATED LED	120	1

REMARKS:

1. FINAL SELECTION OF FIXTURE SHALL BE APPROVED BY OWNER/ARCHITECT PRIOR TO PURCHASE.
2. LED COLOR TEMPERATURE SHALL BE 3000K FOR THESE FIXTURE.
3. LED COLOR TEMPERATURE SHALL BE 3500K FOR THESE FIXTURE.

KEYED NOTES

1. CIRCUIT SHALL BE ROUTED THROUGH RELAY PANEL "RP-4".
2. EXHAUST FAN SHALL BE SWITCHED WITH LIGHTS.
3. CONTRACTOR SHALL SERVE FIXTURE FROM UNSWITCHED PORTION OF THE LIGHTING CIRCUIT IN THIS AREA.
4. KITCHEN FOOD PREPARATION AREA LIGHTING REQUIREMENT. PROVIDE AT LEAST 50 FOOT-CANDLES OF LIGHT TO ALL WORKING SURFACES
5. FOOD STORAGE AREA LIGHTING REQUIREMENT. PROVIDE AT LEAST 10 FOOT-CANDLES AT A DISTANCE OF 30 INCHES ABOVE THE FLOOR IN WALK-IN REFRIGERATION UNITS AND DRY FOOD STORAGE AREAS.
6. CONTRACTOR SHALL PROVIDE AND INSTALL THREE(3) WALL MOUNTED FAN SPEED CONTROLLERS (LUTRON NTFS-6E-XX OR SIMILAR - XX DENOTES COLOR). ONE(1) CONTROLLER AND SWITCH LEG SHALL BE INSTALLED PER FAN.



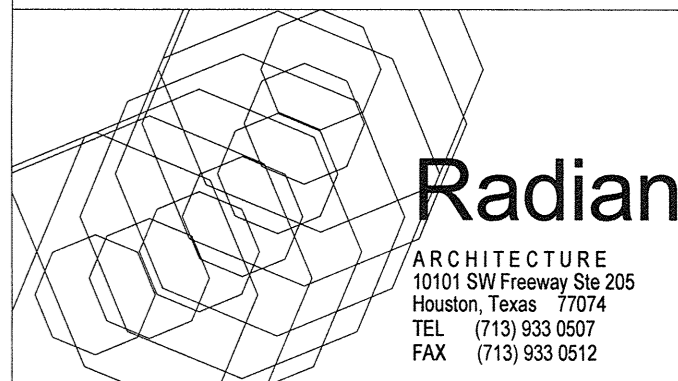
REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL PHASING INFORMATION.

1 ELECTRICAL LIGHTING PLAN - AREA B

1/8" = 1'-0"

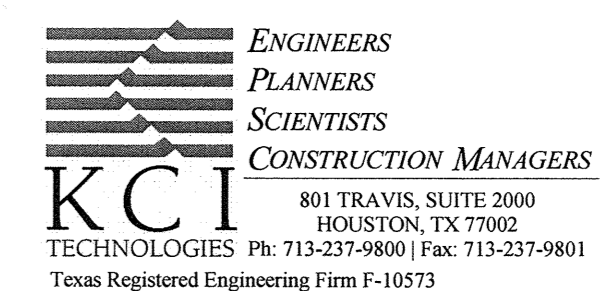
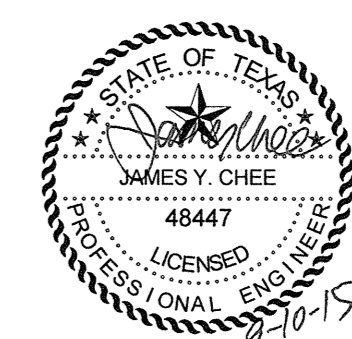


OPTIMUM CARE
SUGAR LAND, TEXAS



Revision Schedule

#	Date	Description
3	09-04-15	PERMIT REVISIONS



Project No.

ELECTRICAL LIGHTING PLAN - AREA B

Sheet No.

3 E2.02

GENERATOR LOAD ANALYSIS
OPTIMUM CARE, HOUSTON TX

SERVICE VOLTAGE: 208Y120V, 3 PHASE, 4 WIRE

	CONN. LOAD KVA	DIV. %	CALCULATED LOAD KVA	CALCULATED LOAD KW	CALCULATED LOAD AMP	COMMENTS
1 LIGHTS		5.6	1.25	7.1	5.6	19.6
2 RECEPTACLES (QTY 71@180VA EACH)		12.8		11.4	9.1	31.6 NEC Art. 220.44
3 COOLING LOADS		34.7		34.7	27.8	96.3 Cooling loads larger than heating
4 HEATING LOADS (non-coincident w/cooling)						
5 HEATING LOADS (coincident w/cooling)						
6 MOTOR		16.1		16.1	12.9	44.8
7 MISC. NON-CONTINUOUS LOADS		13.8	100%	13.8	11.0	38.3
8 MISC. CONTINUOUS LOADS						
9 KITCHEN LOADS		14.0	65%	9.1	7.3	25.2 NEC2011 Article 220.56
10 OUTSIDE LIGHTING						
11 NON-COINCIDENT LOADS						
TOTAL LOADS	97.0 kva		92.2 kva	73.7 kw	255.6 A	

	CONN. LOAD(KVA)	CONN. LOAD(KW)	CALCULATED LOAD (KVA)	CALCULATED LOAD(KW)	CALCULATED LOAD (AMP)
125% x "TOTAL LOADS" above	121.3 kva	97 kw	115.2 kva	92.2 kw	319.8 A
Standard Generator size closest to line above			125.0 kva	100.0 kw	347.0 A
Proposed Generator Size			125.0 kva	100 KW	347.0 A

Generator Output Breaker: 347 x 1.25 = 433.7 (Select 400Amp, 80% rated breaker) 400Amp
Proposed Automatic Transfer Switch 400Amp
Provide feeder from Generator 2 runs of 4#30, 1#3G, 2 1/2" C
Ampacity of Generator feeder 400 Amp

Spare Generator Capacity Available 32.8 kva 26.3 kw 91.1 A
Percent Spare Generator Capacity Available = 35.6%

Available short circuit current at output breaker 3,851 Amp

ELECTRICAL LOAD ANALYSIS
OPTIMUM CARE, HOUSTON TX

SERVICE VOLTAGE: 208Y120V, 3 PHASE, 4 WIRE
OCCUPANCY: OFFICE BUILDING

	CONN. LOAD KVA	DIV. %	CALCULATED LOAD KVA	CALCULATED LOAD AMP	COMMENTS
1 LIGHTS (select larger of (a) or (b))					
(a) CONNECTED LOADS		10.0			Connected loads smaller than Code loads
(b) 11.319 SF x 3.5	39.6	125%	49.5	137.5	code loads larger than connected loads
2 RECEPTACLES (QTY 132@180VA EACH)		23.8		16.9	46.9 NEC2011 Art. 220.44, First 10KVA @100%, Remainder @50%
3 COOLING LOADS		60.5		60.5	168.0 Cooling loads larger than heating
4 HEATING LOADS (non-coincident w/cooling)					
5 HEATING LOADS (coincident w/cooling)					
6 MOTOR		28.4		28.4	78.9
7 MISC. NON-CONTINUOUS LOADS		20.4	100%	20.4	56.8
8 MISC. CONTINUOUS LOADS					
9 KITCHEN LOADS		14.0	65%	9.1	25.2 NEC2011 Article 220.56
10 TRANSFORMER SPARE CAPACITY					
11 EXISTING LOADS					
25% largest motor (Largest Motor 1.7KVA)	1.7	25%	0.4	1.1	
TOTAL LOADS	157.1 kva		185.3 kva	514.3 A	

PROPOSED SERVICE CAPACITY 216 kva 600 A
**Provide service feeder from Power Co: 3 runs of 4#500 KCM, 1 #30 G, 3.5" conduit
Service Feeder Capacity 411 KVA 1140 AMP
Provide all equipment and labor for electrical service per Power Co's requirements, including but not limited to xfmr pad, busfed weatherhead, cable tap box, busfed CT can, conduits/wires and all accessories and support hardware as required per Power Company specs and standards.

SPARE CAPACITY AVAILABLE 31 kva 86 A
PERCENT SPARE CAPACITY AVAILABLE 14%
** May omit ground wire where not required by local power company.

Equipment Short Circuit Ratings Summary (Point-to-Point Calculation)
OPTIMUM CARE, HOUSTON TX

EQPT	DIST. FROM UPSTREAM EQPT (FT)	CALCULATED SHORT CKT CURRENT (AMPS)	EQPT A.I.C. RATINGS (AMPS)
DP1	120	15,993	22,000
DPE1	15	14,925	22,000
L1M	35	11,061	22,000
L1A	35	9,355	10,000
L2M	95	7,639	10,000
L2A	140	7,665	10,000
L2A	95	5,851	10,000
L5T	10	5,823	10,000
K1	98	3,647	10,000
GAR	280	3,061	10,000

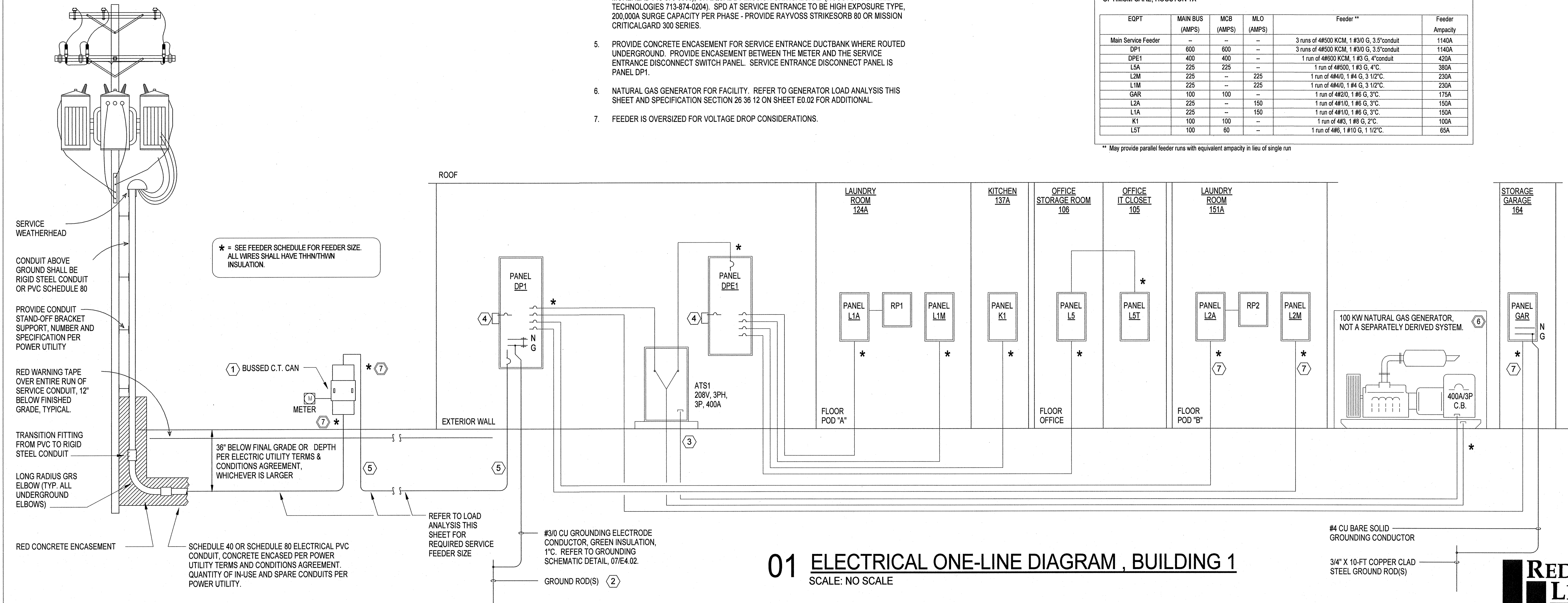
Feeder Schedule
OPTIMUM CARE, HOUSTON TX

EQPT	MAIN BUS (AMPS)	MCB (AMPS)	MLO (AMPS)	Feeder **	Feeder Ampacity
Main Service Feeder	-	-	-	3 runs of 4#500 KCM, 1 #30 G, 3.5" conduit	1140A
DP1	600	600	-	3 runs of 4#500 KCM, 1 #30 G, 3.5" conduit	1140A
DPE1	400	400	-	1 run of 4#600 KCM, 1 #3 G, 4" conduit	420A
L5A	225	225	-	1 run of 4#600, 1 #3 G, 4" C.	380A
L2M	225	-	225	1 run of 4#40, 1 #4 G, 3 1/2" C.	230A
L1M	225	-	225	1 run of 4#40, 1 #4 G, 3 1/2" C.	230A
GAR	100	-	-	1 run of 4#60, 1 #6 G, 3" C.	175A
L2A	225	-	150	1 run of 4#10, 1 #6 G, 3" C.	160A
L1A	225	-	150	1 run of 4#10, 1 #6 G, 3" C.	160A
K1	100	100	-	1 run of 4#8, 1 #6 G, 2" C.	100A
L5T	100	60	-	1 run of 4#6, 1 #10 G, 1 1/2" C.	65A

** May provide parallel feeder runs with equivalent ampacity in lieu of single run

KEYED NOTES

- C. T. CAN: PROVIDE BUSSED C.T. CAN IN ACCORDANCE WITH POWER UTILITY TERMS AND CONDITIONS AGREEMENT.
- GROUND ROD: AT EACH GROUND ROD LOCATION, PROVIDE A 3/4" X 10-FT COPPER CLAD STEEL GROUND ROD. TIE ALL OTHER REQUIRED COMPONENTS OF THE GROUNDING ELECTRODE TOGETHER. REFER TO GROUNDING DETAIL 07/E4.02 FOR REQUIRED GROUNDING ELECTRODE COMPONENTS.
- (1) 1" CONDUIT FOR CONTROLS. IN ADDITION, PROVIDE A 1" CONDUIT FROM GENERATOR CONTROLS LOCATION TO THE REMOTE ANNUNCIATOR PANEL.
- SURGE PROTECTIVE DEVICE (SPD): PROVIDE SPD AT SERVICE ENTRANCE, CONNECT SPD TO LOAD SIDE OF THE SERVICE ENTRANCE DISCONNECT OVERCURRENT DEVICE. SPD'S TO BE AS MADE BY RAYVOSS (HOUSTON REP: WILDCAT ELECTRIC SUPPLY, TIM MOREHEAD 713-876-0900), OR EQUAL BY MISSION CRITICALGARD (HOUSTON REP: LEE TECHNOLOGIES 713-874-0204). SPD AT SERVICE ENTRANCE TO BE HIGH EXPOSURE TYPE, 200,000A SURGE CAPACITY PER PHASE - PROVIDE RAYVOSS STRIKESORB 80 OR MISSION CRITICALGARD 300 SERIES.
- PROVIDE CONCRETE ENCASUREMENT FOR SERVICE ENTRANCE DUCTBANK WHERE ROUTED UNDERGROUND. PROVIDE ENCASUREMENT BETWEEN THE METER AND THE SERVICE ENTRANCE DISCONNECT SWITCH PANEL. SERVICE ENTRANCE DISCONNECT PANEL IS PANEL DP1.
- NATURAL GAS GENERATOR FOR FACILITY. REFER TO GENERATOR LOAD ANALYSIS THIS SHEET AND SPECIFICATION SECTION 26 36 12 ON SHEET E0.02 FOR ADDITIONAL.
- FEEDER IS OVERSIZED FOR VOLTAGE DROP CONSIDERATIONS.



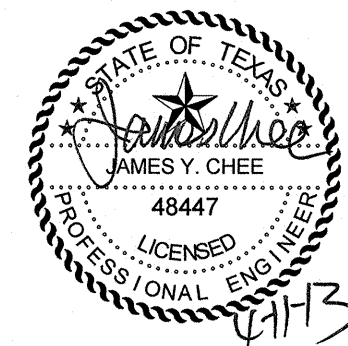
01 ELECTRICAL ONE-LINE DIAGRAM, BUILDING 1
SCALE: NO SCALE

OPTIMUM CARE
SUGAR LAND, TEXAS



Revision Schedule

#	Date	Description



REDDING LINDEN BURR
CONSULTING ENGINEERS
801 TRAVIS, SUITE 2000
HOUSTON, TEXAS 77002
PH: 713.237.9800
FAX: 713.237.9801
TEXAS REGISTERED ENGINEERING FIRM P-3113

Project No.
ONE LINE DIAGRAM, BUILDING 1
Sheet No.

E3.01

GENERATOR LOAD ANALYSIS
Optimum Personal Care - Wings 3 & 4, HOUSTON TX

SERVICE VOLTAGE: 208Y/120V, 3 PHASE, 4 WIRE

	CONN. LOAD KVA	DIV. %	CALCULATED LOAD KVA	CALCULATED LOAD KW	CALCULATED LOAD AMP	COMMENTS
1 LIGHTS		6.1	1.25	7.7	6.1	21.2
2 RECEPTACLES (Qty 28@180VA each=5.kva)	5.0	5.0		5.0	4.0	14.0 NEC Art. 220.44
3 COOLING LOADS - HVAC						
4 HEATING LOADS - HVAC (non-coincident w/cooling)	35.5			35.5	28.4	98.5 Heating loads larger than cooling
5 HEATING LOADS - HVAC (coincident w/cooling)						
6 MOTOR	1.9			1.9	1.5	5.2
7 MISC. CONTINUOUS LOADS						
8 KITCHEN LOADS	2.8	65%		1.8	1.5	5.1 NEC2008 Article 220.56
9 OUTSIDE LIGHTING	0.2	125%		0.3	0.2	0.8
10 NON-COINCIDENT LOADS	0.3	0				Non-coincident loads, not included in load analysis (NEC 220.60)
11 TRANSFORMER SPARE CAPACITY						
TOTAL LOADS	109.5 kva			109.8 kva	87.9 kw	304.9 A
100% x "TOTAL LOADS" above	109.5 kva	88 kw	109.8 kva	87.9 kw	304.9 A	
Standard Generator size closest to line above			126.0 kva	100.0 kw	347.0 A	
125% x "TOTAL LOADS" above	136.9 kva	110 kw	137.3 kva	109.8 kw	381.1 A	
Standard Generator size closest to line above			156.3 kva	125.0 kw	433.7 A	
Proposed Generator Size			125.0 kva	100 KW	347.0 A	
Spare Generator Capacity Available			16.2 kva	12.1 kw	42.1 A	
Percent Spare Generator Capacity Available = 13.8%						
Available short circuit current at output breaker			3,851 Amp			

ELECTRICAL LOAD ANALYSIS
Optimum Personal Care - Building 2, HOUSTON TX

SERVICE VOLTAGE: 208Y/120V, 3 PHASE, 4 WIRE
OCCUPANCY: HOSPITAL

	CONN. LOAD KVA	DIV. %	CALCULATED LOAD KVA	CALCULATED LOAD AMP	COMMENTS
1 LIGHTS (select larger of (a) or (b))					
(a) CONNECTED LOADS		6.1			Connected loads smaller than Code loads
(b) 10,000 SF x 2	20.0	125%	25.0	69.4	code loads larger than connected loads
2 RECEPTACLES (Qty 154@180VA each=27.7kva)	27.7	27.7		18.9	52.4 NEC2014 Art. 220.44, First 10KVA @ 100%, Remainder @50%
3 HEATING LOADS - HVAC (non-coincident w/cooling)	35.5			35.5	98.5 Heating loads larger than cooling
4 MOTOR	4.2			4.2	11.7
5 MISC. NON-CONTINUOUS LOADS	65.0	100%		65.0	180.5
6 KITCHEN LOADS	2.8	65%		1.8	5.1 NEC2008 Article 220.56
7 OUTSIDE LIGHTING	0.2	125%		0.3	0.8
8 NON-COINCIDENT LOADS	0.3	0			Non-coincident loads, not included in load analysis (NEC 220.60)
25% largest motor (Largest Motor 1.2KVA)	1.2	25%	0.3	0.8	
TOTAL LOADS	142.0 kva		151.0 kva	419.3 A	
PROPOSED SERVICE CAPACITY			216 kva	600 A	
**Provide service feeder from Power Co :			2 runs of 4#350 KCM, 1 #2/0 G, 3.5"conduit (RMC ‡)		
Service Feeder Capacity			223 KVA	620 AMP	
Provide CT can & meter per CenterPoint's service standards					
SPARE CAPACITY AVAILABLE			65 kva	181 A	
PERCENT SPARE CAPACITY AVAILABLE			30%		
** May omit ground wire where not required by local power company.					
‡ RMC (Rigid Metal Conduit) shall have 40-mil thick external PVC coating for corrosion protection					

KEYED NOTES

- C.T. CAN: PROVIDE C.T. CAN IN ACCORDANCE WITH POWER UTILITY TERMS AND CONDITIONS AGREEMENT.
- GROUND ROD: AT EACH GROUND ROD LOCATION, PROVIDE A 3/4" X 10-FT COPPER CLAD STEEL GROUND ROD.
- (1) 1" CONDUIT FOR CONTROLS. IN ADDITION, PROVIDE A 1" CONDUIT FROM GENERATOR CONTROLS LOCATION TO THE REMOTE ANNUNCIATOR PANEL.
- SURGE PROTECTIVE DEVICE (SPD): PROVIDE ERICO MODULAR TDX PANEL PROTECTOR TO PANEL. PART NUMBER: TDX100M120208
- PROVIDE CONCRETE ENCASEMENT FOR SERVICE ENTRANCE DUCTBANK WHERE ROUTED UNDERGROUND. PROVIDE ENCASEMENT BETWEEN THE METER AND THE SERVICE ENTRANCE DISCONNECT SWITCH PANEL. SERVICE ENTRANCE DISCONNECT PANEL IS PANEL DP2.
- NATURAL GAS GENERATOR FOR FACILITY. REFER TO GENERATOR LOAD ANALYSIS THIS SHEET AND SPECIFICATION SECTION 28.36.12 ON SHEET E0.02 FOR ADDITIONAL INFORMATION.
- FEEDER IS OVERSIZED FOR VOLTAGE DROP CONSIDERATIONS.

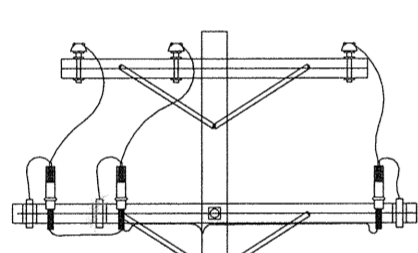
Equipment Short Circuit Ratings Summary (Point-to-Point Calculation)
Optimum Personal Care - Building 2, HOUSTON TX

EQPT	DIST. FROM UPSTREAM EQPT (FT)	CALCULATED SHORT CKT CURRENT (AMPS)	EQPT A.I.C. RATINGS (AMPS)
L4S	20	436	10,000
L4A	20	105	10,000
L3S	70	431	10,000
L3A	70	105	10,000
K2	125	402	10,000
DPE2	10	383	22,000
DP2	150	50	22,000

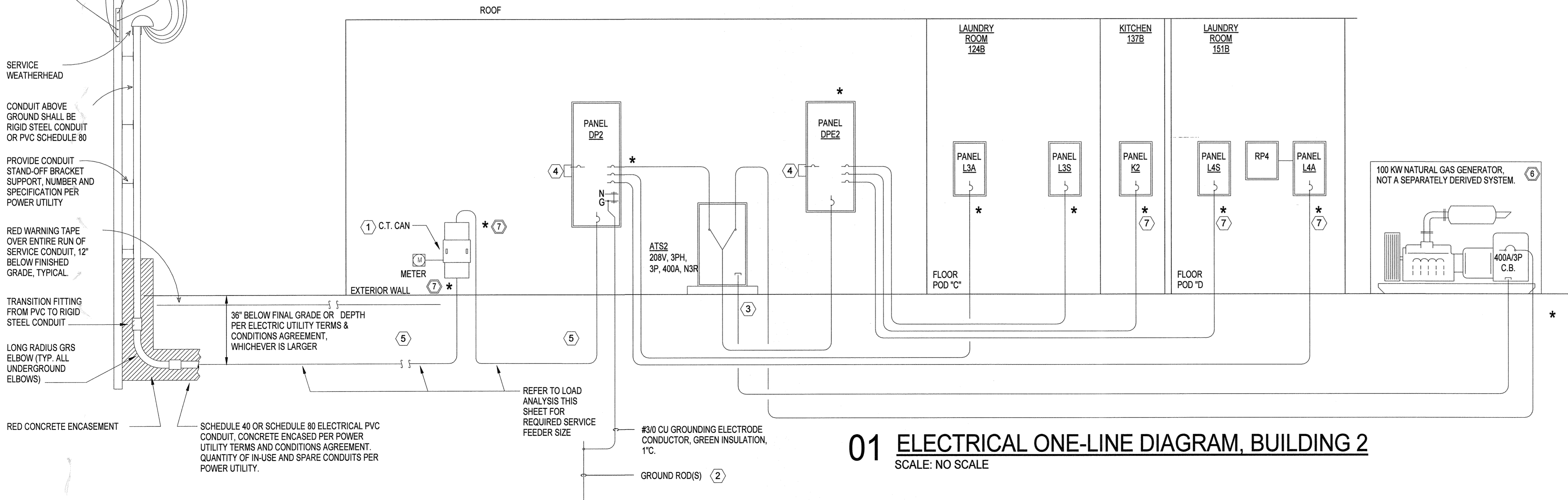
Feeder Schedule
Optimum Personal Care - Building 2, HOUSTON TX

EQPT	MAIN BUS (AMPS)	MCB (AMPS)	MLO (AMPS)	Feeder **	Feeder Ampacity
Main Service Feeder	--	--	--	2 runs of 4#350 KCM, 1 #2/0 G, 3.5"conduit (RMC ‡)	620A
DP2	600	600	--	2 runs of 4#350 KCM, 1 #3/0 G, 3 1/2"conduit	620A
DPE2	400	400	--	1 run of 4#600 KCM, 1 #3 G, 4"conduit	420A
L4S	225	225	--	1 run of 4#4/0, 1 #4 G, 3"C.	230A
L3S	225	225	--	1 run of 4#4/0, 1 #4 G, 3"C.	230A
L4A	100	100	--	1 run of 4#3, 1 #8 G, 1 1/2"C.	100A
L3A	100	100	--	1 run of 4#3, 1 #8 G, 1 1/2"C.	100A
K2	100	100	--	1 run of 4#3, 1 #8 G, 1 1/2"C.	100A

** May provide parallel feeder runs with equivalent ampacity in lieu of single run
‡ RMC (Rigid Metal Conduit) installed below grade shall have 40-mil thick external PVC coating for corrosion protection



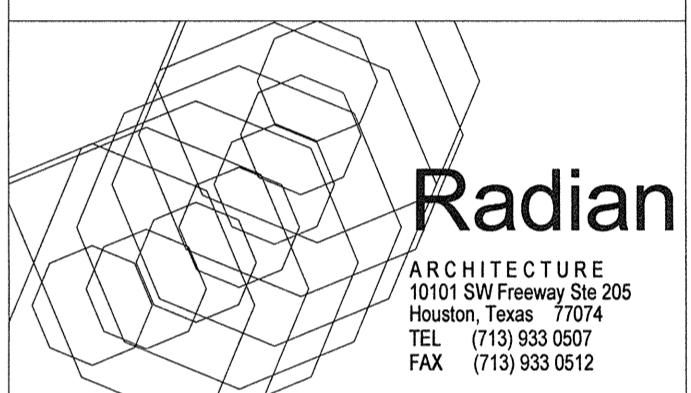
* = SEE FEEDER SCHEDULE FOR FEEDER SIZE. ALL WIRES SHALL HAVE THIN/WITHIN INSULATION.



01 ELECTRICAL ONE-LINE DIAGRAM, BUILDING 2
SCALE: NO SCALE

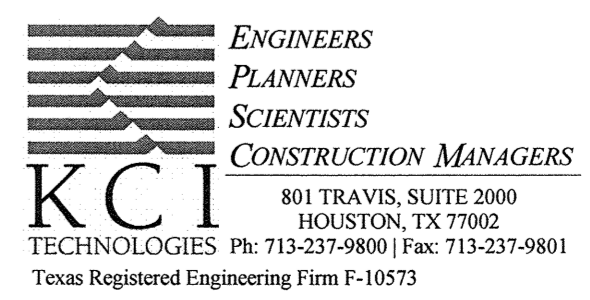
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OPTIMUM CARE
SUGAR LAND, TEXAS



Revision Schedule

#	Date	Description
3	09-04-15	PERMIT REVISIONS



Project No. **ONE-LINE DIAGRAM, BUILDING 2**

Sheet No. **E3.02**

208Y120V 3PH 4W Full size neutral w/copper ground bus (Fed from DP1)

PANEL "L1M"
 Copper Bus Rating: 225 AMP
 Mains Rating (M.C.B.): 225 AMP
 1 run of 4#4@ 1.44 G, 3°C
 Feeder Ampacity = 230A

LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD AMP	WIRE/CONDUIT SIZE (Note 1)	TRIPPOLE (Note 2)	CKT #	PH #	TRIPPOLE (Note 2)	WIRE/CONDUIT SIZE (Note 1)	LOAD AMP	LOAD KVA	TYPE	LOAD DESCRIPTION
SPARE					20 /1/ 1	A	2	20 /1/					SPARE
SPARE					20 /1/ 3	B	4	20 /1/		3.0	0.36	R	2 D.R. Street Recept.
Sprinkler	MIS	0.40	3.3	2#12,1#12G,1/2"C	20 /1/ 5	C	6	20 /1/					
3 D.R. Great Room Recept.	R	0.54	4.5	2#12,1#12G,1/2"C	20 /1/ 7	A	8	20 /1/					SPARE
4 D.R. Great Room Recept.	R	0.72	6.0	2#12,1#12G,1/2"C	20 /1/ 9	B	10	20 /1/					SPARE
Emergency Outside	L	1.00	8.3	2#12,1#12G,1/2"C	20 /1/ 11	C	12	20 /1/	2#12,1#12G,1/2"C	4.2	0.50	R	Hallway/Atic Recept/Dampers
2 D.R. GFCI Bath	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 13	A	14	20 /1/	2#12,1#12G,1/2"C	2.7	0.32	MIS	TV Recept
2 D.R. GFCI W/P	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 15	B	16	20 /1/	2#12,1#12G,1/2"C	3.0	0.36	R	2 D.R. GFCI Bath
Steps Lighting	L	0.50	4.2	2#12,1#12G,1/2"C	20 /1/ 17	C	18	20 /1/	2#12,1#12G,1/2"C	1.5	0.18	R	1 D.R. GFCI W/P
5 D.R. Great Room Recept.	R	0.90	7.5	2#12,1#12G,1/2"C	20 /1/ 19	A	20	20 /1/	2#12,1#12G,1/2"C	4.9	0.59	L	Atic Lighting
Emergency	L	0.22	1.9	2#12,1#12G,1/2"C	20 /1/ 21	B	22	20 /1/	2#12,1#12G,1/2"C	13.3	1.60	MT	Fire Pump (Rm. 125)
Hallway Recept/ Atic Recept./Dampers	R	0.50	4.2	2#12,1#12G,1/2"C	20 /1/ 23	C	24	20 /1/	2#12,1#12G,1/2"C	14.2	1.70	MT	Furnace Hallway #1 (FCU-5)
4 D.R. GFCI W/P	R	0.72	6.0	2#12,1#12G,1/2"C	20 /1/ 25	A	26	20 /1/	2#12,1#12G,1/2"C	14.2	1.70	MT	Furnace Hallway #2 (FCU-11)
A/C Hallway #1 (CU-8)	C	2.4	23.5	2#8,1#10G,1"C (Note 3)	40 /2/ 27	B	28	20 /1/	2#12,1#12G,1/2"C	4.2	0.50	MIS	Jazuzzi
**23.5 FLA,4 KVA-Disc60A2P240V/NFNR	C	2.4	23.5	2#8,1#10G,1"C (Note 3)	29	C	30	40 /2	2#8,1#10G,1"C (Note 3)	16.8	1.7	C	A/C Hallway #2 (CU-11)
Wall Pack	L	0.30	2.5	2#12,1#12G,1/2"C	20 /1/ 31	A	32			16.8	1.7	C	**16.8 FLA,3.5 KVA-Disc60A2P240V/NFNR
Fire Alarm	MIS	0.50	4.2	2#12,1#12G,1/2"C	20 /1/ 33	B	34	30 /2	2#10,1#10G,3/4"C	24.0	2.5	MIS	****Normal 1-30R 30A-125/250V-3P-4W-G
Pool Lights	L	0.50	4.2	2#12,1#12G,1/2"C	20 /1/ 35	C	36			24.0	2.5	MIS	****Normal 1-30R 30A-125/250V-3P-4W-G
Pool Lights	L	0.50	4.2	2#12,1#12G,1/2"C	20 /1/ 37	A	38	20 /1/					SPARE
SPARE					20 /1/ 39	B	40	20 /1/					SPARE
SPARE					20 /1/ 41	C	42	20 /1/					SPARE

PANEL "L1M" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	LOAD (KVA)	NEC CALCULATION REFERENCE
LIGHTING	L	1.25	3.6	4.5	125% of connected loads
RECEPTACLES	R	1	5.5	5.5	
COOLING LOADS - HVAC	C	1	8.4	8.4	Cooling loads larger than heating
HEATING LOADS - HVAC (non-coincident w/cooling)	H				
MOTOR	MT	1	5.0	5.0	
MISC. NON-CONTINUOUS LOADS	MIS	1	6.7	6.7	
25% LARGEST MOTOR (1.7 KVA)		0.25		0.4	
TOTAL LOAD (KVA)				29.2 KVA	30.5 KVA
TOTAL LOAD (AMP AVG)				81.1 AMP	84.8 AMP

208Y120V 3PH 4W Full size neutral w/copper ground bus (Fed from DPE1)

PANEL "L1A"
 Copper Bus Rating: 225 AMP
 Mains Rating (M.C.B.): 150 AMP
 1 run of 4#10, 1 #6 G, 2 1/2"C
 Feeder Ampacity = 150A

LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD AMP	WIRE/CONDUIT SIZE (Note 1)	TRIPPOLE (Note 2)	CKT #	PH #	TRIPPOLE (Note 2)	WIRE/CONDUIT SIZE (Note 1)	LOAD AMP	LOAD KVA	TYPE	LOAD DESCRIPTION
EXTERIOR REC (2)	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 1	A	2	20 /1/		6.0	0.72	MIS	TV REC (2) 120A
GF RR (2) 122A	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 3	B	4	20 /1/	2#12,1#12G,1/2"C	3.0	0.36	MIS	TV REC (1) 127A
BEDROOM REC (4) 123A	R	0.72	6.0	2#12,1#12G,1/2"C	20 /1/ 5	C	6	20 /1/	2#12,1#12G,1/2"C	6.0	0.72	MIS	TV REC (2) 116A
GF & (3) REC 123A	R	0.72	6.0	2#12,1#12G,1/2"C	20 /1/ 7	A	8	20 /1/	2#12,1#12G,1/2"C	6.0	0.72	MIS	TV REC (2) 128A
BEDROOM REC (2) 127A	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 9	B	10	20 /1/	2#12,1#12G,1/2"C	6.0	0.72	MIS	GREAT ROOM TV REC (2) 117A
BEDROOM REC (4) 116A	R	0.72	6.0	2#12,1#12G,1/2"C	20 /1/ 11	C	12	20 /1/	2#12,1#12G,1/2"C	4.2	0.50	MIS	PCS (2) 117A & 125A
GF RR (2) 115A	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 13	A	14	20 /1/	2#12,1#12G,1/2"C	7.3	0.88	L	LIGHTING 124A
BEDROOM REC (4) 128A	R	0.72	6.0	2#12,1#12G,1/2"C	20 /1/ 15	B	16	20 /1/	2#12,1#12G,1/2"C	10.6	1.28	L	LIGHTING 128A
BEDROOM REC (4) 129A	R	0.72	6.0	2#12,1#12G,1/2"C	20 /1/ 17	C	18	20 /1/	2#12,1#12G,1/2"C	0.8	0.10	L	LIGHTING 128A
GREAT ROOM REC (6) 117A	R	1.98	9.0	2#12,1#12G,1/2"C	20 /1/ 19	A	20	20 /1/	2#12,1#12G,1/2"C	9.8	1.18	L	LIGHTING 137A
GREAT ROOM REC (2) 117A	R	0.90	7.5	2#12,1#12G,1/2"C	20 /1/ 21	B	22	20 /1/	2#12,1#12G,1/2"C	4.4	0.53	L	LIGHTING 177A
GREAT ROOM REC (2) 117A	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 23	C	24	20 /1/	2#12,1#12G,1/2"C	7.5	0.90	M	FANS
GREAT ROOM REC (2) 117A	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 25	A	26	20 /1/	2#12,1#12G,1/2"C	7.3	0.88	L	LIGHTING 124B
CORRIDOR REC (4) 118A	R	0.72	6.0	2#12,1#12G,1/2"C	20 /1/ 27	B	28	20 /1/	2#12,1#12G,1/2"C	2.1	0.25	MIS	FIRE ALARM
CONVENIENCE REC (2) 125A	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 29	C	30	20 /1/	2#8,1#10G,1" (Note 3)	4.2	0.50	M	GATE OPERATOR
GF & (2) REC 110A	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 31	A	32	20 /1/	2#12,1#12G,1/2"C	10.7	1.28	L	LIGHTING 128B
EXTERIOR REC (2)	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 33	B	34	20 /1/	2#12,1#12G,1/2"C	4.4	0.53	L	LIGHTING 177B
EXTERIOR REC (2)	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 35	C	36	/1					SPACE
EXTERIOR REC (1)	R	0.18	1.5	2#12,1#12G,1/2"C	20 /1/ 37	A	38	60 /3	4#6,1#10G,1 1/4"C	0.0	0.0	MIS	SPD (Surge-Protective Device)
EXTERIOR LTG	OL	1.17	9.7	2#12,1#12G,1/2"C	20 /1/ 39	B	40			0.0	0.0	MIS	*** (Externally Mounted)
GREAT ROOM TV REC (2) 117B	MIS	0.72	6.0	2#12,1#12G,1/2"C	20 /1/ 41	C	42			0.0	0.0	MIS	*Erico #TDX100 Modular ***

PANEL "L1A" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	LOAD (KVA)	NEC CALCULATION REFERENCE
LIGHTING	L	1.25	6.6	8.3	125% of connected loads
RECEPTACLES	R	1	10.1	10.0	NEC2014 Art. 220.44, First 10KVA @ 100%, Remainder @50%
MISC. NON-CONTINUOUS LOADS	MIS	1	4.7	4.7	
OUTSIDE LIGHTING	OL	1.25	1.2	1.5	
TOTAL LOAD (KVA)				22.6 KVA	24.5 KVA
TOTAL LOAD (AMP AVG)				62.7 AMP	68.0 AMP

208Y120V 3PH 4W Full size neutral w/copper ground bus (Fed from DPE)

PANEL "K1"
 Copper Bus Rating: 300 AMP
 Mains Rating (M.C.B.): 300 AMP
 1 run of 4#3, 1 #8 G, 1 1/2"C
 Feeder Ampacity = 100A

LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD AMP	WIRE/CONDUIT SIZE (Note 1)	TRIPPOLE (Note 2)	CKT #	PH #	TRIPPOLE (Note 2)	WIRE/CONDUIT SIZE (Note 1)	LOAD AMP	LOAD KVA	TYPE	LOAD DESCRIPTION
MAIN		0.0	0.0		100 /3	1	A	2	/1				SPACE
---		0.0	0.0			3	B	4	/1				SPACE
---		0.0	0.0			5	C	6	/1				SPACE
Exhaust Fan	MIS	1.70	14.2	2#12,1#12G,1/2"C	20 /1/ 7	A	8	/1					SPACE
Fresh Air	MIS	1.20	10.0	2#12,1#12G,1/2"C	20 /1/ 9	B	10	50 /2	3#8,1#10G,1" (Note 3)	43.3	4.5	C	A/C Kitchen
Control Hood	MIS	0.15	1.3	2#12,1#12G,1/2"C	20 /1/ 11	C	12			43.3	4.5	C	**30W,43.3 FLA,3.5 KVA-Disc60A2P240V/NFNR
Recept Kitchen	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 13	A	14	20 /1/	2#12,1#12G,1/2"C	7.1	0.85	MIS	Freezer Pantry
GFCI Kitchen	R	0.36	3.0	2#12,1#12G,1/2"C	20 /1/ 15	B	16	20 /1/	2#12,1#12G,1/2"C	7.1	0.85	MIS	Freezer Pantry
GFCI Kitchen	R	0.18	1.5	2#12,1#12G,1/2"C	20 /1/ 17	C	18	20 /1/	2#12,1#12G,1/2"C	10.0	1.20	R	Recept Kitchen (Microwave)
Dishwasher	MIS	1.80	15.0	2#12,1#12G,1/2"C	20 /1/ 19	A	20	20 /1/	2#12,1#12G,1/2"C	2.9	0.35	MIS	Ice Maker
Dishwasher	MIS	1.80	15.0	2#12,1#12G,1/2"C	20 /1/ 21	B	22	20 /1/	2#12,1#12G,1/2"C	3.0	0.36	R	GFCI Kitchen
SPARE					20 /1/ 23	C	24	20 /1/	2#12,1#12G,1/2"C	3.0	0.36	R	GFCI Kitchen
Furnace Kitchen	MT	1.70	14.2	2#12,1#12G,1/2"C	20 /1/ 25	A	26	20 /1/	2#12,1#12G,1/2"C	3.0	0.36	R	GFCI Kitchen
Refrigerator Kitchen	MIS	0.65	5.4	2#12,1#12G,1/2"C	20 /1/ 27	B	28	20 /1/	2#12,1#12G,1/2"C	3.0	0.36	R	GFCI Kitchen
Refrigerator Kitchen	MIS	0.65	5.4	2#12,1#12G,1/2"C	20 /1/ 29	C	30	20 /1/	2#12,1#12G,1/2"C	2.1	0.25	MIS	Hood

PANEL "K1" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	LOAD (KVA)	NEC CALCULATION REFERENCE
RECEPTACLES	R	1	3.5	3.5	
COOLING LOADS - HVAC	C	1	9.0	9.0	Cooling loads larger than heating
HEATING LOADS - HVAC (non-coincident w/cooling)	H				
MOTOR	MT	1	1.7	1.7	
MISC. NON-CONTINUOUS LOADS	MIS	1	10.3	10.3	
25% LARGEST MOTOR (1.7 KVA)		0.25		0.4	
TOTAL LOAD (KVA)				24.5 KVA	24.9 KVA
TOTAL LOAD (AMP AVG)				68.0 AMP	69.2 AMP

208Y120V 3PH 4W Full size neutral w/copper ground bus (Fed from DP1)

OPTIMUM CARE, SUGAR LAND, TX
DIST. PANELBOARD "DPE1"
 Copper Bus Rating: 400 Amp
 Mains Rating (M.C.B.): 400 Amp
 1 run of 4#6@ 1.44 G, 3°C
 Feeder Ampacity = 400A

OPTIONAL STANDBY ELECTRICAL SYSTEM

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	LOAD (KVA)	NEC CALCULATION REFERENCE
LIGHTING	L	1.25	8.3	10.4	125% of connected loads
RECEPTACLES	R	1	13.8	11.9	NEC2014 Art. 220.44
COOLING LOADS - HVAC	C	1	34.7	34.7	Cooling loads larger than heating
HEATING LOADS - HVAC (non-coincident w/cooling)	H				
MOTOR	MT	1	23.7	23.7	
MISC. NON-CONTINUOUS LOADS	MIS	1	30.3	30.3	
KITCHEN LOADS	K	0.65	14.8	9.6	NEC2014 Art. 220.56
OUTSIDE LIGHTING	OL	1.25	1.2	1.5	
TOTAL LOAD (KVA)				128.0 KVA	122.0 KVA
TOTAL LOAD (AMP AVG)				351.6 AMP	338.6 AMP

Relay Panel Summary

OPTIMUM CARE, SUGAR LAND, TX

Relay Panel	1-Pole Qty	Total Poles	Relay Panel Size	LCD catalog number (or approved equal)
RP3	3	3	8	LCD # GR140BLT # DTC MODERN (8 relays)
RP4	3	3	8	LCD # GR140BLT # DTC MODERN (8 relays)

Relay Panel Load Schedule

OPTIMUM CARE, SUGAR LAND, TX

Relay Panel	Relay #	Loads Served (Zone Name)	Area (served)	Zone	Elec Panel	Circuit Controlled	Time On	Time Off	Flash	Override	Digital Switch	1-Pole	3-Pole
RP1	1	EXTERIOR LTG	EXT	A11	L1A	39	8:00PM	7:00AM	N	N	N	1	
RP1	3	FANS	INT	A13	L1A	24	9:00AM	11:00PM	N	Y	Y	1	
RP1	4	LIGHTING 177A	INT	A14	L1A	22	8:00AM	11:00PM	Y	Y	Y	1	
RP2	4	LIGHTING 177B	INT	A24	L2A	22	8:00AM	11:00PM	Y	Y	Y	1	
RP2	6	SIGNAGE	EXT	A22	L2A	32	8:00PM	8:00AM	N	N	N	1	
RP2	5	3 ITS LTG	EXT	A21	L2M	37,39,41	7:00PM	7:00AM	N	N	N		1
RP5	1	LIGHTING	INT	A51	LSA	4	7:00AM	7:00PM	Y	Y	Y	1	
RP5	2	FANS	INT	A52	LSA	4	7:00AM	7:00PM	Y	Y	Y	1	
RP5	3	EX											

208Y120V 3Ph 4W Full size neutral w/copper ground bus (Fed from DP1)

PANEL "L2M"

Copper Bus Rating: 100 AMP
Mains Rating (M.C.B.): 100 AMP
1 unit of 483, 1 #8 G, 1 1/2" C
Feeder Ampacity = 100A

X MCB
MLO
Feed Thru Lugs
Shunt-Trip MCB

New Panel
Isolated Ground Bus
Location
Mounting
Enclosure (NEMA)

LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD AMP	WIRE CONDUIT SIZE (Note 1)	TRIPPOLE (Note 2)	OKT # (Note 2)	PH # (Note 2)	TRIPPOLE (Note 2)	WIRE CONDUIT SIZE (Note 1)	LOAD AMP	LOAD KVA	LOAD TYPE	LOAD DESCRIPTION
SPARE					20 / 1	1	A	2	20 / 1	2	0.36	R	2 D.R. GFI WIP
4 D.R. Hallway Recept.	R	0.72	6.0	2#12,1#12G,1/2" C	20 / 1	3	B	4	20 / 1	10.0	1.20	MIS	Emergency Outside
3 D.R. GFCI WIP	R	0.54	4.5	2#12,1#12G,1/2" C	20 / 1	5	C	6	20 / 1	4.5	0.54	R	3 D.R. Hallway Recept
TV Recept (Rm. 145)	MIS	0.40	3.3	2#12,1#12G,1/2" C	20 / 1	7	A	8	20 / 1	3.0	0.36	R	2 D.R. Bath GFCI
4 D.R. Great Room Recept	R	0.72	6.0	2#12,1#12G,1/2" C	20 / 1	9	B	10	20 / 1	14.2	1.70	MT	Furnace Hallway #1 (FCU-1)
3 D.R. Great Room Recept	R	0.54	4.5	2#12,1#12G,1/2" C	20 / 1	11	C	12	20 / 1	14.2	1.70	MT	Furnace Hallway #2 (FCU-4)
Emergency Hallway	L	0.29	2.4	2#12,1#12G,1/2" C	20 / 1	13	A	14	20 / 1	3.0	0.36	R	2 D.R. GFCI WIP
SPARE					20 / 1	15	B	16	20 / 1				SPARE
SPARE					20 / 1	17	C	18	20 / 1				SPARE
6 D.R. Great Room Recept	R	1.08	9.0	2#12,1#12G,1/2" C	20 / 1	19	A	20	20 / 1	3.6	0.43	L	Attic Lighting
5 D.R. Great Room Recept	R	0.90	7.5	2#12,1#12G,1/2" C	20 / 1	21	B	22	25 / 2	16.8	1.7	C	A/C Hallway #2 (CU-4)
Wall Pack	L	0.26	2.1	2#12,1#12G,1/2" C	20 / 1	23	C	24		16.8	1.7	C	"16.8 FLA,3.5 KVA-Disc3A(2P)240V/NFNR
Jacuzzi	MIS	0.50	4.2	2#12,1#12G,1/2" C	20 / 1	25	A	26	40 / 2	23.5	2.4	C	A/C Hallway #1 (CU-1)
DRYER	MIS	2.5	24.0	3#10,1#10G,3/4" C	30 / 2	27	B	28		23.5	2.4	C	"23.5 FLA,4.9 KVA-Disc3A(2P)240V/NFNR
****Nema4-3R 30A-125250V-3P-4W-G	MIS	2.5	24.0		29	C	30	20 / 1		1.5	0.18	R	1 D.R. Fountain
					31	A	32	20 / 1					
					33	B	34	20 / 1					
					35	C	36	20 / 1					
					37	A	38	20 / 1					
					39	B	40	20 / 1					
					41	C	42	20 / 1					

PANEL "L2M" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	LOAD (KVA) CALCULATED	LOAD (KVA) CALCULATED	NEC CALCULATION REFERENCE
LIGHTING	L	1.25	1.0	1.2	125% of connected loads	
RECEPTACLES	R	1	6.3	6.3		
COOLING LOADS - HVAC	C	1	8.4	8.4	Cooling loads larger than heating	
HEATING LOADS - HVAC (non-coincident wooding)	H					
MOTOR	MT	1	3.4	3.4		
MISC. NON-CONTINUOUS LOADS	MIS	1	7.1	7.1		
25% LARGEST MOTOR (1.7 KVA)		0.25		0.4		
TOTAL LOAD (KVA)			26.2 KVA	26.8 KVA		
TOTAL LOAD (AMP AVG)			72.6 AMP	74.5 AMP	Calc'd Amps: PHA=58A, PHB=108A, PHC=124A, NEUR=12A	

208Y120V 3Ph 4W Full size neutral w/copper ground bus

PANEL "L5T"

Copper Bus Rating: 100 AMP
Mains Rating (M.C.B.): 100 AMP
1 unit of 483, 1 #8 G, 1 1/2" C
Feeder Ampacity = 100A

X MCB
MLO
Feed Thru Lugs
Shunt-Trip MCB

New Panel
Isolated Ground Bus
Location
Mounting
Enclosure (NEMA)

LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD AMP	WIRE CONDUIT SIZE (Note 1)	TRIPPOLE (Note 2)	OKT # (Note 2)	PH # (Note 2)	TRIPPOLE (Note 2)	WIRE CONDUIT SIZE (Note 1)	LOAD AMP	LOAD KVA	LOAD TYPE	LOAD DESCRIPTION
Recept 102	R	0.36	3.0	2#12,1#12G,1/2" C	20 / 1	1	A	2	20 / 1	10.0	1.20	MIS	Micro 108
Recept GFCI 108-107	R	0.36	3.0	2#12,1#12G,1/2" C	20 / 1	3	B	4	20 / 1	1.5	0.18	R	GFCI 104
GFCI WIP	R	0.36	3.0	2#12,1#12G,1/2" C	20 / 1	5	C	6	20 / 1	2.9	0.35	MIS	Ice Maker 108
Recept 102	R	0.36	3.0	2#12,1#12G,1/2" C	20 / 1	7	A	8	20 / 1	1.5	0.18	R	Recept 104
Lighting 101,104,108	L	0.85	7.1	2#12,1#12G,1/2" C	20 / 1	9	B	10	20 / 1	3.0	0.36	R	Recept 108
A/C (CU-6)	L	1.7	16.8	3#10,1#10G,1/2" (Note 3)	25 / 2	11	C	12	20 / 1	6.7	0.80	MIS	Coffee Maker GFCI
"16.8 FLA,3.5 KVA-Disc3A(2P)240V/NFNR		1.7	16.8		13	A	14	20 / 1		1.5	0.18	R	GFCI 104
Recept 101	R	0.72	6.0	2#12,1#12G,1/2" C	20 / 1	15	B	16	20 / 1	4.5	0.54	R	Recept 108
Exterior Lighting	L	0.19	1.6	2#12,1#12G,1/2" C	20 / 1	17	C	18	20 / 1	10.0	1.20	L	Fans
Furnace (FCU-6)	MT	1.70	14.2	2#12,1#12G,1/2" C	20 / 1	19	A	20	20 / 1	10.0	1.20	MT	Disposal 108
Gas Water Heater	MIS	0.20	1.7	2#12,1#12G,1/2" C	20 / 1	21	B	22	20 / 1	5.4	0.65	MIS	Refrigerator 108
Lighting 100,103,108	L	0.58	4.8	2#12,1#12G,1/2" C	20 / 1	23	C	24	20 / 1	5.4	0.65	MIS	Freezer 108
Mains Rating (M.C.B.)					100 / 3	25	A	26	20 / 1				SPACE
*** Disc3A(2P)240V/NFNR					27	B	28	20 / 1					SPACE
					29	C	30	20 / 1					SPACE
SPACE					31	A	32	20 / 1					SPACE
SPACE					33	B	34	20 / 1					SPACE
SPACE					35	C	36	20 / 1					SPACE
SPACE					37	A	38	20 / 1					SPACE
SPACE					39	B	40	20 / 1					SPACE
SPACE					41	C	42	20 / 1					SPACE

PANEL "L5T" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	LOAD (KVA) CALCULATED	LOAD (KVA) CALCULATED	NEC CALCULATION REFERENCE
RECEPTACLES	R	1	3.6	3.6		
MISC. NON-CONTINUOUS LOADS	MIS	1	3.9	3.9		
				3.5		
TOTAL LOAD (KVA)			16.7 KVA	17.8 KVA		
TOTAL LOAD (AMP AVG)			49.2 AMP	49.4 AMP	Calc'd Amps: PHA=13A, PHB=35A, PHC=12A, NEUR=15A	

208Y120V 3Ph 4W Full size neutral w/copper ground bus Egrt & Service Entrance Rated
OPTIMUM CARE, SUGAR LAND, TX

DIST. PANELBOARD - "DP1"

Copper Bus Rating: 600 Amp
Mains Rating (MCB w/Ground Fault Protection): 600 Amp
3 units of 4800 KCM, 1 #30 G, 3 1/2" condit
Feeder Ampacity = 1140A

X MCB
MLO
Circuit Breaker (CB)
Fused Switch (FS)
Shunt-trip MCB

Status: NEW
Isolated Ground Bus
Enclosure (NEMA): 3R
A.I.C. (KA): 22 KA
Mounting: Concrete Pad

OKT	LOAD DESCRIPTIONS	LOAD Type	CONN. KVA	CONN. AMP	Load Type	O.C. Amp	BKR	POLES	Phase	PHASE WIRES, NEUTRAL & GRD & CONDUIT AMPACITY	FEEDER AMPACITY	
1	SPD (Externally Mounted Surge-Protective Device)	MIS	---	---	CB	100	3P	A B C	1	run 4#3, 1#8G, 1 1/2" C	100 Amp	
2	Dist Pnl "DP1"	---	137.3	381.1	---	CB	400	3P	A B C	1	run 4#600 KCM, 1 #3 G, 3/2" condit	420 Amp
3	Panel "L2A"	---	19.4	54.0	---	CB	150	3P	A B C	1	run 4#10, 1 #6 G, 3/2" C	150 Amp
4	Panel "L2M"	---	47.8	132.8	---	CB	225	3P	A B C	1	run 4#40, 1 #4 G, 1 1/2" C	230 Amp
5	Panel "GAR"	---	4.8	13.2	---	CB	100	3P	A B C	1	run 4#20, 1 #6 G, 3/2" C	175 Amp
6	SPARE				Y	CB	225	3P	A B C			
7	SPARE				Y	CB	225	3P	A B C			
8	SPARE				Y	CB	100	3P	A B C			
9	SPARE				Y	CB	100	3P	A B C			
10	SPARE				Y	CB	100	3P	A B C			
11	SPARE				Y	CB	100	3P	A B C			
12	SPARE				Y	CB	100	3P	A B C			

DIST. PANELBOARD - "DP1" LOAD ANALYSIS

LOAD DESCRIPTION	LOAD Type	DEMAND FACTOR	CONNECTED	LOAD (KVA) CALCULATED	LOAD (KVA) CALCULATED	NEC CALCULATION REFERENCE
LIGHTING	L	1.25	10.5	13.1	125% of connected loads	
RECEPTACLES	R	---	25.7	17.9	NEC2011 Art. 220.44	
COOLING LOADS	C	1	64.0	64.0	Cooling loads larger than heating	
HEATING LOADS (non-coincident wooding)	H					
MOTOR	MT	1	31.8	31.8		
MISC. NON-CONTINUOUS LOADS	MIS	1	65.2	65.2		
KITCHEN LOADS	K	0.65	14.8	9.6	NEC2011 Art. 220.56	
OUTSIDE LIGHTING	OL	1.25	1.1	1.4		
NON-COINCIDENT LOADS	NC					
TOTAL LOAD (KVA)			213.2 KVA	231.1 KVA		
TOTAL LOAD (AMP AVG)			591.7 AMP	563.8 AMP	PHA=692A, PHB=358A, PHC=458A, NEUR=93A	

208Y120V 3Ph 4W Full size neutral w/copper ground bus (Fed from DPE)

PANEL "L2A"

Copper Bus Rating: 100 AMP
Mains Rating (M.C.B.): 100 AMP
1 unit of 483, 1 #8 G, 1 1/2" C
Feeder Ampacity = 100A

X MCB
MLO
Feed Thru Lugs
Shunt-Trip MCB

New Panel
Isolated Ground Bus
Location
Mounting
Enclosure (NEMA)

LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD AMP	WIRE CONDUIT SIZE (Note 1)	TRIPPOLE (Note 2)	OKT # (Note 2)	PH # (Note 2)	TRIPPOLE (Note 2)	WIRE CONDUIT SIZE (Note 1)	LOAD AMP	LOAD KVA	LOAD TYPE	LOAD DESCRIPTION	
4 D.R. Bedroom #5 Recept (Rm 147)	R	0.72	6.0	2#12,1#12G,1/2" C	20 / 1	1	A	2	20 / 1	14.2	1.70	MIS	Furnace Bedroom #2 (FCU-2) (Rm. 142-144, 156-158,161)	
4 D.R. Bedroom #2 Recept (Rm 155)	R	0.72	6.0	2#12,1#12G,1/2" C	20 / 1	3	B	4	20 / 1	14.2	1.70	MIS	Furnace Bedroom #1 (FCU-3) (Rm. 147-148,151-155)	
Bedroom #5 Lighting (Rm 147,148,150-151)	L	0.96	8.0	2#12,1#12G,1/2" C	20 / 1	5	C	6	20 / 1	6.0	0.72	R	4 D.R. Bedroom #1 Recept. (Rm. 152)	
4 D.R. Office Recept. - W/H (Rm 161,163)	L	0.72	6.0	2#12,1#12G,1/2" C	20 / 1	7	A	8	20 / 1	3.7	0.45	L	Hallway Lighting (Rm 141,146)	
4 D.R. Bedroom #6 Recept (Rm 144)	R	0.72	6.0	2#12,1#12G,1/2" C	20 / 1	9	B	10	20 / 1	4.5	0.54	R	3 D.R. Bathroom GFCI (Rm 148,153-154)	
4 D.R. Bedroom #4 Recept (Rm 158)	R	0.72	6.0	2#12,1#12G,1/2" C	20 / 1	11	C	12	20 / 1				L	Step Lights
4 D.R. Bedroom #3 Recept (Rm 156-158)	R	0.72	6.0	2#12,1#12G,1/2" C	20 / 1	13	A	14	20 / 1	1.6	0.19	L	Great Room Lighting (Rm. 145)	
Bedrooms #6/7 Lighting (142-144)	L	0.45	3.7	2#12,1#12G,1/2" C	20 / 1	15	B	16	40 / 2	26.2	2.7	C	A/C Bedroom #2 (CU-3)	
4 D.R. Bedroom #7 Recept (Rm 142)	R	0.72	6.0	2#12,1#12G,1/2" C	20 / 1	17	C	18	20 / 1	26.2	2.7	C	"26.2 FLA,4.9 KVA-Disc3A(2P)240V/NFNR	
Bedrooms #3/4 Lighting (Rm 156-158, 161-163)	L	0.64	5.3	2#12,1#12G,1/2" C	20 / 1	19	A	20	40 / 2	368,1#10G,1" C (Note 3)	23.5	2.4	C	A/C Bedroom #1 (CU-3)
Dining Room Lighting (Rm 138)	L	0.58	3.2	2#12,1#12G,1/2" C	20 / 1	21	B	22		23.5	2.4	C	"23.5 FLA,4.9 KVA-Disc3A(2P)240V/NFNR	
Ceiling Fan Chandelier (Rm 145)	L	0.90	7.5	2#12,1#12G,1/2" C	20 / 1	23	C	24	20 / 1	1.6	0.19	L	Great Room Lighting (Rm. 145)	
Washer	MIS	1.20	10.0	2#12,1#12G,1/2" C	20 / 1	25	A	26	20 / 1				SPACE	
SPARE					20 / 1	27	B	28	20 / 1				SPACE	
SPARE					20 / 1	29	C	30	20 / 1				SPACE	
SPARE					20 / 1	31	A	32	20 / 1				SPACE	
SPARE					20 / 1	33	B	34	20 / 1				SPACE	
SPARE					20 / 1	35	C	36	20 / 1				SPACE	
SPARE					20 / 1	37	A	38	20 / 1				SPACE	
SPARE					20 / 1	39	B	40	20 / 1				SPACE	
SPARE					20 / 1	41	C	42	20 / 1				SPACE	

PANEL "L2A" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	LOAD (KVA) CALCULATED	LOAD (KVA) CALCULATED	NEC CALCULATION REFERENCE
LIGHTING	L	1.25	4.9	6.1	125% of connected loads	
RECEPTACLES	R	1	5.6	5.6		
COOLING LOADS - HVAC	C	1	10.3	10.3	Cooling loads larger than heating	
HEATING LOADS - HVAC (non-coincident wooding)	H					
MISC. NON-CONTINUOUS LOADS	MIS	1	4.6	4.6		
TOTAL LOAD (KVA)			25.4 KVA	26.6 KVA		
TOTAL LOAD (AMP AVG)			70.5 AMP	73.9 AMP	Calc'd Amps: PHA=81A, PHB=48A, PHC=65A, NEUR=17A	

208Y120V 3Ph 4W Full size neutral w/copper ground bus (Fed from DPE)

PANEL "L5A"

Copper Bus Rating: 100 AMP
Mains Rating (M.C.B.): 100 AMP
1 unit of 483, 1 #8 G, 1 1/2" C
Feeder Ampacity = 100A

X MCB

208Y120V 3PH 4W All size neutral, w/copper ground bus

PANEL "L3M"
 Copper Bus Rating 150 AMP
 Mains Rating (M.L.O.) 150 AMP
 1 run of 4#10, 1 #6 G, 3" C
 Feeder Ampacity = 150A

MCB New Panel
 X M.L.O. Isolated Ground Bus
 X Feed Thru Lugs Location
 SEE PLAN Location
 Flush Mounting
 Shunt-Trip MCB Surface
 10 KA A.I.C. 1 Enclosure (NEMA)

LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD AMP	WIRE/CONDUIT SIZE (Note 1)	TRIPPOLE (Note 2)	CKT # (Note 2)	PH # (Note 2)	TRIPPOLE (Note 2)	WIRE/CONDUIT SIZE (Note 1)	LOAD AMP	LOAD KVA	TYPE	LOAD DESCRIPTION
CU-17	C	2.4	23.5	2#8, 1#10G, 3/4" C (Note 3)	40 / 2	1 A	2	20 / 1	2#12, 1#12G, 1/2" C	10.0	1.20	MIS	AQUARIUM 117A
**23.5 FLA-Disc30A2P240VNFN3R	C	2.4	23.5		3 B	4	20 / 1	2#12, 1#12G, 1/2" C	10.0	1.20	MIS	WASHER 141A	
CU-18	C	2.4	23.5	2#8, 1#10G, 3/4" C (Note 3)	40 / 2	5 C	6	30 / 2	2#10, 1#10G, 1/2" C	20.0	2.11	MIS	DRYER
**23.5 FLA-Disc30A2P240VNFN3R	C	2.4	23.5		7 A	8			20.0	2.11	MIS	**30A-125250V-3P-4W-G.NEMA 14-30R	
CU-19	C	2.7	26.2	2#8, 1#10G, 3/4" C (Note 3)	40 / 2	9 B	10	20 / 1	2#12, 1#12G, 1/2" C	10.0	1.20	MT	FOUNTAIN
**28.2 FLA-Disc30A2P240VNFN3R	C	2.7	26.2		11 C	12	20 / 1	2#12, 1#12G, 1/2" C	10.0	1.20	MT	FOUNTAIN	
CU-20	C	1.7	16.8	2#8, 1#10G, 1/2" C (Note 3)	25 / 2	13 A	14	20 / 1	2#12, 1#12G, 1/2" C	5.2	0.62	MT	EF-22,23,24,25,26,27,28
**16.8 FLA-Disc30A2P240VNFN3R	C	1.7	16.8		15 B	16	20 / 1	2#12, 1#12G, 1/2" C	3.0	0.36	R	EXTRIOR RECS (2)	
CU-16	C	3.6	34.2	2#8, 1#10G, 3/4" C (Note 3)	50 / 2	17 C	18	20 / 1	2#12, 1#12G, 1/2" C	4.5	0.54	R	EQPT RECS
**34.2 FLA-Disc30A2P240VNFN3R	C	3.6	34.2		19 A	20	20 / 1	2#12, 1#12G, 1/2" C	4.2	0.50	MIS	BAS	
FCU-17.34HP Disc30A2P240VNI	MT	1.7	13.8	2#12, 1#12G, 3/4" C	20 / 1	21 B	22	20 / 1	2#12, 1#12G, 1/2" C	2.1	0.25	MIS	DAMPER
FCU-18.34HP Disc30A2P240VNI	MT	1.7	13.8	2#12, 1#12G, 3/4" C	20 / 1	23 C	24	20 / 1	2#12, 1#12G, 1/2" C	5.0	0.59	L	MECH/L LIGHTING
FCU-19.34HP Disc30A2P240VNI	MT	1.7	13.8	2#12, 1#12G, 3/4" C	20 / 1	25 A	26	20 / 1					SPARE
FCU-20.34HP Disc30A2P240VNI	MT	1.7	13.8	2#12, 1#12G, 3/4" C	20 / 1	27 B	28	20 / 1	2#12, 1#12G, 1/2" C	2.1	0.25	MIS	FIRE ALARM PANEL
FCU-26.34HP Disc30A2P240VNI	MT	1.7	13.8	2#12, 1#12G, 3/4" C	20 / 1	29 C	30	20 / 1					SPARE
MAF-2.12HP Disc30A2P240VNI	MT	1.2	9.8	2#12, 1#12G, 3/4" C	20 / 1	31 A	32	/ 1					SPARE
KEF-2.34HP Disc30A2P240VNI	MT	1.7	13.8	2#12, 1#12G, 3/4" C	20 / 1	33 B	34	/ 1					SPARE
GENERATOR LTG	MIS	0.05	0.5	2#12, 1#12G, 1/2" C	20 / 1	35 C	36	/ 1					SPARE
GENERATOR CHARGING	MIS	0.25	2.1	2#12, 1#12G, 1/2" C	20 / 1	37 A	38	/ 1					SPD (Externally Mounted Surge-Protective Device)
GENERATOR HEATER	MIS	1.2	11.5	2#10, 1#10G, 1/2" C (Note 3)	30 / 2	39 B	40	/ 1					SPARE
**2.4KW-Disc30A2P240VNFN3R	MIS	1.2	11.5		41 C	42							SPARE

PANEL "L3M" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	LOAD (KVA)	CALCULATED	NEC CALCULATION REFERENCE
LIGHTING	L	1.25	0.8	0.7	12% of connected loads	
RECEPTACLES	R	1	0.9	0.9		
COOLING LOADS	C	1	25.8	25.8	Cooling loads larger than heating	
HEATING LOADS (non-coincident w/cooling)	H					
MOTOR	MT	1	14.1	14.1		
MISC. NON-CONTINUOUS LOADS	MIS	1	10.3	10.3		
2% LARGEST MOTOR (1.7 KVA)		0.25		0.4		
TOTAL LOAD (KVA)			51.7 KVA	52.3 KVA		
TOTAL LOAD (AMP AVG)			143.6 AMP	145.1 AMP		Calc Amps: PNA=164A, PNB=145A, PNC=185A, Neut=23A

208Y120V 3PH 4W All size neutral, w/copper ground bus

PANEL "K2"
 Copper Bus Rating 100 AMP
 Mains Rating (M.L.O.) 100 AMP
 1 run of 4#10, 1 #6 G, 3" C
 Feeder Ampacity = 200A

MCB New Panel
 X M.L.O. Isolated Ground Bus
 X Feed Thru Lugs Location
 SEE PLAN Location
 Flush Mounting
 Shunt-Trip MCB Surface
 10 KA A.I.C. 1 Enclosure (NEMA)

LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD AMP	WIRE/CONDUIT SIZE (Note 1)	TRIPPOLE (Note 2)	CKT # (Note 2)	PH # (Note 2)	TRIPPOLE (Note 2)	WIRE/CONDUIT SIZE (Note 1)	LOAD AMP	LOAD KVA	TYPE	LOAD DESCRIPTION
RANGE RECL (SHUT TRIP)	R	0.18	1.5	2#12, 1#12G, 1/2" C	20 / 1	1 A	2	20 / 1	2#12, 1#12G, 1/2" C	7.1	0.85	K	FREEZER
SOLENOID POWER	MIS	0.15	1.3	2#12, 1#12G, 1/2" C	20 / 1	3 B	4	20 / 1	2#12, 1#12G, 1/2" C	7.1	0.85	K	FREEZER
SUPPRESSION SYSTEM	MIS	0.15	1.3	2#12, 1#12G, 1/2" C	20 / 1	5 C	6	20 / 1	2#12, 1#12G, 1/2" C	5.4	0.65	K	REFRIGERATOR
SPARE					20 / 1	7 A	8	20 / 1	2#12, 1#12G, 1/2" C	5.4	0.65	K	REFRIGERATOR
DISH WASHER	K	1.80	15.0	2#12, 1#12G, 1/2" C	20 / 1	9 B	10	20 / 1	2#12, 1#12G, 1/2" C	3.0	0.36	K	KITCHEN RECEPTACLES
DISH WASHER	K	1.80	15.0	2#12, 1#12G, 1/2" C	20 / 1	11 C	12	20 / 1	2#12, 1#12G, 1/2" C	3.0	0.36	K	KITCHEN RECEPTACLES
SPARE					20 / 1	13 A	14	20 / 1	2#12, 1#12G, 1/2" C	3.0	0.36	K	KITCHEN RECEPTACLES
SPARE					20 / 1	15 B	16	20 / 1	2#12, 1#12G, 1/2" C	3.0	0.36	K	KITCHEN RECEPTACLES
SPARE					20 / 1	17 C	18	20 / 1	2#12, 1#12G, 1/2" C	3.0	0.36	K	KITCHEN RECEPTACLES
SPARE					20 / 1	19 A	20	20 / 1	2#12, 1#12G, 1/2" C	3.0	0.36	K	KITCHEN RECEPTACLES
SPARE					20 / 1	21 B	22	20 / 1	2#12, 1#12G, 1/2" C	3.0	0.36	K	KITCHEN RECEPTACLES
SPARE					20 / 1	23 C	24	20 / 1	2#12, 1#12G, 1/2" C	2.1	0.25	MIS	PC
SPARE					20 / 1	25 A	26	20 / 1					SPARE
SPARE					20 / 1	27 B	28	20 / 1					SPARE
SPARE					20 / 1	29 C	30	/ 1					SPARE
SPARE					20 / 1	31 A	32	/ 1					SPARE
SPARE					20 / 1	33 B	34	/ 1					SPARE
SPARE					20 / 1	35 C	36	/ 1					SPARE
SPARE					20 / 1	37 A	38	/ 1					SPARE
SPARE					20 / 1	39 B	40	/ 1					SPARE
SPARE					20 / 1	41 C	42	/ 1					SPARE

PANEL "K2" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	LOAD (KVA)	CALCULATED	NEC CALCULATION REFERENCE
RECEPTACLES	R	1	0.2	0.2		
MISC. NON-CONTINUOUS LOADS	MIS	1	0.6	0.6		
KITCHEN LOADS	K	0.85	9.1	5.9	NEC2011 Art. 220.56	
TOTAL LOAD (KVA)			9.9 KVA	6.7 KVA		
TOTAL LOAD (AMP AVG)			27.3 AMP	18.5 AMP		Calc Amps: PNA=25A, PNB=18A, PNC=21A, Neut=18A

208Y120V 3PH 4W All size neutral, w/copper ground bus

PANEL "L3A"
 Copper Bus Rating 225 AMP
 Mains Rating (M.L.O.) 225 AMP
 1 run of 4#10, 1 #4 G, 3 1/2" C
 Feeder Ampacity = 230A

MCB New Panel
 X M.L.O. Isolated Ground Bus
 X Feed Thru Lugs Location
 SEE PLAN Location
 Flush Mounting
 Shunt-Trip MCB Surface
 22 KA A.I.C. 1 Enclosure (NEMA)

LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD AMP	WIRE/CONDUIT SIZE (Note 1)	TRIPPOLE (Note 2)	CKT # (Note 2)	PH # (Note 2)	TRIPPOLE (Note 2)	WIRE/CONDUIT SIZE (Note 1)	LOAD AMP	LOAD KVA	TYPE	LOAD DESCRIPTION
EXTERIOR REC (2)	R	0.36	3.0	2#12, 1#12G, 1/2" C	20 / 1	1 A	2	20 / 1	2#12, 1#12G, 1/2" C	6.0	0.72	MIS	TV REC (2) 120B
GF RR (2) 122A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20 / 1	3 B	4	20 / 1	2#12, 1#12G, 1/2" C	3.0	0.36	MIS	TV REC (1) 127B
BEDROOM REC (4) 123A	R	0.72	6.0	2#12, 1#12G, 1/2" C	20 / 1	5 C	6	20 / 1	2#12, 1#12G, 1/2" C	6.0	0.72	MIS	TV REC (2) 116B
GF & (3) REC 123A	R	0.72	6.0	2#12, 1#12G, 1/2" C	20 / 1	7 A	8	20 / 1	2#12, 1#12G, 1/2" C	6.0	0.72	MIS	TV REC (2) 128B
BEDROOM REC (2) 127A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20 / 1	9 B	10	20 / 1	2#12, 1#12G, 1/2" C	6.0	0.72	MIS	GREAT ROOM TV REC (2) 117B
BEDROOM REC (4) 116A	R	0.72	6.0	2#12, 1#12G, 1/2" C	20 / 1	11 C	12	20 / 1	2#12, 1#12G, 1/2" C	4.2	0.50	MIS	PCS (2) 117B & 125B
GF RR (2) 115A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20 / 1	13 A	14	20 / 1	2#12, 1#12G, 1/2" C	7.3	0.88	L	LIGHTING 124B
BEDROOM REC (4) 128A	R	0.72	6.0	2#12, 1#12G, 1/2" C	20 / 1	15 B	16	20 / 1	2#12, 1#12G, 1/2" C	10.6	1.28	L	LIGHTING 128B
BEDROOM REC (4) 128A	R	0.72	6.0	2#12, 1#12G, 1/2" C	20 / 1	17 C	18	20 / 1	2#12, 1#12G, 1/2" C	0.8	0.10	L	LIGHTING 128B
GREAT ROOM REC (9) 117A	R	1.26	9.0	2#12, 1#12G, 1/2" C	20 / 1	19 A	20	20 / 1	2#12, 1#12G, 1/2" C	9.8	1.18	L	LIGHTING 137B
GREAT ROOM REC (5) 117A	R	0.90	7.5	2#12, 1#12G, 1/2" C	20 / 1	21 B	22	20 / 1	2#12, 1#12G, 1/2" C	4.4	0.53	L	LIGHTING 117B
GREAT ROOM REC (2) 117A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20 / 1	23 C	24	20 / 1	2#12, 1#12G, 1/2" C	7.5	0.90	M	FANS
GREAT ROOM REC (2) 117A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20 / 1	25 A	26	20 / 1					SPARE
CORRIDOR REC (4) 118A	R	0.72	6.0	2#12, 1#12G, 1/2" C	20 / 1	27 B	28	20 / 1					SPARE
CONVENIENCE REC (2) 125A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20 / 1	29 C	30	20 / 1					SPARE
GF & (2) REC 110A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20 / 1	31 A	32	/ 1					SPACE
EXTERIOR REC (2)	R	0.36	3.0	2#12, 1#12G, 1/2" C	20 / 1	33 B	34	/ 1					SPACE
EXTERIOR REC (2)	R	0.36	3.0	2#12, 1#12G, 1/2" C	20 / 1	35 C	36	/ 1					SPACE
EXTERIOR REC (1)	R	0.18	1.5	2#12, 1#12G, 1/2" C	20 / 1	37 A	38	60 / 3	4#6, 1#10G, 1 1/4" C	0.0	0.0	MIS	SPD (Externally Mounted Surge-Protective Device)
EXTERIOR LTG	OL	0.51	4.3	2#12, 1#12G, 1/2" C	20 / 1	39 B	40	/ 1					SPARE
SPARE					20 / 1	41 C	42	/ 1					SPARE

PANEL "L3A" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	LOAD (KVA)	CALCULATED	NEC CALCULATION REFERENCE
LIGHTING	L	1.25	4.0	4.9	12% of connected loads	
RECEPTACLES	R	---	10.1	10.0	NEC2011 Art. 220.44, First 100kVA @ 100%, Remainder @ 50%	
MISC. NON-CONTINUOUS LOADS	MIS	1	3.7	3.7		
OUTSIDE LIGHTING	OL	1.25	0.5	0.6		
TOTAL LOAD (KVA)			18.3 KVA	18.4 KVA		
TOTAL LOAD (AMP AVG)			50.8 AMP	53.7 AMP		Calc Amps: PNA=45A, PNB=41A, PNC=38A, Neut=18A

208Y120V 3PH 4W All size neutral, w/copper ground bus

OPTIMUM CARE, HOUSTON TX
DIST. PANELBOARD

208Y120V 3Ph 4W Full size neutral, w/copper ground bus

PANEL "L4M"

Copper Bus Rating: 225 AMP
Mains Rating (M.C.B.): 225 AMP
1 run of 4#40, 1 #4 G, 3 1/2" C.
Feeder Ampacity = 230A

LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD AMP	WIRE/CONDUIT SIZE (Note 1)	TRIPPOLE (Note 2)	CKT # (Note 3)	PH # (Note 3)	WIRE/CONDUIT SIZE (Note 1)	LOAD AMP	LOAD KVA	TYPE	LOAD DESCRIPTION
CU-12	C	2.4	23.5	2#6, 1#10G, 3/4" C (Note 3)	40	12	1	20 #12, 1#12G, 1/2" C	10.0	1.20	MIS	AQUARIUM
*23.5 FLA-Disc3A2P240VNFANR	C	2.4	23.5		3	9	4	20 #12, 1#12G, 1/2" C	10.0	1.20	MIS	WASHER
CU-15	C	2.4	23.5	2#6, 1#10G, 3/4" C (Note 3)	40	12	5	20 #12, 1#12G, 1/2" C	20.0	2.1	MIS	DRYER
*23.5 FLA-Disc3A2P240VNFANR	C	2.4	23.5		7	4	8	20 #12, 1#12G, 1/2" C	20.0	2.1	MIS	**30A-125/250V-3P-4W-G-NEMA 14-30R
CU-14	C	2.7	26.2	2#6, 1#10G, 3/4" C (Note 3)	40	12	9	20 #12, 1#12G, 1/2" C	10.0	1.20	MT	FOUNTAIN
*26.2 FLA-Disc3A2P240VNFANR	C	2.7	26.2		11	12	20	20 #12, 1#12G, 1/2" C	10.0	1.20	MT	FOUNTAIN
CU-15	C	1.7	16.8	2#10, 1#10G, 1/2" C (Note 3)	25	12	13	20 #12, 1#12G, 1/2" C	4.5	0.53	MT	EXHAUST FANS EF-16, 17, 18, 19, 20, 21
*16.8 FLA-Disc3A2P240VNFANR	C	1.7	16.8		15	16	20	20 #12, 1#12G, 1/2" C	3.0	0.36	R	EXTERIOR RECS (2)
SPACE					11	17	18	20 #12, 1#12G, 1/2" C	3.0	0.36	R	EQPT RECS (2)
SPACE					11	19	20	20 #12, 1#12G, 1/2" C	4.2	0.50	MT	BAS
FCU-12,3AMP Disc3A2P240VNI	MT	1.7	13.8	2#12, 1#12G, 3/4" C	20	11	21	20 #12, 1#12G, 1/2" C	2.1	0.25	MT	DAMPER
FCU-13,3AMP Disc3A2P240VNI	MT	1.7	13.8	2#12, 1#12G, 3/4" C	20	11	23	20 #12, 1#12G, 1/2" C	3.6	0.43	L	MECH. LIGHTING
FCU-14,3AMP Disc3A2P240VNI	MT	1.7	13.8	2#12, 1#12G, 3/4" C	20	11	25	20 #12, 1#12G, 1/2" C	2.1	0.25	MT	RECIRC PUMP RCP-1
FCU-15,3AMP Disc3A2P240VNI	MT	1.7	13.8	2#12, 1#12G, 3/4" C	20	11	27	20 #12, 1#12G, 1/2" C	2.1	0.25	MIS	FIRE ALARM PANEL
SPACE					20	11	29	20 #12, 1#12G, 1/2" C				SPACE
SPACE					20	11	31	20 #12, 1#12G, 1/2" C				SPACE
SPACE					20	11	33	20 #12, 1#12G, 1/2" C				SPACE
SPACE					20	11	35	20 #12, 1#12G, 1/2" C				SPACE
SPACE					11	37	38	60 #3 4#6, 1#10G, 1 1/4" C	0.0	0.0	MIS	SPD (Externally Mounted Surge-Protective Device)
SPACE					11	39	40		0.0	0.0	MIS	***
SPACE					11	41	42		0.0	0.0	MIS	***

PANEL "L4M" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	CALCULATED	NEC CALCULATION REFERENCE
LIGHTING	L	1.25	0.4	0.5	125% of connected loads
RECEPTACLES	R	1	0.7	0.7	
COOLING LOADS	C	1	18.7	18.7	Cooling loads larger than heating
HEATING LOADS (non-coincident w/cooling)	H				
MOTOR	MT	1	10.6	10.6	
MISC. NON-CONTINUOUS LOADS	MIS	1	6.8	6.8	
2% LARGEST MOTOR		0.25		0.4	
TOTAL LOAD (KVA)			37.2 KVA	37.8 KVA	
TOTAL LOAD (AMP AVG)			103.4 AMP	104.8 AMP	Conf Amps: P14-118A, P18-123A, P1C-132A, Nema-13A

208Y120V 3Ph 4W Full size neutral, w/copper ground bus

PANEL "L4A"

Copper Bus Rating: 225 AMP
Mains Rating (M.C.B.): 225 AMP
1 run of 4#40, 1 #4 G, 3 1/2" C.
Feeder Ampacity = 230A

LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD AMP	WIRE/CONDUIT SIZE (Note 1)	TRIPPOLE (Note 2)	CKT # (Note 3)	PH # (Note 3)	WIRE/CONDUIT SIZE (Note 1)	LOAD AMP	LOAD KVA	TYPE	LOAD DESCRIPTION
EXTERIOR REC (2)	R	0.36	3.0	2#12, 1#12G, 1/2" C	20	11	1	20 #12, 1#12G, 1/2" C	6.0	0.72	MIS	TV REC (2) 120A
GF RR (2) 122A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20	11	3	20 #12, 1#12G, 1/2" C	3.0	0.36	MIS	TV REC (1) 127A
BEDROOM REC (2) 123A	R	0.72	6.0	2#12, 1#12G, 1/2" C	20	11	5	20 #12, 1#12G, 1/2" C	6.0	0.72	MIS	TV REC (2) 116A
GF & (3) REC 123A	R	0.72	6.0	2#12, 1#12G, 1/2" C	20	11	7	20 #12, 1#12G, 1/2" C	6.0	0.72	MIS	TV REC (2) 128A
BEDROOM REC (2) 127A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20	11	9	20 #12, 1#12G, 1/2" C	6.0	0.72	MIS	GREAT ROOM TV REC (2) 117A
BEDROOM REC (4) 116A	R	0.72	6.0	2#12, 1#12G, 1/2" C	20	11	11	20 #12, 1#12G, 1/2" C	4.2	0.50	MIS	PCS (2) 117A & 125A
GF RR (2) 115A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20	11	13	20 #12, 1#12G, 1/2" C	7.3	0.88	L	LIGHTING 124A
BEDROOM REC (4) 128A	R	0.72	6.0	2#12, 1#12G, 1/2" C	20	11	15	20 #12, 1#12G, 1/2" C	10.6	1.28	L	LIGHTING 128A
BEDROOM REC (4) 128A	R	0.72	6.0	2#12, 1#12G, 1/2" C	20	11	17	20 #12, 1#12G, 1/2" C	0.8	0.10	L	LIGHTING 128A
GREAT ROOM REC (6) 117A	R	1.08	9.0	2#12, 1#12G, 1/2" C	20	11	19	20 #12, 1#12G, 1/2" C	9.8	1.18	L	LIGHTING 137A
GREAT ROOM REC (2) 117A	R	0.90	7.5	2#12, 1#12G, 1/2" C	20	11	21	20 #12, 1#12G, 1/2" C	4.4	0.53	L	LIGHTING 177A
GREAT ROOM REC (2) 117A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20	11	23	20 #12, 1#12G, 1/2" C	7.5	0.90	M	FANS
GREAT ROOM REC (2) 117A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20	11	25	20 #12, 1#12G, 1/2" C				SPACE
CORRIDOR REC (4) 118A	R	0.72	6.0	2#12, 1#12G, 1/2" C	20	11	27	20 #12, 1#12G, 1/2" C				SPACE
CONVENIENCE REC (2) 125A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20	11	29	20 #12, 1#12G, 1/2" C				SPACE
GF & (2) REC 119A	R	0.36	3.0	2#12, 1#12G, 1/2" C	20	11	31	20 #12, 1#12G, 1/2" C				SPACE
EXTERIOR REC (2)	R	0.36	3.0	2#12, 1#12G, 1/2" C	20	11	33	20 #12, 1#12G, 1/2" C				SPACE
EXTERIOR REC (2)	R	0.36	3.0	2#12, 1#12G, 1/2" C	20	11	35	20 #12, 1#12G, 1/2" C				SPACE
EXTERIOR REC (1)	R	0.18	1.5	2#12, 1#12G, 1/2" C	20	11	37	20 #12, 1#12G, 1/2" C	0.0	0.0	MIS	SPD (Externally Mounted Surge-Protective Device)
SPACE					20	11	39	20 #12, 1#12G, 1/2" C	0.0	0.0	MIS	***
SPACE					20	11	41	20 #12, 1#12G, 1/2" C	0.0	0.0	MIS	***

PANEL "L4A" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	CALCULATED	NEC CALCULATION REFERENCE
LIGHTING	L	1.25	4.0	4.9	125% of connected loads
RECEPTACLES	R	1	10.1	10.0	NEC2011 Art. 220.44, First 100VA @100%, Remainder @50%
MISC. NON-CONTINUOUS LOADS	MIS	1	3.7	3.7	
TOTAL LOAD (KVA)			17.8 KVA	18.7 KVA	
TOTAL LOAD (AMP AVG)			49.3 AMP	52.0 AMP	Conf Amps: P14-118A, P18-123A, P1C-132A, Nema-13A

208Y120V 3Ph 4W Full size neutral, w/copper ground bus

PANEL "GAR"

Copper Bus Rating: 100 AMP
Mains Rating (M.C.B.): 100 AMP
1 run of 4#60, 1 #6 G, 3" C.
Feeder Ampacity = 175A

LOAD DESCRIPTION	TYPE	LOAD KVA	LOAD AMP	WIRE/CONDUIT SIZE (Note 1)	TRIPPOLE (Note 2)	CKT # (Note 3)	PH # (Note 3)	WIRE/CONDUIT SIZE (Note 1)	LOAD AMP	LOAD KVA	TYPE	LOAD DESCRIPTION
LIGHTING	L	0.49	4.1	2#12, 1#12G, 1/2" C	20	11	1	20 #12, 1#12G, 1/2" C	16.5	1.7	MIS	COMPRESSOR CU-21
RECS	R	0.36	3.0	2#12, 1#12G, 1/2" C	20	11	3	20 #12, 1#12G, 1/2" C	16.5	1.7	MIS	**16.5 FLA-Disc3A2P240VNFANR
RECS	R	0.36	3.0	2#12, 1#12G, 1/2" C	20	11	5	20 #12, 1#12G, 1/2" C				SPACE
SPACE					20	11	7	20 #12, 1#12G, 1/2" C				SPACE
SPACE					11	9	10	20 #12, 1#12G, 1/2" C				SPACE
SPACE					11	11	12	20 #12, 1#12G, 1/2" C				SPACE

PANEL "GAR" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	CALCULATED	NEC CALCULATION REFERENCE
LIGHTING	L	1.25	0.5	0.6	125% of connected loads
RECEPTACLES	R	1	0.7	0.7	
TOTAL LOAD (KVA)			4.6 KVA	4.9 KVA	
TOTAL LOAD (AMP AVG)			12.9 AMP	13.2 AMP	Conf Amps: P14-118A, P18-123A, P1C-132A, Nema-13A

208Y120V 3Ph 4W Full size neutral, w/copper ground bus Eqtg Is Service Entrance Rated

OPTIMUM CARE, HOUSTON TX

DIST. PANELBOARD - "DP2"

Copper Bus Rating: 600 Amp
Mains Rating (M.C.B w/Ground Fault Protection): 600 Amp
3 runs of 4#500 KCMIL, 1 #3/0 G, 4" conduit
Feeder Ampacity = 1140A
(All wires shall have THHN/THWN insulation unless noted otherwise)

CKT.	LOAD DESCRIPTIONS	Load Type	CONN. KVA	CONN. AMP	Code	OC. Type	BKR	POLES	Phase	PHASE WIRES, NEUTRAL & GRD & CONDUIT SIZE	FEEDER AMPACITY
1	SPD (Externally Mounted Surge-Protective Device)	MIS								1 run 4#500 KCMIL, 1 1/2" C	100 Amp
2	Dist Pnl "DP2"		77.4	214.7		CB	100	3P	A B C	1 run 4#500 KCMIL, 1 1/2" C	420 Amp
3	Panel "L4M"		18.7	52.0		CB	225	3P	A B C	1 run 4#40, 1 #4 G, 3 1/2" C	230 Amp
4	Panel "L4M"		37.8	104.8		CB	225	3P	A B C	1 run 4#40, 1 #4 G, 3 1/2" C	230 Amp
5	SPACE					Y	CB	225	3P	A B C	
6	SPACE					Y	CB	225	3P	A B C	
7	SPACE					Y	CB	225	3P	A B C	
8	SPACE					Y	CB	225	3P	A B C	
9	SPACE					Y	CB	100	3P	A B C	
10	SPACE					Y	CB	100	3P	A B C	
11	SPACE					Y	CB	100	3P	A B C	
12	SPACE					Y	CB	100	3P	A B C	

DIST. PANELBOARD - "DP2" LOAD ANALYSIS

LOAD DESCRIPTION	TYPE	DEMAND FACTOR	CONNECTED	CALCULATED	NEC CALCULATION REFERENCE
LIGHTING	L	1.25	8.9	11.2	125% of connected loads
RECEPTACLES	R	1	22.0	16.0	NEC2011 Art. 220.44
COOLING LOADS	C	1	44.6	44.6	Cooling loads larger than heating
HEATING LOADS (non-coincident w/cooling)	H				
MOTOR	MT	1	24.7	24.7	
MISC. NON-CONTINUOUS LOADS	MIS	1	25.1	25.1	
KITCHEN LOADS	K	0.65	9.1	6.9	NEC2011 Art. 220.56
OUTSIDE LIGHTING	OL	1.25	0.5	0.6	
NON-COINCIDENT LOADS	NC				
TOTAL LOAD (KVA)			134.9 KVA	128.1 KVA	
TOTAL LOAD (AMP AVG)			374.4 AMP	355.5 AMP	PhA-416A, P18-378A, P1C-345A, Nema-15A

Relay Panel Summary

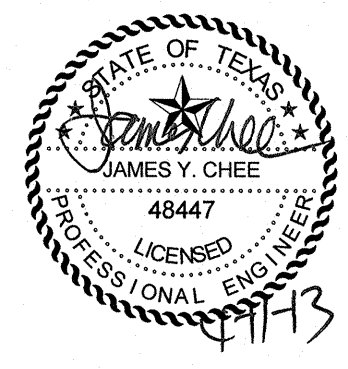
OPTIMUM CARE, HOUSTON TX

Relay Panel	1-Pole Qty	Total Poles	Relay Panel Size	LCD catalog number (or approved equal)
RP3	3	3	8	LCD # GR1408LT / 8 DTC MODEM (8 relays)
RP4	3	3	8	LCD # GR1408LT / 8 DTC MODEM (8 relays)

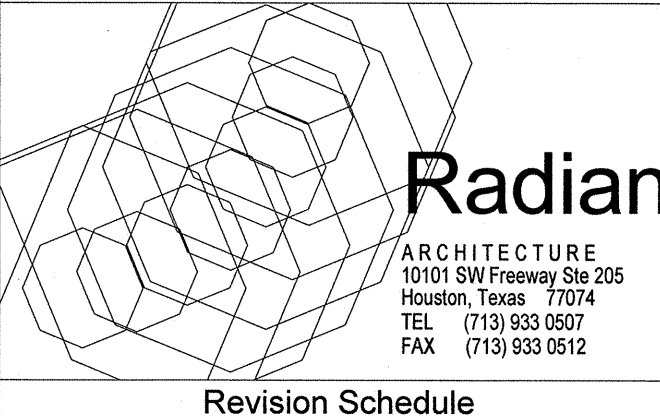
Relay Panel Load Schedule

OPTIMUM CARE, HOUSTON TX

Relay Panel	Relay #	Loads Served (Zone Name)	Area served	Zone	Elec Panel	Circuit Controlled	Time On	Time Off	Flash	Overside	Digital Switch	1-Pole
RP3	1	EXTERIOR LTG	EXT	B31	L3A	39	8:00PM	7:00AM	N	N	N	1
RP3	3	LIGHTING 117B	INT	B31	L3A	22	8:00AM	11:PM	Y	Y	Y	1
RP3	4	FANS	INT	B32	L3A	24	9:00AM	11:PM	N	Y	Y	1
RP4	3	LIGHTING 177A	INT	B41	L4A	22	8:00AM	11:00PM	Y	Y	Y	1
RP4	4	FANS	INT	B42	L4A	24	9:00AM	11:00PM	Y	Y	Y	1



OPTIMUM CARE
SUGAR LAND, TEXAS



Revision Schedule

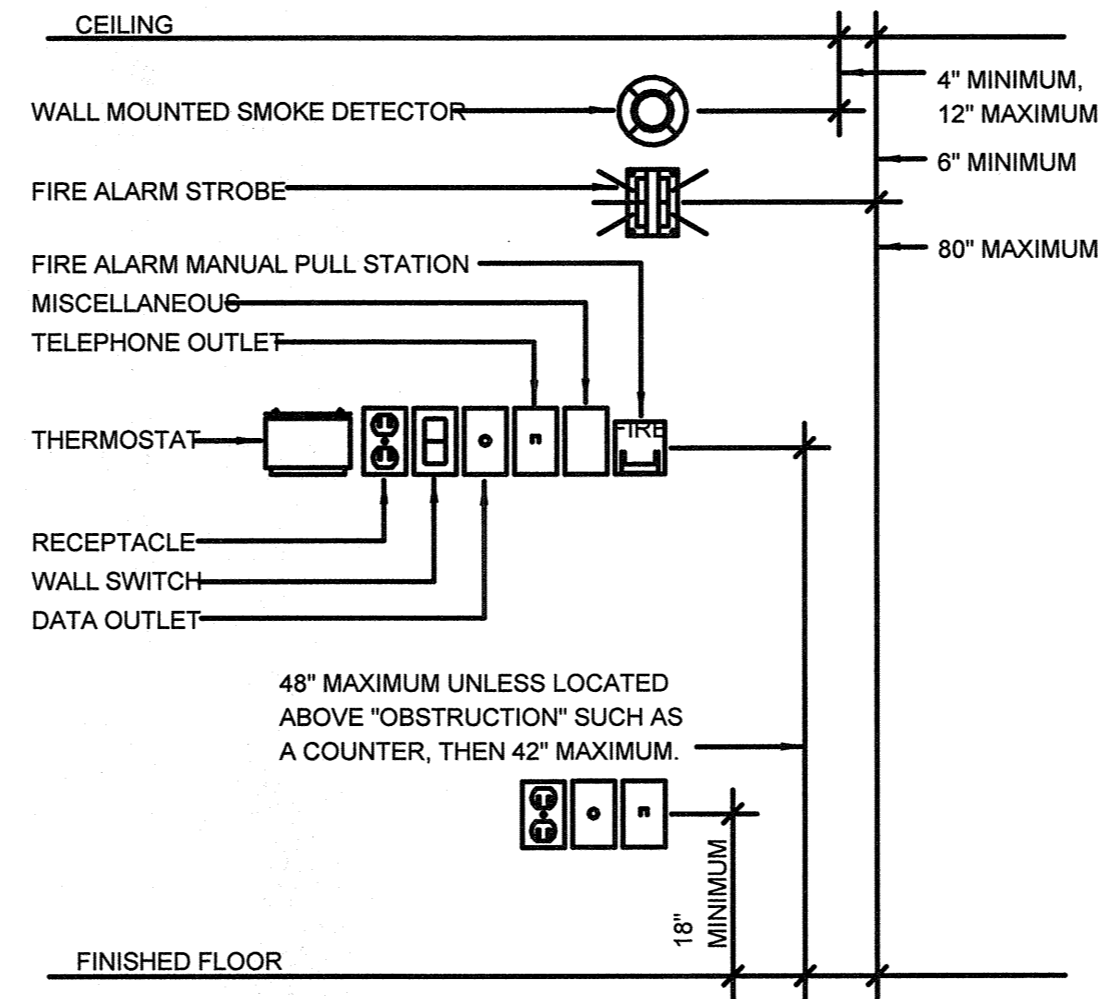
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Project No.
ELECTRICAL PANEL SCHEDULES
Sheet No.

E3.06

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1 MOUNTING HEIGHT DETAIL
NO SCALE

NOTE: ALL DEVICES SHOWN MAY NOT BE USED. DETAIL INDICATES TYPICAL MOUNTING HEIGHTS ONLY. MOUNTING HEIGHTS SHOWN ON THE ARCHITECT DRAWINGS AND SPECIFICATIONS TAKE PRECEDENCE. VERIFY EXACT MOUNTING HEIGHT REQUIRED WITH ARCHITECT AND INSTALL ACCORDINGLY.

ELECTRICAL LEGEND

ALL SYMBOLS SHOWN ARE NOT NECESSARILY USED IN THIS PROJECT

- E (E) EXISTING
- R (R) RELOCATED
- N (N) NEW
- NEW LINEAR LIGHT FIXTURE. LETTER INDICATES TYPE.
- NEW LIGHT FIXTURE. LETTER INDICATES TYPE.
- NEW LINEAR WITH BALLAST CONNECTED TO THE BATTERY BACKUP.
- NEW DOWNLIGHT FIXTURE. LETTER INDICATES TYPE.
- NEW DOWNLIGHT FIXTURE CONNECTED TO BATTERY BACKUP. LETTER INDICATES TYPE.
- ⊕ EXIT LIGHT. PROVIDE DIRECTIONAL CHEVRON(S) ARROW(S) AS INDICATED ON PLANS. CONNECT TO EMERGENCY CIRCUIT.
- ⌚ SINGLE POLE SWITCH
- ⌚_T TIMER SWITCH
- ⌚₃ THREE(3) WAY SWITCH
- ⌚₄ FOUR(4) WAY SWITCH
- ⌚_D DIMMER SWITCH, 600 WATT TYPICAL UNLESS NOTED OTHERWISE PROVIDE THE FOLLOWING UNLESS NOTED OTHERWISE ON THE DRAWINGS:
LUTRON # NOVA - T SERIES WITH PRESET
FOR 600 WATT - #NT-600P, FOR 1000 WATT - #NT-1000P,
FOR 1500 WATT - #NT-1500P, FOR 2000 WATT - #NT-2000P.
- ⌚ Duplex RECEPTACLE, 20AMP, 125VOLT, 2POLE, 3WIRE, GROUNDING TYPE, NEMA 5-20R
- ⌚_{GFI} GROUND FAULT INTERRUPTOR (GFI) DUPLEX RECEPTACLE. SIMILAR TO DUPLEX RECEPTACLE ABOVE. NOTE: SOME GFI RECEPTACLES ARE NOTE WITH A KEYED NOTE ONLY.
- ⌚ Double (QUAD) DUPLEX RECEPTACLE WITH COMMON COVER PLATE. SIMILAR TO DUPLEX RECEPTACLE.
- ⌚ 208V RECEPTACLE. TYPE AS INDICATED ON PLANS.
- ⌚ DEDICATED DUPLEX RECEPTACLE, PROVIDE GRAY COLOR (CONFIRM W/ARCHITECT) RECEPTACLE AND COVER PLATE, WITH INTENDED USAGES OF RECEPTACLES ENGRAVED ON COVERPLATE (E.G. "COPIER").
- ⌚ 'DEDICATED' QUAD. RECEPTACLE, PROVIDE GRAY COLOR (CONFIRM W/ARCHITECT) RECEPTACLE AND COVER PLATE, WITH INTENDED USAGES OF RECEPTACLES ENGRAVED ON COVERPLATE (E.G. "COPIER").
- ▼ COMBINATION TELEPHONE/DATA OUTLET. PROVIDE BACK BOX/COVER PLATE. INSTALL 3/4"C. WITH BUSHING AND PULL STRING, STUBBED TO ABOVE ACCESSIBLE CEILING.
- TV CABLE (TV)
PROVIDE BACKBOX/COVERPLATE AND 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING WITH PULL STRING
- ⌚ JUNCTION BOX.
- ⌚ ELECTRICAL PANEL BOARDS.
- ⌚ DISCONNECT SWITCH. ALL SWITCHES SHALL BE HEAVY DUTY TYPE (E.G. 30A/3P/600/NF/NEMA 1)
- ⌚ FUSED DISCONNECT SWITCH. SIMILAR TO ABOVE.
- ⌚ COMBINATION DISCONNECT SWITCH AND MAGNETIC MOTOR STARTER. 30AMP SIZE 1 MINIMUM TYPICAL UNLESS NOTED OTHERWISE. PROVIDE CONTROL POWER TRANSFORMER. 2 N.O. AND 2 N.C. CONTACTS, HAND-OFF-AUTOMATIC SWITCH, RED PILOT LIGHTS ("RUN" LIGHT). PROVIDE OVERLOAD RELAYS MATCHING FLA OF EQUIPMENT.
- CONDUIT RUN CONCEALED IN WALL OR CEILING
- - - CONDUIT RUN CONCEALED IN FLOOR
- ⌚ HOMERUN TO ELECTRICAL PANELBOARDS
- ⌚ HOMERUN TO ELECTRICAL PANELBOARDS FOUND IN MULTIPLE DRAWING LOCATIONS. ITEMS IN MULTIPLE LOCATIONS ARE ON THE SAME CIRCUIT.
- ⌚ DEDICATED HOMERUN TO ELECTRICAL PANELBOARDS. CONTRACTOR SHALL NOT SHARE HOMERUN WITH OTHER EQUIPMENT.

LEGEND NOTES:

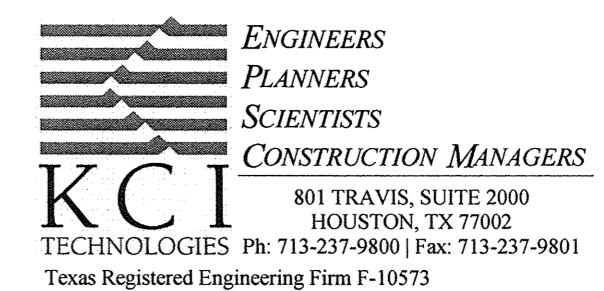
1. THE WORD "PROVIDE" AS USED IN THESE DRAWINGS SHALL MEAN "MATERIALS AND LABOR FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR".
2. MOUNTING HEIGHT OF ALL LIGHT SWITCHES, DIMMERS, RECEPTACLES, TELEPHONE, DATA AND SIGNAL OUTLETS SHALL BE IN ACCORDANCE WITH THE 'AMERICAN WITH DISABILITIES ACT'. LIGHT SWITCHES, DIMMERS, ETC. (+42") RECEPTACLES, TELEPHONE, DATA, ETC. (+42") ALL MOUNTING HEIGHTS ARE MEASURED FROM FINISHED FLOOR TO CENTER OF DEVICE. MOUNTING HEIGHTS SHOWN ON THE ARCHITECT DRAWINGS AND SPECIFICATIONS TAKE PRECEDENCE. VERIFY EXACT MOUNTING HEIGHT REQUIRED WITH ARCHITECT AND INSTALL ACCORDINGLY.

OPTIMUM CARE
SUGAR LAND, TEXAS



Revision Schedule

#	Date	Description
3	09-04-15	PERMIT REVISIONS



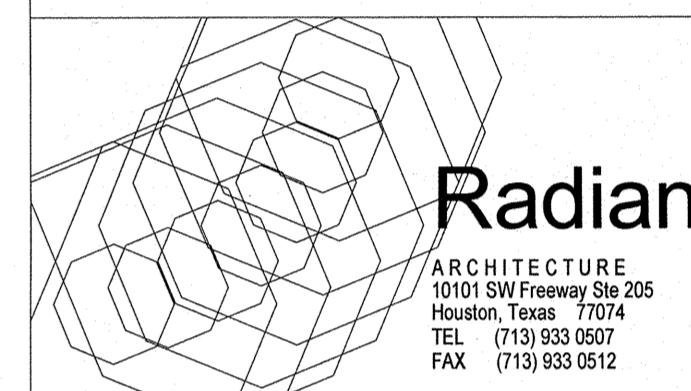
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ELECTRICAL LEGENDS AND DETAILS

Sheet No.

E4.01

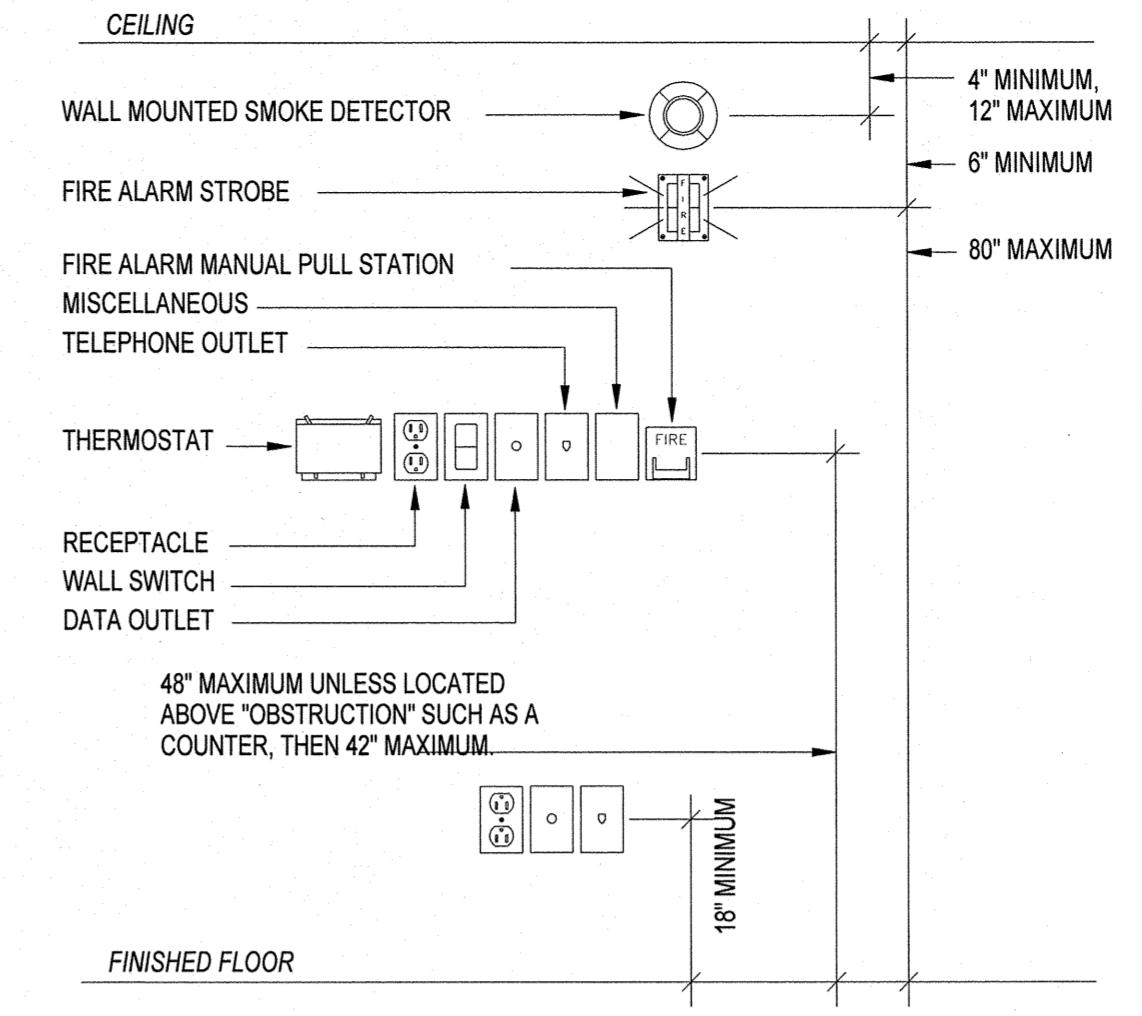
OPTIMUM CARE SUGAR LAND, TEXAS



Revision Schedule		
#	Date	Description

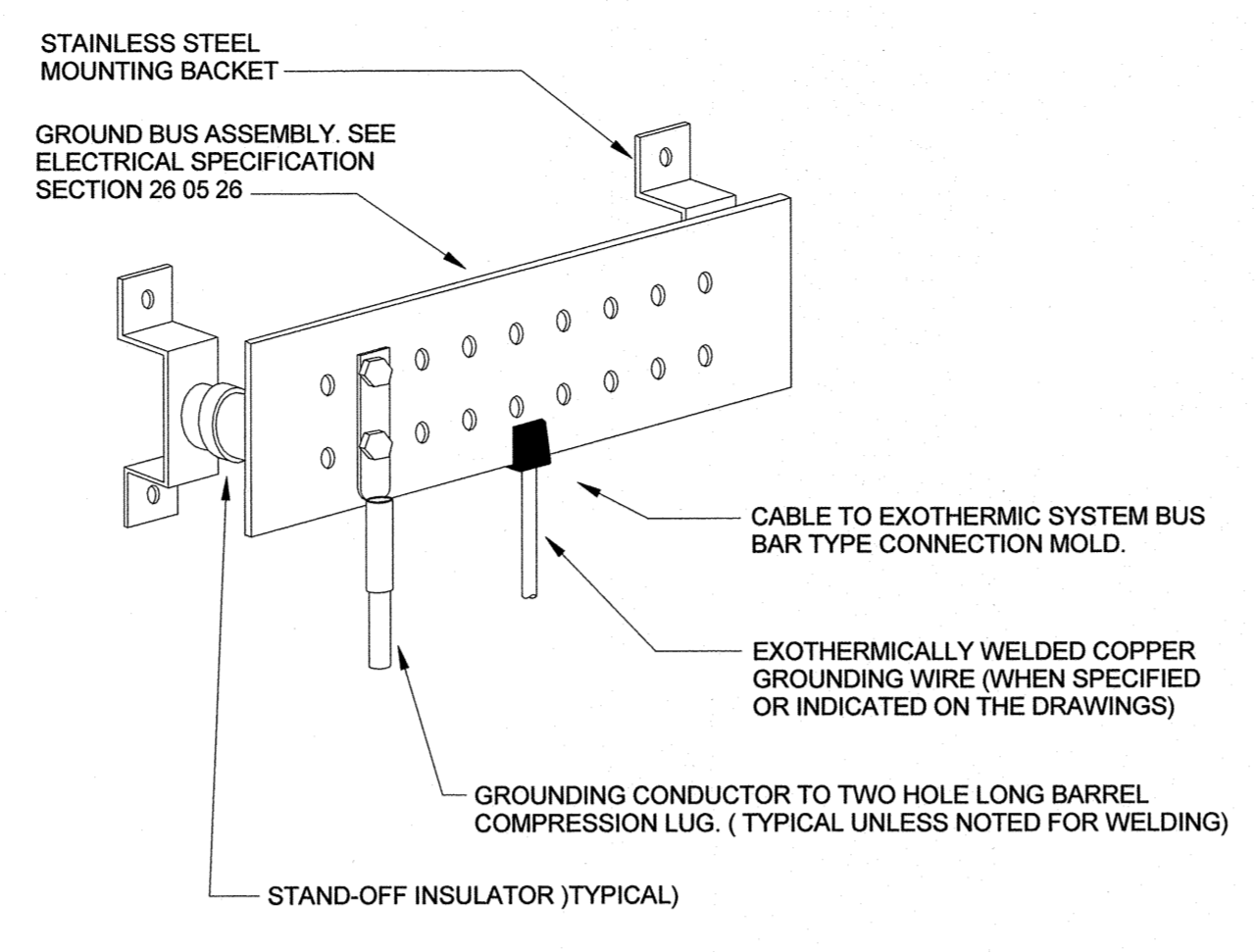
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ELECTRICAL DETAILS
Sheet No.

E4.02

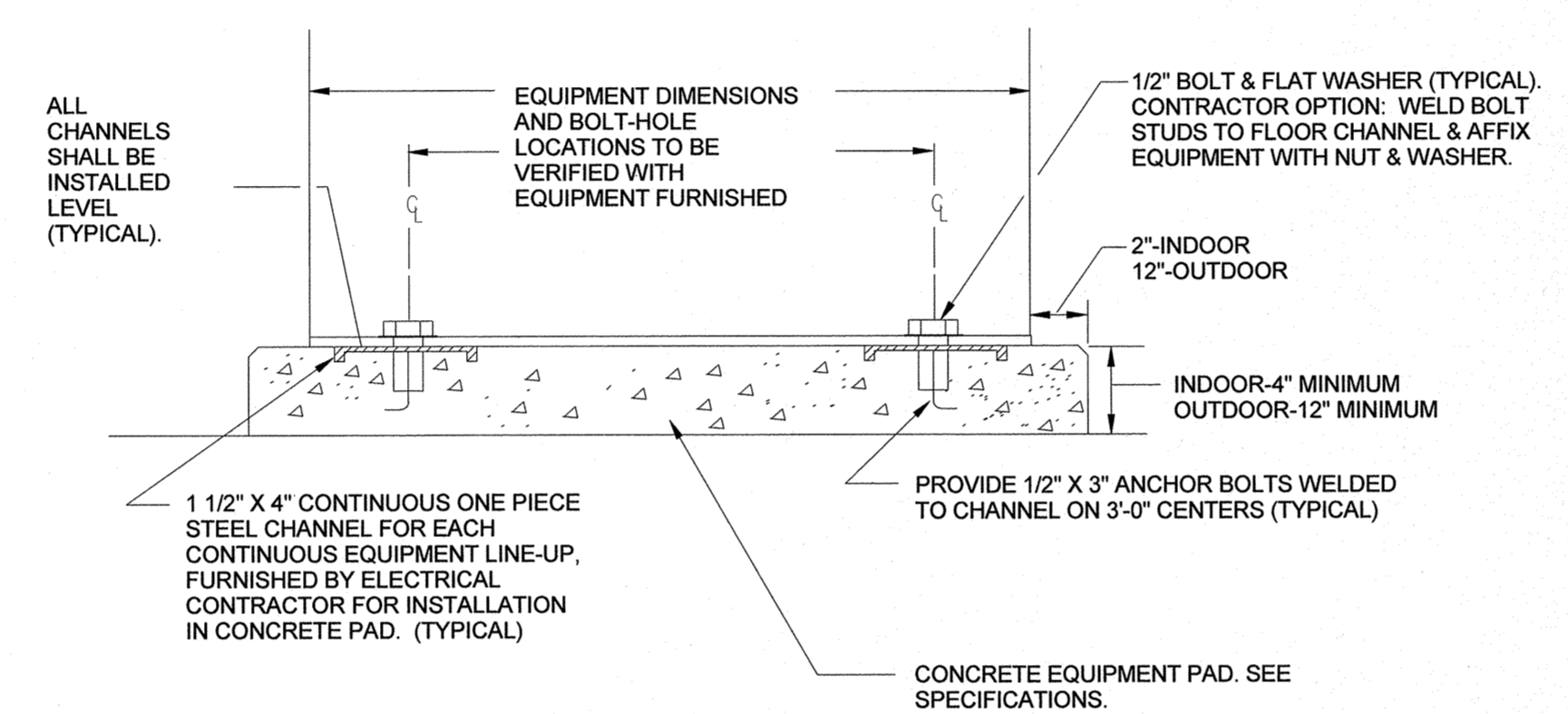


02 MOUNTING HEIGHT DETAIL
SCALE: NOT TO SCALE

NOTE: ALL DEVICES SHOWN MAY NOT BE USED. DETAIL INDICATES TYPICAL MOUNTING HEIGHTS ONLY. MOUNTING HEIGHTS SHOWN ON THE ARCHITECT DRAWINGS AND SPECIFICATIONS TAKE PRECEDENCE. VERIFY EXACT MOUNTING HEIGHT REQUIRED WITH ARCHITECT AND INSTALL ACCORDINGLY.

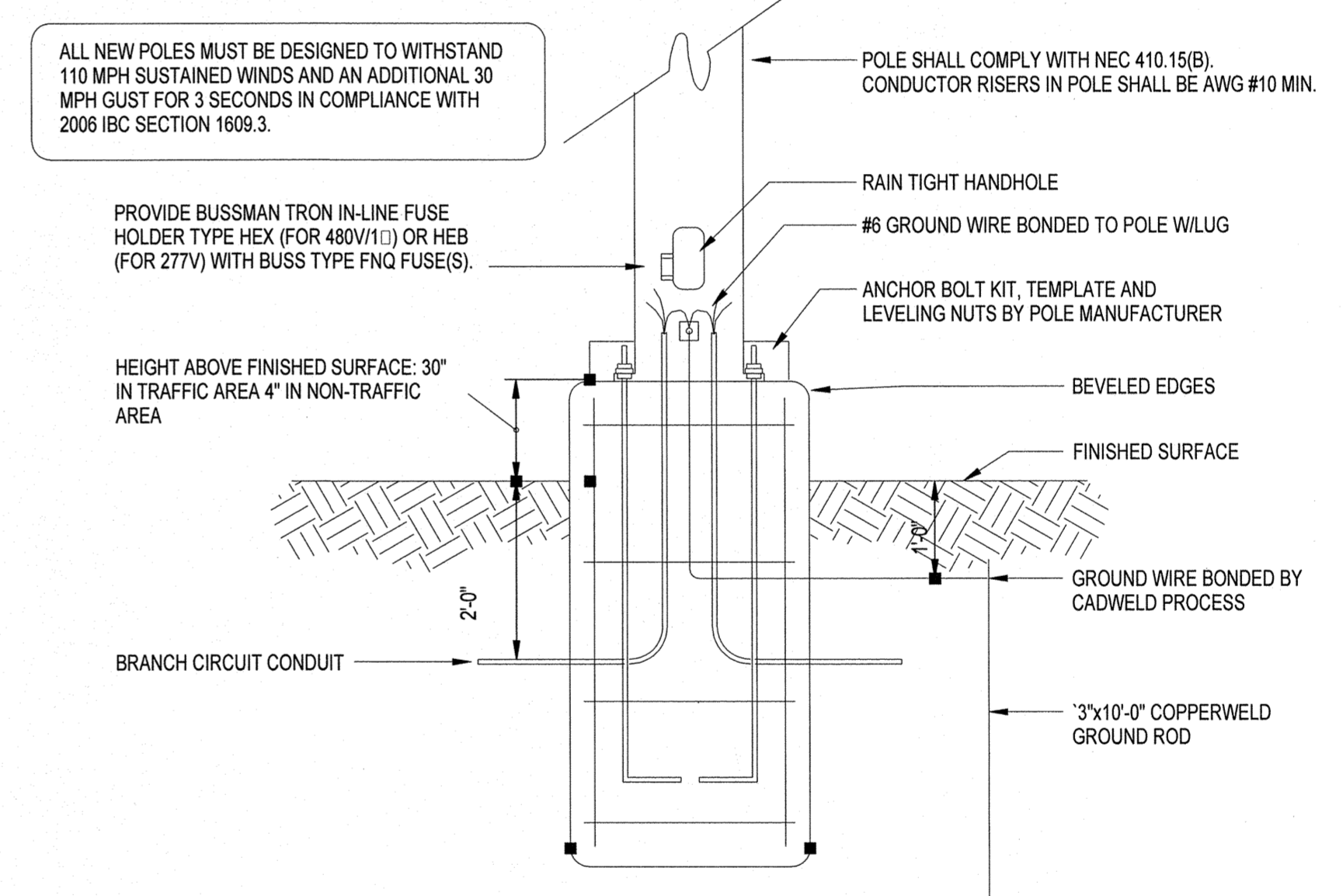


05 GROUNDING BUS DETAIL
SCALE: NOT TO SCALE



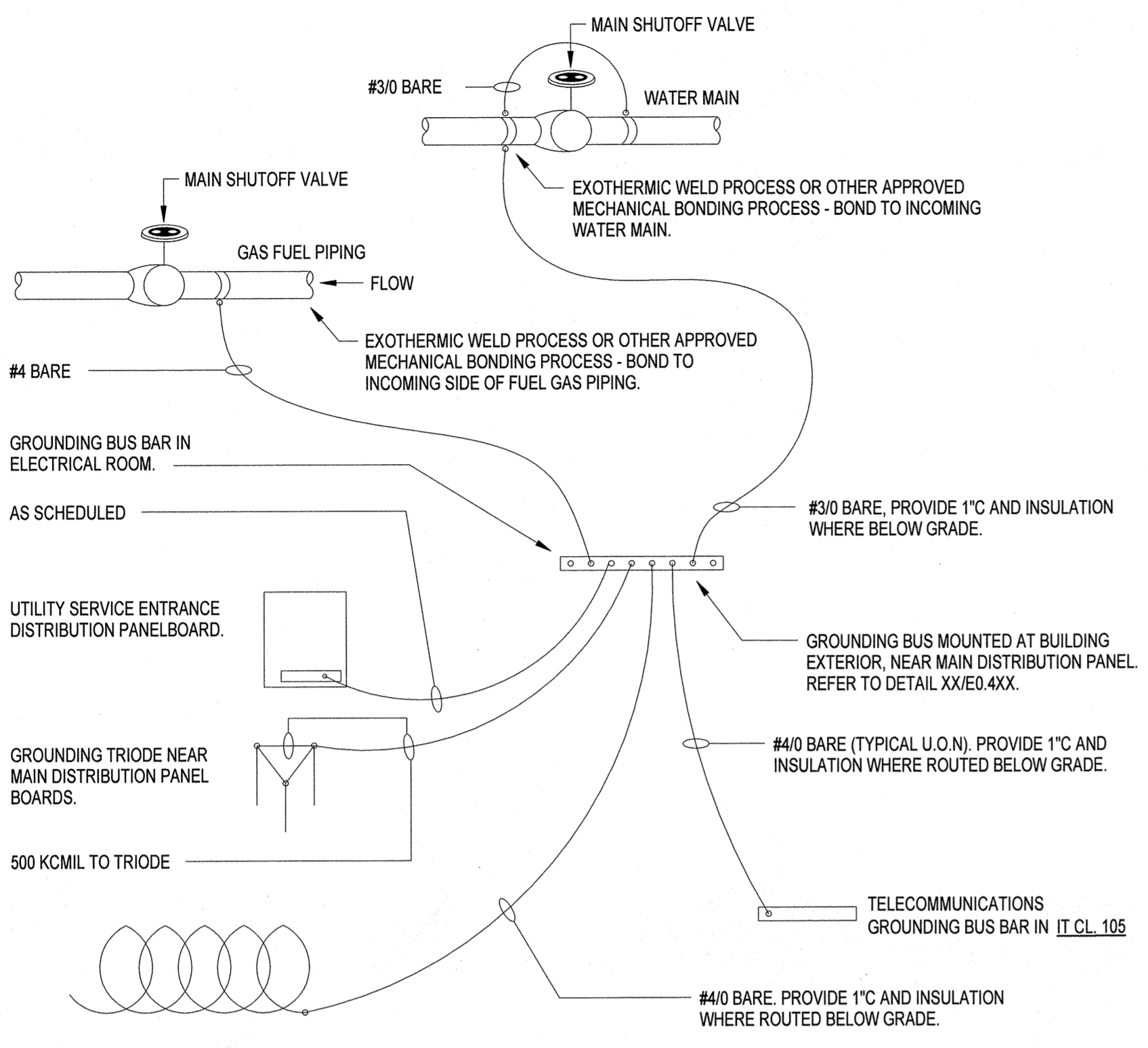
04 EQUIPMENT ANCHOR DETAIL
SCALE: NOT TO SCALE

NOTE: PROVIDE ANCHOR INSTALLATION FOR ALL SWITCHGEAR, SWITCHBOARDS, MOTOR CONTROL CENTERS, AND OTHER EQUIPMENT AS SPECIFIED OR NOTED ON PLANS.



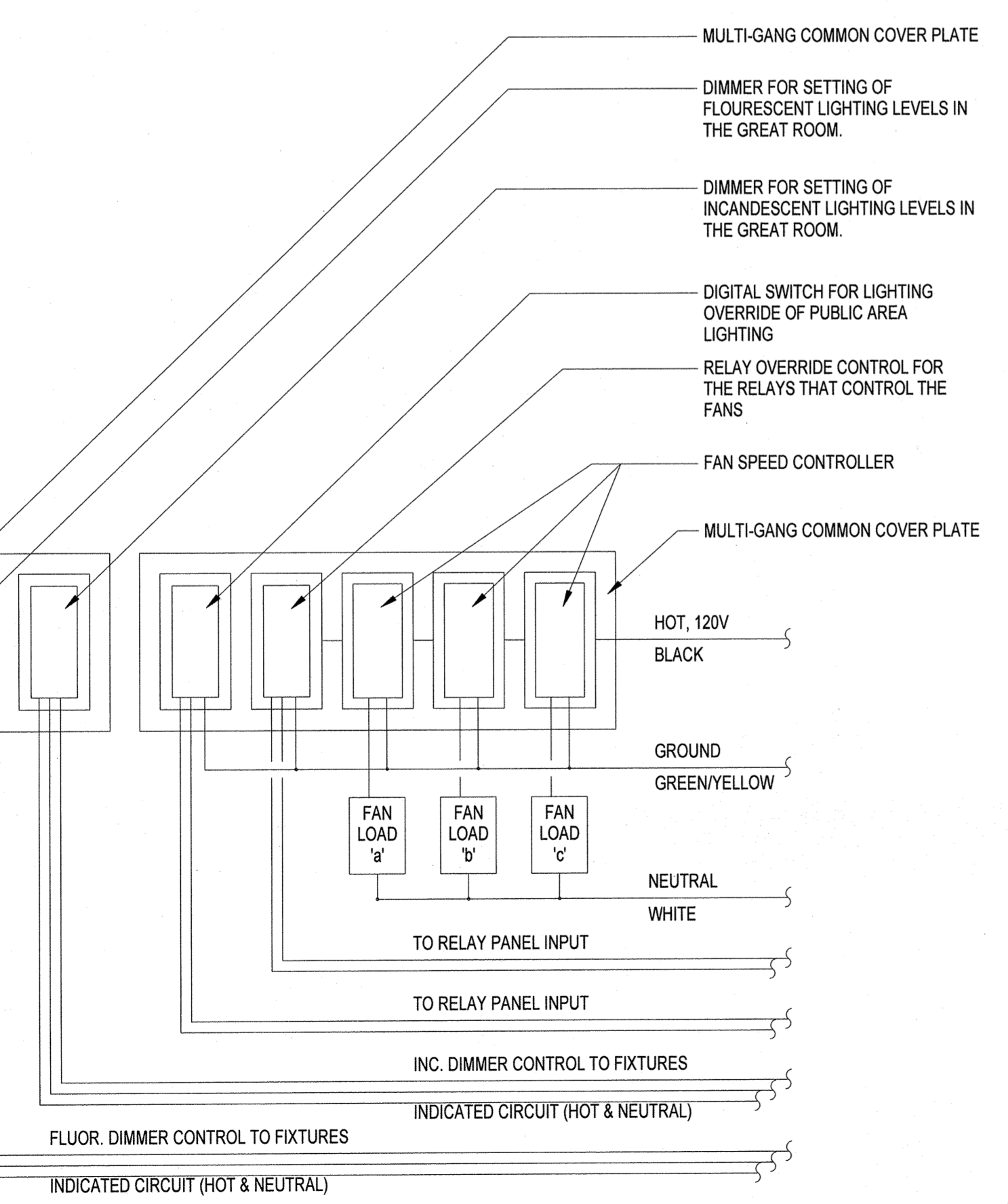
01 POLE BASE ELECTRICAL DETAIL
SCALE: NOT TO SCALE

POLE BASE DETAILS SHOWN ABOVE ARE FOR ELECTRICAL REQUIREMENTS IN THE POLE BASE ONLY. EXACT DESIGN OF POLE BASE, POLE BASE DIAMETER, POLE BASE DEPTH, REBAR REQUIREMENTS, CONCRETE MATERIAL, ETC. TO BE PROVIDED BY A LICENSED STRUCTURAL ENGINEER. ANCHOR BOLT PATTERN TO BE PROVIDED BY THE POLE MANUFACTURER FOR THE SPECIFIC POLE TO BE PROVIDED TO THE JOB-SITE.

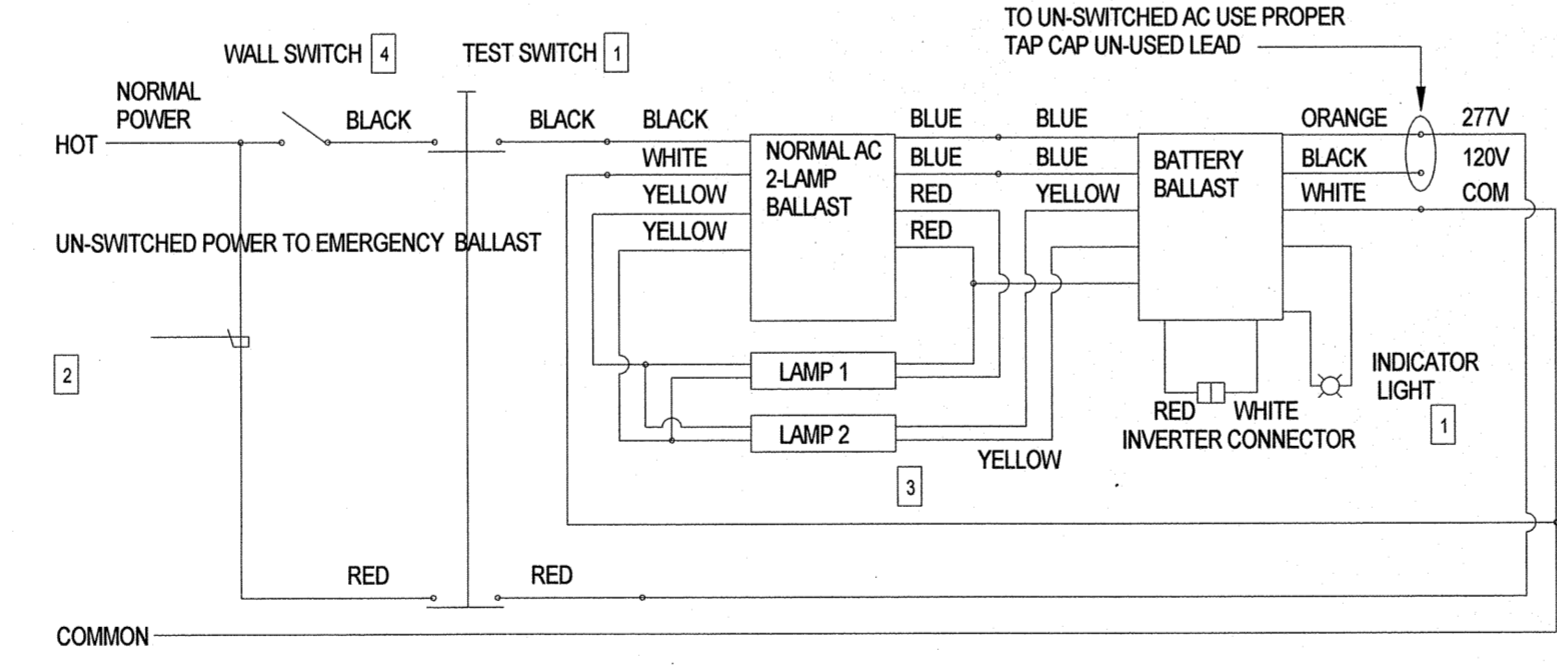


07 ELECTRICAL GROUNDING SCHEMATIC
NO SCALE

NOTE: GROUNDING OF UTILITY COMPANY TRANSFORMERS SHALL BE PER UTILITY COMPANY REQUIREMENTS.



06 GREAT ROOM SWITCH GROUP SCHEMATIC
NOT TO SCALE

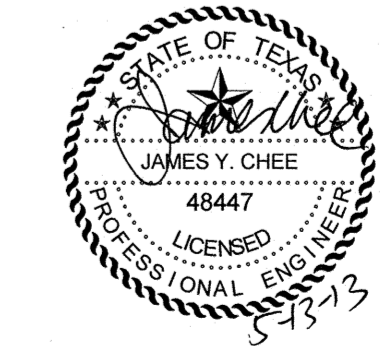


03 TYPICAL EMERGENCY BALLAST WIRING DIAGRAM
SCALE: NO SCALE

- NOTES:
- 1 INSTALL TEST SWITCH AND CHARGING INDICATING LIGHT PER INSTALLATION INSTRUCTIONS.
 - 2 CONNECT EMERGENCY BALLAST TO UN-SWITCHED POWER LEADS.
 - 3 LAMPS ARE SWITCHED ON AND OFF BY WALL SWITCH. WHEN NORMAL POWER FAILS, THE EMERGENCY BALLAST AUTOMATICALLY SWITCHES TO EMERGENCY POWER, OPERATING BOTH LAMPS FOR AT LEAST 90 MINUTES.
 - 4 FOR UNSWITCHED (EGRESS) EMERGENCY BALLAST FIXTURES, WIRING DIAGRAM IS SIMILAR EXCEPT NO WALL SWITCH.

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LIGHTING FIXTURE SCHEDULE						
TYPE	MC. AND CATALOG NO.	DESCRIPTIONS	MOUNTING	LAMP (QTY, WATT AND TYPE)	VOLTS	REMARKS
A	GOTHAM CV9 SERIES WITH LUTRON HI-LUME 1% ELECTRONIC DIMMING BALLAST	8" CYLINDER, ALUMINUM UPPER REFLECTOR WITH HIGHLY REFLECTIVE WHITE PAINT, 16" TALL, PENDENT WITH VERTICAL TRIPLE-TUBE LAMP, PENDENT MOUNT SO AS TO LOCATE BOTTOM OF FIXTURE AT LEVEL OF FAN BLADES. PROVIDE WITH 1% DIMMING BALLAST.	PENDENT	32W TRT 3500K	120	1,3,6,13
A1	GOTHAM CV9 SERIES WITH LUTRON ECOSYSTEM 5% ELECTRONIC DIMMING BALLAST	8" CYLINDER, ALUMINUM UPPER REFLECTOR WITH HIGHLY REFLECTIVE WHITE PAINT, 16" TALL, WITH VERTICAL TRIPLE-TUBE LAMP, PENDENT MOUNT SO AS TO LOCATED BOTTOM OF FIXTURE AT LEVEL OF FAN BLADES. PROVIDE WITH 5% DIMMING BALLAST.	SURFACE	32W TRT 3500K	120	1,6,13
B	GOTHAM 6" AFV SERIES WITH THERMALLY PROTECTED BALLAST.	6" APERTURE OPEN REFLECTOR, VERTICAL TRIPLE TUBE LAMP, SELF-FLANGED SEMI-SPECULAR CLEAR ALZAK REFLECTOR, 4" VERTICAL ADJUSTMENTS.	RECESSED	32W TRT 3500K	120	1,2,6
C	LITHONIA SP8 SERIES WITH A12 PATTERN ACRYLIC LENS DIFFUSER, .125" THICKNESS, NOMINAL	1'X 4' GASKETTED 2-LAMP FLUORESCENT FIXTURE, UV STABILIZED ACRYLIC LENS. PROVIDE GYP-BOARD HOUSING AROUND FIXTURE SO AS TO PREVENT DIRECT CONTACT WITH INSULATION.	RECESSED	(2) 32W T8, 3500K	120	1,2,4,6
C2	LITHONIA SP8 SERIES WITH A12 PATTERN ACRYLIC LENS DIFFUSER, .125" THICKNESS, NOMINAL	2'X 4' GASKETTED 6-LAMP FLUORESCENT FIXTURE, UV STABILIZED ACRYLIC LENS. PROVIDE GYP-BOARD HOUSING AROUND FIXTURE SO AS TO PREVENT DIRECT CONTACT WITH INSULATION.	RECESSED	(6) 32W T8, 3500K	120	1,2,4,6
C3	LITHONIA SP8 SERIES WITH A12 PATTERN ACRYLIC LENS DIFFUSER, .125" THICKNESS, NOMINAL	SIMILAR TO TYPE "C2" EXCEPT PROVIDE WITH (4) LAMPS.	RECESSED	(4) 32W T8, 3500K	120	1,2,4,6
D	FOCAL POINT FEQ 14 B SERIES VOLUMETRIC FIXTURE WITH T8 LAMPS	1'X 4' VOLUMETRIC LAMP, 20 GA STEEL REFLECTOR AND HOUSING. PROVIDE GYP-BOARD HOUSING AROUND FIXTURE SO AS TO PREVENT DIRECT CONTACT WITH INSULATION.	RECESSED	(2) 32W T8, 3500K	120	1,2,4,6
D2	LITHONIA SP8 SERIES WITH A12 PATTERN ACRYLIC LENS DIFFUSER, .125" THICKNESS, NOMINAL	SIMILAR TO TYPE "C2" EXCEPT PROVIDE WITH (4) LAMPS.	RECESSED	(4) 32W T8, 3500K	120	1,2,4,6
D3	FOCAL POINT FEQ 14 B SERIES VOLUMETRIC FIXTURE WITH T8 LAMPS	SIMILAR TO TYPE "D" EXCEPT PROVIDE WITH DUAL BALLASTS AND SWITCH ALTERNATELY SO AS TO PROVIDE 50% LIGHTING LEVEL IN THE ROOM.	RECESSED	(2) 32W T8, 3500K	120	1,2,4,6
F	LITHONIA WST LED SERIES 2-ENGINE LED WALLSCONCE.	POYESTER POWDER COAT EXTERIOR WALL SCONCE. COORDINATE EXACT FINISH AND MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ORDERING.	SURFACE	(20) 4000K 700mA LEDS.	120	1,3,11, 16
G	CON-TECK CTL 8028 SERIES	LED TRACK HEAD, PROVIDE WITH DIMMABLE 18W LED LAMP. PROVIDE COMPATIBLE TRACK, 4' LENGTH. PROVIDE APPROPRIATE DIMMER FOR WALL CONTROL.	TRACK	18W DIMMABLE LED LAMP INCLUDED WITH HEAD	120	1,2
H	BEGA 2196 LED SERIES	LOW LEVEL STEP LIGHTING	FLUSH WALL	LED LAMP INCLUDED WITH FIXTURE	120	1,3
J1	BEGA 8258 MH SERIES	PARKING LOT POLE MOUNTED LUMINAIRE ON 16' POLE. COORDINATE OPTICAL DISTRIBUTION TYPE WITH PHOTOMETRIC STUDY PRIOR TO ORDERING.	POLE	100W ED-17 MH COATED LAMP	120	1,3,14, 15,16
J2	BEGA 8258 MH SERIES	SIMILAR TO TYPE "J1" EXCEPT PROVIDE WITH (2) HEADS ON POLE.	POLE	100W ED-17 MH COATED LAMP	120	1,3,14, 15,16
K	LITHONIA 2SRH SERIES WITH A12 PATTERN ACRYLIC LENSE, .125" THICKNESS, NOMINAL	4-LAMP 2'X 4' SURFACE MOUNTED FLUORESCENT FIXTURE FOR KITCHEN APPLICATION, SUITABLE FOR HIGH-PRESSURE HOSE-DOWN APPLICATIONS.	SURFACE	(4) 32W T8, 3500K	120	1
K2	LITHONIA 2SRH SERIES WITH A12 PATTERN ACRYLIC LENSE, .125" THICKNESS, NOMINAL	KITCHEN STORAGE AREA FIXTURE, SIMILAR TO TYPE "K" EXCEPT PROVIDE WITH (6) LAMPS.	SURFACE	(6) 32W T8, 3500K	120	1
M	ALKCO LINC5150 SERIES	SINGLE LAMP FLUORESCENT UNDERCABINET TASK LIGHTING WITH EXTRUDED LINEAR PRISMATIC ACRYLIC LENS. WHITE GLAZE FINISH WITH FIXTURE MOUNTED ROCKER SWITCH	UNDER CABINET	32W T8, 3500K	120	1,5,12
P	FOCAL POINT FAVAW SERIES RECESSED WALL MOUNTED CEILING WASH TYPE FIXTURE, INVERTED MOUNT.	2' SINGLE LAMP RECESSED MOUNTED FLUORESCENT CEILING WASH FIXTURE WITH SINGLE T8 LAMP, MOUNTED INVERTED SO AS TO ILLUMINATE DESK. MOUNT 12" FROM DESK SURFACE, MOUNT 2' LENGTHS APPROXIMATELY 4' ON CENTER.	RECESSED WALL	17W T8, 3500K	120	1,12
X1	PHILLIPS PATRON LED PLACEMT SERIES BATTERY POWERED EXTERIOR EGRESS LIGHT	ARCHITECTURAL DIE CAST MINI-WALL LIGHT/UNIT WITH 90 MINUTE BATTERY. WET LOCATION LISTED. COORDINATE COLORS WITH ARCHITECT PRIOR TO ORDERING. LOCATED AT EXTERIOR SIDE OF EGRESS DOORS.	SURFACE	(8)-3W LED'S	120	1,3
Z	LITHONIA QUANTUM SERIES EXIT SIGN, LQM SERIES	LED TYPE EXIT SIGNAGE. PROVIDE 90 MINUTE BATTERY. COORDINATE EXACT COLOR REQUIREMENTS WITH OWNER AND THE LOCAL AUTHORITY HAVING JURISDICTION. PROVIDE QUANTITY OF ARROWS AS INDICATED ON DRAWINGS	CEILING	LED'S INCLUDED	120	1
W1	MONTE CARLO FANS INDOOR CEILING FAN - BRUSHED STEEL, MATTE OPAL GLASS LIGHT KIT, (5) 52" BLADES, #P829116 OR #400881	THREE SPEED CEILING FAN, 12 DEGREE BLADE PITCH, 5 BLADE FAN WITH LIGHT KIT, INDOOR MOUNTED IN GREAT ROOMS AND IN MULTI-PURPOSE ROOM. PROVIDE WALL MOUNTED SPEED CONTROL FOR EACH FAN.	STEM	75W HALOGEN T4 LAMP	120	1,3
W2	WESTINGHOUSE OASIS TROPICALSAFARI OUTDOOR CEILING FAN WITH LIGHT KIT, (5) 48" BLADES, RUBBED OIL BRONZE FINISH, #78619-65 OR SIMILAR	THREE SPEED CEILING FAN, 13 DEGREE BLADE PITCH, 5 BLADE FAN WITH LIGHT KIT, WET LOCATION RATED. MOUNTED OUTDOORS UNDER CANOPY. CHAIN MOUNTED SPEED CONTROL	STEM	60W INCANDESCENT, CANDELLABRA BASE	120	1,3

LIGHTING FIXTURE SCHEDULE REMARKS

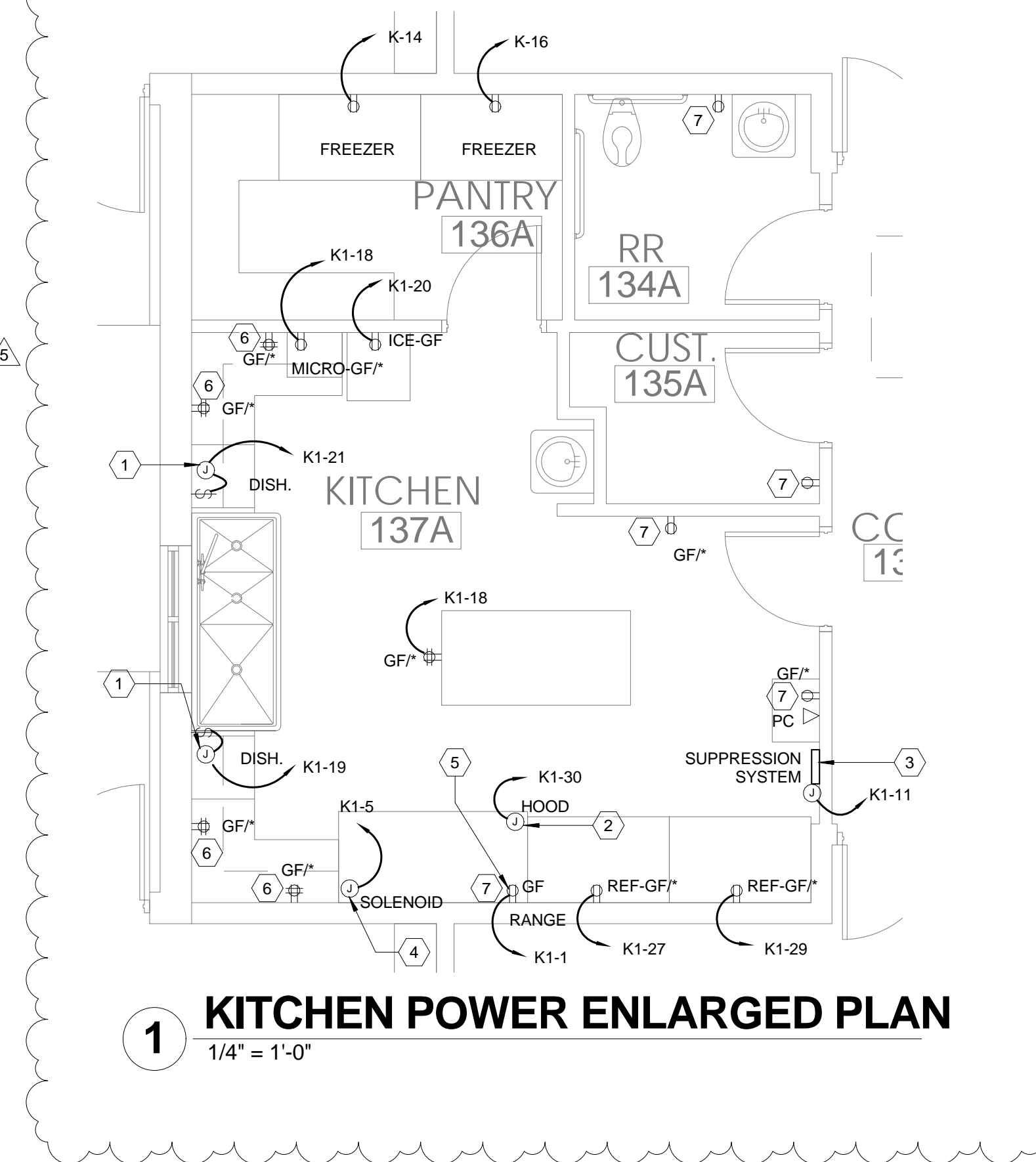
- SELECTION TO BE APPROVED BY ARCHITECT AND BUILDING REPRESENTATIVE BEFORE PURCHASING.
- REFER TO ARCHITECTURAL DRAWINGS AND DETAILS FOR EXACT CEILING TYPE IN ORDER TO DETERMINE THE APPROPRIATE FIXTURE FRAME KIT OR ADDITIONAL ACCESSORIES REQUIRED.
- COORDINATE MOUNTING HEIGHT OF FIXTURE WITH ARCHITECT PRIOR TO INSTALLATION.
- ALL LINEAR FLUORESCENT LAMPS THAT ARE CONTROLLED BY OCCUPANCY SENSORS SHALL BE PROVIDED WITH ELECTRONIC PROGRAMMED RAPID-START TYPE BALLASTS.
- UNDER-CABINET LIGHTING: LIGHTING SHALL BE INSTALLED IN 1'-0" INCREMENT TO MOST CLOSELY MATCH THE ENTIRE LENGTH OF UNDER CABINET SPACE. NUMBER OF UNDER-CABINET FIXTURE DESIGNATIONS INDICATES THE UNDERCABINET AREAS THAT REQUIRE THESE FIXTURES BUT DOES NOT NECESSARILY INDICATE THE QUANTITIES OR LENGTHS OF THE FIXTURES. PROVIDE QUANTITIES OF SIMILAR 2, 3 AND 4 FIXTURES AS REQUIRED. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS, SECTIONS AND ELEVATIONS OF UNDER-CABINET AREAS.
- FOR SIMILAR LIGHTING FIXTURES INDICATED ON THE PLAN AS SWITCHED OR UNSWITCHED EMERGENCY TYPE FIXTURES, PROVIDE AN APPROPRIATE 90 MINUTE BATTERY BALLAST FOR THE FIXTURE, PROVIDE EMERGENCY FIXTURE WITH FUSING SUCH THAT FAILURE OF FIXTURE BALLAST WILL NOT CAUSE OTHER FIXTURES ON THE SAME CIRCUIT TO FAIL. PROVIDE BUSMAN HEX FUSE HOLDER OR SIMILAR INSIDE OF BALLAST HOUSING. PROVIDE INTEGRAL TEST SWITCH.
- EXTERIOR LIGHTING FIXTURE TO SERVE EMERGENCY EGRESS FUNCTION.
- COORDINATE EXACT LENGTHS OF FIXTURE AS REQUIRED TO MOST FULLY SPAN THE ARCHITECTURAL COVE OR CABINET WHERE FIXTURE IS LOCATED. REFER TO ARCHITECTURAL PLANS, DETAILS, SECTIONS AND ELEVATIONS FOR COVE AND/OR UNDERCABINET REQUIREMENTS.
- AIMABLE FIXTURE WITH EXTRUDED ALUMINUM YOKE, ADJUSTABLE 0 TO 90 DEGREE VERTICALLY, 338 DEGREE HORIZONTALLY, MATTE BLACK FINISH. INCLUDE GEL HOLDER AND BARN DOOR SHUTTERS. PROVIDE (4) GELLS PER FIXTURE (RED, YELLOW, GREE, BLUE).
- COORDINATE FIXTURE AND POLE FINISH WITH ARCHITECT PRIOR TO ORDERING. REFER TO LANDSCAPE ARCHITECTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS. COORDINATE EXACT FIXTURE OPTICS SO AS TO MAXIMIZE ILLUMINATION ON PARKING LOT SURFACE. PROVIDE BUSMAN HEX TYPE FUSE HOLDER IN BASE OF POLE, FUSE AT 5 AMPS.
- WHERE FIXTURE IS INSTALLED AT STAND-ALONE OUT-BUILDING, SUCH AS AT THE GARAGE/STORAGE 164 OR OTHER AREA THAT THE CIRCUIT IS NOT SERVED THROUGH THE RELAY PANEL, PROVIDE THE FIXTURE WITH PHOTOCCELL CONTROL OPTION SO AS TO PREVENT DAY-BURING OF FIXTURE.
- PROVIDE A LOCAL WALL-MOUNTED ON/OFF SWITCH AND CONNECT THE FIXTURE TO THE OCCUPANCY SENSOR IN THE SPACE. SO AS TO SWITCH LIGHTING "OFF" WHEN SPACE IS UNOCCUPIED FOR DESIGNATED PERIOD OF TIME.
- WALLBOX TYPE DIMMER IS TO BE COMPATIBLE WITH THE DIMMING BALLAST USED. VERIFY PROPER MODEL NUMBER OF DIMMER FOR DIMMER/BALLAST COMPATIBILITY PRIOR TO SUBMITTAL.
- LIGHTING POLES TO BE PROVIDED AND ANCHORED TO THE POLE BASE SO AS TO THE WITHSTAND WIND LOADS AS REQUIRED PER DETAIL 01E4.02 (110 MPH WIND WITH 140 MPH - 3 SECOND - GUSTS). CONTRACTOR SHALL SUBMIT EVIDENCE FROM THE POLE MANUFACTURER THAT THE POLE CAN WITHSTAND THE WIND LOADS BASED ON THE FIXTURE EFFECTIVE PROJECTED AREA (EPA), BASED ON THE FIXTURE MANUFACTURER'S EPA DATA. CONTRACTOR SHALL SUBMIT MANUFACTURER'S RECOMMENDED FASTENING REQUIREMENTS IN ORDER TO ACHIEVE THE POLE WIND WITHSTAND VALUES.
- PROVIDE POLE MOUNTED FIXTURE HEADS WITH HOUSE-SIDE SHIELD TYPE SHIELDING SO AS TO PREVENT LIGHT SPILL OVER THE EDGE OF THE PROPERTY.
- FIXTURES TO BE FULL CUT-OFF TYPE AS REQUIRED BY THE CITY OF SUGAR LAND.

GENERAL NOTES (LIGHTING FIXTURES)

- Refer to Architectural reflected ceiling plans for exact location of all fixtures.
- Verify color of all fixtures with Architect and Owner prior to ordering.
- Drawings do not show details of fixture mounting. Contractor shall provide all necessary and required mounting hardware and accessories as required for a complete and operating system. For fixtures mounted in a sloped ceiling, provide sloped-ceiling adaptors as required for all fixtures installed in such ceiling.
- All 2'x4' fixtures supported by framing members of suspended ceiling system shall be fastened to the ceiling framing member by mechanical means, such as bolts, screws, or rivets. Clips identified for use with the type of ceiling framing member(s) and fixture(s) shall also be permitted. All four sides of fixtures shall be fastened to ceiling framing members. Refer to N.E.C. 2011 Article 410.36(B).
- All fixtures shall be factory painted-after-fabrication type.
- In general, all fixtures in areas with lay-in type ceiling are connected using EMT conduit and 6-ft (maximum length) fixture whip. On plan drawings, fixture circuiting and connection are shown diagrammatically with arcs and curves. Such diagrammatic representation does not imply or indicate exclusive use of armored or metal clad cable (type BX or MC). ALL FIXTURE CONNECTION IN AREAS WITH LAY-IN CEILING SHALL BE MADE WITH CONDUIT AND 6-FT MAXIMUM LENGTH WHIPS.
- Fixtures with canopy in areas with gypsum board type ceiling may use the fixture canopy as a junction box or as a pull point. Recessed type fixtures located in gypsum board type ceiling may use access through the fixture housing for access to the fixture junction box, if they are so designed. Fixture types mounted in gypsum board type ceiling MUST be a type as designed for inaccessible type ceiling. Access hatch near the fixture will not be an acceptable means of meeting NEC 100 requirement of "accessible".

KEYED NOTES

- POWER FOR DISH WASHER. PROVIDE HARDWIRED CONNECTION TO DISHWASHER, PROVIDE A SWITCH LOCATED ABOVE COUNTER. ENGRAVE COVERPLATE "DISH".
- EXHAUST HOOD FOR KITCHEN. PROVIDE A CONNECTION FOR HOOD LIGHTING. PROVIDE A SINGLE SWITCH TO CONTROL HOOD EXHAUST AND HOOD MAKEUP AIR FANS, PROVIDE INTERLOCK SUCH THAT EXHAUST AND SUPPLY FANS OPERATE SIMULTANEOUSLY. PROVIDE INTERLOCK WITH FIRE SUPPRESSION SYSTEM TO SHUT FANS DOWN UPON ACTIVATION OF SUPPRESSION SYSTEM.
- EXHAUST HOOD SUPPRESSION SYSTEM, ANSUL OR SIMILAR. PROVIDE INTERCONNECTION WITH FIRE ALARM SYSTEM TO ALERT FIRE ALARM SYSTEM FOR TROUBLE OR ALARM CONDITIONS.
- SOLENOID VALVE FOR GAS SUPPLY AT RANGE. PROVIDE CONNECTION WITH SUPPRESSION SYSTEM SUCH THAT WHEN SUPPRESSION SYSTEM IS ACTIVATED, THE SOLENOID SHUTS GAS SUPPLY TO THE RANGE.
- OUTLET FOR RANGE WITH SHUNT TRIP. PROVIDE ONNECTION WITH SUPPRESSION SYSTEM SUCH THAT WHEN SUPPRESSION SYSTEM IS ACTIVATED, THE SHUNT TRIP DE-ACTIVATES POWER TO RANGE RECEPTACLE.
- PROVIDE SEPARATE CIRCUIT PER EACH GFCI KITCHEN QUAD. RECEPTACLE. USE CIRCUITS K-22, K-24, K-26, AND K-28.
- GENERAL PURPOSE RECEPTACLE. USE CIRCUITS K1-13, K1-15, K1-17 WITH NO MORE THAN 3 RECEPTACLES PER CIRCUIT.



1 KITCHEN POWER ENLARGED PLAN
1/4" = 1'-0"

DETAIL 01 GENERAL NOTES

- (A) SIMILAR FOR 137B EXCEPT SERVED FROM PANEL K2 AND EQUIPMENT IS MIRRORED.

REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL PHASING INFORMATION.

OPTIMUM CARE
SUGAR LAND, TEXAS

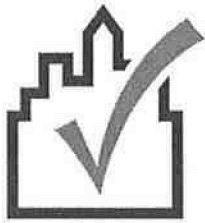


Revision Schedule		
#	Date	Description
2	11-04-13	CITY COMMENTS
3	1-28-14	CITY COMMENTS
5	10-20-15	ELECTRICAL REVISIONS



Project No.
ELECTRICAL DETAILS AND ENLARGED PLANS
 Sheet No.

E4.03



COMcheck Software Version 3.9.2

Interior Lighting Compliance Certificate

2009 IECC

Section 1: Project Information

Project Type: **New Construction**

Project Title : OPTIMUM PERSONAL CARE ASSISTED LIVING FACILITIES

Construction Site:

1110/12/14 LAKEVIEW DRIVE
SUAGR LAND, TX 77478

Designer

JOHN HILL
REDDING LINDEN BURR ENGINEERS
801 TRAVIS STREET
SUITE 2000
HOUSTON, TX 77002
(713)237-9800
JHILL@RLBENGINEERS.COM

Section 2: Interior Lighting and Power Calculation

A Area Category	B Floor Area (ft ²)	C Allowed Watts / ft ²	D Allowed Watts (B x C)
Assisted Living Facility (Healthcare-Clinic)	18438	1	18438
Administration Office (Office)	958	1	958
Storage Garage (Warehouse)	600	0.8	480
Total Allowed Watts =			19876

Section 3: Interior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Assisted Living Facility (Healthcare-Clinic 18438 sq.ft.)				
Compact Fluorescent 1: A: GREATROOM PENDENT: Triple 4-pin 32W: Electronic:	1	48	32	1536
Compact Fluorescent 3: B: TYPICAL DOWN: Triple 4-pin 32W: Electronic:	1	68	32	2176
Linear Fluorescent 1: C: 1X4 2-LAMP: 48" T8 32W (Super T8): Electronic:	2	2	54	108
Linear Fluorescent 4: D: VOLUMETRIC FIXTURE: 48" T8 32W (Super T8): Electronic:	2	56	54	3024
Linear Fluorescent 6: D3: SIMILAR TO D EXCEPT 2-BALLAST: 48" T8 32W (Super T8): Electronic:	2	24	54	1296
LED 1: H: LOW LEVEL STEP LTG: Other:	1	32	2	64
Halogen 1: W1: CEILING FAN: Halogen MR-16 71W:	1	12	71	852
Administration Office (Office 958 sq.ft.)				
Compact Fluorescent 2: A1: MULTIPURPOSE RM PEND: Triple 4-pin 32W: Electronic:	1	6	32	192
Compact Fluorescent 3 copy 1: B: TYPICAL DOWN: Triple 4-pin 32W: Electronic:	1	6	32	192
Linear Fluorescent 4 copy 1: D: VOLUMETRIC FIXTURE: 48" T8 32W (Super T8): Electronic:	2	3	54	162
Linear Fluorescent 9: M: UNDERCABINET: 24" T8 17W: Electronic:	1	7	17	119
Linear Fluorescent 10: P: OVER DESK TASK: 24" T8 17W: Electronic:	1	3	17	51
Halogen 1 copy 1: W1: CEILING FAN: Halogen MR-16 71W:	1	2	71	142
Storage Garage (Warehouse 600 sq.ft.)				
Linear Fluorescent 1 copy 1: C: 1X4 2-LAMP: 48" T8 32W (Super T8): Electronic:	2	9	54	486
Total Proposed Watts =				10400

Section 4: Requirements Checklist