COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

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MARK PESTRELLA, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

April 16, 2025

IN REPLY PLEASE
REFER TO FILE: BRC-2

NOTICE TO BIDDERS D
HARBOR-UCLA MEDICAL CENTER REPLACEMENT PROGRAM
GENERATOR BUILDING RETROFIT PROJECT COMPONENT
BID NUMBER: BRC0000569
SPECS 7962; C.P. 67961

This Notice to Bidders D revises certain portions of the Invitation for Bids (IFB), dated February 13, 2025, for the above-named bid and is hereby made a part thereof.

a. QUESTIONS AND ANSWERS

Refer to the attached file dated April 16, 2025, "Request for Information/Clarifications", containing questions and answers, in response to the questions received from bidders.

b. BID FORMS

1) Replace Section 00 03 00 "Form of Bid" with the revised Section 00 03 00 (Attached).

c. PLANS

1. Replace and add Increment 1 Sheets as noted in Exhibit 14, Addendum D narrative.

2. Replace and add Increment 2 Sheets as noted in Exhibit 14, Addendum D narrative.

d. SPECIFICATIONS

1. Replace and add Increment 1 Specification Sections as noted in Exhibit 14, Addendum D narrative.

2. Replace and add Increment 2 Specification Sections as noted in Exhibit 14, Addendum D narrative.

Kindly notify your subconsultants of this Notice.

If you have any questions regarding this Notice to Bidders D, you may contact Mr. Matt Jerge at (626) 476-0378 or by email at mjerge@pw.lacounty.gov.

Very truly yours,

MARK PESTRELLA, PE
Director of Public Works

Brian Soria

for Soo Kim
Division Chief
Business Relations and Contracts Division

MJ

April 16, 2025
REQUEST FOR INFORMATION/CLARIFICATIONS
HARBOR-UCLA MEDICAL CENTER REPLACEMENT PROGRAM
GENERATOR BUILDING RETROFIT PROJECT COMPONENT
BID NUMBER: BRC0000569

Question Number	Question	Answer	Answer Provided in Notice to Bidders:
1	What is the typical timeline for a shutdown notice, and would temporary generators be needed?	The typical required shutdown notice period is four (4) weeks. Please refer to Exhibit 9 and notes in the plans, which outline the various shutdowns and cutovers that may be required throughout the course of the project. Bidders/Contractors shall provide Temporary Generators required for any major shutdowns exceeding 15 minutes in 24/7 occupied buildings, including but not limited to: •Main hospital buildings •Central Plant •Main Data Centers For buildings that operate only during regular hours, work may be scheduled off-hours to avoid the need for temporary generators. However, if a data center is present in those buildings, it must be supported with Temporary Generators during shutdowns. Bidders/Contractor are responsible for coordinating shutdowns, obtaining approvals, and ensuring compliance with all hospital, regulatory, and project-specific requirements.	**A**
2	Please further clarify the details of the expected responsibilities from the bidders for the scope of Owner-Furnished, Contractor-Installed (OF/CI) work, and are power studies required?	The Owner-Furnished, Contractor-Installed (OF/CI) scope is outlined in Exhibit 10, which clearly defines the roles and responsibilities for OF/CI work. Bidders/Contractors must review Exhibit 10 in detail to fully understand their obligations under this project. Power studies are required. Bidders/Contractors shall assume that all necessary power system studies (e.g., short-circuit analysis, coordination study, arc flash study, and harmonic analysis) are required and are the responsibility of the Bidders/Contractors unless explicitly stated otherwise in the Contract Documents or Exhibit 10. Bidders/Contractors shall install, integrate, test, and commission all Owner-Furnished equipment per project specifications and applicable codes.	**A**
3	Can we schedule an additional job-walk for this project?	Bidders may request one additional job walk to view the project site by emailing Matt Jerge at mjerge@dpw.lacounty.gov. Additional job walks will only be conducted from April 7, 2025 through April 11, 2025.	**C**

Question Number	Question	Answer	Answer Provided in Notice to Bidders:
4	Specification 23 09 00 – 2 Please confirm that Siemens, Johnson Controls, & Honeywell are approved DDC manufacturers? These manufacturers provide open BACnet controls systems and are equivalent to the listed acceptable manufacturer in specification 23 09 00 – 2 Section 1.3. By allowing these manufacturers, this will allow for competitive bidding as required per California public contracting code section 3400.	Per Mechanical Controls scope identified on specification 230900 section 1.3, and detail 3/sheet M301.2 keynote #4, "Contractor is to integrate new mechanical and fuel oil monitoring systems into the existing hospital BAS (Schneider Electric EcoStruxure) and coordinate with owner preferred vendor (KDC Systems)". Siemens, Johnson Controls, & Honeywell are not approved vendors, as they not authorized and licensed to work within the existing Schneider Ecostruxure platform that serves the existing Hospital.	**D**
5	Who is responsible for veeder root control panel installation, conduit, and wiring, including all sensors?	All described scope, including but not limited to, the veeder root control panel installation, conduit, wiring, and all sensors, shall be part of the Contractor's base bid.	**D**
6	Who is responsible for fuel oil control panel installation, conduit, and wiring, including all sensors?	All described scope, including but not limited to, the fuel oil control panel installation, conduit, wiring, and all sensors, should be part of the Contractor's base bid.	**D**
	1. (1) Front End Panel with the following: · (1) Network Control Panel (120-volt power not included) · (1) Ethernet Connection (assumed within room) · Any Underground conduit & wire excluded from scope 2. (1) Vender Root Panel with the following: · (1) MSTP BACnet to Panel Installed by Others · Controller and all sensors installed by others 3. (1) Fuel Oil Control Panel with the following: · (1) MSTP BACnet to Panel Installed by Others · Fuel Oil System & all sensors installed by others 4. VRF System: · (1) Centralized Controller (Power not included) · (2) Outdoor Condensing Unit · (4) Fan Coil Units w/ Mfg. T-STAT · Any additional points e.g. 24-volt converter kits, filter, leak sensor, etc., are not included	All the described scope shall be part of the Contractor's base bid.	**D**

Question Number	Question	Answer	Answer Provided in Notice to Bidders:
7	Please advise on the logistics and requirements necessary for shutting down adjacent streets to perform work.	The requirements are a two step process, allow for two week minimum to receive approval: Step 1: Submit an Facilities Management Request for Information (FMRFI) with the request. Step 2: Once FMRFI response received, submit a Construction Activity Notice (CAN) and Logistics Plan.	**D**
8	Please provide a logistics plan for parking, construction trailers, material and equipment Laydown.	Please use Exhibit 13 for prilimanry logitics plan assumptions which will need to be submitted by the contractor to the DHS facilities for review and	**D**
9	Please provide preferred Vendors for Fuel Controls/monitoring, Fire Alarm, Fire Sprinkler and HVAC Controls.	Manufacturers are listed in Specific Spec Sections. See answer to RFI #10. There are no Fire Sprinklers on the project	**D**
10	Are there any preferred vendors required to use on this project?	First listed manufacturer in the specs if multiple manufacturers are listed should always be the basis of design. Any substitutions need to be formally submitted per the specification. Technology Low Voltage requires a Genetec Certified Contractor.	**D**
11	Will the Owner provide parking for GC and Subcontractor use? If not, please provide typical parking cost.	Yes, parkling shall be provided for up to 50 vevhiecles. please refer to Exhibit 13 in RFI #8.	**D**
12	Sheet DU2-221, Key note 1 calls to remove the existing equipment and pad for the existing gear inside the switchgear room. Please advise if existing pad can remain?	The housekeeping pad in the new battery needs to be removed. The housekeeping pad in the main switchgear room is to remain and be reused.	**D**
13	Is Duct Leakage testing required?	Yes, See Spec section 230593 for requirements as part of TAB requirements.	**D**

Question Number	Question	Answer	Answer Provided in Notice to Bidders:
14	Reference Inc. #1 Electrical Sheet DU1-214.2 (Bottom Right Corner) Feeder Designations: G002, S001B, C003 & F001. These listed feeder designations are listed on electrical sheet DU1-214.2 and there is a note next to the feeder runs that states: see continued on sheet DU1-214.3. Once on sheet DU1-214.3 there is nothing listed and we need to know where these feeder (conduit's) connect to or what equipment they connect to. Please advise.	G002, S001B, C003, and F001 do not continue on DU1-214.3. See Special Notes 1 and 2 on DU1-214.2 Just to the east of Manhole MVMH-N-19/20 there is a cap shown where these conduits connect to the conduits that are installed by the Inc 2 contractor. See Addendum D.	**D**
15	Reference Inc. #1 Electrical sheets (conduit and cable schedules). There are feeder designations (P627, P628, P629, P630, P631A, L001B and L002B shown on the conduit and cable schedule but these are not shown on the Inc. #1 drawings. Please provide an electrical site drawing showing these conduit feeder locations, otherwise we will assume that they are N.I.C.	P627, P628, P629 and P630 are NIC and will be removed from the conduit and cable schedule on DU1-403.1, see Addendum D. P631A is shown at the bottom of DU1-212 to the west of manhole MVMH-N-19/20. L001B and L002B can be found on DU1-221 and DU1-224 in Addendum D. DU1-214.3 has been renumbered to DU1-224 in Addendum D.	**D**
16	Reference Inc. #1 Electrical sheet DU1-214.3 and Conduit and Cable Schedule sheet DU1-402.1 (Feeder tags L001 & L002). Looking at sheet DU1-214.3 there you will see feeder conduit tags (L001 & L002) with a Note #2 next to them. Note #2 states: Install cable into existing conduits. Sheet DU1-402.1 feeder tags (L001 & L002) tell us to install new (2) 2" PVC/IMC conduits and NO wire. Please advise as to what the scope of work is for feeder designations. (L001 & L002).	Feeder tags on DU1-214.3 were renumbered from L001 and L002 to L001B and L002B. DU1-214.3 was renumbered to DU1-224 in Addendum D. L001 L002 is Inc 1 contractor scope to install conduit only in Milestone 1. L001A and L002A is Inc 2 contractor scope to install conduit only in Milestone 1. L001B and L002B is Inc 1 contractor scope to install cable in Milestone 2.	**D**
17	INC 2 Milestone 3 - says to turn o@ LSC4 and pull new cables from new 011-01-EMV-SGR-02-GB-23 to MVMH-E-01E and splice. LSC4 feeder needs to be moved somewhere prior to the new EMV-SGR-02 to be installed. It does not show when and where LSC4 feeder is to be refed to allow for the existing switchgear to be removed so that new switchgear can be installed? Please Advise.	In Milestone 3, the existing generator building switchgear from which LSC4 is connected to is still installed. After new switchgear 011-01-EMV-SGR-02 (PART A) is installed, a new feeder is to be installed from breaker GB-23 through a different conduit system than LSC4 is installed in to manhole MVMH-E-01E and spliced to the portion of LSC4 that is connected to breaker GP-31. See drawing DU1-223 for new conduit path and DU1-234 for new cable from 011-01-EMV-SGR-02 (PART A).	**D**
18	Are there any Badge requirements for this facility? If so, please provide cost to obtain a badge.	Yes,badging is required. Vendormate, the HUCLA approved badging service.	**D**
19	Per the job walk it was discussed that GC is to remove all trees and shrubbery and the leftover foam insulation debris on site. Please confirm or advise.	Confirmed. This should be part of your base bid.	**D**
20	Per the job walk, it was discussed that the GC is to include allowances for unforeseen utilities. Please provide amount to be included in bid.	Bidder to include a contingency to be used for corrections associated with unforeseen utilities conditions discovered during construction. Please breakout the contingency under Division 01 - 01 73 00. Please see updated Form of Bid attached to this Notice.	**D**
21	For the owner furnished equipment to be installed by the contractor, is there a specific person who should be contacted from CAT/QUINN Power Systems for details on scope, cost, and warranty for work to be included in contractor's bid?	Yes, please contact Andrew Salem, the Product Support Sales Manager at 562-463-4782 Phone | 626-862-7870 Cell andrew.salem@quinnpower.com| www.quinnpower.com	**D**

EXHIBIT 13
Conceptual Logistics Plan

1. Conceptual Logistics Plan: Prepared by DPW dated 04/15/2025

Exhibit #13

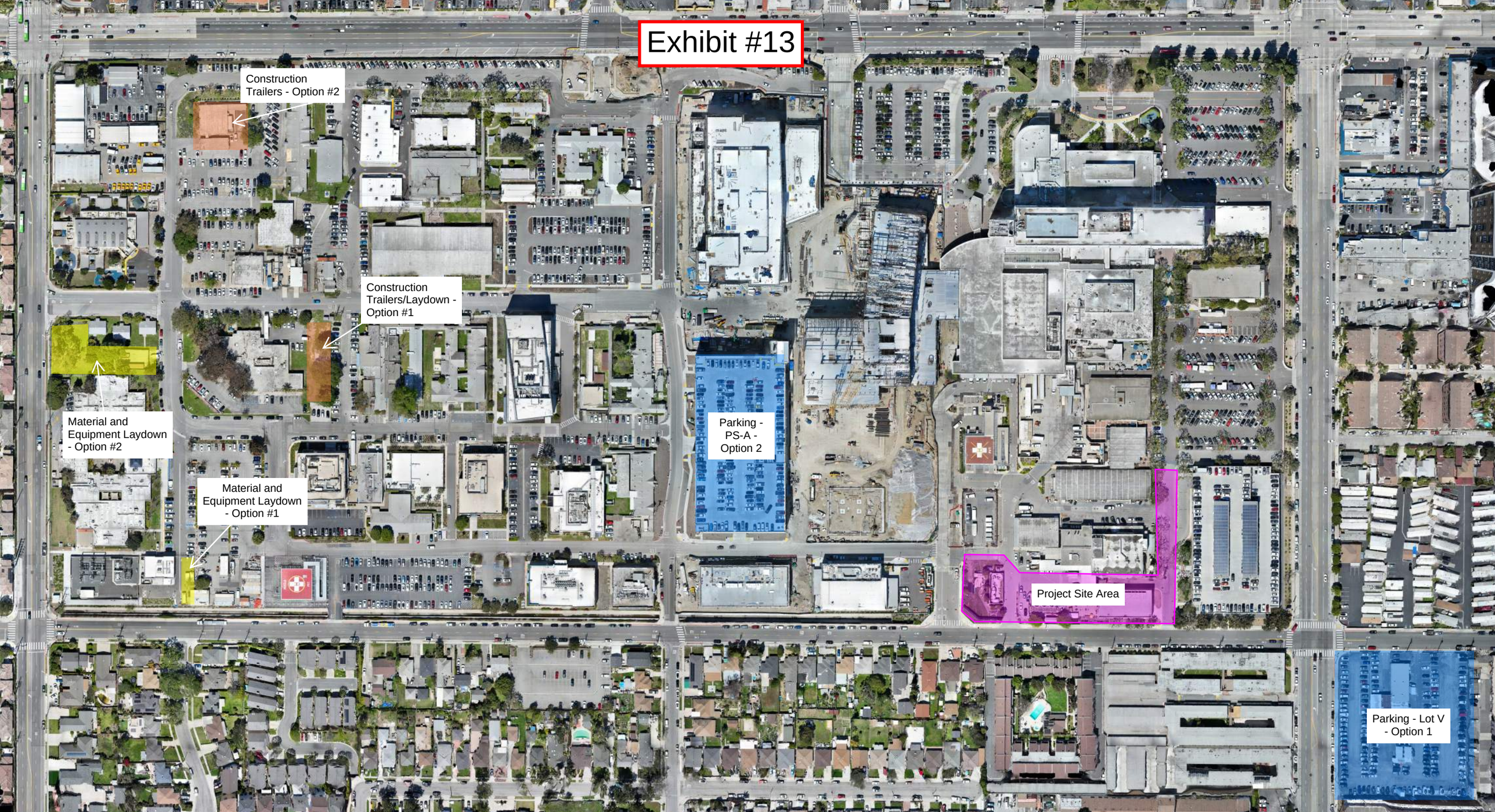
Construction Trailers - Option #2
Construction Trailers/Laydown - Option #1
Material and Equipment Laydown - Option #2
Material and Equipment Laydown - Option #1
Parking - PS-A - Option 2
Project Site Area
Parking - Lot V - Option 1

EXHIBIT 14 - Addendum D

1. Addendum D Narrative: Prepared by RBB Architects dated April 11, 2025

ADDENDUM NO. D

To RBB Architects Drawings, Specifications, and Project Documents for:

LAC/Harbor-UCLA Medical Center
Phase 2E Inc. 1 – 12kV General Access Power (GAP) Switchgear Building
Inc. 2 – Generator Building Retrofit

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OSHPD # I240005-19-01 / # I240005-19-02
Client # BRC #0000569 / Spec # 7962

NOTICE

The following clarification's, additions, and/or deletions shall, by this reference, be incorporated into the Contract Specifications and/or Drawings authored by RBB Architect Inc. or its Consultants as though fully set forth therein.

DOCUMENTS ISSUED WITH THIS ADDENDUM

None

DOCUMENTS REVISED WITH THIS ADDENDUM

None

DOCUMENTS REISSUED WITH THIS ADDENDUM

None

DRAWINGS REISSUED WITH THIS ADDENDUM

None

Inc. 1 DRAWINGS ISSUED WITH THIS ADDENDUM

None

Inc. 2 DRAWINGS ISSUED WITH THIS ADDENDUM

None

Inc. 1 DRAWINGS REVISED WITH THIS ADDENDUM

DU1-004 – Added general notes to provide additional requirements for contractor.
DU1-005 – Added steps to Sequence of Installation for installation of HVAC and Plumbing equipment.
DU1-212 – Clarified "Electrical Lines" to "Electrical Underground Ductbank Conduit Lines" on Note 5.
DU1-221 – Added power cables between switchgear sections and added notes 14 and 15.
DU1-543 – Removed note 3.

Inc. 2 DRAWINGS REVISED WITH THIS ADDENDUM

A300.2 – Added panic hardware to (3) existing doors in the portion of the existing Emergency Generator Building where new Switchgear will be installed.
A511.2 – On the enlarged plan of the existing Emergency Generator Building are now showing the existing doors that are to receive panic hardware.

P011.2 – Plumbing Schedules - Added the voltage requirements for the Fuel Oil Filter cabinet.
P101.2 – Plumbing Partial Site Plan - Added the existing utilities, i.e. sewer, storm drain, and electrical lines to the Site Plan. Rerouted the Fuel Oil supply and return piping to avoid the existing underground utilities. Revised plumbing notes to reference the correct details. Added the Fuel Tank Overfill Alarm location at each tank. Indicated the location of the Building Engineers office in the Central Plant.
P211.2 – Plumbing Level 1 Plan - Added the existing underground utilities on this sheet for reference. Relocated Fuel Oil Filter inside the building to avoid the existing electrical panel. Revised plumbing notes for the new fuel pump control panel. Revised the plumbing notes at the existing and new leak and inventory control and monitoring panels. Relocated the transition sump, supply and return lines into the building to avoid the existing underground utilities.
P220.2 - Revised the detail callout information on the tank vents.
P301.2 - Added note G to the FUEL CONTROL AND MONITORING SEQUENCE OF OPERATION notes.
P302.2 - Revised the Fuel Oil piping to and from the Fuel Oil Filter Cabinet. Revised the fuel oil supply and return lines with the transition sump location.
P303.2 - Revised notes on the control panels to tie to the BMS System in the Central Plants Building Engineers office. Revised callout to Veeder Root. Revised note on the existing daytank solenoid wiring.
P304.2 - Revised notes on the control panels to tie to the BMS System in the Central Plants Building Engineers office.
P800.2 – Plumbing Details - Revised product name on Detail #1
P801.2 – Plumbing Details - Revised underground piping in trench detail to include additional widths. Revised the Fuel Oil Cabinet detail.

DU2-004 – Added general notes to provide additional requirements for contractor.
DU2-004 – Updated feeders to fuel pumps on Note 1.

DU2-006 – Added steps to Sequence of Installation for installation of HVAC and Plumbing equipment.
DU2-213 – Updated conduit identification number
DU2-215.1 – Added existing starters and pump controllers. Added Note 4 for demo instructions.
DU2-215.2 – Removed Notes 6 and 10.
DU2-216.2 – Moved detail 2 and added tap detail added notes for tap. Changed circuits on some light circuits.
DU2-225 – Added wiring for battery chargers, added power cables between switchgear, added notes for both.
DU2-245 – Added plumbing power to various equipment, to control panel, and to site. Added notes 3-12.
DU2-401.1 – Fixed pole number of panel pc circuit 29/31.
DU2-401.2 – Adjusted loads being moved around on panels.
DU2-401.3 – Adjusted loads being moved around on panels.
DU2-401.4 – Moved panels around, matched loads with previous steps.
DU2-401.5 – Updated loads. Updated where battery chargers are fed from.
DU2-511 – Added additional requirements to general note 8.
DU2-512 – Update general note 2 to clarify what the load is for.
DU2-513 - Added additional requirements to general note 6.
DU2-604 – Corrected vertical placement of equipment.

FA010.2 – Fire Alarm Symbols and Abbreviations - Revised C.S.F.M. listings for the Conventional Heat Sensor and Fire Alarm Control Panel.

Inc. 1 SPECIFICATIONS REVISIONS ISSUED WITH THIS ADDENDUM

None

Inc. 2 SPECIFICATIONS REVISIONS ISSUED WITH THIS ADDENDUM

221324 Facility Fuel-Oil Piping - Revised Leak Detection and Monitoring system manufacturer and model number in spec section 2.9. A.1.

SPECIFICATIONS SECTIONS ISSUED WITH THIS ADDENDUM

None

SPECIFICATIONS SECTIONS REISSUED WITH THIS ADDENDUM

None

END OF ADDENDUM D

SECTION 221324 - FACILITY FUEL-OIL PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Fuel-oil pipes, tubes, and fittings.
2. Double-containment piping and fittings.
3. Piping specialties.
4. Joining materials.
5. Specialty valves.
6. Mechanical leak-detection valves.
7. Leak detection and monitoring system.
8. Labels and identification.

1.3 DEFINITIONS

A. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.

B. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.

C. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, and dimensions of individual components and profiles.
2. Include, where applicable, rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
3. For valves, include pressure rating, capacity, settings, and electrical connection data of selected models.

B. Shop Drawings: For fuel-oil piping.

1. Include plans, elevations sections, hangers, and supports for multiple pipes.
2. Include details of location of anchors, alignment guides, and expansion joints and loops.

C. Delegated-Design Submittal: For fuel-oil piping indicated to comply with performance requirements and design criteria.

1. Include analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
2. Detail fabrication and assembly of anchors and seismic restraints.
3. Design Calculations: Calculate requirements for selecting seismic restraints.
4. Detail fabrication and assembly of pipe anchors, hangers, supports for multiple pipes, and attachments of the same to building structure.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings:

1. Plans and details, drawn to scale, on which fuel-oil piping is shown and coordinated with other installations, using input from installers of the items involved.
2. Site Survey: Plans, drawn to scale, on which fuel-oil piping and tanks are shown and coordinated with other services and utilities.

B. Brazing certificates.

C. Welding certificates.

D. Field quality-control reports.

E. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For fuel-oil equipment and accessories to include in emergency, operation, and maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1.8 QUALITY ASSURANCE

A. Brazing: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX.

B. Steel Support Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

C. Pipe Welding Qualifications: Qualify procedures and personnel according to ASME Boiler and Pressure Vessel Code.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Lift and support fuel-oil storage tanks only at designated lifting or supporting points, as shown on Shop Drawings. Do not move or lift tanks unless empty.

B. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.

C. Store pipes and tubes with protective PE coating to avoid damaging the coating and to protect from direct sunlight.

D. Store PE pipes and valves protected from direct sunlight.

1.10 FIELD CONDITIONS

A. Interruption of Existing Fuel-Oil Service: Do not interrupt fuel-oil service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary fuel-oil supply according to requirements indicated:

1. Notify Owner no fewer than two days in advance of proposed interruption of fuel-oil service.
2. Do not proceed with interruption of fuel-oil service without Owner's written permission.

1.11 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of flexible, double-containment piping and related equipment that fail in materials or workmanship within specified warranty period.

1. Failures due to defective materials or workmanship for materials including piping, dispenser sumps, water-tight sump entry boots, terminations, and other end fittings.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with ASME B31.9, "Building Services Piping," for fuel-oil piping materials, installation, testing, and inspecting.

C. Fuel-Oil Valves: Comply with UL 842 and have service mark initials "WOG" permanently marked on valve body.

D. Comply with requirements of the EPA and of state and local authorities having jurisdiction. Include recording of fuel-oil piping.

2.2 PERFORMANCE REQUIREMENTS

A. Maximum Operating-Pressure Ratings: 3-psig fuel-oil supply pressure at oil-fired appliances.

B. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design restraints and anchors and multiple pipe supports and hangers for fuel-oil piping.

2.3 FUEL-OIL PIPES, TUBES, AND FITTINGS

A. See "Outdoor Piping Installation" and "Indoor Piping Installation" articles for where pipes, tubes, fittings, and joining materials are applied in various services.

B. Steel Pipe: ASTM A 53/A 53M, black steel, Schedule 40, Type E or S, Grade B.

1. Malleable-Iron Threaded Fittings: ASME B16.3, Class 150, standard pattern.
2. Wrought-Steel Welding Fittings: ASTM A 234/A 234M, for butt and socket welding.
3. Unions: ASME B16.39, Class 150, malleable iron with brass-to-iron seat, ground joint, and threaded ends.
4. Forged-Steel Flanges and Flanged Fittings: ASME B16.5, minimum Class 150, including bolts, nuts, and gaskets of the following material group, end connections, and facings:
   a. Material Group: 1.1.
   b. End Connections: Threaded or butt welding to match pipe.
   c. Lapped Face: Not permitted underground.
   d. Gasket Materials: Asbestos free, ASME B16.20 metallic, or ASME B16.21 nonmetallic, gaskets compatible with fuel oil.
   e. Bolts and Nuts: ASME B18.2.1, cadmium-plated steel.
5. Protective Coating for Underground Piping: Factory-applied, three-layer coating of epoxy, adhesive, and PE.
   a. Joint Cover Kits: Epoxy paint, adhesive, and heat-shrink PE sleeves.

2.4 DOUBLE-CONTAINMENT PIPE AND FITTINGS

A. Flexible, Metallic, Double-Containment Piping: Comply with UL 971A.

1. Franklin Fueling Systems
2. Pipe Materials:
   a. Metallic Lining: ASTM A 240/ASTM A 240M Type 304 corrugated stainless-steel tubing.
   b. Carrier Pipe: Fluoropolymer tube.
   c. Jacket: UV stabilized.
3. Fiberglass transition sumps with w~~W~~atertight sump entry boots, pipe adapters with test ports and tubes, coaxial fittings, and couplings.
4. Minimum Operating Pressure Rating: 10 psig.
5. Plastic to Steel Pipe Transition Fittings: Factory-fabricated fittings with plastic end matching or compatible with carrier piping, and steel pipe end complying with ASTM A 53/A 53M, black steel, Schedule 40, Type E or S, Grade B.
6. Include design and fabrication of double-containment pipe and fitting assemblies with provision for field installation of cable leak-detection system in annular space between carrier and containment piping.

B. Rigid, Double-Containment Piping: Comply with UL 971.

1. 3000 American Series
2. AO Smith Inland
3. RTRP: ASTM D 2996 or ASTM D 2997 carrier and containment piping and mechanical couplings to seal carrier and containment piping or individually bonded joints.

    a. Minimum Operating-Pressure Rating for RTRP NPS 2 and NPS 3: 150 psig.
    b. Minimum Operating-Pressure Rating for RTRP NPS 4 and NPS 6: 125 psig. Compliance with UL 971 is not required for NPS 6 and larger piping.
    c. Fittings: RTRF complying with ASTM D 2996 or ASTM D 2997 and made by RTRP manufacturer; watertight sump entry boots, termination, or other end fittings.

4. Leak-Detection System: Include design and fabrication of double-containment pipe and fitting assemblies with provision for field installation of cable leak-detection system in annular space between carrier and containment piping.

2.5 PIPING SPECIALTIES

A. Metallic Flexible Connectors:

1. Franklin Fueling Systems
2. Listed and labeled for aboveground and underground applications by an NRTL acceptable to authorities having jurisdiction.
3. Stainless-steel bellows with woven, flexible, bronze or stainless-steel, wire-reinforcing protective jacket.
4. Minimum Operating Pressure: 150 psig.
5. End Connections: Socket, flanged, or threaded end to match connected piping.
6. Maximum Length: 30 inches
7. Swivel end, 50-psig maximum operating pressure.
8. Factory-furnished anode for connection to cathodic protection.

B. Y-Pattern Strainers:

1. Body: ASTM A 126, Class B, cast iron with bolted cover and bottom drain connection.
2. End Connections: Threaded ends for NPS 2 and smaller.
3. Strainer Screen: 80-mesh startup strainer and perforated stainless-steel basket with 50 percent free area.
4. CWP Rating: 125 psig.

C. Basket Strainers:

1. Body: ASTM A 126, Class B, high-tensile cast iron with bolted cover and bottom drain connection.
2. End Connections: Threaded ends for NPS 2 and smaller.
3. Strainer Screen: 80-mesh startup strainer and perforated stainless-steel basket with 50 percent free area.
4. CWP Rating: 125 psig.

D. T-Pattern Strainers:

1. Body: Ductile or malleable iron with removable access coupling and end cap for strainer maintenance.
2. End Connections: Grooved ends.
3. Strainer Screen: 80-mesh startup strainer and perforated stainless-steel basket with 57 percent free area.

4. CWP Rating: 750 psig.

E. Manual Air Vents:

1. Body: Bronze.
2. Internal Parts: Nonferrous.
3. Operator: Screwdriver or thumbscrew.
4. Inlet Connection: NPS 1/2.
5. Discharge Connection: NPS 1/8.
6. CWP Rating: 150 psig.
7. Maximum Operating Temperature: 225 deg F.

2.6 JOINING MATERIALS

A. Joint Compound and Tape for Threaded Joints: Suitable for fuel oil.

B. Welding Filler Metals: Comply with AWS D10.12/D10.12M for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.

C. Brazing Filler Metals: Alloy with melting point greater than 1000 deg F complying with AWS A5.8/A5.8M. Brazing alloys containing more than 0.05 percent phosphorus are prohibited.

D. Bonding Adhesive for RTRP and RTRF: As recommended by piping and fitting manufacturer.

2.7 SPECIALTY VALVES

A. Pressure Relief Valves:

1. Universal
2. Listed and labeled for fuel-oil service by an NRTL acceptable to authorities having jurisdiction.
3. Body: Brass, bronze, or cast steel.
4. Springs: Stainless steel, interchangeable.
5. Seat and Seal: Nitrile rubber.
6. Orifice: Stainless steel, interchangeable.
7. Factory-Applied Finish: Baked enamel.
8. Maximum Inlet Pressure: 150 psig.
9. Relief Pressure Setting: 60 psig.

B. Oil Safety Valves:

1. Universal
2. Listed and labeled for fuel-oil service by an NRTL acceptable to authorities having jurisdiction.
3. Body: Brass, bronze, or cast steel.
4. Springs: Stainless steel.
5. Seat and Diaphragm: Nitrile rubber.
6. Orifice: Stainless steel, interchangeable.
7. Factory-Applied Finish: Baked enamel.
8. Manual override port.
9. Maximum Inlet Pressure: 60 psig.
10. Maximum Outlet Pressure: 3 psig.

C. Emergency Shutoff Valves:

1. Universal
2. Listed and labeled for fuel-oil service by an NRTL acceptable to authorities having jurisdiction.
3. Double poppet valve.
4. Body: ASTM A 126, cast iron.
5. Disk: FPM.
6. Poppet Spring: Stainless steel.
7. Stem: Plated brass.
8. O-Ring: FPM.
9. Packing Nut: PTFE-coated brass.
10. Fusible link to close valve at 165 deg F.
11. Thermal relief to vent line pressure buildup due to fire.
12. Air test port.
13. Maximum Operating Pressure: 0.5 psig.

2.8 MECHANICAL LEAK-DETECTION VALVES

A. Universal

B. Listed and labeled for fuel-oil service by an NRTL acceptable to authorities having jurisdiction.

C. Body: ASTM A 126, cast iron.

D. O-Rings: Elastomeric compatible with fuel oil.

E. Piston and Stem Seals: PTFE.

F. Stem and Spring: Stainless steel.

G. Piston Cylinder: Burnished brass.

H. Indicated Leak Rate: Maximum 3 gph at 10 psig.

I. Leak Indication: Reduced flow.

2.9 LEAK-DETECTION AND MONITORING SYSTEM

A. Cable and Sensor System: Comply with UL 1238.

D

1. Veeder-Root TLS-450PLUS Automatic Tank Gauge Fuel Management System.
2. Calibrated leak-detection, inventory and monitoring system with probes and other sensors and remote alarm panel for fuel-oil piping with printer.
3. Monitor siter performance, receive real-time alerts, with a wide range of options, store up to 3 years data and protect it from power outages, battery replacement, or software upgrades.
4. Include fittings and devices required for testing.
5. Provide interface for connection to Level and Leak Detection and Monitoring System and Building Automation System (BAS). Interface shall provide information on actual fuel level for each tank, level alarms for each tank, inventory management and product order notification. Coordinate monitoring and controls with Main Fuel Receiving Port controls and Level and Leak Detection and Monitoring System.

2.10 LABELS AND IDENTIFICATION

A. Detectable Warning Tape: Acid- and alkali-resistant PE film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored yellow.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas for compliance with requirements for installation tolerances and other conditions affecting performance of fuel-oil piping.

B. Examine installation of fuel-burning equipment and fuel-handling and storage equipment to verify actual locations of piping connections before installing fuel-oil piping.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 EARTHWORK

A. Comply with requirements in Section 312333~~000~~ "Excavating, Backfilling and Compaction For Utilities~~arth Moving~~" for excavating, trenching, and backfilling.

3.3 PREPARATION

A. Close equipment shutoff valves before turning off fuel oil to premises or piping section.

B. Comply with NFPA 30 and NFPA 31 requirements for prevention of accidental ignition.

3.4 OUTDOOR PIPING INSTALLATION

A. Install Underground Fuel-Oil Piping Buried:

1. Under Compacted Backfill: 18 inches below finished grade.
2. Under Asphalt 2 Inches Thick: 8 inches below bottom of asphalt.
3. Under 4 Inches of Reinforced Concrete in Areas Subject to Vehicle Traffic: 4 inches below bottom of concrete.
4. Comply with requirements in Section 312000 "Earth Moving" for excavating, trenching, and backfilling.

B. Steel Piping with Protective Coating:

1. Apply joint cover kits to pipe after joining, to cover, seal, and protect joints.
2. Repair damage to PE coating on pipe as recommended in writing by protective coating manufacturer. Review protective coating damage with Architect prior to repair.
3. Replace pipe having damaged PE coating with new pipe.

C. Install double-containment, fuel-oil pipe at a minimum slope of 1 percent downward toward fuel-oil storage tank sump.

D. Install vent pipe at a minimum slope of 2 percent downward toward fuel-oil storage tank sump.

E. Assemble and install entry boots for pipe penetrations through sump sidewalls for liquid-tight joints.

F. Install metal pipes and tubes, fittings, valves, and flexible connectors at piping connections to AST and UST.

G. Install fittings for changes in direction in rigid pipe.

H. Install system components with pressure rating equal to or greater than system operating pressure.

3.5 INDOOR PIPING INSTALLATION

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements are used to size pipe and calculate friction loss, expansion, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.

B. Arrange for pipe spaces, chases, slots, sleeves, and openings in building structure during progress of construction to allow for mechanical installations.

C. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.

D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

E. Install piping above accessible ceilings at a height that allows sufficient space for ceiling panel removal.

F. Install piping free of sags and bends.

G. Install fittings for changes in direction and branch connections.

H. Comply with requirements for equipment specifications for roughing-in requirements.

I. Conceal pipe installations in walls, pipe spaces, or utility spaces; above ceilings; below grade or floors; and in floor channels unless indicated to be exposed to view.

J. Prohibited Locations:

1. Do not install fuel-oil piping in or through HVAC ducts and plenums, clothes or trash chutes, chimneys or gas vents (flues), ventilating ducts, or dumbwaiter or elevator shafts.
2. Do not install fuel-oil piping in solid walls or partitions.

K. Use eccentric reducer fittings to make reductions in pipe sizes. Install fittings with level side down.

L. Connect branch piping from top or side of horizontal piping.

M. Install unions in pipes NPS 2 and smaller at final connection to each piece of equipment and elsewhere as indicated. Unions are not required on flanged devices.

N. Do not use fuel-oil piping as grounding electrode.

3.6 VALVE INSTALLATION

A. Install manual fuel-oil shutoff valves on branch connections to fuel-oil appliance.

B. Install valves in accessible locations.

C. Install oil safety valves at inlet of each oil-fired appliance.

D. Install pressure relief valves in distribution piping between the supply and return lines.

E. Install one-piece, bronze ball valve with hose end connection at low points in fuel-oil piping. Comply with requirements in Section 2201116-2.4 "Ball Valves for Plumbing Piping."

F. Install manual air vents at high points in fuel-oil piping.

G. Install emergency shutoff valves at dispensers.

3.7 PIPING JOINT CONSTRUCTION

A. Ream ends of pipes and tubes and remove burrs.

B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.

C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:

1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.

D. Welded Joints: Construct joints according to AWS D10.12/D10.12M, using qualified processes and welding operators according to "Quality Assurance" Article.

1. Bevel plain ends of steel pipe.
2. Patch factory-applied protective coating as recommended by manufacturer at field welds and where damage to coating occurs during construction.

E. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," "Pipe and Tubing" Chapter.

F. Flanged Joints: Install gasket material, size, type, and thickness for service application. Install gasket concentrically positioned.

G. Flared Joints: Comply with SAE J513. Tighten finger tight then use wrench according to fitting manufacturer's written instructions. Do not overtighten.

H. Fiberglass-Bonded Joints: Prepare pipe ends and fittings, apply adhesive, and join according to pipe manufacturer's written instructions.

3.8 HANGER AND SUPPORT INSTALLATION

A. Pipe hanger and support and equipment support materials and installation requirements are specified in Section 230529 "Hangers and Supports for HVAC Piping and Equipment."

B. Install hangers for horizontal steel piping with the following maximum spacing and minimum rod sizes:

1. NPS 1-1/4 and Smaller: Maximum span, 84 inches; minimum rod size, 3/8 inch.
2. NPS 1-1/2: Maximum span, 108 inches; minimum rod size, 3/8 inch.

3. NPS 2: Maximum span, 10 feet; minimum rod size, 3/8 inch.
4. NPS 2-1/2: Maximum span, 11 feet; minimum rod size, 1/2 inch.
5. NPS 3: Maximum span, 12 feet; minimum rod size, 1/2 inch.
6. NPS 4: Maximum span, 13 feet; minimum rod size, 5/8 inch.

C. Support vertical steel pipe at each floor and at spacing not greater than 15 feet.

D. Install hangers for horizontal, drawn-temper copper tubing with the following maximum spacing and minimum rod sizes:

1. NPS 3/4 and Smaller: Maximum span, 60 inches; minimum rod size, 3/8 inch.
2. NPS 1: Maximum span, 72 inches; minimum rod size, 3/8 inch.
3. NPS 1-1/4: Maximum span, 84 inches; minimum rod size, 3/8 inch.
4. NPS 1-1/2 and NPS 2: Maximum span, 96 inches; minimum rod size, 3/8 inch.
5. NPS 2-1/2: Maximum span, 108 inches; minimum rod size, 1/2 inch.
6. NPS 3: Maximum span, 10 feet; minimum rod size, 1/2 inch.
7. NPS 4: Maximum span, 11 feet; minimum rod size, 5/8 inch.

E. Support vertical copper tube at each floor and at spacing not greater than 10 feet.

3.9 LEAK-DETECTION AND MONITORING SYSTEM INSTALLATION

A. Install leak-detection and monitoring system. Install alarm panel inside building where indicated.

B. Double-Containment, Fuel-Oil Piping: Install leak-detection sensor probes at low points in piping.

3.10 CONNECTIONS

A. Where installing piping adjacent to equipment, allow space for service and maintenance.

B. Install unions, in piping NPS 2 and smaller, adjacent to each valve and at final connection to each piece of equipment having threaded pipe connection.

C. Install flanges, in piping NPS 2-1/2 and larger, adjacent to flanged valves and at final connection to each piece of equipment having flanged pipe connection.

D. Connect piping to equipment with shutoff valve and union. Install union between valve and equipment.

E. Install flexible piping connectors at final connection to burners or oil-fired appliances.

3.11 LABELING AND IDENTIFYING

A. Nameplates, pipe identification, valve tags, and signs are specified in Section 230553 "Identification for HVAC Piping and Equipment."

B. Equipment Nameplates and Signs: Install engraved plastic-laminate equipment nameplates and signs on or near each service regulator, service meter, and earthquake valve.

1. Text: In addition to identifying unit, distinguish between multiple units; inform operator of operational requirements; indicate safety and emergency precautions; and warn of hazards and improper operations.

C. Install detectable warning tape directly above fuel-oil piping, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs. Terminate tracer wire in an accessible area and identify as "tracer wire" for future use with plastic-laminate sign.

1. Piping: Over underground fuel-oil distribution piping.

3.12 FIELD QUALITY CONTROL

A. Pressure Test Piping: Minimum hydrostatic or pneumatic test-pressures measured at highest point in system:

1. Fuel-Oil Distribution Piping: Minimum 100 psig for minimum 6 hours
2. Fuel-Oil, Double-Containment Piping:

    a. Carrier Pipe: Minimum 100 psig for minimum 6 hours.
    b. Containment Conduit: Minimum 100 psig for minimum 6 hours.

3. Suction Piping: Minimum 20-in. Hg for minimum 30 minutes.
4. Isolate storage tanks if test pressure in piping will cause pressure in storage tanks to exceed 10 psig.

B. Inspect and test fuel-oil piping according to NFPA 31, "Tests of Piping" Paragraph; and according to requirements of authorities having jurisdiction.

C. Test leak-detection and monitoring system for accuracy by manually operating sensors and checking against alarm panel indication.

D. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Bleed air from fuel-oil piping using manual air vents.

F. Fuel-oil piping and equipment will be considered defective if it does not pass tests and inspections.

G. Prepare test and inspection reports.

3.13 OUTDOOR PIPING SCHEDULE

A. Underground Fuel-Oil Piping: Rigid, double-containment piping. Size indicated is carrier-pipe size.

B. Underground fuel-oil-tank fill and vent piping shall be the following:

1. NPS 2 and Smaller: Steel pipe, steel or malleable-iron threaded fittings, and threaded joints. Coat pipe and fittings with protective coating for steel piping.
2. NPS 2-1/2 and Larger: Steel pipe, steel welding fittings, and welded joints. Coat pipe and fittings with protective coating for steel piping.

C. Containment Conduit: Steel pipe with wrought-steel fittings and welded joints. Coat pipe and fittings with protective coating for steel piping.

D. Aboveground fuel-oil piping shall be the following:

1. NPS 2 and Smaller: Steel pipe, steel or malleable-iron threaded fittings, and threaded joints.
2. NPS 2-1/2 and Larger: Steel pipe, steel welding fittings, and welded joints.

E. INDOOR PIPING SCHEDULE

F. Aboveground fuel-oil piping shall be the following:
1. NPS 1/2 to NPS 2: Steel pipe, steel or malleable-iron threaded fittings, and threaded joints.
2. NPS 2-1/2 and Larger: Steel pipe, steel fittings, and welded or flanged joints.

3.14 SHUTOFF VALVE SCHEDULE

A. Valves for aboveground distribution piping NPS 2 and smaller shall be the following:

1. Two-piece, full regular-port, bronze ball valves with bronze trim.

B. Distribution piping valves for pipe NPS 2-1/2 and larger shall be the following:

1. Two-piece, full-port, bronze ball valves with bronze trim.

C. Valves in branch piping for single appliance shall be the following:

1. Two-piece, full-port, bronze ball valves with bronze trim.

END OF SECTION 221113

LEGEND

SYMBOL	DESCRIPTION
-	NOTE CALLOUT
- / -	DETAIL CALLOUT - NUMBER ON TOP DENOTES DETAIL NUMBER - NUMBER ON BOTTOM DENOTES SHEET DETAIL IS SHOWN
- / -	MECHANICAL EQUIPMENT CALLOUT, SEE MECHANICAL PLANS FOR EXACT LOCATION AND REQUIREMENTS
- / -	SECTION CALLOUT
-	FEEDER CALLOUT
-	EXISTING FEEDER CALLOUT
	NEW LINEWORK
	EXISTING LINEWORK
	DEMOLISHED LINEWORK
	CONDUIT EXPOSED
	CONDUIT CONCEALED IN WALL OR ABOVE CEILING
	CONDUIT CONCEALED UNDERGROUND OR BELOW FLOOR
	CONDUIT EMERGENCY
W W	MULTI-CHANNEL RACEWAY
	CONDUIT TURNED UP
	CONDUIT CAPPED
A-1	BRANCH CIRCUIT HOMERUN TO PANELBOARD AND CIRCUITS AS INDICATED
	3/4" CONDUIT, TICK MARKS INDICATE QUANTITY OF #12 AWG WIRES (UNLESS NOTED OTHERWISE, NO MARKS INDICATES 2#12 & 1#12 GND WIRES) - SMALL MARK DENOTES HOT WIRE - LARGE MARK DENOTES NEUTRAL WIRE - DIAGONAL DENOTES GROUND WIRE
G	GENERATOR
	SWITCH
	CIRCUIT BREAKER
	2-WAY SWITCH, TRANSFER SWITCH
	FUSE
	TRANSFORMER
	GROUND CONNECTION
	MOTOR - SINGLE PHASE FRACTIONAL OR INTEGRAL HORSEPOWER
M	METER
ECM	ELECTRONIC CIRCUIT MONITOR
	480V DRAWOUT BREAKER
VFD	VARIABLE FREQUENCY DRIVE
	PANEL
	FUSED DISCONNECT SWITCH
	NON-FUSED DISCONNECT SWITCH
	COMBINATION STARTER/DISCONNECT SWITCH
M	SWITCH MOTOR RATED
	SPLICE
	TERMINATION
	EXISTING TERMINATION
5D	MEDIUM VOLTAGE - AIR CIRCUIT BREAKER DRAWOUT BREAKER
	MEDIUM VOLTAGE FUSED DISCONNECT SWITCH
	MEDIUM VOLTAGE MODULAR SPLICE
	MEDIUM VOLTAGE EXISTING MODULAR SPLICE
X / y	2X4 LIGHT FIXTURE - UPPER CASE LETTER INDICATES LIGHT FIXTURE CALLOUT. LOWER CASE LETTER INDICATES LIGHTING CONTROL ZONE.
	2X4 EMERGENCY LIGHT FIXTURE FED FROM GENERATOR/ INVERTER/ BATTERY BACKUP
X / y	2X2 LIGHT FIXTURE - UPPER CASE LETTER INDICATES LIGHT FIXTURE CALLOUT. LOWER CASE LETTER INDICATES LIGHTING CONTROL ZONE.
	2X2 EMERGENCY LIGHT FIXTURE FED FROM GENERATOR/ INVERTER/ BATTERY BACKUP
X / y	LINEAR LIGHT FIXTURE. DIMENSIONS PER PLANS - UPPER CASE LETTER INDICATES LIGHT FIXTURE CALLOUT. LOWER CASE LETTER INDICATES LIGHTING CONTROL ZONE.
	EMERGENCY LINEAR LIGHT FIXTURE. DIMENSIONS PER PLANS - LIGHT FIXTURE FED FROM GENERATOR/ INVERTER/ BATTERY BACKUP
X / y	LINEAR PENDANT LIGHT FIXTURE. DIMENSIONS PER PLANS - UPPER CASE LETTER INDICATES LIGHT FIXTURE CALLOUT. LOWER CASE LETTER INDICATES LIGHTING CONTROL ZONE.
X / y	TRACK LIGHTING - UPPER CASE LETTER INDICATES LIGHT FIXTURE CALLOUT. LOWER CASE LETTER INDICATES LIGHTING CONTROL ZONE.
X / y	UNDERCABINET / COVE FIXTURE - UPPER CASE LETTER INDICATES LIGHT FIXTURE CALLOUT. LOWER CASE LETTER INDICATES LIGHTING CONTROL ZONE.
X / y	LED STRIP LIGHT FIXTURE - UPPER CASE LETTER INDICATES LIGHT FIXTURE CALLOUT. LOWER CASE LETTER INDICATES LIGHTING CONTROL ZONE.
X / y	LED STRIP EMERGENCY LIGHT FIXTURE - UPPER CASE LETTER INDICATES LIGHT FIXTURE CALLOUT. LOWER CASE LETTER INDICATES LIGHTING CONTROL ZONE. LIGHT FIXTURE FED FROM INVERTER BACKUP.

SYMBOL	DESCRIPTION
X / y	DOWNLIGHT FIXTURE - UPPER CASE LETTER INDICATES LIGHT FIXTURE CALLOUT. LOWER CASE LETTER INDICATES LIGHTING CONTROL ZONE.
X / y	EMERGENCY DOWNLIGHT FIXTURE FED FROM GENERATOR BACKUP
X / y	PENDANT LUMINAIRE - UPPER CASE LETTER INDICATES LIGHT FIXTURE CALLOUT. LOWER CASE LETTER INDICATES LIGHTING CONTROL ZONE.
X / y	WALLWASH LIGHT FIXTURE - UPPER CASE LETTER INDICATES LIGHT FIXTURE CALLOUT. LOWER CASE LETTER INDICATES LIGHTING CONTROL ZONE.
X / y	WALL MOUNTED LIGHT FIXTURE - UPPER CASE LETTER INDICATES LIGHT FIXTURE CALLOUT. LOWER CASE LETTER INDICATES LIGHTING CONTROL ZONE.
	EMERGENCY WALL MOUNTED LIGHT FIXTURE FED FROM GENERATOR BACKUP
	BOLLARD LUMINAIRE
	POST TOP LUMINAIRE
	POLE MOUNTED LUMINAIRE, SINGLE HEAD
	POLE MOUNTED LUMINAIRE, DOUBLE HEAD
	POLE MOUNTED LUMINAIRE, TRIPLE HEAD
	POLE MOUNTED LUMINAIRE, QUAD HEAD
	IN GRADE LUMINAIRE
	PATHWAY LUMINAIRE
	LANDSCAPE FIXTURE
	EXIT LIGHT FIXTURE WITH DIRECTIONAL ARROWS AS INDICATED. SHADED SIDE DENOTES NUMBER OF FACES
	JUNCTION BOX
	PHOTOCELL FOR EXTERIOR APPLICATIONS
DS	DAYLIGHT SENSOR - CEILING MOUNTED
R	RELAY
ER	EMERGENCY RELAY UL 924 COMPLIANT
M	MOTION SENSOR - CEILING MOUNTED
M	MOTION SENSOR - CORNER OR WALL MOUNTED
M	MOTION SENSOR WITH AISLE/CORRIDOR LENS - CEILING MOUNTED
M	COMBINATION MOTION AND DAYLIGHT SENSOR
N	LIGHTING CONTROL NETWORK DEVICE
TM	DIGITAL TIMER SWITCH
MS	MOTION SENSOR SWITCH
LV	LOW VOLTAGE SWITCH
DM	DIMMER MASTER SWITCH
D	DIGITAL DIMMING SWITCH
G	GRAPHICAL TOUCH SCREEN - LIGHTING CONTROL STATION
T	THERMOSTAT WITH A 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE
H	MODULAR FURNITURE - BASE POWER WHIP FEED CONNECTION
M	MODULAR FURNITURE - FLOOR BOX FEED CONNECTION
P	MODULAR FURNITURE - POWER POLE FEED CONNECTION
	LIGHTING CONTROL PANEL - SURFACE MOUNTED
	PANELBOARD - RECESSED MOUNTED
	PANELBOARD - SURFACE MOUNTED
	DISTRIBUTION PANEL/ BOARD
	SINGLE POLE SWITCH, DEVICE SHALL BE MOUNTED +48" MAX AND +36" MIN FROM THE CENTER OF DEVICE:
3	SWITCH 3-WAY (48" AFF MAXIMUM)
T	TIMER SWITCH (48" AFF MAXIMUM)
ab	DUAL SWITCH (48" AFF MAXIMUM)
	PUSHBUTTON SWITCH
	RECESSED ON WALL — G=GFI, WP=WEATHERPROOF SURFACE — G=GFI, WP=WEATHERPROOF FLOOR OR CEILING — C=CEILING
	20A, 125V DUPLEX RECEPTACLE MOUNTED +15" AFF, UNLESS OTHERWISE NOTED
	20A, 125V QUAD RECEPTACLE MOUNTED +15" AFF, UNLESS OTHERWISE NOTED
	20A, 125V DUPLEX RECEPTACLE RECEPTACLE ON DEDICATED CIRCUIT MOUNTED +15" AFF, UNLESS OTHERWISE NOTED
	20A, 125V CONTROLLED DUPLEX RECEPTACLE MOUNTED +15" AFF, UNLESS OTHERWISE NOTED
	20A, 125V QUAD RECEPTACLE (HALF) CONTROLLED RECEPTACLE MOUNTED +15" AFF, UNLESS OTHERWISE NOTED
	20A, 125V HOSPITAL GRADE EMERGENCY DUPLEX RECEPTACLE MOUNTED +15" AFF, UNLESS OTHERWISE NOTED
	20A, 125V HOSPITAL GRADE EMERGENCY QUAD RECEPTACLE MOUNTED +15" AFF, UNLESS OTHERWISE NOTED
	SPECIAL RECEPTACLE REFER TO DRAWINGS FOR NEMA CONFIGURATION MOUNTED +15" AFF, UNLESS OTHERWISE NOTED
	JUNCTION BOX
	RECESSED POKE-THROUGH RECESSED POKE-THROUGH - POWER/TEL/DATA RECESSED FLOOR BOX - POWER/TEL/DATA
	20A, 125V DUPLEX RECEPTACLE FIRE RATED TYPE
	20A, 125V QUAD RECEPTACLE FIRE RATED TYPE

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
&	AND
1/C	SINGLE CONDUCTOR
@	AT
A OR AMP	AMPERES
A.C.	ASPHALT CONCRETE
ABV	ABOVE
AF	AMPERE FUSE RATING
AFC	AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
APPROX.	APPROXIMATE
ARCH.	ARCHITECT; ARCHITECTURAL
AS	AMPERE SWITCH RATING
ASCC	AVAILABLE SHORT CIRCUIT CURRENT
ATC	AIR TERMINAL CHAMBER
ATO	AUTOMATIC THROW-OVER (SWITCH)
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
B.S.	BARE STRANDED
BAT	BATTERY
BEL	BELOW
BKBD	BACKBOARD
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT
C.O.	CONDUIT ONLY WITH PULL WIRE
CB	CIRCUIT BREAKER
CC	CONSTANT CURRENT
CKT	CIRCUIT
CL	CENTER LINE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CP	COMMUNICATION PROCESSOR
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CSFD	COMBINATION SMOKE FIRE DAMPER
CT	CURRENT TRANSFORMER
CU	COPPER
CW	COLD WATER
DIAG	DIAGRAM
DIS	DISCONNECT
DIST.	DISTANCE
DL	DAMP LOCATION LISTING
DM	DIGITAL METER
DMM	DIGITAL METER MODULE
DP	DISTRIBUTION PANEL
DWG	DRAWING
DWP	DEPARTMENT OF WATER & POWER
EA	EACH
ECM	ELECTRIC CIRCUIT MONITOR
ELEC.	ELECTRICAL
EM	EMERGENCY
EMH	ELECTRICAL MANHOLE
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF
EPR	ETHYLENE PROPYLENE RUBBER
EQUIP	EQUIPMENT
ERR	EXISTING TO BE RELOCATED AND RECONNECTED
EXIST/(E)	EXISTING
EXP	EXPLOSION PROOF
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FFE	FINISHED FLOOR ELEVATION
FIN.	FINISH
FIP.	FIELD INTERFACE PANEL
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLR	FLOOR
FLUOR	FLUORESCENT
FMC	FLEXIBLE METAL CONDUIT
FO	FIBER OBTIC
FT	FEET
FTG	FOOTING
GAP	GENERAL ACCESS POWER
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GFR	GROUND FAULT RELAY
GG	GREEN GROUND
GND	GROUND
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HT	HEIGHT
HTR	HEATER
HV	HIGH VOLTAGE
HZ	HERTZ
ICON	INTEGRATED COMMUNICATIONS OPTICAL NETWORK
IE	INVERT ELEVATION
IED	INTELLEGENT ELECTRONIC DEVICE
IMC	INTERMEDIATE METAL CONDUIT
INCAND	INCANDESCENT
ISC	SHORT CIRCUIT CURRENT
J, JB, J-BOX	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT-AMPERES
KW	KILOWATT

ABBREVIATION	DESCRIPTION
LF	LINEAR FEET
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LGST	LARGEST
LIS	LOAD INTERRUPTER SWITCH
LOC	LOCATION
LOTO	LOCK-OUT & TAG-OUT
LSI	LONG TERM, SHORT TERM, INSTANTANEOUS
LSIG	LONG TERM, SHORT TERM, INSTANTANEOUS GROUNDING
LTG	LIGHTING
LV	LOW VOLTAGE
M	METER
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPS
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFGR, MFR	MANUFACTURER
MH	MANHOLE
MI	MECHANICAL INTERLOCK
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MRCT	MULTI-RATIO CURRENT TRANSFORMER
MTD	MOUNTED
MTG	MOUNTING
MTR	MOTOR
MTTB	MAIN TELEPHONE TERMINAL BOARD
MV	MEDIUM VOLTAGE
N	NORTH
NAC	NOTIFICATION APPLIANCE CIRCUIT
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NF	NON-FUSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT- 24HRS ON
NO.	NUMBER
OC	ON CENTER
OCPD	OVERCURRENT PROTECTIVE DEVICE
OD	OUTSIDE DIAMETER
OE	OVERHEAD ELECTRICAL
OFC	OIL FUSED CUTOUT
OH	OVER HEAD
OL	OIL LEVER SWITCH
P	POLE
PAC	PROGRAMMABLE AUTOMATION CONTROLLER
PB	PULL BOX
PC	PHOTOCELL
PCB	POLYCHLORINATED BIPHENYL
PDS	PRESSURE DIFFERENTIAL SWITCH
PF	POWER FACTOR
PH OR Ø	PHASE
PILC	PAPER INSULATED, LEAD COVER
PIV	POST INDICATING VALVE
PL	PLATE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
POC	POINT OF CONNECTION
PREF.	PREFERRED
PRI.	PRIMARY
PVC	POLY-VINYL CHLORIDE
PWR	POWER
REC/RECEPT	RECEPTACLE
REQ'D	REQUIRED
RGS	RIGID GALVANIZED STEEL
RM	ROOM
RMC	RIGID METAL CONDUIT
RMJV	ROSENDIN MEADOWS JOINT VENTURE (DESIGN-BUILD CONTRACTOR)
RPBP	REDUCED PRESSURE BACK FLOW PREVENTER
RTAC	REAL TIME AUTOMATION CONTROLLER
SCCR	SHORT CIRCUIT CURRENT RATING
SCE	SOUTHERN CALIFORNIA EDISON
SF	SQUARE FEET
SHT	SHEET
SIG.	SIGNAL
SP	SPARE
SPECS	SPECIFICATIONS
ST	STREET
STD	STANDARD
STP	SHIELDED TWISTED PAIR
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SWST	SWITCHING STATION
T.O.D.	TOP OF DUCTBANK
T.O.M.	TOP OF MANHOLE
TB	TERMINAL BLOCK
TEL./TELE	TELEPHONE
TMH	TELEPHONE MANHOLE
TPS	TWISTED SHIELDED PAIR
TRANSF, XFMR	TRANSFORMER
TS	TAMPER SWITCH
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VA	VOLT-AMPERES
VB	VIBRATION SWITCH
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF

IN THE EVENT ABBREVIATIONS NOT MENTIONED HEREIN ARE USED, REFERENCE WILL BE MADE TO ANSI Y1.1, MILITARY STANDARD ABBREVIATIONS AND OTHER STANDARD INDUSTRY CONVENTIONS.

SHEET INDEX LEGEND

INCREMENT NUMBER
DRAWING TYPE
MILESTONE NUMBER
SEQUENTIAL NUMBER

D U X - X X X . X

SHEET INDEX

RBB ARCHITECTS INC

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CERTIFIED PROFESSIONAL ENGINEER — CARSTON K. CHAN — No. E21060 — STATE OF CALIFORNIA — ELECTRICAL

LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 08/31/2023 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
03/14/2025	A	ADDENDUM A
02/10/2025		BID SET
01/31/2025	3	HCAI BACKCHECK 2
04/04/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 1 - RETROFIT OF GENERATOR BLDG. SWITCHGEAR

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL

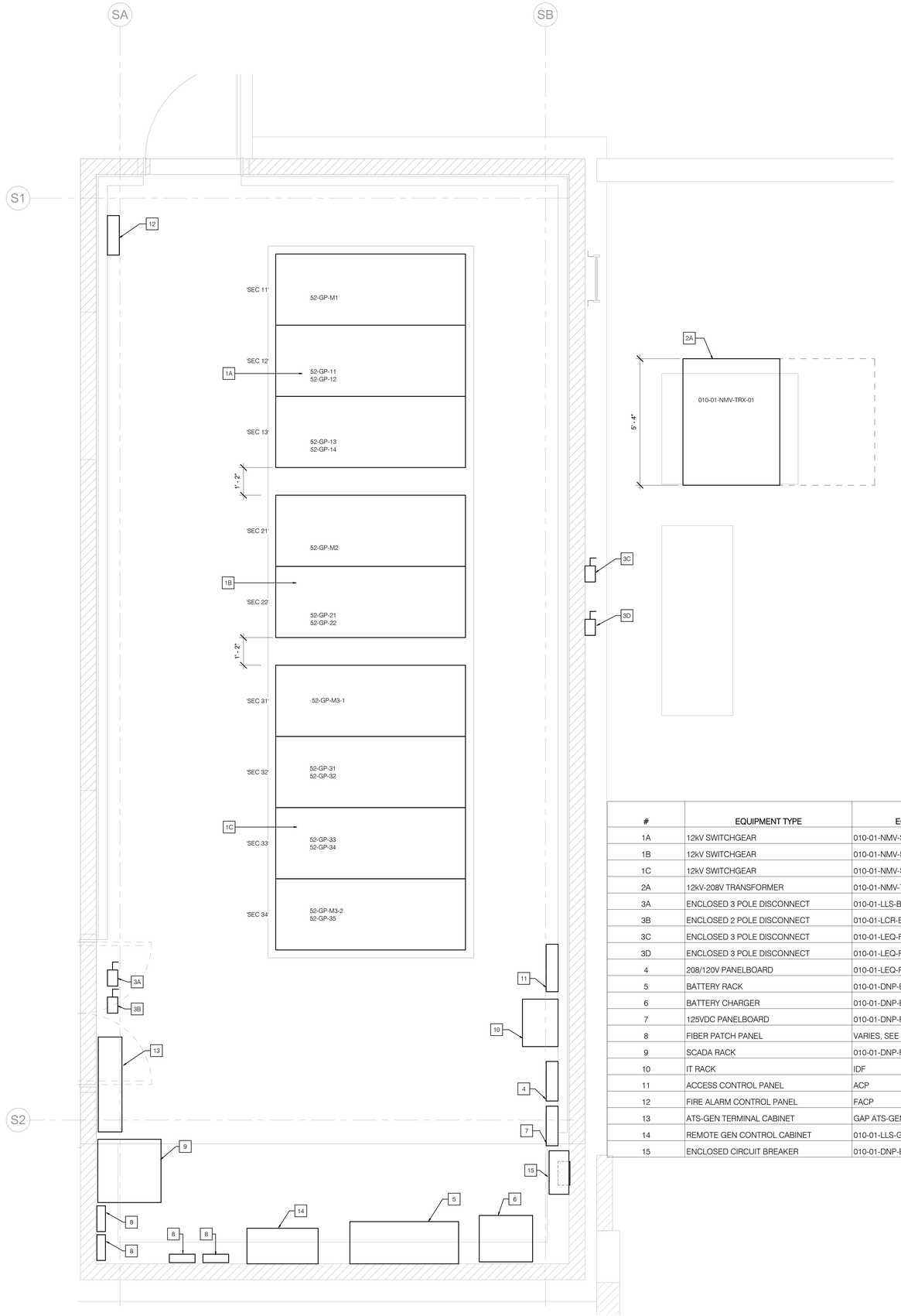
MILESTONE DATE: 12/17/2024

RBB PROJECT: 1712105 SCALE:

DESCRIPTION
LEGEND, ABBREVIATIONS AND SHEET INDEX

DU1-001

Print Date: 4/15/2025 2:45:54 PM



GENERAL NOTES

1. CONTRACTOR TO PROVIDE POWER AND ARC FLASH STUDY FOR LOW VOLTAGE 600 VOLTS AND LESS EQUIPMENT.
2. CONTRACTOR TO PROVIDE STRUCTURAL DESIGN CALCULATIONS STUDY WITH SEISMIC FOR ANCHORING THE SWITCHGEAR TO THE HOUSE KEEPING PAD PER SPEC 26 1913 MEDIUM-VOLTAGE METAL CLAD SWITCHGEAR.
3. CONTRACTOR TO PROVIDE STRUCTURAL DESIGN CALCULATIONS STUDY WITH SEISMIC FOR ANCHORING THE SCADA AND GENERATOR CONTROL PANELS IN GAP BUILDING TO THE HOUSE KEEPING PAD.
4. CONTRACTOR TO ADD WARNING LABELS FOR EXPOSED 12KV CONDUITS AND PULL BOXES TO WITH YELLOW BACK GROUND 'DANGER HIGH VOLTAGE'.
5. CONTRACTOR TO COORDINATE WORK AND WITH QUINN AND CAT COMPANIES.

#	FURNISHMENT	INSTALLATION	TESTING BY QUINN CONTRACTOR PROVIDED	TESTING BY 3RD PARTY CONTRACTOR PROVIDED
1A	OWNER	CONTRACTOR	YES	
1B	OWNER	CONTRACTOR	YES	
1C	OWNER	CONTRACTOR	YES	YES
2A	CONTRACTOR	CONTRACTOR		YES
3A	CONTRACTOR	CONTRACTOR		YES
3B	CONTRACTOR	CONTRACTOR		YES
3C	CONTRACTOR	CONTRACTOR		YES
3D	CONTRACTOR	CONTRACTOR		YES
4	CONTRACTOR	CONTRACTOR		YES
5	CONTRACTOR	CONTRACTOR		YES
6	CONTRACTOR	CONTRACTOR		YES
7	CONTRACTOR	CONTRACTOR		YES
8	CONTRACTOR	CONTRACTOR		YES
9	OWNER	CONTRACTOR	YES	
10	CONTRACTOR	CONTRACTOR		YES
11	CONTRACTOR	CONTRACTOR		YES
12	CONTRACTOR	CONTRACTOR		YES
13	CONTRACTOR	CONTRACTOR		YES
14	OWNER	CONTRACTOR	YES	
15	CONTRACTOR	CONTRACTOR		YES

#	EQUIPMENT TYPE	EQUIPMENT ID	MANUFACTURER	DESCRIPTION/CATALOG #	ANCHORAGE DETAIL (#/SHEET #)	OSP CERTIFICATION #
1A	12kV SWITCHGEAR	010-01-NMV-SGR-01	EATON	VACCLAD-W, 15k, 1200A, 25kAIC	6/S602.1	OSP-0019
1B	12kV SWITCHGEAR	010-01-NMV-SGR-02	EATON	VACCLAD-W, 15k, 1200A, 25kAIC	6/S602.1	OSP-0019
1C	12kV SWITCHGEAR	010-01-NMV-SGR-03	EATON	VACCLAD-W, 15k, 1200A, 25kAIC	6/S602.1	OSP-0019
2A	12kV-208V TRANSFORMER	010-01-NMV-TRX-01	EATON	CA202003EN, 75kVA, 12kV-208Y/120V, RADIAL FEED	6/S602.1	OSP-0008
3A	ENCLOSED 3 POLE DISCONNECT	010-01-LLS-BDS-01	EATON	DH362UGK	1/S603.1	OSP-0338
3B	ENCLOSED 2 POLE DISCONNECT	010-01-LCR-BDS-01	EATON	DH261UGK	1/S603.1	OSP-0338
3C	ENCLOSED 3 POLE DISCONNECT	010-01-LEQ-FDS-01	EATON	DH362UGK, NEMA 3R	1/S603.1	OSP-0338
3D	ENCLOSED 3 POLE DISCONNECT	010-01-LEQ-FDS-02	EATON	DH362UGK, NEMA 3R	1/S603.1	OSP-0338
4	208/120V PANELBOARD	010-01-LEQ-PNL-01	EATON	208Y/120V, 3PH 4W, 225A/3P MCB, 30CKT	3/S603.1	OSP-0009
5	BATTERY RACK	010-01-DNP-BAT-01	C&D TECHNOLOGIES	RD01266	11/S602.1	OSP-0569
6	BATTERY CHARGER	010-01-DNP-BCH-01	LA MARCHE	TPSD-75-130V-550-017-537	5/S602.1	OSP-0340
7	125VDC PANELBOARD	010-01-DNP-PPL-01	EATON	125VDC, 2W,250A, 100A/2P MCB, 28CKT	3/S603.1	OSP-0009
8	FIBER PATCH PANEL	VARIES, SEE DRAWINGS	COMMSCOPE	WBE-EMT-BK-4P-MOD	EXEMPT PER CBC 1616A.1.18	
9	SCADA RACK	010-01-DNP-FPP-02	CAT/QUINN COMPANY			OPM-0247-13
10	IT RACK	IDF	SEE TELECOM DRAWINGS	SEE TELECOM DRAWINGS		OPM-0247-13
11	ACCESS CONTROL PANEL	ACP	SEE TELECOM DRAWINGS	SEE TELECOM DRAWINGS		
12	FIRE ALARM CONTROL PANEL	FACP	SEE FIRE PROTECTION DRAWINGS	4007-9201	8/S603.1	OSP-0004-10
13	ATS-GEN TERMINAL CABINET	GAP ATS-GEN TERMINAL CABINET	HOFFMAN	A424812WFSSLP	6/S603.1	
14	REMOTE GEN CONTROL CABINET	010-01-LLS-GCP-01	CAT/QUINN COMPANY			OSP-0697
15	ENCLOSED CIRCUIT BREAKER	010-01-DNP-BDS-01	EATON	HD100S WITH HDL 100A CIRCUIT BREAKER		OSP-0064

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OSHPD # I240005-19-01

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
03/14/2025	A	ADDENDUM A
02/10/2025		BID SET
01/31/2025	3	HCAI BACKCHECK 2
08/08/2024		HCAI BACKCHECK 1
04/04/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 1 - RETROFIT OF GENERATOR BLDG. SWITCHGEAR

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 01/03/24
RBB PROJECT: 1712105 SCALE: 1/2" = 1'-0"

DESCRIPTION
EQUIPMENT PLAN - GAP SWGR BLDG

DU1-004

Print Date: 4/9/2025 6:00:04 PM

SEQUENCE OF INSTALLATION

INC 1 MILESTONE 1 (INSTALL GAP AREA 12KV UNDERGROUND CONDUITS):

a. INSTALL 12KV CONDUIT AND CABLE FROM SF6-S7 TO CHILLER PLANT 2000KVA, 12KV TO 4160V TRANSFORMER AND TO CHILLER PLANT 1500KVA, 12KV TO 480V TRANSFORMER. REMOVE SOME OF THE EXISTING CONDUIT AND ALL OF THE CABLE FROM THE ORIGINAL 12KV CABLE FROM SF6-S7 TO THE CHILLER PLANT 12KV TO 4160V TRANSFORMER. THE EXISTING POWER PATH TO 12KV TO 4160V TRANSFORMER IS IN THE WAY OF INSTALLING THE NEW GAP BUILDING.
b. INSTALL ALL 12KV UNDERGROUND MANHOLES, CONDUITS AND DUCT BANKS.
c. INCREMENT 1, MILESTONE 1: UNDERGROUND CONDUIT INSTALLATION SIGN OFF.

INC 2 MILESTONE 1 (INSTALL NEW LOW VOLTAGE CONFIGURATION FOR POWER SUPPLY TO NEW AND EXISTING PANELS):

a. INSTALL 3 NEW 208/120 VOLT PANELS (011-01-LEP-PNL-01, 011-01-LEQ-PNL-01, AND 011-01-LCR-PNL-01) AND 2 ATS UNITS 011-01-LEP-ATS-01 AND 011-01-LEP-ATS-02 IN THE GENERATOR BUILDING.
b. INSTALL NEW GENERATOR HOUSE TRANSFORMER 011-01-NMV-TRX-01 AND 12KV CABLE FROM SF6-S7 TO TRANSFORMER 011-01-NMV-TRX-01 INPUT SWITCH B. TRANSFORMER FEEDS NORMAL POWER TO NEW ATS UNITS 011-01-LEP-ATS-01.
c. TEMPORARILY MOVE ALL INDIVIDUAL LOADS FROM EXISTING PANEL LSA TO EXISTING PANEL PC. NOTE ALL EXISTING PANELS HAVE MOSTLY LIFE SAFETY LOADS ON THEM WITH OTHER TYPES MIXED IN THEM.
d. REPLACE THE EXISTING 208/120 VOLT, 50A PANEL LSA WITH NEW LARGER 225A BUS RATING.
e. CONNECT A TEMPORARY 208/120V 4W 3 PHASE 150KVA GENERATOR TO ATS 011-01-LEP-ATS-02. ATS 011-01-LEP-ATS-02 WILL SEND A SIGNAL TO THE TEMPORARY GENERATOR ON WHEN TO TURN ON.
f. MOVE SOME INDIVIDUAL LOADS TO THE NEW PANELS. THE 3 NEW PANELS ARE RATED FOR EQUIPMENT, CRITICAL, AND LIFE SAFETY CIRCUITS. THE 2 OLD REMAINING PANELS PB AND PC WILL NOW ONLY HAVE LIFE SAFETY LOADS ON THEM.
g. MOVE EXISTING 208/120 VOLT PANEL PC INTO NEW SYSTEM. NOTE ONLY GEN 5 AND 6 ARE WITHOUT CONTROL POWER DURING THIS MOVE. GEN 1 TO 4 ARE WITH 208/120 VOLT CONTROL POWER.
h. MOVE INDIVIDUAL GENERATOR #4 208/120 VOLT LOADS FROM PANEL PB TO PANEL PC.
i. TEMP MOVE GENERATOR #3 208/120 VOLT LOADS FROM PANEL PB TO PANEL PC.
j. TURN OFF THE GENERATOR SWITCHGEAR BREAKER UE-2 WHICH DE-ENERGIZES THE EXISTING HOUSE POWER TRANSFORMER AND ONLY PANEL PB. MOVE EXISTING 208/120 VOLT PANEL PB INTO NEW SYSTEM. NOTE ONLY GEN 1 AND 2 ARE WITHOUT CONTROL POWER DURING THIS MOVE. GEN 3 TO 6 ARE WITH 208/120 VOLT CONTROL POWER.
k. MOVE INDIVIDUAL GENERATOR #3 208/120 VOLT LOADS FROM PANEL PC BACK TO PANEL PB.
l. WITH GENERATOR SWITCHGEAR BREAKER UE-2 STILL OFF THAT DE-ENERGIZED THE EXISTING HOUSE POWER TRANSFORMER. CONNECT THE EXISTING HOUSE TRANSFORMER TO ATS 011-01-LEP-ATS-01.
m. TURN ON THE GENERATOR SWITCHGEAR BREAKER UE-2 WHICH ENERGIZES THE EXISTING HOUSE POWER TRANSFORMER. THE NEW AND EXISTING 208/120V PANELS ARE NOW WITH GENERATOR BACKUP POWER VIA ATS 011-01-LEP-ATS-01.
n. REMOVE TEMP GENERATOR.
o. RENAME PANELS PB AND PC TO LATEST NAMING CONVENTIONS THAT NOTE THEY ARE NOW ONLY LIFE SAFETY.
p. DEMO EXISTING HVAC.
Δ D q. INSTALL NEW HVAC
r. REPLACE FACP SYSTEM WITH NEW
s. INCREMENT 2, MILESTONE 1: RECONFIGURE GENERATOR BUILDING HOUSE LOADS SIGN OFF.

INC 1 MILESTONE 2 (INSTALL GAP BUILDING WITH SWITCHGEAR):

a. INSTALL GAP BUILDING, HOUSE TRANSFORMER WITH EQUIPMENT PANELS, HVAC, FACP AND ASSOCIATED DEVICES.
b. INSTALL GAP SWITCHGEAR IN GAP BUILDING WITH CONTROLS.
c. CONNECT 12KV CABLE FROM GENERATOR ESSENTIAL SWITCHGEAR BREAKER LSC4 TO GAP SWITCHGEAR 010-001-NMV-SGR-03.
d. INSTALL (3) 120V CIRCUITS FROM LIFE SAFETY PANEL IN THE GENERATOR BUILDING TO GAP BUILDING.
e. INSTALL (2) 120V CIRCUITS FROM CRITICAL PANEL IN THE GENERATOR BUILDING TO GAP BUILDING.
f. START UP GAP BUILDING AND SWITCHGEAR AND TEST.
g. PROGRAM TEST CONTROLS FOR GAP SWITCHGEAR 010-001-NMV-SGR-03. SWITCHGEAR 010-001-NMV-SGR-03 WILL BE BACKED UP BY EXISTING GENERATORS AND A LOSS OF POWER TO THIS SWITCHGEAR WILL START THE EXISTING GENERATORS.
h. INCREMENT 1, MILESTONE 2: GAP BUILDING CONSTRUCTION AND COMMISSIONING SIGN OFF.

INC 1 MILESTONE 3 (MOVE SOME NORMAL LOADS FROM GENERATOR BUILDING SWITCHGEAR TO GAP SWITCHGEAR):

a. CLOSE GENERATOR SWITCHGEAR BREAKER LSC4 TO GAP SWITCHGEAR. GENERATOR BACKUP POWER IS NOW AVAILABLE TO GAP SWITCHGEAR 010-001-NMV-SGR-03.
b. MOVE 2 NORMAL 12KV LOADS, SUB-6N1 AND SF6-S7 WAY 2, FROM THE GENERATOR NORMAL SWITCHGEAR AND ONE, CHILLER PLANT TRANSFORMER LOAD, FROM SF6-S7 TO THE GAP SWITCHGEAR 010-001-NMV-SGR-01, 010-001-NMV-SGR-02 AND 010-001-NMV-SGR-03. NOTE THAT SOME OF THE NORMAL 12KV LOADS ARE FROM THE EXISTING CHILLER/BOILER PLANT AND WILL BE CONNECTED TO GAP SWITCHGEAR 010-001-NMV-SGR-03. THE TEMP PROGRAMMING FOR GAP SWITCHGEAR 010-001-NMV-SGR-03 WILL PROVIDE GENERATOR EQUIPMENT-LEVEL POWER TO THE CHILLER/BOILER PLANT TO BE ABLE TO RUN THE BOILER PLANT UNDER GENERATOR POWER. THE GENERATOR POWER WILL BE PROVIDED VIA THE EXISTING GENERATOR SWITCHGEAR ESSENTIAL BUS BREAKER LSC4 TO SWITCHGEAR 010-001-NMV-SGR-03.
c. INCREMENT 1, MILESTONE 3: REFEED NORMAL LOADS PART 1 SIGN OFF

INC 1 MILESTONE 4 (MOVE REMAINING NORMAL LOADS FROM GENERATOR SWITCHGEAR TO GAP SWITCHGEAR):

a. MOVE 2 NORMAL 12KV LOADS, SF6-S4 WAY 2 AND ONE CHILLER PLANT TRANSFORMER LOAD, FROM THE GENERATOR SWITCHGEAR TO THE GAP SWITCHGEAR 010-001-NMV-SGR-01 AND 010-001-NMV-SGR-03.
b. INCREMENT 1, MILESTONE 4: REFEED NORMAL LOADS PART 2 SIGN OFF.

INC 2 MILESTONE 2 (DEMO NORMAL GENERATOR BUILDING SWITCHGEAR AND INSTALL NEW ESSENTIAL SWITCHGEAR):

a. INSTALL 12KV CABLE FROM NEW GENERATOR HOUSE TRANSFORMER 011-01-NMV-TRX-01 SWITCH INPUT A TO GAP SWITCHGEAR 010-001-NMV-SGR-03 BREAKER GP-35.
b. CHANGE A / B SWITCH IN NEW GENERATOR HOUSE TRANSFORMER 011-01-NMV-TRX-01 TO A. THE NEW GENERATOR HOUSE TRANSFORMER 011-01-NMV-TRX-01 IS NOW FED FROM SWITCHGEAR 011-001-NMV-SGR-03. THIS IS A TEMP CONNECTION AND WILL PROVIDE BACK POWER TO THE GENERATOR BUILDING 208/120V PANELS FROM THE GAP SWITCHGEAR 010-010-NMV-SGR-03.
c. TURN OFF THE GENERATOR SWITCHGEAR BREAKER UE-2 AND DE-ENERGIZE THE EXISTING GENERATOR BUILDING HOUSE TRANSFORMER AND REMOVE OLD TRANSFORMER.
d. COORDINATE WITH SCE TO DISCONNECT OLD SERVICE TO THE GENERATOR BUILDING METER SWITCHGEAR AND REMOVE THEIR METER.
e. DEMO THE GENERATOR BUILDING NORMAL SWITCHGEAR AND UTILITY METER SWITCHGEAR.
f. TURN OFF H-O-A SWITCH FOR GENERATORS 1 AND 2 AND RACK OUT 12KV MAIN BREAKERS FOR GENERATORS 1 AND 2.
g. INSTALL NEW SWITCHGEAR 011-01-EMV-SGR-02 PART 1 AND 011-01-EMV-SGR-03 IN GENERATOR BUILDING WITH CONTROLS WHERE THE NORMAL SWITCHGEAR WAS INSTALLED.
h. INSTALL NEW GENERATOR HOUSE TRANSFORMER 011-01-EMV-TRX-01 FED FROM NEW SWITCHGEAR 011-01-EMV-SGR-02 PART 1. CONNECT TRANSFORMER SECONDARY POWER CABLE TO NEW BREAKER 011-01-ENP-BDS-01. CONNECT NEW BREAKER 01-ENP-BDS-01 TO ATS 011-01-LEP-ATS-01 VIA A TERMINAL PANEL ABOVE NEW BREAKER 011-01-ENP-BDS-01.
i. INSTALL NEW 12KV CABLES FROM GENERATORS 1 AND 2 TO NEW SWITCHGEAR 011-01-EMV-SGR-03.
j. CONNECT ATS CONTROLS OF ATS 011-01-LEP-ATS-01 TO CONTROL SYSTEM FOR OPERATING GENERATORS 1 AND 2.
k. PROGRAM AND TEST NEW SWITCHGEAR.
l. TEST TO ENSURE THE NEW SWITCHGEAR IS NOW ABLE TO TAKE ON EMERGENCY LOAD AND POWER FROM GENERATORS 1 AND 2.
m. INCREMENT 2, MILESTONE 2: DEMOLISH EXISTING NORMAL SWITCHGEAR, INSTALL NEW ESSENTIAL SWITCHGEAR SIGN OFF.

INC 2 MILESTONE 3 (MOVE EXISTING GENERATOR LOADS FROM EXISTING GENERATOR SWITCHGEAR TO NEW ESSENTIAL SWITCHGEAR 011-01-EMV-SGR-02 AND 011-01-EMV-SGR-03):

a. MOVE 2 ESSENTIAL LOADS, SUB-6E1 AND SUB-6E2, OFF THE OLD GENERATOR SWITCHGEAR TO NEW GENERATOR SWITCHGEAR 011-001-NMV-SGR-02 AND 011-001-NMV-SGR-03.
b. CHANGE THE A / B 12KV SWITCH IN NEW GENERATOR HOUSE TRANSFORMER 011-01-NMV-TRX-01 TO B. THE NEW GENERATOR HOUSE TRANSFORMER 011-01-NMV-TRX-01 IS NOW BEING FED FROM NORMAL POWER SF6-S7 WAY 5. ATS 011-01-LEP-ATS-01 WILL AUTOMATICALLY SWITCH BETWEEN BEING FED FROM 011-01-NMV-TRX-01 OR 011-01-EMV-TRX-01 FOR GENERATOR POWER.
c. IN SWITCHGEAR 010-001-NMV-SGR-03 OPEN 12KV BREAKER GP-35 AND RACK IT OUT FOR 12KV CABLE GOING TO TRANSFORMER 011-01-NMV-TRX-01 INPUT SWITCH A.
d. RECONFIGURE GAP SWITCHGEAR 010-001-NMV-SGR-02 TO BE FED BY 010-001-NMV-SGR-03 BY CLOSING BREAKERS FROM SWITCHGEAR 010-001-NMV-SGR-03 AND OPEN MAIN BREAKER GP-M2 ON SWITCHGEAR 010-001-NMV-SGR-02. CHANGE EAST LOOP 12KV OPEN SWITCH FROM SF6-S7 POSITION 1 TO SF6-S1 POSITION 1. NOTE THE HOSPITAL TOWER NORMAL POWER IS FED FROM GAP SWITCHGEAR 010-001-NMV-SGR-02 AND SWITCHGEAR 010-001-NMV-SGR-02 IS FED FROM SWITCHGEAR 010-001-NMV-SGR-03.
e. CHANGE CONTROL PROGRAM FOR SWITCHGEAR 010-001-NMV-SGR-03 TO HAVE A TEMP PROGRAM SO THAT IF GENERATOR POWER IS NEEDED IT WILL REPOWER 010-001-NMV-SGR-02 AFTER MORE THAN 2 EXITING GENERATORS ARE PARALLELED.
f. TURN OFF THE EXISTING 4160V CHILLERS AND KEEP THEM OFF. STARTUP 3 OF THE 6 GENERATORS IN THE GENERATOR BUILDING AND HAVE THEM PARALLELED AND STAY RUNNING AND PARALLELED. DISCONNECT THE ESSENTIAL 12KV CABLE FROM HOSPITAL TOWER ATS UNITS OFF OF BREAKER LSC1. SPLICE THE OLD HOSPITAL TOWER ATS ESSENTIAL 12KV CABLE IN MANHOLE MVMH-E-01E TO NEW CABLE FROM NEW GENERATOR SWITCHGEAR 011-01-EMV-SGR-02. NOTE THAT IF A UTILITY POWER IS LOST THE HOSPITAL ATS UNITS WILL NOT RECEIVE ESSENTIAL POWER FROM THE ESSENTIAL FEEDER. HOWEVER, THE NORMAL POWER WILL BE BACK UP IN LESS THAN 10 SECTIONS VIA OLD GENERATOR SWITCHGEAR BREAKER LSC4 FEEDING GAP SWITCHGEAR 010-001-NMV-SGR-03 AND GAP SWITCHGEAR 010-001-NMV-SGR-03 FEEDING SWITCHGEAR 010-001-NMV-SGR-02.
g. AFTER SPLICE IS COMPLETED TURN THE 3 GENERATORS FROM FORCE TO RUN BACK TO AUTO AND ALLOW THEM TO AUTO TURN OFF. ENABLE THE EXISTING 4160V CHILLERS TO RUN.
h. REMOVE TEMP CONTROL PROGRAM FOR SWITCHGEAR 010-001-NMV-SGR-03 AND INSTALL THE ORIGINAL ONE BACK.
i. RECONFIGURE GAP SWITCHGEAR 010-001-NMV-SGR-02 TO BE FED BY MAIN BREAKER GP-M2 BY CLOSING GP-M2 ON SWITCHGEAR 010-001-NMV-SGR-02 AND OPEN BREAKERS FROM SWITCHGEAR 010-001-NMV-SGR-03. CHANGE EAST LOOP 12KV OPEN SWITCH BACK TO THE ORIGINAL LOCATION FROM SF6-S1 POSITION 1 TO SF6-S7 POSITION 1.
j. INSTALL NEW 12KV CABLE FROM NEW SWITCHGEAR 011-01-EMV-SGR-02 BREAKER GB-23 TO MANHOLE MVMH-E-01E. TURN OFF EXISTING GENERATOR SWITCHGEAR BREAKER LSC4 THAT FEEDS GENERATOR POWER TO GAP SWITCHGEAR 010-001-NMV-SGR-03 VIA A SPLICE IN MANHOLE MVMH-E-01E. DISCONNECT SPLICE IN MANHOLE MVMH-E-01E AND SPLICE TO NEW CABLE FROM NEW GENERATOR SWITCHGEAR 011-01-EMV-SGR-02 IN MANHOLE MVMH-E-01E. NEW SWITCHGEAR 011-01-EMV-SGR-02 NOW FEEDS GENERATOR POWER TO GAP SWITCHGEAR 010-001-NMV-SGR-03 WHEN NEEDED.
k. INCREMENT 2, MILESTONE 3: REFEED ESSENTIAL LOADS SIGN OFF.

INC 2 MILESTONE 4 (DEMO OLD EXISTING GENERATOR BUILDING SWITCHGEAR AND INSTALL NEW ESSENTIAL SWITCHGEAR):

a. TURN OFF THE H-O-A SWITCH FOR GENERATORS 3 THROUGH 6 AND RACK 12KV MAIN BREAKERS FOR GENERATORS 3 THRU 6.
b. DEMO OLD EXISTING GENERATOR ESSENTIAL BUS SWITCHGEAR.
c. INSTALL NEW SWITCHGEAR 011-01-EMV-SGR-01 AND 011-01-EMV-SGR-02 PART 2 IN GENERATOR BUILDING WITH CONTROLS.
d. INSTALL NEW 12KV CABLES FROM GENERATORS 5 AND 6 TO NEW SWITCHGEAR 011-01-EMV-SGR-01 AND NEW 12KV CABLE FROM GENERATORS 3 AND 4 TO NEW SWITCHGEAR 011-01-EMV-SGR-02 PART 2.
e. PROGRAM AND TEST NEW SWITCHGEAR.
f. TEST TO ENSURE THE NEW SWITCHGEAR 011-01-EMV-SGR-01 IS NOW ABLE TO TAKE ON EMERGENCY LOADS AND POWER FROM GENERATORS 5 AND 6.
g. INSTALL NEW FUEL CONTROL SYSTEM AND FILTER.
Δ D h. CONVERT EXISTING FUEL SYSTEM TO NEW ONE.
i. DEMO OLD FUEL CONTROL SYSTEM.
j. INCREMENT 2, MILESTONE 4: DEMOLISH EXISTING SWITCHGEAR, INSTALL NEW SWITCHGEAR SIGN OFF.

INC 2 MILESTONE 5 (COMPLETE THE INSTALL OF NEW SWITCHGEAR 011-01-EMV-SGR-02):

a. CONNECT 011-01-EMV-SGR-02 PART 1 AND 011-01-EMV-SGR-02 PART 2 WITH 12KV CABLE AND PROGRAM AND TEST SWITCHGEAR.
b. THIS TEST IS TO ENSURE THE NEW SWITCHGEAR IS NOW ABLE TO TAKE ON EMERGENCY LOAD AND POWER FROM GENERATORS 3 AND 4.
c. PROGRAM AND TEST THAT ALL 6 GENERATORS CAN NOW PARALLEL AS ONE.
d. INCREMENT 2, MILESTONE 5: COMPLETE AND COMMISSIONING ESSENTIAL SWITCHGEAR SIGN-OFF.

INC 2 MILESTONE 6 (FINAL RECONFIGURATIONS OF THE 12KV SYSTEM):

a. THE SURGERY EMERGENCY BUILDING NORMAL 12KV POWER SUPPLY SUB-6N2 IS CONNECTED FROM GAP SWITCHGEAR TO NEW CUP SWITCHGEAR 007-02-NMV-SGR-02.
b. THE SURGERY EMERGENCY BUILDING NORMAL 12KV POWER SUPPLY SUB-6N21 IS MOVED FROM GAP SWITCHGEAR 010-001-NMV-SGR-01 TO NEW CUP SWITCHGEAR 007-02-NMV-SGR-01 AND NO LONGER FED FROM GAP SWITCHGEAR 010-001-NMV-SGR-01.
c. INSTALL NEW 12KV CABLE FROM THE NEW CUP SWITCHGEAR 007-02-NMV-SGR-02 TO GAP SWITCHGEAR 010-001-NMV-SGR-02 MAIN BREAKER GP-M2. REMOVE NO LONGER USED 12KV POWER SUPPLY CABLE FROM GAP SWITCHGEAR 010-001-NMV-SGR-02 MAIN BREAKER GP-M2 TO GAP SWITCHGEAR 010-001-NMV-SGR-01. GAP SWITCHGEAR 010-001-NMV-SGR-02 IS NOW FED FROM THE NEW CUP SWITCHGEAR 007-02-NMV-SGR-02.
d. INSTALL NEW 12KV CABLE FROM GAP SWITCHGEAR 010-001-NMV-SGR-01 BREAKER GP-11 TO MANHOLE MVMH-N-15. CONNECT NEW CABLE FROM GAP SWITCHGEAR 010-001-NMV-SGR-01 BREAKER GP-11 IN MVMH-N-15 TO 12KV CABLE GOING TO TRANSFORMER 011-01-NMV-TRX-01 INPUT SWITCH A. REMOVE NO LONGER USED 12KV CABLE FROM MANHOLE MVMH-N-15 TO GAP SWITCHGEAR 010-001-NMV-SGR-03 BREAKER GP-35.
e. UPDATE THE CONTROL PROGRAM FOR SWITCHGEAR 010-001-NMV-SGR-03 TO THE FINAL PROGRAM SO THAT WHEN GENERATOR POWER IS NEEDED TO THE CHILLER/BOILER PLANT IT WILL PRIORITIZE THE BOILER PLANT AS FIRST AND EXTRA POWER FOR THE CHILLER PLANT IF AVAILABLE.
f. INSTALL NEW 12KV CABLE TO EXISTING CHILLER PLANT 2000KVA, 12KV TO 4160V TRANSFORMER FROM GAP SWITCHGEAR 010-001-NMV-SGR-03. REMOVE NO LONGER USED 12KV CABLE FROM SF6-S7 TO CHILLER PLANT 2000KVA, 12KV TO 4160V TRANSFORMER.
g. INSTALL NEW 12KV CABLE FROM THE NEW CUP SWITCHGEAR 007-02-NMV-SGR-01 TO GAP SWITCHGEAR 010-001-NMV-SGR-01 MAIN BREAKER GP-M1. REMOVE NO LONGER USED 12KV POWER SUPPLY CABLE FROM GAP SWITCHGEAR 010-001-NMV-SGR-01 MAIN BREAKER GP-M1 TO MANHOLE MVMH-N-15. GAP SWITCHGEAR 010-001-NMV-SGR-01 IS NOW FED FROM THE NEW CUP SWITCHGEAR 007-02-NMV-SGR-01.
h. INCREMENT 2, MILESTONE 6: FINAL 12KV CONNECTIONS SIGN OFF.

CONSTRUCTION SEQUENCING

1. INCREMENT 1, MILESTONE 1 AND INCREMENT 2, MILESTONE 1 MAY BE CONSTRUCTED CONCURRENTLY.
2. DO NOT PROCEED WITH CONSTRUCTION OF INCREMENT 1, MILESTONE 2 UNTIL INCREMENT 1, MILESTONE 1 AND INCREMENT 2, MILESTONE 1 ARE COMPLETED WITH HCAI SIGN OFF.
3. DO NOT PROCEED WITH CONSTRUCTION OF INCREMENT 1, MILESTONE 3 UNTIL INCREMENT 1, MILESTONE 2 IS COMPLETE WITH HCAI SIGN OFF.
4. DO NOT PROCEED WITH CONSTRUCTION OF INCREMENT 1, MILESTONE 4 UNTIL INCREMENT 1, MILESTONE 3 IS COMPLETE WITH HCAI SIGN OFF.

CONSTRUCTION SEQUENCE LEGEND

INC 1 MILESTONE 1
INC 2 MILESTONE 1
INC 1 MILESTONE 2
INC 1 MILESTONE 3
INC 1 MILESTONE 4
INC 2 MILESTONE 2
INC 2 MILESTONE 3
INC 2 MILESTONE 4
INC 2 MILESTONE 5
INC 2 MILESTONE 6

GENERAL NOTES

1. ALL OUTAGES REQUIRE A MINIMUM 4 WEEKS NOTICE AND AGREEMENT WITH THE OWNER ON TIMING OF THE OUTAGE. MOPS WILL NEED TO BE SUBMITTED AND APPROVED. OUTAGE DURATION TO BE MINIMIZED SUCH AS ADDING 600A T-BODY WITH CAPACITIVE TEST POINT TO NEW CABLES BEFORE CUTTING INTO EXISTING 12KV CABLES.
2. PHASE VOLTAGE ROTATION SHALL BE RECORDED BEFORE THE POWER IS SHUT OFF. CONFIRM THE ROTATION ON THE SUPPLY END AND THE LOAD END OF THE CABLE THAT IS TO BE CUT AND/OR REPLACED. AFTER THE CUT OVER AND BEFORE DOWN STREAM LOADS ARE ALLOWED TO COME ON PERFORM PHASE ROTATION AND PHASE TO PHASE TESTING AT THE NEW SUPPLY AND LOAD END OF THE NEW CABLE. RECORD THE RESULTS AND PROVIDE IN OUTAGE REPORT.
3. IF THE OUTAGE FOR THE LOADS IS REQUIRED TO BE LONGER THAT 2.5 HOURS PROVIDE TEMPORARY GENERATORS FOR THE LOADS.
4. OUTAGES ARE TO BE BETWEEN 11PM AND 6AM. GENERATORS ARE ALWAYS REQUIRED FOR ANY OUTAGE TO THE IT/SHOPS AND THE CHILLER PLANT 1500KVA TRANSFORMER.

Print Date: 4/9/2025 6:00:05 PM

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LICENSED ARCHITECT — KEVIN S. BOOTS — C-30600 — 08/31/2025 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

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04/09/2025	D	ADDENDUM D
03/14/2025	A	ADDENDUM A
02/10/2025		BID SET
08/08/2024		HCAI BACKCHECK 1
04/04/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER
PHASE 2E INC 1 - RETROFIT OF GENERATOR BLDG. SWITCHGEAR

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 01/16/24
RBB PROJECT: 1712105 SCALE:

DESCRIPTION
SEQUENCE OF INSTALLATION

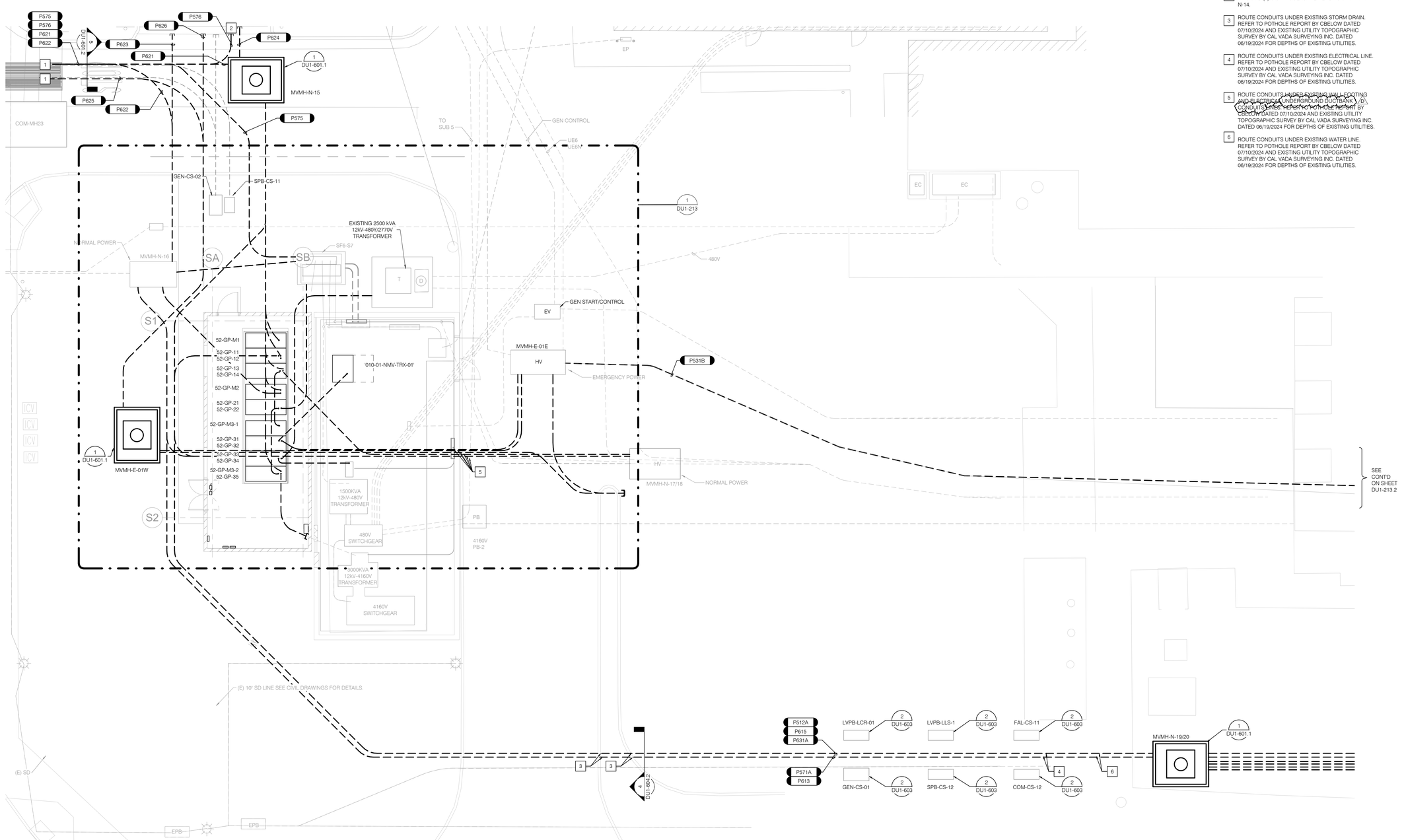
DU1-005

GENERAL NOTES

1. ALL 5" CONDUIT MINIMUM BEND RADIUS IS 60".
2. THIS SHEET REPRESENTS INSTALLATION OF CONDUITS ONLY. REFER TO SHEET DU1-402.1, DU1-402.2, AND DU1-402.3 FOR CONDUIT INFORMATION.
3. REFER TO SINGLE LINE SHEET DU1-521 AND DU1-522 FOR MORE INFORMATION.
4. TYPE MV CABLE SHALL BE INSTALLED, TERMINATED AND TESTED BY QUALIFIED PERSONS AND SHALL BE MARKED AS REQUIRED BY CEC 310.120.
5. PROVIDE INSPECTIONS AND TEST REPORT TO HCAI/OSHPD PRIOR TO ENERGIZATION.
6. ALL 4" CONDUIT MINIMUM BEND RADIUS IS 48".

NOTES

1. CONNECT TO EXISTING DUCKBANK. CONFIRM AND COORDINATE EXISTING CONDUIT DUCTBANKS FOR EACH CONDUIT TO AND FROM LOCATIONS.
2. STUB OUT (1)-5"C WHOSE "OTHER END" IS AT MVMH-N-13 AND (1)-5"C WHOSE "OTHER END" IS AT MVMH-N-14.
3. ROUTE CONDUITS UNDER EXISTING STORM DRAIN. REFER TO POTHOLE REPORT BY CBELOW DATED 07/10/2024 AND EXISTING UTILITY TOPOGRAPHIC SURVEY BY CAL VADA SURVEYING INC. DATED 06/19/2024 FOR DEPTHS OF EXISTING UTILITIES.
4. ROUTE CONDUITS UNDER EXISTING ELECTRICAL LINE. REFER TO POTHOLE REPORT BY CBELOW DATED 07/10/2024 AND EXISTING UTILITY TOPOGRAPHIC SURVEY BY CAL VADA SURVEYING INC. DATED 06/19/2024 FOR DEPTHS OF EXISTING UTILITIES.
5. ROUTE CONDUITS UNDER EXISTING WALL FOOTING AND ELECTRICAL UNDERGROUND DUCTBANK. DO NOT CONDUITS ARE BEING CONFLICTED BY CBELOW DATED 07/10/2024 AND EXISTING UTILITY TOPOGRAPHIC SURVEY BY CAL VADA SURVEYING INC. DATED 06/19/2024 FOR DEPTHS OF EXISTING UTILITIES.
6. ROUTE CONDUITS UNDER EXISTING WATER LINE. REFER TO POTHOLE REPORT BY CBELOW DATED 07/10/2024 AND EXISTING UTILITY TOPOGRAPHIC SURVEY BY CAL VADA SURVEYING INC. DATED 06/19/2024 FOR DEPTHS OF EXISTING UTILITIES.



(MILESTONE 1)

N

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

0 8

Print Date: 4/9/2025 6:00:17 PM

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08/08/2024		HCAI BACKCHECK 1
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PHASE 2E INC 1 - RETROFIT OF GENERATOR BLDG. SWITCHGEAR

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL

MILESTONE DATE: 12/21/23

RBB PROJECT: 1712105 SCALE: 1/8" = 1'-0"

DESCRIPTION

ENLARGED 12KV SITE UG POWER PLAN - GAP BLDG

DU1-212

GENERAL NOTES

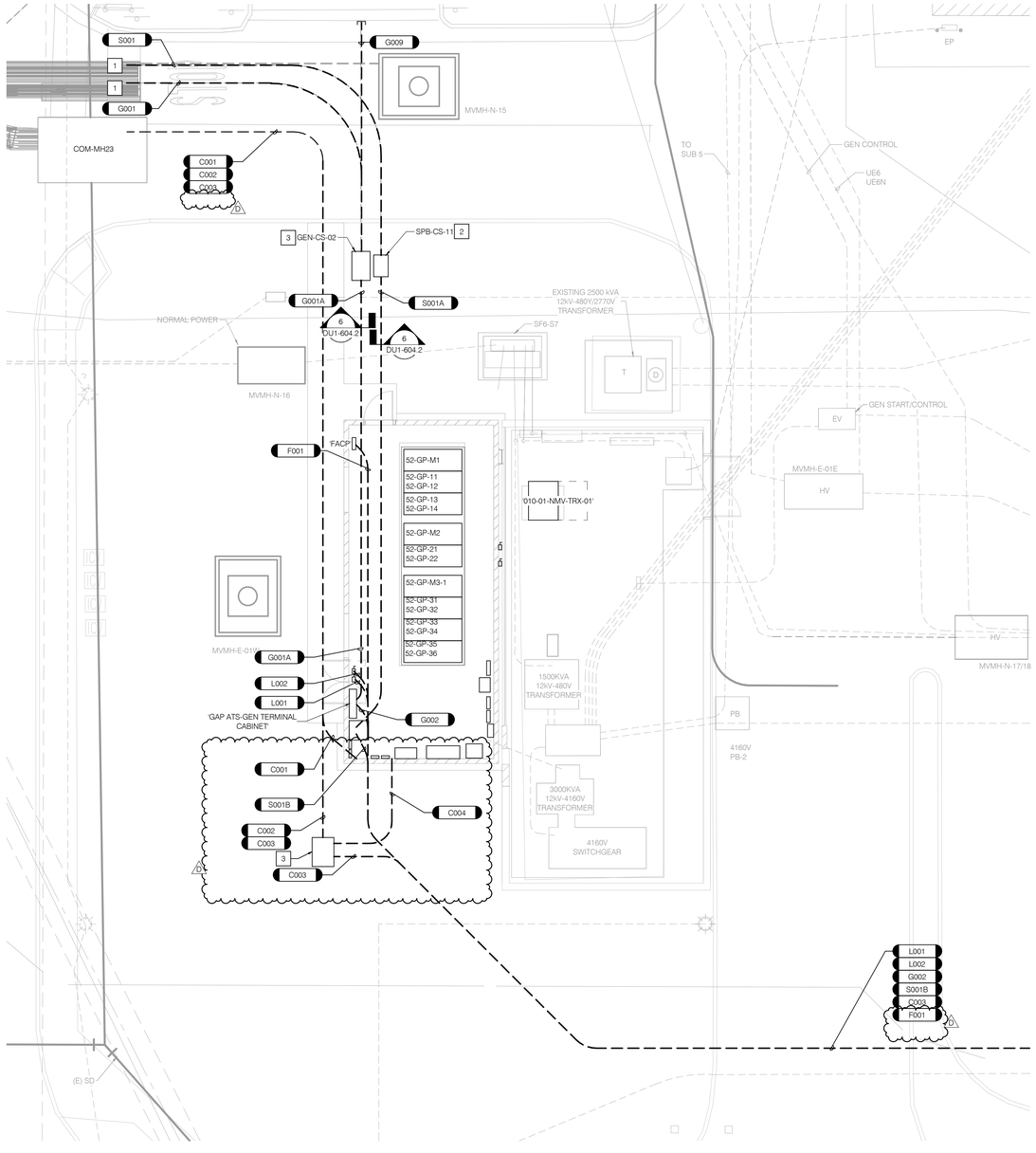
1. SEE DRAWING DU1-004 FOR EQUIPMENT CATALOG NUMBERS FOR WHICH THIS DESIGN IS BASED ON.
2. SEE DRAWING DU1-402.1, DU1-402.2, AND DU1-402.3 FOR CONDUIT AND CABLE SCHEDULE.
3. REFER TO DRAWINGS DU1-211, DU1-212, DU1-213.1, DU1-213.2 FOR ADDITIONAL CONDUITS TO BE INSTALLED DURING MILESTONE 1.
4. ALL 5" CONDUIT MINIMUM BEND RADIUS IS 60".
5. ALL 4" CONDUIT MINIMUM BEND RADIUS IS 48".

NOTES

1 CONNECT TO EXISTING DUCKBANK.

2 IN GROUND PULL BOX 2'WX3'LX3'H FEET. SEE DRAWING DU1-603 DETAIL 2.

3 IN GROUND PULL BOX 2.5'WX4'LX3'H. SEE DRAWING DU1-601.2 DETAIL 5.



(MILESTONE 1)

N

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

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OSHPD # I240005-19-01

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01/31/2025	3	HCAI BACKCHECK 2
04/04/2024		HCAI SUBMITTAL

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PHASE 2E INC 1 - RETROFIT OF GENERATOR BLDG. SWITCHGEAR

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL

MILESTONE DATE: 12/21/23

RBB PROJECT: 1712105 SCALE: 1/8" = 1'-0"

DESCRIPTION

ENLARGED 208/120V, SCADA, FIRE, COM, GEN START SITE UG PLAN - GAP SWGR BLDG

DU1-214.1

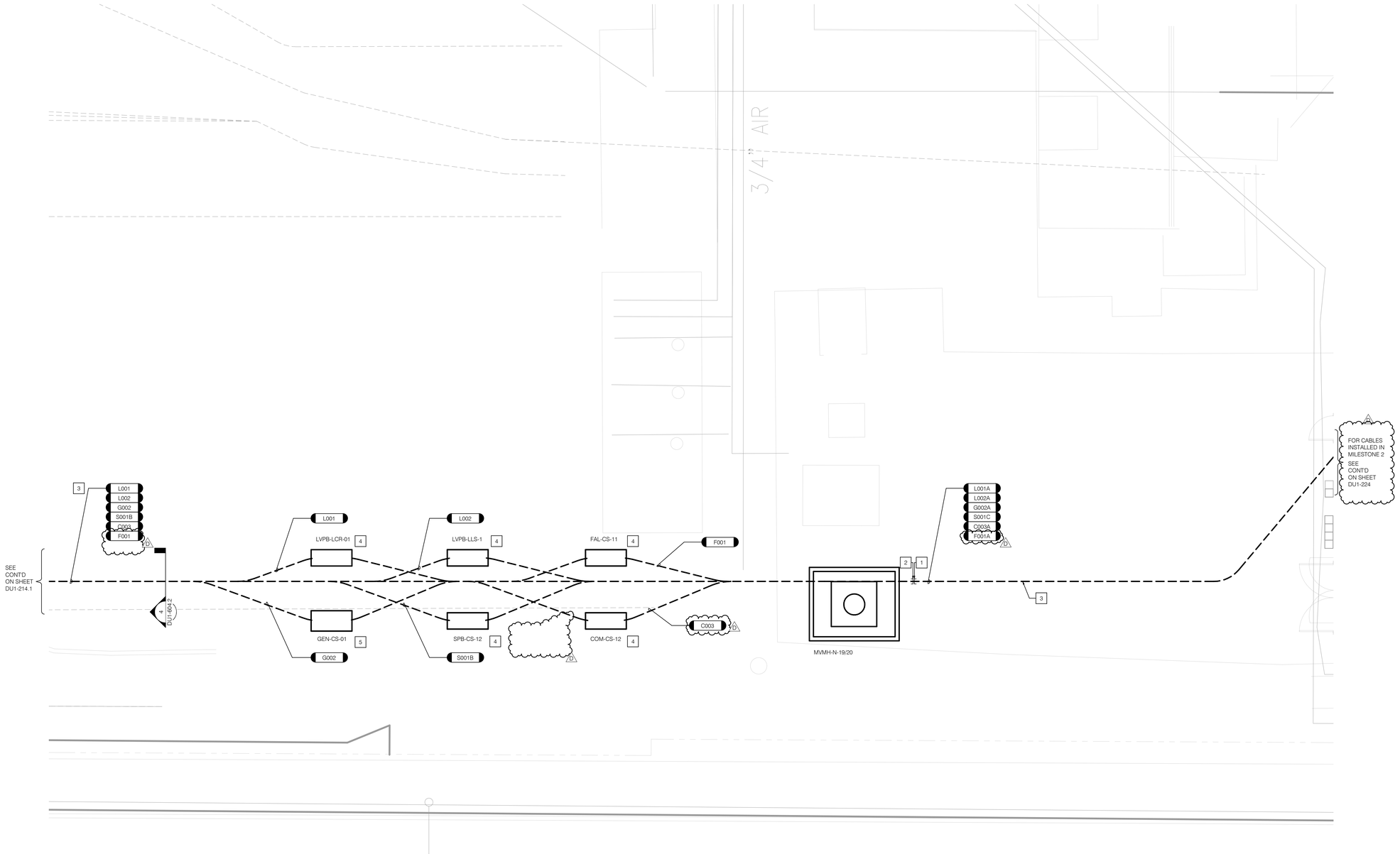
Print Date: 4/15/2025 3:28:42 PM

GENERAL NOTES

1. REFER TO DRAWINGS DU1-211, DU1-212, DU1-213.1, DU1-213.2, DU1-214.1 FOR ADDITIONAL CONDUITS TO BE INSTALLED DURING MILESTONE 1.

NOTES

1. UNDERGROUND EAST CONDUITS BY INC 2 CONTRACTOR. REMOVE CAP AND CONNECT CONDUIT TO INC 1 STUB OUT.
2. UNDERGROUND WEST CONDUITS BY INC 1 CONTRACTOR. REMOVE CAP AND CONNECT CONDUIT TO INC 2 STUB OUT.
3. ROUTE CONDUITS UNDER EXISTING UTILITIES.
4. IN GROUND PULLBOX 2'WX3'LX3'H. SEET DRAWING DU1-603 DETAIL 2.
5. IN GROUND PULLBOX 2.5'WX4'LX3'H. SEE DRAWING DU1-601.2 DETAIL 5.



(MILESTONE 1)

RBB

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STRUCTURAL PROFESSIONAL ENGINEER — JASON K. CHAN — No. E21080 — STATE ELECTRICAL — STATE OF CALIFORNIA — SIGNED: 04/02/2024

LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 08/31/2023 — STATE OF CALIFORNIA

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OSHPD # I240005-19-01

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08/08/2024		HCAI BACKCHECK 1
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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL

MILESTONE DATE: 10/25/2024

RBB PROJECT: 1712105 SCALE: 3/16" = 1'-0"

DESCRIPTION

ENLARGED 208/120V, SCADA, FIRE, COM, GEN START SITE UG POWER PLAN

DU1-214.2

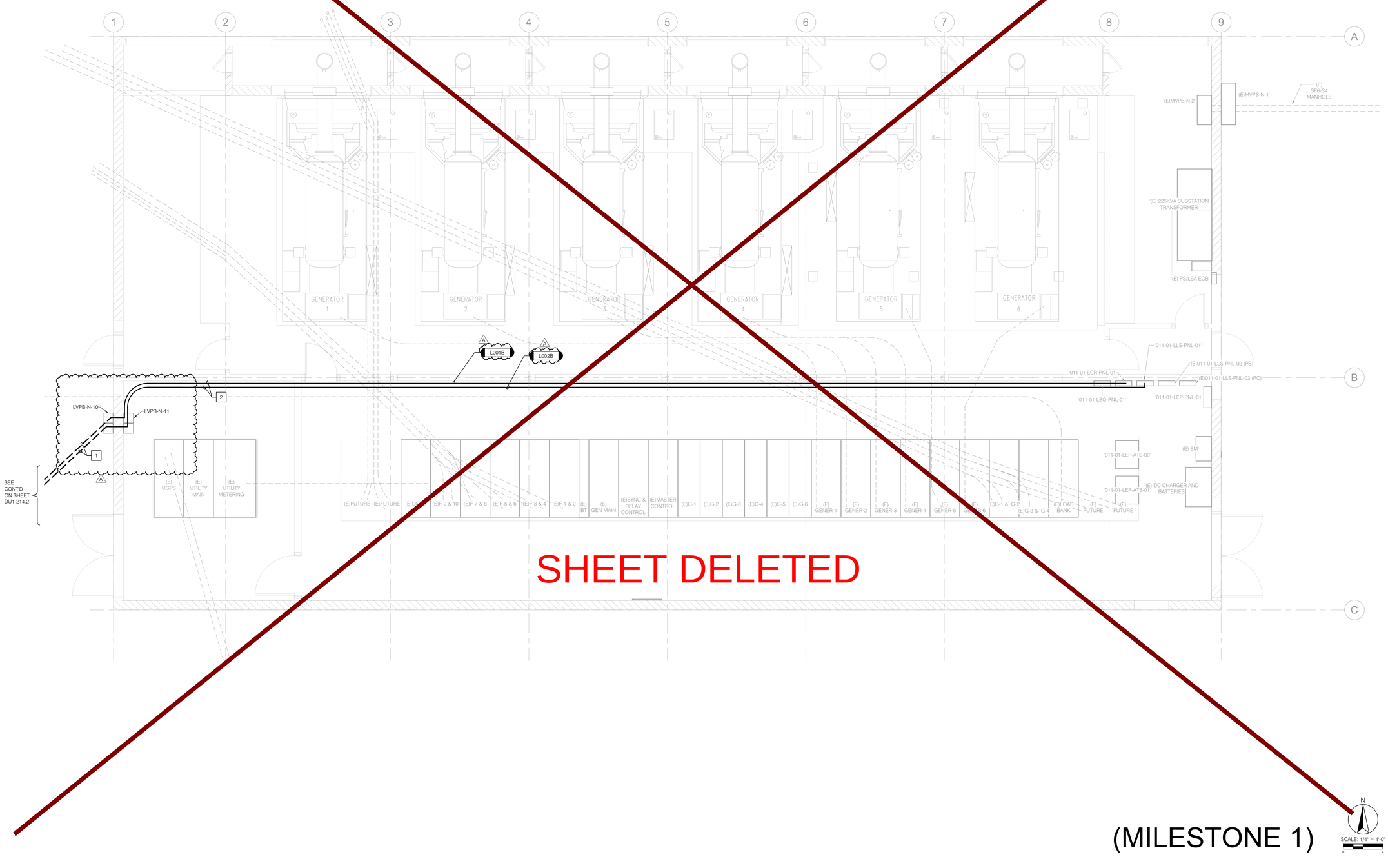
Print Date: 4/15/2025 2:44:21 PM

GENERAL NOTES

1. REFER TO DRAWINGS DU1-211, DU1-212, DU1-213.1, DU1-213.2, DU1-214.1, DU1-241.2 FOR ADDITIONAL CONDUITS TO BE INSTALLED DURING MILESTONE 1.

NOTES

1. UNDERGROUND CONDUITS INSTALLED BY INC 2 CONTRACTOR.
2. INSTALL CABLE INTO CONDUIT INSTALLED BY INC 2 CONTRACTOR.



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(MILESTONE 1)

Print Date: 3/13/2025 6:00:22 PM

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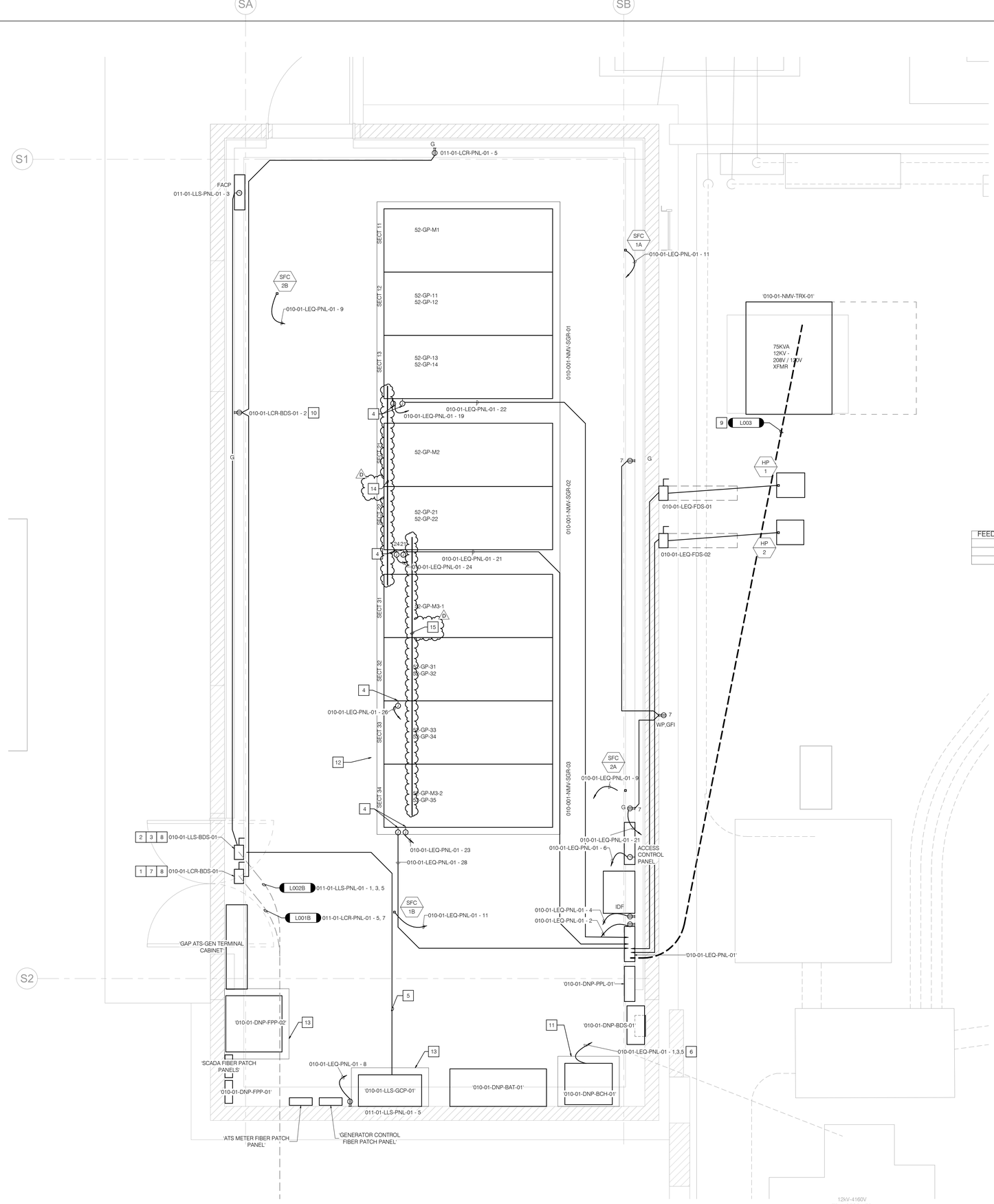
PHASE 2E INC 1 - RETROFIT OF GENERATOR BLDG. SWITCHGEAR

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 12/21/23
RBB PROJECT: 1712105 SCALE: 1/4" = 1'-0"

DESCRIPTION
ENLARGED 208/120V, SCADA, FIRE, COM, GEN START SITE UG POWER PLAN - GEN BLDG

DU1-214.3



GENERAL NOTES

1. FOR ADDITIONAL UNDERGROUND CONDUITS THAT ARE TO BE INSTALLED UNDER INCREMENT 1, SEE DRAWINGS DU1-212, DU1-213.1, DU1-213.2, DU1-214.1, DU1-214.2, DU1-214.3.
2. SEE DRAWING DU1-402.1, DU1-402.2, AND DU1-402.3 FOR CONDUIT AND CABLE SCHEDULE.
3. ALL 208/120V CONDUITS SHALL CONTAIN GROUND CABLE. MINIMUM 1#12 AWG GND.

NOTES

1. 010-01-LCR-BDS-01 IS FED FROM PANEL '011-01-LCR-PNL-01' LOCATED IN GENERATOR BUILDING.
2. 010-01-LLS-BDS-01 IS FED FROM PANEL '011-01-LLS-PNL-01' LOCATED IN GENERATOR BUILDING.
3. PROVIDE 60A 3P DISCONNECT SWITCH. FEED 3-1P CIRCUITS FROM DISCONNECT AS INDICATED. MOUNT CENTER OF GRIP 4'-6" AFF.
4. PROVIDE 120V POWER FOR SWITCHGEAR HEATER BLOCKS AND LIGHTS.
5. PROVIDE 1"C - 2 #8 AWG & 1 #8 GND FOR 40A CIRCUIT FOR REMOTE GENERATOR CONTROLLER POWER. CIRCUIT 5 FROM 011-01-LLS-PNL-01.
6. PROVIDE 1"C - 3 #6 AWG & 1 #10 GND FOR 50A CIRCUIT FOR BATTERY CHARGER.
7. PROVIDE 30A 2P DISCONNECT SWITCH. FEED 2-1P CIRCUITS FROM DISCONNECT AS INDICATED. MOUNT CENTER OF GRIP 4'-6" AFF.
8. PROVIDE LABELING FOR MAIN BUILDING DISCONNECT. SEE 260553 "IDENTIFICATION FOR ELECTRICAL SYSTEMS" 2(D)(2).
9. ROUTE CONDUITS UNDER EXISTING UTILITIES.
10. CIRCUIT 7 FROM 011-01-LCR-PNL-01.
11. PROVIDE HOUSEKEEPING PAD FOR BATTERY CHARGER. 4" TALL AND NO MORE THAT 4" EXTENDING AROUND THE FRONT AND SIDES OF THE BATTERY CHARGER. ENSURE TO TAKE IN ACCOUNT ANY DISTANCE FROM WALL DUE TO HEAT VENTS.
12. PROVIDE HOUSEKEEPING PAD FOR THE SWITCHGEAR GROUP. 4" TALL AND NO MORE THAN 4" EXTENDING AROUND THE FRONT, BACK, AND SIDES OF THE SWITCHGEAR.
13. PROVIDE HOUSEKEEPING PAD FOR CONTROL PANELS. 4" TALL AND NO MORE THAN 4' EXTENDING AROUND THE FRONT AND SIDES OF THE SCADA AND GEN CONTROL PANEL.
14. PROVIDE 3/4"C WITH 3#10 AWG AND 1#10 AWG CABLES FROM CTS IN SECTION 31 TO DIFFERENTIAL IN SECTION 13.
15. PROVIDE 3/4"C WITH 3#10 AWG AND 1#10 AWG CABLES FROM CTS IN SECTION 34 TO DIFFERENTIAL IN SECTION 22.

FEEDER NAME	TO	FROM	LENGTH	FEEDER	VOLTAGE DROP
L001	010-01-LCR-BDS-01	011-01-LCR-PNL-01	390	(4)6AWG & 10AWG GND	3.10%
L002	010-01-LLS-BDS-01	011-01-LLS-PNL-01	400	(4)6AWG & 1AWG GND	3.10%
L003	010-01-NMV-TRX-01	010-01-LEQ-PNL-01	30	(4)4/0 AWG & (1)4AWG GND	0.13%

(MILESTONE 2)

SCALE: 1/2" = 1'-0"

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OSHPD # I240005-19-01

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04/04/2024		HCAI SUBMITTAL

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PHASE 2E INC 1 - RETROFIT OF GENERATOR BLDG. SWITCHGEAR

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 11/27/23
RBB PROJECT: 1712105 SCALE: 1/2" = 1'-0"

DESCRIPTION
ENLARGED 208/120V POWER PLAN - GAP SWGR BLDG

DU1-221

Print Date: 4/9/2025 6:00:31 PM

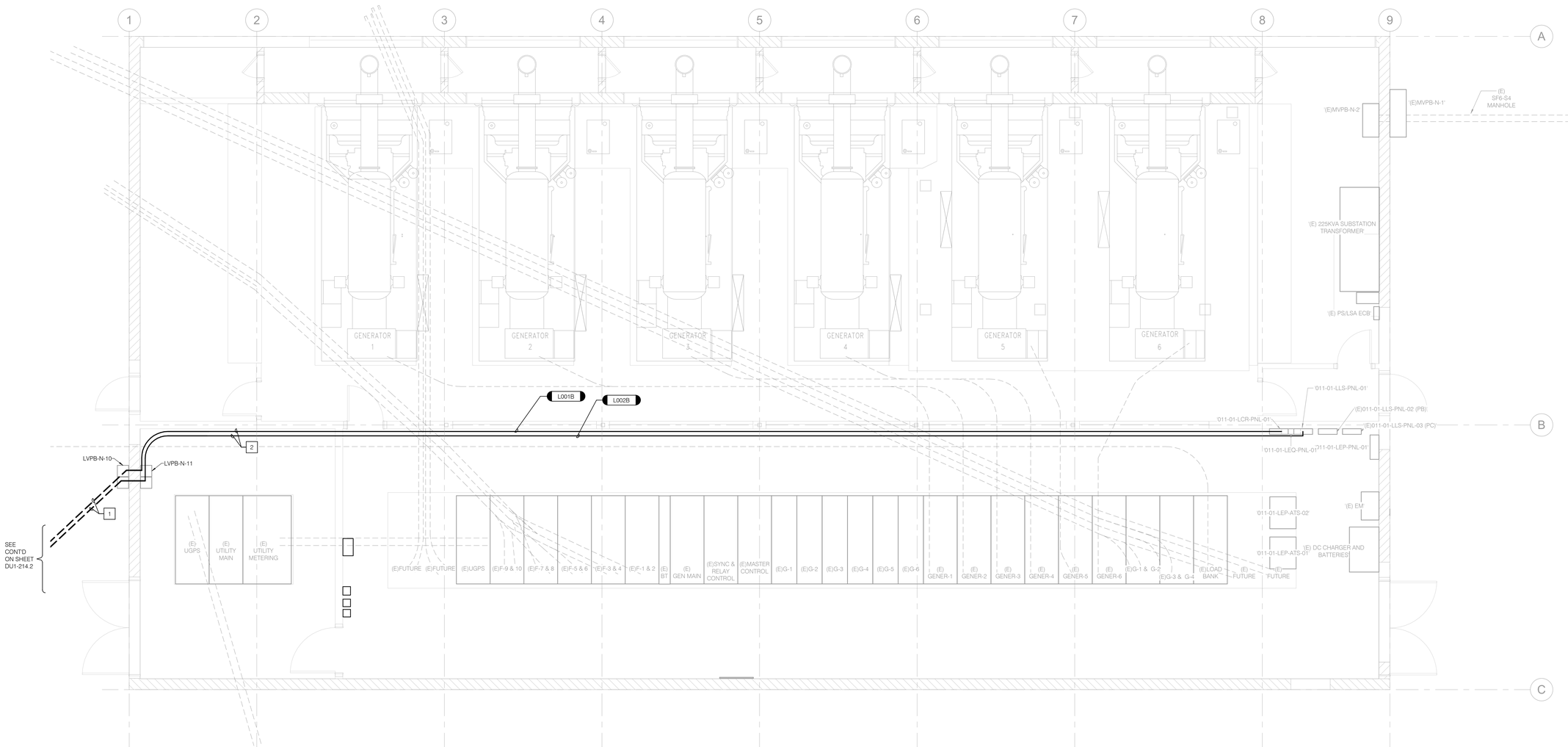
GENERAL NOTES

1. REFER TO DRAWINGS DU1-211, DU1-212, DU1-213.1, DU1-213.2, DU1-214.1, DU1-241.2 FOR ADDITIONAL CONDUITS TO BE INSTALLED DURING MILESTONE 1.

NOTES

1 UNDERGROUND CONDUITS INSTALLED BY INC 2 CONTRACTOR.

2 INSTALL CABLE INTO CONDUIT INSTALLED BY INC 2 CONTRACTOR.



(MILESTONE 2)

N

SCALE: 1/4" = 1'-0"

0 4

Print Date: 4/15/2025 2:45:24 PM

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AGENCY APPROVALS

OSHPD # I240005-19-01

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04/04/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 1 - RETROFIT OF GENERATOR BLDG. SWITCHGEAR

1000 West Carson Street, Torrance, CA 90509

MILESTONE:	HCAI SUBMITTAL
MILESTONE DATE:	12/21/23
RBB PROJECT: 1712105	SCALE: 1/4" = 1'-0"

DESCRIPTION

ENLARGED 208/120V, SCADA, FIRE, COM, GEN START SITE UG POWER PLAN - GEN BLDG

DU1-224

GENERAL NOTES

1. TYPE MV CABLE SHALL BE INSTALLED, TERMINATED AND TESTED BY QUALIFIED PERSONS AND SHALL BE MARKED AS REQUIRED BY CEC 310.120.
2. SEE THE CONDUIT AND CABLE SCHEDULE FOR CONDUIT TYPES. CONDUIT INDOORS SHALL BE RGS FOR CONDUITS CONTAINING HIGH VOLTAGE CABLE OF 1000V OR GREATER. CONDUIT OUTSIDE SHALL BE RGS. CONDUIT CONTAINING VOLTAGES 600V OR LESS INSTALLED INDOORS AND ABOVE 9' CAN BE EMT.
3. SPLICING OF MV CABLES ARE TO BE MADE WITH 600A T-BODY WITH CAPACITIVE TEST POINT.

ID	FROM	TO	PHASE CABLE SIZE	PHASE CABLE TYPE	GROUND CONDUCTOR SIZE	GROUND CONDUCTOR TYPE	NEW CONDUIT SIZE	NEW CONDUIT TYPE	VIA	CONTRACTOR SCOPE	REMARKS
C001	PULLBOX "COM-MH23"	STUB UP IN GAP BUILDING BUILDING	-	-	-	-	4"	PVC	-	INC 1	
C002	PULLBOX "COM-MH23"	PULLBOX "COM-CS-13"	-	-	-	-	(2) 4"	PVC		INC 1	
C003	PULLBOX "COM-MH23"	STUB OUT NEAR MVMH-N-19/20	-	-	-	-	(3) 2"	PVC	COM-CS-12, COM-CS-12	INC 1	
C003A	STUB OUT NEAR MVMH-N-19/20	GEN BUILDING	-	-	-	-	(3) 2"	PVC		INC 2	
C004	PULLBOX "COM-CS-13"	STUB UP IN GAP BUILDING BUILDING	-	-	-	-	(1) 2"	PVC	-	INC 1	
C005	GEN BUILDING IDF ENCLOSURE	GEN BUILDING BACKBOARD	-	-	-	-	(1) 2"	PVC	-	INC 2	
D100	BATTERY RACK "011-01-DNB-BAT-01"	DISCONNECT "011-01-DNP-BDS-01"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D101	DISCONNECT "011-01-DNP-BDS-01"	SPLICE BOX	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D102	BATTERY CHARGER "011-01-DNP-BCH-01"	SPLICE BOX	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D103	SPLICE BOX	PANEL "011-01-DNP-PNL-01"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D104	PANEL "011-01-DNP-PNL-01"	PANEL "011-01-DNP-PNL-02"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D105	PANEL "011-01-DNP-PNL-01"	PANEL "011-01-DNP-PNL-03"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D106	PANEL "011-01-DNP-PNL-01"	011-01-EMV-SGR-01 RELAYS, POWER METERS AND SWGR CIRCUIT BREAKERS "OPEN"	4#12AWG,...	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D107	PANEL "011-01-DNP-PNL-01"	011-01-EMV-SGR-01 CIRCUIT BREAKERS "CLOSE"	2#6AWG	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1.25"	IMC		INC 2	
D108	PANEL "011-01-DNP-PNL-01"	SCADA CONTROL AND GEN CONTROL	6#12AWG,...	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D200	BATTERY RACK "011-01-DNB-BAT-02"	DISCONNECT "011-01-DNP-BDS-02"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D201	DISCONNECT "011-01-DNP-BDS-0"	SPLICE BOX	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D202	BATTERY CHARGER "011-01-DNP-BCH-02"	SPLICE BOX	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D203	SPLICE BOX	PANEL "011-01-DNP-PNL-02"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D204	PANEL "011-01-DNP-PNL-02"	PANEL "011-01-DNP-PNL-03"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D205	PANEL "011-01-DNP-PNL-02"	011-01-EMV-SGR-02 (PART A) RELAYS, POWER METERS AND SWGR CIRCUIT BREAKERS "OPEN"	4#12AWG,...	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D206	PANEL "011-01-DNP-PNL-02"	011-01-EMV-SGR-02 (PART A) CIRCUIT BREAKERS "CLOSE"	2#6AWG	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D207	PANEL "011-01-DNP-PNL-02"	011-01-EMV-SGR-02 (PART B) RELAYS, POWER METERS AND SWGR CIRCUIT BREAKERS "OPEN"	4#12AWG,...	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D208	PANEL "011-01-DNP-PNL-02"	011-01-EMV-SGR-02 (PART B) SWGR CIRCUIT BREAKERS "CLOSE"	2#6AWG	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D301	PANEL "011-01-DNP-PNL-03"	011-01-EMV-SGR-03 RELAYS, POWER METERS AND SWGR CIRCUIT BREAKERS "OPEN"	4#12AWG,...	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D302	PANEL "011-01-DNP-PNL-03"	011-01-EMV-SGR-03 SWGR CIRCUIT BREAKERS "CLOSE"	2#6AWG	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D303	PANEL "011-01-DNP-PNL-03"	SCADA CONTROL AND GEN CONTROL	6#12AWG,...	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1.25"	IMC		INC 2	
F001	FACP IN GAP BUILDING	STUB OUT NEAR MVMH-N-19/20	-	-	-	-	(2) 2"	PVC	FAL-CS-11	INC 1	
F001A	STUB OUT NEAR MVMH-N-19/20	(E) FIRE ALARM TERMINAL CABINET IN GENERATOR BUILDING	-	-	-	-	(2) 2"	PVC	-	INC 2	
S001	EXISTING CONDUITS INSTALLED BY PHASE 1A, INC 3 DUCTBANK PROJECT	PULLBOX "SPB-CS-11"	-	-	-	-	(4) 2"	PVC	-	INC 1	CONNECT (2) CONDUITS FORM SPB-CS-09 AND (2) FROM SPB-CS-10
S001A	PULLBOX "SPB-CS-11"	SCADA FIBER PATCH PANEL IN GAP SWITCHGEAR BUILDING	-	-	-	-	(4) 2"	PVC	-	INC 1	SEE DU2-403.2 FOR CABLE REQUIREMENTS
S001B	(4) FIBER PATCH PANELS: (2) SCADA, GEN CONTROL, AND ATS METER FIBER PATCH PANELS IN GAP...	STUB OUT NEAR MVMH-N-19/20	-	-	-	-	(4) 2"	PVC/IMC	SPB-CS-12	INC 1	
S001C	STUB OUT NEAR MVMH-N-19/20	(4) FIBER PATCH PANELS: (2) SCADA, GEN CONTROL, AND ATS METER FIBER PATCH PANELS IN...	-	-	-	-	(4) 2"	PVC/IMC	-	INC 2	
S001D	(4) FIBER PATCH PANELS: (2) SCADA, GEN CONTROL, AND ATS METER FIBER PATCH PANELS IN GAP...	(4) FIBER PATCH PANELS: (4) FIBER PATCH PANELS: (2) SCADA, GEN CONTROL, AND ATS METER...								INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
S001E	(4) FIBER PATCH PANELS: (2) SCADA, GEN CONTROL, AND ATS METER FIBER PATCH PANELS IN GEN...	GENERATOR BLDG SWGR SCADA AND GEN CONTROL SECTION								INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENT INSTALL IN WIREWAY
G001	EXISTING CONDUITS FROM PULLBOX "GEN-CS-03" INSTALLED BY PHASE 1A, INC 3 DUCTBANK...	PULLBOX "GEN-CS-02"	-	-	-	-	(7) 2"	PVC	-	INC 1	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G001A	PULLBOX "GEN-CS-02"	ATS-GEN TERMINAL CABINET IN GAP BUILDING	-	-	-	-	(9) 2"	PVC	-	INC 1	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G002	ATS-GEN TERMINAL CABINET IN GAP BUILDING	STUB OUT NEAR MVMH-N-19/20	-	-	-	-	(7) 2"	PVC/IMC	GEN-CS-01W	INC 1	
G002A	STUB OUT NEAR MVMH-N-19/20	ATS-GEN TERMINAL CABINET IN GENERATOR BUILDING	-	-	-	-	(7) 2"	PVC/IMC/RMC	-	INC 2	USE RMC OUTSIDE
G002B	ATS-GEN TERMINAL CABINET IN GENERATOR BUILDING	GENERATOR BLDG SWGR GEN CONTROL SECTION	156#12AWG				-	-		INC 2	INSTALL IN WIREWAY
G002C	ATS-GEN TERMINAL CABINET IN GAP BUILDING	ATS-GEN TERMINAL CABINET IN GENERATOR BUILDING	264#12 AWG							INC 2	(1) 2"C-36#12, (1) 2"C-48#12, (3) 2"C-60#12
G003	GENERATOR CONTROL CABINET IN EXISTING GENERATOR BUILDING	TRANSFER SWITCH #1 IN SUB 1	-	-	-	-	-	-	GEN-CS-01E, GEN-CS-02E	INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G004	GENERATOR CONTROL CABINET IN EXISTING GENERATOR BUILDING	TRANSFER SWITCH #2 IN SUB 1	-	-	-	-	-	-	GEN-CS-01E, GEN-CS-02E	INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G005	GENERATOR CONTROL CABINET IN EXISTING GENERATOR BUILDING	TRANSFER SWITCH #3 IN SUB 1	-	-	-	-	-	-	GEN-CS-01E, GEN-CS-02E	INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G006	GENERATOR CONTROL CABINET IN EXISTING GENERATOR BUILDING	TRANSFER SWITCH #4 IN PCDC	-	-	-	-	-	-	GEN-CS-01E, GEN-CS-02E	INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G007	GENERATOR CONTROL CABINET IN EXISTING GENERATOR BUILDING	TRANSFER SWITCH #5 IN PCDC	-	-	-	-	-	-	GEN-CS-01E, GEN-CS-02E	INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G008	GENERATOR CONTROL CABINET IN EXISTING GENERATOR BUILDING	TRANSFER SWITCH #6 IN PCDC	-	-	-	-	-	-	GEN-CS-01E, GEN-CS-02E	INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G009	PULLBOX "GEN-CS-02"	STUB OUT INTO EMERGENCY RESPONSE HAZ MAT AREA	-	-	-	-	(2) 2"C	PVC	-	INC 1	
G010	ATS "011-01-LEP-ATS-01"	ATS-GEN TERMINAL CABINET IN GENERATOR BUILDING	12#12 AWG	-	-	-	2"	IMC	-	INC 2	
G011	GENERATOR BLDG SWGR GEN CONTROL SECTION	(E) CHILLER PLANT BMS/EMS CONTROL SYSTEM	20#14 AWG	-	-	-	2"	RMC		INC 2	INSTALL FLEX CONDUIT SEISMIC CONNECTION BETWEEN GENERATOR BUILDING AND OVER SHADE STRUCTURE
G012	GENERATOR BLDG SWGR GEN CONTROL SECTION	(E) CHILLER PLANT BMS/EMS CONTROL SYSTEM		6-PAIR MULTI-MODE FIBER OPTIC CABLE	-	-	1.5"	RMC		INC 2	INSTALL FLEX CONDUIT SEISMIC CONNECTION BETWEEN GENERATOR BUILDING AND OVER SHADE STRUCTURE
L001	DISCONNECT "010-01-LCR-BDS-01"	STUB OUT NEAR MVMH-N-19/20	-	-	-	-	(2) 2"	PVC/IMC	LVPB-LCR-01	INC 1	
L001A	STUB OUT NEAR MVMH-N-19/20	PANEL "011-01-LCR-PNL-01	-	-	-	-	(2) 2"	PVC/IMC	-	INC 2	
L001B	PANEL "011-01-LCR-PNL-01"	DISCONNECT "010-01-LCR-BDS-01"	4-6 AWG	0.6 KV, CU, THHN/THWN	6 AWG	THHN/THWN	-	-	LVPB-LCR-01	INC 1	
L002	DISCONNECT "010-01-LLS-BDS-01"	STUB OUT NEAR MVMH-N-19/20	-	-	-	-	(2) 2"	PVC/IMC	LVPB-LLS-01	INC 1	
L002A	STUB OUT NEAR MVMH-N-19/20	PANEL "011-01-LLS-PNL-01"	-	-	-	-	(2) 2"	PVC/IMC	-	INC 2	
L002B	PANEL "011-01-LLS-PNL-01"	DISCONNECT "010-01-LLS-BDS-01"	6-6 AWG	0.6 KV, CU, THHN/THWN	6 AWG	THHN/THWN	-	-	LVPB-LLS-01	INC 1	
L003	TRANSFORMER "010-01-NMV-TRX-01"	PANEL "010-01-LEQ-PNL-01"	4-4/0 AWG	0.6 KV, CU, THHN/THWN	4 AWG	THHN/THWN	2.5"	PVC		INC 1	
L100	TRANSFORMER "011-01-NMV-TRX-01"	DISCONNECT SWITCH ABOVE LVPB-E-04	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) #1/0AWG	THHN/THWN	(2) 3"	PVC/RMC	VIA LVPB-E-11 AND LVPB-E-04	INC 2	
L100A	TRANSFORMER "011-01-NMV-TRX-01"	DISCONNECT "011-01-LNP-BDS-01"	4- 12 AWG	0.6 KV, CU, THHN/THWN	12 AWG	THHN/THWN	1"	PVC/RMC	LVPB-E-04		
L101	DISCONNECT "011-01-LNP-BDS-01"	TRANSFER SWITCH "011-01-LEP-ATS-01"	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) 2#AWG	THHN/THWN	(2) 3"	IMC		INC 2	
L102	JUNCTION BOX "LVPB-E-02"	TRANSFER SWITCH "011-01-LEP-ATS-01"	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) 2#AWG	THHN/THWN	(2) 3"	IMC		INC 2	
L103	TRANSFER SWITCH "011-01-LEP-ATS-01"	TRANSFER SWITCH "011-01-LEP-ATS-02"	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) 2#AWG	THHN/THWN	(2) 3"	IMC		INC 2	
L104	GENERATOR QUICK CONNECT BOX "011-01-LEP-GQC-01"	TRANSFER SWITCH "011-01-LEP-ATS-02"	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) 2#AWG	THHN/THWN	(2) 3"	IMC		INC 2	
L105	TRANSFER SWITCH "011-01-LEP-ATS-02"	PANEL "011-01-LEP-PNL-01"	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) 2#AWG	THHN/THWN	(2) 3"	IMC		INC 2	
L106	EXISTING PS/LSA ENCLOSED CIRCUIT BREAKER	JUNCTION BOX "LVPB-E-02"	4-500KCMIL	0.6 KV, CU, THHN/THWN	2#AWG	THHN/THWN	4"	IMC		INC 2	
L111	PANEL "011-01-LEP-PNL-01"	PANEL "011-01-LEQ-PNL-01"	4- 3/0 AWG	0.6 KV, CU, THHN/THWN	4 AWG	THHN/THWN	2"	IMC		INC 2	
L110	PANEL "011-01-LEP-PNL-01"	PANEL "011-01-LCR-PNL-01"	4-4/0 AWG	0.6 KV, CU, THHN/THWN	4 AWG	THHN/THWN	2.5"	IMC		INC 2	
L112	PANEL "011-01-LEP-PNL-01"	PANEL "011-01-LLS-PNL-01"	4-4/0 AWG	0.6 KV, CU, THHN/THWN	4 AWG	THHN/THWN	2.5"	IMC		INC 2	
L113	PANEL "011-01-LEP-PNL-01"	PANEL "011-01-LLS-PNL-02"	4-4/0 AWG	0.6 KV, CU, THHN/THWN	4 AWG	THHN/THWN	2.5"	IMC		INC 2	
L114	PANEL "011-01-LEP-PNL-01"	PANEL "011-01-LLS-PNL-03"	4-4/0 AWG	0.6 KV, CU, THHN/THWN	4 AWG	THHN/THWN	2.5"	IMC		INC 2	
L200	TRANSFORMER "011-01-EMV-TRX-01"	DISCONNECT "011-01-ENP-BDS-01"	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) #1/0AWG	THHN/THWN	(2) 3"	PVC/RMC	VIA LVPB-E-10 AND LVPB-E-01	INC 2	
L201	DISCONNECT "011-01-ENP-BDS-01"	J-BOX LVPB-E-02	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) 2#AWG	THHN/THWN	(2) 3"	IMC		INC 2	

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AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
03/14/2025	A	ADDENDUM A
02/10/2025		BID SET
04/04/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

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PHASE 2E INC 1 - RETROFIT OF GENERATOR BLDG. SWITCHGEAR

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 11/17/2023
RBB PROJECT: 1712105 SCALE:

DESCRIPTION
CONDUIT AND CABLE SCHEDULE

DU1-402.1

GENERAL NOTES

1. TYPE MV CABLE SHALL BE INSTALLED, TERMINATED AND TESTED BY QUALIFIED PERSONS AND SHALL BE MARKED AS REQUIRED BY CEC 310.120.
2. SEE THE CONDUIT AND CABLE SCHEDULE FOR CONDUIT TYPES. CONDUIT INDOORS SHALL BE RGS FOR CONDUITS CONTAINING HIGH VOLTAGE CABLE OF 1000V OR GREATER. CONDUIT OUTSIDE SHALL BE RGS. CONDUIT CONTAINING VOLTAGES 600V OR LESS INSTALLED INDOORS AND ABOVE 9' CAN BE EMT.
3. SPLICING OF MV CABLES ARE TO BE MADE WITH 600A T-BODY WITH CAPACITIVE TEST POINT.

ID	FROM	TO	PHASE CABLE SIZE	PHASE CABLE TYPE	GROUND CONDUCTOR SIZE	GROUND CONDUCTOR TYPE	NEW CONDUIT SIZE	NEW CONDUIT TYPE	VIA	CONTRACTOR SCOPE	REMARKS
P581	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, 52-LB	EXISTING 2000KW LOAD BANK	-	-	-	-	-	-	-	INC 2	DISCONNECT AND REMOVE CABLE
P582	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, LSC4	MANHOLE "MVMH-E-01E"	-	-	-	-	-	-	MVMH-E-01E	INC 2	DISCONNECT AND REMOVE CABLE
P583	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, LSC3	MANHOLE "MVMH-E-01E"	-	-	-	-	-	-	-	INC 2	DISCONNECT AND REMOVE CABLE
P584	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, LSC2	MANHOLE "MVMH-E-01E"	-	-	-	-	-	-	-	INC 2	DISCONNECT AND REMOVE CABLE
P585	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, LSC1	MANHOLE "MVMH-E-01E"	-	-	-	-	-	-	-	INC 2	DISCONNECT AND REMOVE CABLE
P586	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, G1	DIESEL GENERATOR 1	-	-	-	-	-	-	-	INC 2	DISCONNECT AND REMOVE CABLE
P587	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, G2	DIESEL GENERATOR 2	-	-	-	-	-	-	-	INC 2	DISCONNECT AND REMOVE CABLE
P588	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, G3	DIESEL GENERATOR 3	-	-	-	-	-	-	-	INC 2	DISCONNECT AND REMOVE CABLE
P589	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, G4	DIESEL GENERATOR 4	-	-	-	-	-	-	-	INC 2	DISCONNECT AND REMOVE CABLE
P590	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, G5	DIESEL GENERATOR 5	-	-	-	-	-	-	-	INC 2	DISCONNECT AND REMOVE CABLE
P591	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, G6	DIESEL GENERATOR 6	-	-	-	-	-	-	-	INC 2	DISCONNECT AND REMOVE CABLE
P600	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, UE-1	SWITCH "SF6-S7"	-	-	-	-	-	-	MVMH-N-17/18, UE-1 FEED P.B.	INC 1	DISCONNECT AND REMOVE CABLE
P601	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, UE-2	EXISTING GENERATOR BUILDING HOUSE TRANSFORMER	-	-	-	-	-	-	-	INC 2	DISCONNECT AND REMOVE CABLE
P602	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, UE-4	EXISTING 2500KVA OUTDOOR SUB AT CENTRAL PLANT	-	-	-	-	-	-		INC 1	DISCONNECT AND REMOVE CABLE
P603	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, UE-5	MANHOLE "MVMH-N-17/18"	-	-	-	-	-	-	-	INC 1	DISCONNECT AND REMOVE CABLE
P604	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, UE-6	MANHOLE "MVMH-N-17/18"	-	-	-	-	-	-	-	INC 1	DISCONNECT AND REMOVE CABLE
P605	EXISTING 12KV MAIN SWITCHGEAR IN GENERATOR BUILDING, UE-7	PULLBOX 'MVPB-N-01' IN GENERATOR BUILDING	-	-	-	-	-	-	-	INC 1	DISCONNECT AND REMOVE CABLE TO MVPB-N-1 AND DEMOLISH CONDUIT TO MVPB-N-2
P610	MANHOLE "MVMH-N-01E"	MANHOLE "MVMH-E-01W"	-	-	-	-	(4) 4"	PVC	-	INC 1	
P611	STUB OUT SOUTH OF MANHOLE "MVMH-N-17/18"	STUB OUT SOUTH OF MVMH-N-17/18	-	-	-	-	(8) 4"	PVC	-	INC 2	
P612	MANHOLE "MVMH-N-16"	MANHOLE "MVMH-N-17/18"	-	-	-	-	(2) 4"	PVC	-	INC 1	
P613	MANHOLE "MVMH-N-16"	MANHOLE "MVMH-N-19/20"	-	-	-	-	(2) 4"	PVC	-	INC 1	
P614	MANHOLE "MVMH-N-15"	MANHOLE "MVMH-N-17/18"	-	-	-	-	(2) 4"	PVC	-	INC 1	
P615	MANHOLE "MVMH-N-15"	MANHOLE "MVMH-N-19/20"	-	-	-	-	4"	PVC	-	INC 1	
P617	MANHOLE "MVMH-E-01E"	STUB OUT SOUTH OF MANHOLE "MVMH-N-17/18"					(4) 4"	PVC	-	INC 1	SPARE
P618	MANHOLE "MVMH-E-01W"	STUB OUT SOUTH OF MANHOLE "MVMH-N-17/18"					(5) 4"	PVC	-	INC 1	
P619	MANHOLE "MVMH-N-19/20"	PULLBOX "MVPB-N-4"					4"	PVC/RMC	-	INC 2	
P619A	MANHOLE "MVMH-N-19/20"	STUB UP AND CAP AT WEST WALL OF GENERATOR BUILDING	-	-	-	-	(2) 4"	PVC	-	INC 2	
P620	NEAR MANHOLE "MVMH-N-17/18"						(9) 4"	PVC		INC 2	EXTEND P617, P618 TO INTERCEPT EXISTING CONDUITS
P621	EXISTING CONDUITS INSTALLED BY PHASE 1A, INC 3 DUCTBANK PROJECT	MANHOLE "MVMH-N-15"	-	-	-	-	(6) 5"	PVC	-	INC 1	CONNECT (2) CONDUITS FORM MVMH-N-11 AND (4) FROM...
P622	EXISTING CONDUITS INSTALLED BY PHASE 1A, INC 3 DUCTBANK PROJECT	MANHOLE "MVMH-N-16"	-	-	-	-	(6) 5"	PVC	-	INC 1	CONNECT (2) CONDUITS FORM MVMH-N-12 AND (4) FROM...
P623	EXISTING CONDUITS INSTALLED BY PHASE 1A, INC 3 DUCTBANK PROJECT	STUB OUT INTO EMERGENCY RESPONSE HAZ MAT AREA					(2) 5"	PVC	-	INC 1	
P624	MANHOLE "MVMH-N-15"	STUB OUT INTO EMERGENCY RESPONSE HAZ MAT AREA	-	-	-	-	(2) 5"	PVC	-	INC 1	
P625	EXISTING CONDUITS INSTALLED BY PHASE 1A, INC 3 DUCTBANK PROJECT	MANHOLE "MVMH-E-01W"	-	-	-	-	(6) 5"	PVC	-	INC 1	
P626	MANHOLE "MVMH-E-01W"	STUB OUT INTO EMERGENCY RESPONSE HAZ MAT AREA	-	-	-	-	(2) 4"	PVC	-	INC 1	
P631A	MANHOLE "MVMH-N-15"	MANHOLE "MVMH-N-19/20"	-	-	-		4"	PVC		INC 1	
P631C	MANHOLE "MVMH-N-15"	EXISTING GENERATOR BUILDING (N) HOUSE TRANSFORMER T-2 SWITCH INPUT A	3-#2AWG	MV-105, 15KV, CU, EPR	#2AWG	THHN/THWN	-	-	MVMH-N-19/20 MVPB-N-3 MVPB-N-4	INC 2	SPLICE TO P511C IN MVMH-N-15
P701	SWITCHGEAR "007-02-NMV-SGR-01", 52-CP-13	MANHOLE "MVMH-N-17/18"	3 - 500KCMIL	MV-105, 15KV, CU, EPR	#4/0AWG	THHN/THWN	-	-	MVMH-N-13, MVMH-N-15	RMJV	SPLICE TO EXISTING FEEDER TO SUB-6N1
P702	SWITCHGEAR "007-02-NMV-SGR-02", 52-CP-24	MANHOLE "MVMH-N-17/18"	3 - 500KCMIL	MV-105, 15KV, CU, EPR	#4/0AWG	THHN/THWN	-	-	MVMH-N-14, MVMH-N-16	RMJV	SPLICE TO EXISTING FEEDER TO SUB-6N2

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REGISTERED PROFESSIONAL ENGINEER — JASON K. CHAN — No. E21060 — STATE ELECTRICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 08/31/2023 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
03/14/2025	A	ADDENDUM A
02/10/2025		BID SET

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 1 - RETROFIT OF GENERATOR BLDG. SWITCHGEAR

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL

MILESTONE DATE: 12/18/24

RBB PROJECT: 1712105 SCALE:

DESCRIPTION
CONDUIT AND CABLE SCHEDULE

DU1-402.3

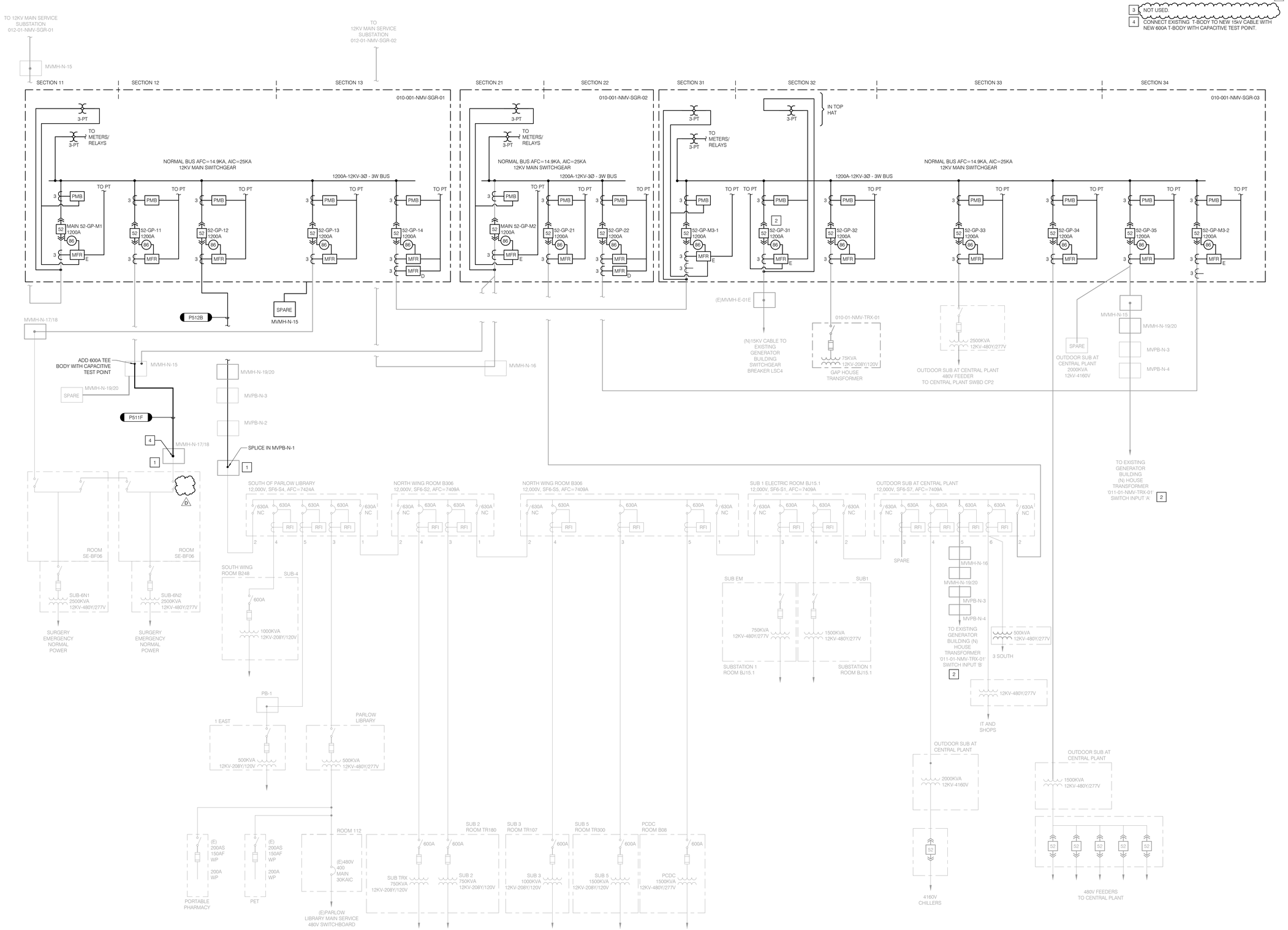
Print Date: 4/15/2025 3:20:22 PM

GENERAL NOTES

1. MAXIMUM LOAD ON SWITCHGEAR BUS IS 3.6 MVA AT THIS MILESTONE.

NOTES

1. NEW LOAD REMOVED FROM GENERATOR BUILDING SWITCHGEAR.
2. NEW TRANSFORMER INSTALLED BY INC.2 CONTRACTOR.
3. NOT USED.
4. CONNECT EXISTING T-BODY TO NEW 15kV CABLE WITH NEW 600A T-BODY WITH CAPACITIVE TEST POINT.



(MILESTONE 4)

Print Date: 4/9/2025 6:03:22 PM

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AGENCY APPROVALS

OSHPD # I240005-19-01

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
03/14/2025	A	ADDENDUM A
02/10/2025		BID SET
01/31/2025	3	HCAI BACKCHECK 2
04/04/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 1 - RETROFIT OF GENERATOR BLDG. SWITCHGEAR

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 12/12/23
RBB PROJECT: 1712105 SCALE: 12" = 1'-0"

DESCRIPTION
2ND CUTOVER GAP SINGLE LINE DIAGRAM

DU1-542

Door Schedule

Number	Room Description	DOOR / OPENING							Fire Rating	FRAME					HARDWARE										NOTES			
		Width	Height	Thickness	Door Type	Door Panel Construction	Finish	Glass		Frame Type	DETAILS: Head Detail	Jamb Detail	Other Jamb Detail	Threshold Detail	Hardware Group	Closer	Panic Device	Mag Hold/Smoke	Smoke Seals	Protective Plates	Weather Seals	Keylock	Privacy Lock	Latchset				
001	(E) ELECTRICAL SWITCHGEAR	3' - 6"	7' - 0"	1 3/4"	A	HM	STL			A	11/A320.2	10/A320.2		9/A320	01	Yes	Yes		Yes	Yes	Yes	Yes			1	9	22	44
002	(E) ELECTRICAL SWITCHGEAR	8' - 4"	10' - 0"	1 3/4"	J1	STL	STL			A	5/320.2	4/1320.2		3/320.2														
006	EMERGENCY GENERATOR	3' - 2"	7' - 0"	1 3/4"	A	S.C.				A					01		Yes								19			
007	(E) ELECTRICAL SWITCHGEAR	4' - 0"	7' - 0"	1 3/4"	A	S.C.				A					01		Yes	No							19			
008	(E) ELECTRICAL SWITCHGEAR	8' - 4"	7' - 0"	1 3/4"	A2	S.C.				A2					02		Yes								19			

D

D

CONSTRUCTION

ALUM	ALUMINUM
GL	GLASS
S.S.	STAINLESS STEEL
STL	STEEL
H.C.	WOOD - HOLLOW CORE
S.C.	WOOD - SOLID CORE
W.S.	WOOD - SHIELDING LEAD
--	NONE
HM	HOLLOW METAL
MC	MINERAL CORE
(E)	EXISTING
HM2	INSULATED HOLLOW METAL
MTL	METAL
WS2	WOOD - SHIELDING RF

FACE

ALUM	ALUMINUM
GL	GLASS
HDWD	HARDWOOD VENEER - STAIN GRAD
PG	HARDWOOD VENEER - PAINT GRAD
LAM	PLASTIC LAMINATE
S.S.	STAINLESS STEEL
STL	STEEL - PRIME COAT
RFG	RF SHIELDED GLASS
WD	WOOD
MRR	MIRROR
FR	FIBER REINFORCED FACE
--	NONE
STLG	STEEL GRILL
COR	CORIAN VENEER
MTL	METAL
PM-2	PLASTIC MATERIAL

GLAZING

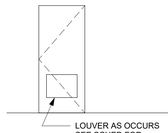
1	1/4" CLEAR
2	1/4" CLEAR TEMPERED
3	1/2" CLEAR
4	1/2" CLEAR TEMPERED
5	1/4" WIRED
6	FIRE RATED
7	LEADED GLASS
--	NONE
	RF SHIELDED GLASS

NOTE:
IN A 20-MINUTE FIRE DOOR ASSEMBLY, THE GLAZING MATERIAL IN THE DOOR ITSELF SHALL HAVE A MINIMUM FIRE-PROTECTION-RATED GLAZING OF 20-MINUTES...
-2016 CBC, SECTION 716.5.3.2

FOOTNOTES

1- HARDWARE BY DOOR MANUFACTURER
2- RHR LEAF ACTIVE
3- LHR LEAF ACTIVE
4- COMBINATION LOCK
5- LIGHT TIGHT
6- SMOKE PARTITION DOOR
7- MECHANICAL UNDERCUT
8- DELAYED ACTION CLOSER
9- FRAME BY DOOR MANUFACTURER
10- INSTALLED IN CURTAINWALL
11- HOSPITAL LATCH
12- ELECTRONIC INTERLOCK PRIVACY LOCK
13- ELECTRIC LOCK
14- CARD READER
15- FOR GLASS TYPE SEE EXTERIOR ELEVATIONS
16- WON DOOR
17- OVERHEAD STOP
18- AUTOMATIC FLUSHBOLT
19- EXISTING DOOR
20- AUTOMATIC DOOR
21- RELOCATED EXISTING DOOR
22- CONTRACTOR TO VERIFY WIDTH
23- DELAYED ACTIVATED PANIC DEVICE
24- TIMED OPENING/LOCKING FEATURE
25- TOTAL DOOR
26- LEAD LINED DOOR
27- RF SHIELDED DOOR
28- WONDOR POCKET DOOR
29- RADIUSED WONDOR AND POCKET
30- INTERIOR WINDOW
31- RF SHEILDED INTERIOR WINDOW
32- LEAD LINED INTERIOR WINDOW
33- INTEGRATED BLINDS
34- W/ SHADE
35- KEYPAD
36- PUSH PLATE
37- BUZZER
38- GREEN CODE
39- SMOKE GUARD
40- AI PHONE/CARD ACCESS
41- MAG HOLD OPEN
42- CASED OPENING
43- EXTERIOR WINDOW
44- MOTOR OPERATED ROLLING DOOR

DOOR TYPES



A
FLUSH

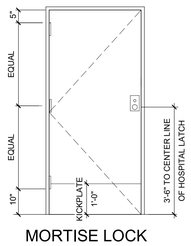
LOUVER AS OCCURS SEE SCHED FOR SIZE

J1
MOTOR OPERATED ROLLING COUNTER DOOR
NOTE: ROLLING COUNTER DOOR HAS GALVANIZED STEEL FRAME

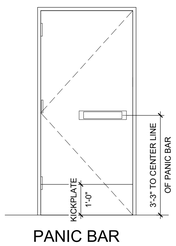
FRAME TYPES

A
(HOLLOW MTL. FR.)

HARDWARE MOUNTING HEIGHT



MORTISE LOCK



PANIC BAR

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08/31/2025
STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-02

CONSULTANT

ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
06/13/2024		HCAI SUBMITTAL
04/18/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE:	HCAI SUBMITTAL
MILESTONE DATE:	10/25/2024
RBB PROJECT: 1712076	SCALE: 1/4" = 1'-0"

DESCRIPTION
DOOR SCHEDULE, DOORS FRAMES, HARDWARE MOUNTING, FINISH SCHEDULE

A300.2

Print Date: 4/10/2025 1:19:09 PM

(E) 6" FLOOR DRAIN TYP.

(E) EXHAUST PIPE TYP.

(E) COLUMN SEE STRUCT., TYP.

(E) DAY FUEL TANK TYP.

(E) MUFFLER ABOVE TYP.

(E) EMERGENCY GENERATOR TYP.

(E) SOUND TRAPS

D

5' - 10"

4' - 5"

6' - 8"

TRANSFORMER

NEW EQUIPMENT PADS

2' - 4"

6' - 8"

TRANSFORMER

(E)

(E)

(E)

(E)

(E)

(E)

(E) EQUIP

CRL

EQL

NP

006

D

BC2

NEW EQUIP PAD, SEE ELECTRICAL

MTS1

ATS EMI

(N) ELECTRICAL SWITCHGEAR ON (E) CONC. PAD

(N) TRANSFORMERS (E) CONC. PAD

NEW ROLL DOWN DOOR SEE DETS 4 AND 5 A320

002

BC1

8' - 10"

PROVIDE NEW EXIT SIGN

(E)

(E)

008

D

007

D

NEW 3'-6" DOOR

001

(E) SPLASH BLOCK

4

A410.2

NEW SIDEWALK SEE CIVIL DWGS.

5' - 0"

FIRST FLOOR PLAN | 1/4" = 1'-0" | 1

Print Date: 4/10/2025 1:17:12 PM

RBB

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08/31/2025
STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-02

CONSULTANT

ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
01/31/2025	BC2	HCAI BACKCHECK 2
10/25/2024	BC1	HCAI BACKCHECK 1
06/13/2024		HCAI SUBMITTAL
04/18/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712076 SCALE: 1/4" = 1'-0"

DESCRIPTION
GENERATOR BUILDING RETROFIT PLAN

A511.2

EQUIPMENT SCHEDULE

UNIT NO.	EQUIPMENT	LOCATION	ROUGH-IN SERVICES: FUEL SUPPLY	ROUGH-IN SERVICES: FUEL RETURN	ROUGH-IN SERVICES: FUEL VENT	ROUGH-IN SERVICES: --	WEIGHT EMPTY(LBS)	DESCRIPTION
FOT 1, FOT 2	UNDERGROUND FUEL TANK	PRIVATE STREET	2"	3"	4"		27,400 LBS	ZCL XERXES, DOUBLEWALL UNDERGROUND STORAGE TANK, UL-LISTED (1316), RE-INFORCED FIBERGLASS POLYESTER CONTAINMENT, 45,000 GALLON STORAGE, 12'-0" DIA. X 60'-7" LONG. PROVIDE TAPPINGS AND MANHOLES AS NECESSARY. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION. (OR APPROVED EQUAL)
FOP 1A, FOP 1B	FUEL OIL PUMP	PRIVATE STREET	2"	--	--			F.E.PETRO, MODEL NO. STPM200, SUBMERSIBLE PUMP, 2 HP, 208 VOLT, 1 PHASE. (COORDINATE WITH ELECTRICAL CONTRACTOR), EMERGENCY POWER, 30 GPM @ 80 FT. HEAD. COMPLETE WITH CHECK VALVE, PRESSURE RELIEF VALVE, INTAKE FILTER SCREEN AND PLLD INSTALLED.
FOP 2A, FOP 2B	FUEL OIL PUMP	PRIVATE STREET	2"	--	--			F.E.PETRO, MODEL NO. STPM200, SUBMERSIBLE PUMP, 2 HP, 208 VOLT, 1 PHASE. (COORDINATE WITH ELECTRICAL CONTRACTOR), EMERGENCY POWER, 30 GPM @ 80 FT. HEAD. COMPLETE WITH CHECK VALVE, PRESSURE RELIEF VALVE, INTAKE FILTER SCREEN AND PLLD INSTALLED.
FOF 1	FUEL OIL FILTER	GENERATOR BUILDING	2"	2"	--		875	RCI TECHNOLOGIES FRS+30, DUPLEX 30 GPM PUMPS TO SERVE TWO TANKS, 3 MICRON PARTICULATE FILTER, 5 MICRON COALESCER, 60"W X 48" H X 12" DEEP CABINET. (2) 2 HORSEPOWER PUMPS IN CABINET, PROVIDE WITH 208 VOLTS, 3 PHASE.

APPLICABLE CODES

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
2022 CALIFORNIA BUILDING CODE (CBC), PART 2 , TITLE 24 , CCR
2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3 , TITLE 24 , CCR
2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4 , TITLE 24 , CCR
2022 CALIFORNIA PLUMBING CODE (CPC), PART 5 , TITLE 24 , CCR
2022 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 CCR
2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24, CCR
2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR
2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR
TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

2020 EDITION NFPA 31 - STANDARD FOR THE INSTALLATION OF OIL-BURNING EQUIPMENT. (CA AMENDED)

APPLICABLE STANDARDS
FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.

PIPE MATERIALS

SERVICES	ABOVE GRADE	BELOW GRADE	NU-HUB CAST IRON ASTM A888 (MATERIAL)	SCHEDULE 40 PVC ASTM D1784	DWV COPPER	TYPE L COPPER ASTM B88	TYPE K COPPER ASTM B88	TYPE M COPPER ASTM B88	TYPE L COPPER ASTM B819	HDPE POLYPROPYLEN	SCHEDULE 40 BLACK STEEL	CPVC FOR 1/2" TO 2", GEORGE FISHER HARVEL CHLORFIT, IRON PIPE SIZE, LA RR# 5695.	NO-HUB COUPLING (CONNECTION TYPE)	SOLVENT CEMENTED	SOLDERED, LEAD FREE	SOLDERED	BRAZED	SCREWED	WELDED	ELECTRIC SOCKET FUSION	CPVC, 2-1/2" & LARGER, SCH. 80 GEORGE FISHER HARVEL CHLORFIT CORZAN, IRON PIPE SIZE LA RR# 5695.	UNDERGROUND WRAP WITH #14 AWG ELECTRIC TRACER WIRE.	DOUBLE WALL FIBERGLASS	ABS PIPE	REMARKS
CONDENSATE DRAIN	•							•								•									
FUEL OIL PIPING (FILL, SUPPLY & RETURN)	•										•							•					•		
		•									•							•					•		
FUEL VENT	•										•							•							
		•									•							•							

1. ALL OF THE ABOVE SHALL COMPLY WITH THE SPECIFICATIONS
2. ALL PIPING BELOW SLAB OR GRADE SHALL BE CORROSION PROTECTED PER SPECIFICATIONS
3. PIPING SYSTEMS SHALL BE INSULATED IN ACCORDANCE WITH REQUIREMENTS OF THE TITLE 24 STANDARDS AND ALL CODES HAVING THE JURISDICTION.

DAY TANK CAPACITY ANALYSIS

EXISTING FUEL OIL DAY TANK CAPACITY: (1) DAY TANK AT 100 GALLONS.

USEABLE FUEL CAPACI TY: 100 GALLONS X .75 = 75 GALLONS. (75% FULL LOW FUEL SWITCH #4.)

EXISTING EMERGENCY GENERATOR CONSUMES 152 GPH AT 100% LOAD

EXISTING DAY TANK USEABLE CAPACITY OF 75 GALLONS WILL PROVIDE FOR APPROXIMATELY 30 MINUTES RUN TIME.

TYPICAL FOR SIX (6) EXISTING EMERGENCY GENERATORS AND DAY TANKS.

EXISTING GENERATOR DAY TANKS PROVIDED WITH A FULLY MONITORED AUTOMATIC REFILL SYSTEM FROM THE MAIN TANKS TO PROVIDE FOR 96 HOURS OF RUN TIME.

FUEL OIL SYSTEM CAPACITY ANALYSIS

EXISTING MAIN FUEL OIL TANK STORAGE CAPACITY: (2) TWO TANKS AT 15,000 GALLONS EACH = 30,000 GALLON.

FUEL OIL CONSUMPTION FOR EXERCISING OF EMERGENCY GENERATORS:

SIX (6) EXISTING 2000 KW EMERGENCY GENERATORS AT 50% LOAD 78 GALLONS PER HOUR X 1/2 HOUR PER MONTH = 234 GALLONS

TOTAL FUEL CONSUMPTION PER MONTH: 234 GALLONS

ASSUMING TANKS ARE REFILLED EVERY 3 MONTHS: 234 GALLONS X 3 = 702 GALLONS.

NFPA 110 REQUIRED EMERGENCY GENERATOR RUN TIME: 96 HOURS AT 100% LOAD (NFPA 110 4.2/A4.2)

SIX (6) EXISTING 2000 KW EMERGENCY GENERATORS X 152 GALLONS PER HOUR (MISSION CRITICAL) X 96 HOURS = 14,592 GALLONS PER GENERATOR X SIX (6) GENERATORS = 87,552 GALLONS OF FUEL, TOTAL

MAIN FUEL TANK SIZE REQUIRED: 87,552 X 1.33 = 116,444 (NFPA 110 5.5.3)

CONCLUSION: TWO (2) NEW 45,000 GALLON FUEL OIL STORAGE TANKS AND PUMPS WILL NEED TO BE INSTALLED, THESE COMBINED WITH THE TWO (2) EXISTING 15,000 GALLON FUEL OIL TANKS WILL STORE AND SUPPLY ENOUGH FUEL FOR THE SIX (6) EMERGENCY GENERATORS TO RUN 100% LOAD FOR THE REQUIRED 96 HOURS X 133% (NFPA 110 5.5.3)

TWO (2) @ 45,000 = 90,000 GALLONS + TWO (2) @ 15,000 = 30,000 GALLONS
90,000 + 30,000 = 120,000 GALLONS

FUEL OIL SYSTEMS

NEW FUEL OIL SYSTEMS SHALL BE INSTALLED, TESTED, AND FULLY FUNCTIONAL PRIOR TO THE COMPLETION OF DRY UTILITY (DU) INC 2 MILESTONE 4. REFER TO SHEET DU2-006 FOR CONSTRUCTION SEQUENCING.

FUEL OIL CONTROL AND LEAK DETECTION

NEW FUEL OIL PANEL AND LEAK DETECTION SYSTEM SHALL BE INSTALLED FIRST AND ALL NEW AND EXISTING TANKS SHALL BE INTEGRATED TO THE NEW SYSTEM FIRST, PRIOR TO DEMOLISHING THE EXISTING CONTROL PANEL AND LEAK DETECTION SYSTEM IN DRY UTILITY (DU) INC 2 MILESTONE 4. REFER TO SHEET DU2-006 FOR CONSTRUCTION SEQUENCING.

SCOPE OF WORK

THE SCOPE OF WORK IS TO INSTALL A NEW FUEL OIL SUPPLY SYSTEM TO SUPPLEMENT THE EXISTING FUEL OIL SUPPLY SYSTEM TO SERVE THE EXISTING EMERGENCY GENERATORS.

THE EXISTING FUEL OIL SUPPLY SYSTEM CONSISTS OF TWO (2) EXISTING 15,000 GALLON DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANKS TO REMAIN AS IS. ALL EXISTING PIPING TO AND FROM THE UNDERGROUND FUEL OIL TANKS TO THE EXISTING DAY TANKS ARE TO REMAIN. PROTECT IN PLACE.

THE EXISTING LEAK DETECTION AND INVENTORY CONTROL PANEL AND SYSTEM IS TO REMAIN IN PLACE, EXISTING SYSTEM TO BE INTEGRATED TO THE NEW SYSTEM PRIOR TO DEMOLISHING.

THE SIX (6) 2,000 KW EMERGENCY GENERATORS AND THE SIX (6) 100 GALLON DAY TANKS ARE TO REMAIN AS IS.

THE EXISTING FUEL PUMP #1 AND FUEL PUMP #2 DISCONNECTS LOCATED NEAR THE ELECTRICAL SWITCHGEAR ROOM ARE TO REMAIN AS IS.

PROVIDING TWO (2) ADDITIONAL 45,000 GALLON DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANKS, COMBINED WITH THE TWO (2) EXISTING 15,000 GALLON DOUBLE WALL FIBERGLASS UNDERGROUND STORAGE TANKS WILL PROVIDE ENOUGH FUEL SATISFY THE NFPA 110 REQUIREMENTS FOR EMERGENCY GENERATORS BE ABLE TO RUN FOR 96 HOURS AT 100% LOAD X 133%. (NFPA 110 5.5.3)

DOUBLE WALL RED THREAD PIPING WILL BE USED FOR ALL UNDERGROUND PIPING. WELDED SINGLE WALL SCHEDULE 40 STEEL PIPING WILL BE USED FOR ALL ABOVE GROUND PIPING.

FUEL OIL FILTER PANEL WILL BE LOCATED INSIDE OF THE GENERATOR BUILDING TO SERVE THE NEW 45,000 GALLON TANKS ONLY. COORDINATE WITH THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO INSTALLATION.

SUPPLY AND RETURN LINES SHALL BE RUN FROM THE UNDERGROUND TANKS TO THE TRANSITION SUMP WHERE IT WILL TRANSTION ABOVE GRADE, ENTER THE BUILDING AND CONNECT TO THE EXISTING SUPPLY AND RETURN HEADERS THAT FEED THE EXISTING DAY TANKS LOCATED NEXT TO EACH GENERATOR.

UNDERGROUND TANK VENT LINES WILL BE ROUTED UNDERGOUND FROM THE UNDERGROUND STORAGE TANKS TO THE GENERATOR BUILDING, VENTS TO BE ROUTED UP THE EXTERIOR WALL OF THE BUILDING AND TERMINATE 12" ABOVE THE PARAPET WALL WITH A CORRISION RESISTANT FLAME ARRESTOR VENT CAP.

PROVIDE NEW LEAK AND INVENTORY CONTROL PANEL TO MONITOR THE NEW 45,000 GALLON TANKS AND UNDERGROUND PIPING AS WELL AS THE EXISTING 15,000 GALLON TANKS. INTEGRATE THE LEAK AND INVENTORY SYSTEMS TO THE NEW SYSTEM PRIOR TO DEMOLISHING.

PROVIDE NEW FUEL CONTROL PANEL TO STAGE AND MONITOR BOTH THE NEW AND THE EXISTING FUEL PUMPS IN ONE LOCATION. NEW FEUL PUMP CONTROL PANEL TO MONITOR AND SEQUENCE ALL FOUR (4) UNDERGROUND FUEL OIL STORAGE TANKS.

RBB

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REGISTERED PROFESSIONAL ENGINEER LOUISE BELAIR No. M38180 EXP 12-31-26 MECHANICAL STATE OF CALIFORNIA

LICENSED ARCHITECT KEVIN S. BOOTS C-30500 08/31/2025 STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-02

CONSULTANT

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Los Angeles, California 90071
213.607.8400 www.tk1sc.com
Project Leader - Michael Huynh
Plumbing Lead - Ron Brick
tk1sc Job #:2017-0456-035

ISSUE RECORD

DATE	△	DESCRIPTION
04/09/2025	D	ADDENDUM D
03/14/2025	A	ADDENDUM A
02/10/2025		BID SET
10/25/2024	BC1	HCAI BACKCHECK 1
06/13/2024		HCAI SUBMITTAL
04/18/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC2 - GENERATOR BUILDING RETROFIT

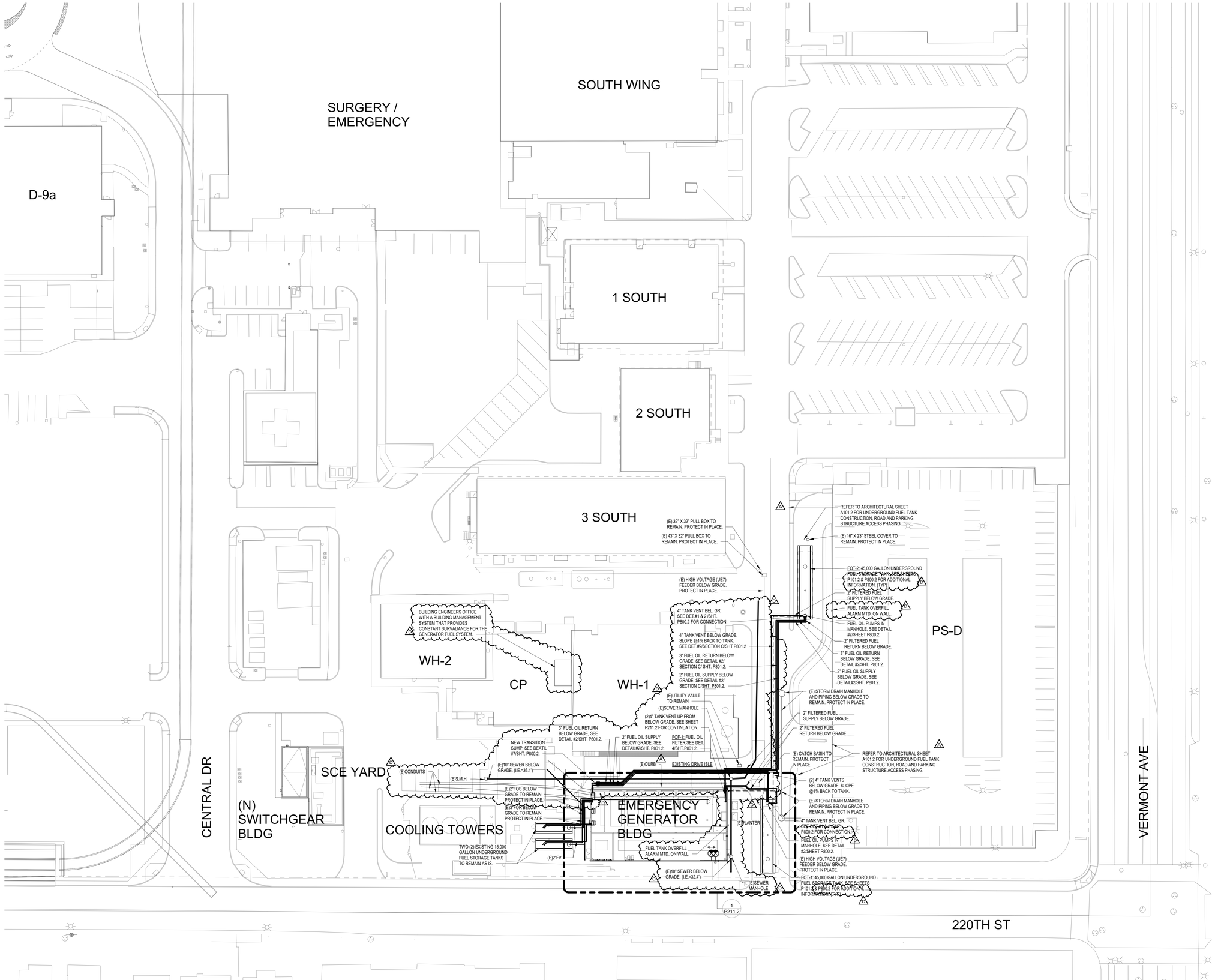
1000 West Carson Street, Torrance, CA 90502

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 6/13/2024
RBB PROJECT: 1712076 SCALE: 12" = 1'-0"

DESCRIPTION
PLUMBING SCHEDULES

P011.2

Print Date: 4/10/2025 5:12:15 AM



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REGISTERED PROFESSIONAL ENGINEER — DENISE BERTOLINO — No. M36180 — EXP. 12-31-26 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 06/31/2025 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-02

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1000 West Carson Street, Torrance, CA 90502

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RBB PROJECT: 1712076 SCALE: 1" = 30'-0"

DESCRIPTION
PLUMBING PARTIAL SITE PLAN

P101.2

1 2 3 4 5 6 7 8 9

EXISTING TRASH COMPACTOR

(E) CONCRETE HOUSE-KEEPING PAD FOR TRASH COMPACTOR.

PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UNDERGROUND UTILITIES IN THIS AREA PRIOR TO START OF CONSTRUCTION. COORDINATE WITH CIVIL ENGINEER AND EXISTING DRAWINGS.

FUEL OIL SUPPY AND FUEL OIL RETURN LINES BELOW GRADE, SEE DETAIL #2 /SECTION A, SHEET P801.2

FUEL OIL SUPPY, FUEL OIL RETURN AND FILTERED FUEL LINES BELOW GRADE, SEE DETAIL #2 /SECTION B, SHEET P801.2

2" FOS & 3" FOR BELOW GRADE.

2" FOS & 3" FOR BELOW GRADE.

2" FILTERED FUEL SUPPLY & RETURN LINE TO FUEL TANKS.

(E) TRENCH DRAIN TO BE REMOVED AND CUT BACK TO ALLOW FOR NEW FUEL OIL TRANSITION SUMP.

(E)10" SEWER BELOW GRADE. SEE SHEET P101.2 FOR CONTINUATION.

TRANSITION SUMP WITH TRAFFIC RATED COVER, SEE DETAIL #7, SHEET P800.2. PROIVIDE 120 VOLT POWER TO SOLENOID VALVES.

(E) CONDUIT BELOW GRADE TO REMAIN. PROTECT IN PLACE.

EXISTING DRIVE ISLE

NOTE:
VENT PIPE RISING UP FACE OF BUILDING ARE NOT SUBJECT TO PHYSICAL DAMAGE OF ANY KIND. VENTS TERMINATE ABOVE THE ROOF LINE, 25 FEET AWAY FROM FRESH AIR INTAKE OR BUILDING OPENINGS.

(E) CONDUIT BELOW GRADE TO REMAIN. PROTECT IN PLACE.

(E)10" SEWER BELOW GRADE. (I.E.=33.4')

(E) SEWER MANHOLE TO REMAIN. PROTECT IN PLACE.

(E)10" SEWER BELOW GRADE. (I.E.=33.4')

(E)6" SEWER (6'-0" DEEP). PROTECT IN PLACE.

(E)10" SEWER BELOW GRADE.

(E) SEWER CLEANOUT TO REMAIN. PROTECT IN PLACE.

2" FOS & 3" FOR BELOW GRADE.

(E)10" SEWER BELOW GRADE. (I.E.=33.3')

(E)PULL BOX

2" FILTERED FUEL SUPPLY & RETURN LINES FROM FUEL TANKS.

4" FOR AND 2" FOS UP FROM BELOW GRADE. AVOID EXISTING BUILDING FOOTING.

(E)TRENCH DRAIN TO REMAIN.

EXISTING CURB

(E)TRENCH DRAIN TO REMAIN.

(2) 2" FILTERED FUEL SUPPLY LINES DOWN TO BELOW GRADE WITH SHUT-OFF VALVES.

(2) 2" FILTERED FUEL SUPPLY LINES UP FROM BELOW GRADE WITH SHUT-OFF VALVES.

EXISTING CURB

A

NEW VEEDER ROOT LEAK DETECTION & INVENTORY CONTROL PANEL ON WALL TO MONITOR THE (2) TWO NEW FUEL TANKS. CONNECT TO BMS SYSTEM IN CENTRAL PLANT BUILDING ENGINEERS OFFICE.

(N)3"FOR TO (E) 3" FOR ABOVE FLOOR

(E)TRENCH DRAIN TO BE REMOVED AND REPLACED TO ALLOW FOR THE FUEL OIL PIPING TO BE INSTALLED.

(E)3"FOR ON UNISTRUT SUPPORT @ FLOOR. (TYP)

(E)2"FOR ON UNISTRUT SUPPORT @ FLOOR. (TYP)

(E)2"FOR ON UNISTRUT SUPPORT @ FLOOR. (TYP)

(E)1 1/2"FOR ON UNISTRUT SUPPORT @ FLOOR. (TYP)

(E)ELECTRICAL PANEL ON WALL TO REMAIN.

2" FILTERED FUEL SUPPLY TO CABINET

2" FILTERED FUEL RETURN FROM CABINET

(2) 4" VENT LINES UP FROM BELOW GRADE. UP ON BUILDING WALL. 12" ABOVE PARAPET WALL. SEE DETAIL #1/SHT. P801.2 (27'-0" ABV. FIN. GRADE.)

(2) 4" VENT LINES BELOW GRADE FROM FUEL TANKS. SLOPE @ 1% BACK TOWARDS TANKS EACH UNDERGROUND TANK.

(E)10" SEWER BELOW GRADE TO REMAIN.

(E) HIGH VOLTAGE (UE7) FEEDER LINE BELOW GRADE TO REMAIN. PROTECT IN PLACE.

E/FOR

E/FOS

(N)2"FOS TO (E) 2" FOS OVERHEAD

CHECK VALVE (TYP.)

(E) LEAK AND INVENTORY CONTROL MONITOR FOR THE TWO EXISTING 15,000 GALLON TANKS TO REMAIN IN PLACE.

(E)3"FOR ON UNISTRUT SUPPORT @ FLOOR. (TYP)

(E)2"FOS @15'-0" OVERHAD. (TYP)

(E) EMERGENCY GENERATOR DAY TANK

(E)2"FOS OVERHEAD. (TYP)

(E) EMERGENCY GENERATOR DAY TANK

(E)1 1/2"FOS

(E) EMERGENCY GENERATOR DAY TANK

(E)1 1/4"FOS

(E) EMERGENCY GENERATOR DAY TANK

(E)1"FOS

(E) EMERGENCY GENERATOR DAY TANK

(E)1"FOS OVERHAD. (TYP)

(E) EMERGENCY GENERATOR DAY TANK

(E) EMERGENCY GENERATOR

(E) EMERGENCY GENERATOR

(E) EMERGENCY GENERATOR

(E) EMERGENCY GENERATOR

(E) EMERGENCY GENERATOR

(E) EMERGENCY GENERATOR

AIR INTAKE SHAFT 103

AIR INTAKE SHAFT 106

EMERGENCY GENERATOR 104

F/OF-1: FUEL OIL FILTER CABINET. COORDINATE WITH ELECTRICAL FOR EXACT LOCATION. CLEAR (E) PANEL.

EXISTING PLANTER AREA TO REMAIN

EXISTING CURB

(E) FOS & FOR FROM 15,000 GALLON FUEL OIL TANKS TO REMAIN. PROTECT IN PLACE.

3 (E) 2" V.T.R.'S WITH VENT CAPS TO REMAIN. PROTECT IN PLACE.

3 (E) 2" VENTS UP FROM BELOW SLAB TO REMAIN. PROTECT IN PLACE.

(E)FS

(E)3/4" CD DN. ON WALL TO REMAIN.

(E)3/4" CD DN. IN WALL TO REMAIN.

E/CD

Room 4

PROVIDE 3/4" DRAIN AT END OF SHEET METAL DRAIN PAN OVERHEAD. SPILL DOWN IN WALL TO (E) FLOOR SINK.

B

(E)HCD

(E)HCD

(E)3/4" HOT CONDENSATE DRAIN OVERHEAD TO REMAIN.

(E)3/4" HCD DN.

(E)3/4" SCD TO BE REMOVED.

(E)3/4" SECONDARY CONDENSATE DRAIN TO BE REMOVED AND RELOCATED TO SOUTH SIDE OF BUILDING.

(E)10" SEWER BELOW GRADE TO REMAIN.

NEW FUEL OIL PUMP CONTROL PANEL W/ INTEGRAL DISCONNECT SWITCHES TO MONITOR AND SEQUENCE ALL FOUR (4) UNDERGROUND FUEL OIL TANKS. (2) TWO EXISTING, (2) TWO NEW. CONNECT TO BMS SYSTEM IN CENTRAL PLANTS BUILDING ENGINEERS OFFICE.

(E) FUEL PUMP CONTROLLER TO REMAIN IN PLACE, REMOVE ONLY AFTER NEW SYSTEM IS IN PLACE, TESTED AND FULLY OPERATIONAL.

(E) FUEL PUMP #1 & #2 DISCONNECTS TO REMAIN, REMOVE AFTER NEW DISCONNECTS ARE INSTALLED AND FULLY OPERATIONAL.

(E) FAN COIL #1 DISCONNECT TO REMAIN.

UGPS ROOM 101

SWITCHGEAR ROOM 102

PROVIDE SHEET METAL DRAIN PAN UNDER EXISTING PRIMARY AND SECONDARY CONDENSATE DRAIN LINES WHERE EXISTING SWITCHGEAR OR ELECTRICAL EQUIPMENT IS LOCATED.

E/SCD

1/4"

(E)10" SEWER BELOW GRADE. (I.E.=32.3')

(E) SEWER MANHOLE TO REMAIN. PROTECT IN PLACE.

(E)10" SEWER BELOW GRADE. (I.E.=32.4')

C

WALL MTD. FAN COIL UNIT. SEE MECH DWGS FOR INFORMATION. (TYP. OF 3)

3/4" CD OVERHEAD, 1% SLOPE. (2 TONS)

3/4" CD (4 TONS)

3/4" CD OVERHEAD, 1% SLOPE. (5.5 TONS)

PROVIDE SHEET METAL DRAIN PAN UNDER EXISTING PRIMARY AND SECONDARY CONDENSATE DRAIN LINES WHERE EXISTING FIRE ALARM CONTROL PANEL AND RIRE ALARM TERMINAL CABINET IS LOCATED.

(E)3/4" SCD OVERHEAD TO BE REMAIN. PROTECT IN PLACE.

(E)3/4" SCD TO BE REMOVED.

E/CD

E/SCD

1/2"

3/4" PCD UP TO ABOVE, HIGH AS POSSIBLE. SEE DET. #10/SHT. P800.2.(TYP. OF 3)

REMOVED AND RECONNECT PRIMARY AND SECONDARY CONDENSATE DRAIN LINES. MODIFY PIPING AS REQUIRED. SEE DET.#9/SHT. P800.2.

3/4" CD OVERHEAD, CONNECT TO (E) CONDENSATE DRAIN LINE. (10.5 TONS)

(E) FAN COIL UNIT OVERHEAD TO BE REMOVED AND REPLACED. SEE MECH. DWGS. FOR ADDITIONAL INFORMATION.

(E)3/4" CD AND SCD OVERHEAD, SLOPED AT 1% TO REMAIN.

3/4" DRAIN DOWN ON WALL, SPILL THROUGH WALL TO GRADE @ 9" ABOVE FINISHED GRADE.

NEW 3/4" SCD DOWN ON WALL NEXT TO (E) SD LINE, SPILL THROUGH WALL TO GRADE @ 9" ABOVE FINISHED GRADE.

(E)10" SEWER BELOW GRADE TO STREET.

N

CAMPUS KEY PLAN

A B C D E

1 2 3 4

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REGISTERED PROFESSIONAL ENGINEER — DENISE BERTOLA — No. M36180 — EXP. 12-31-26 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — KEVIN S. BOOTS — C-36500 — 08/31/2025 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-02

CONSULTANT

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Project Leader - Michael Huynh
Plumbing Lead - Ron Brick
tk1sc Job #:2017-0456-035

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Harbor-UCLA MEDICAL CENTER

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PHASE 2E INC2 - GENERATOR BUILDING RETROFIT

1000 West Carson Street, Torrance, CA 90502

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 6/13/2024
RBB PROJECT: 1712076 SCALE: 1/4" = 1'-0"

DESCRIPTION
PLUMBING LEVEL 1 PLAN

P211.2

GENERAL NOTE:
FUEL TANK VENTS SHALL PROVIDE THE FOLLOWING ITEMS:
VENTS MUST BE LOCATED 5 FEET AWAY FROM PROPERTY LINES.
VENTS SHALL BE A MINIMUM OF 12 FEET ABOVE GRADE.

CFC 5704.2.7.3.3

(2) 4" TANK VENTS @ 12" ABV. WALL WITH CORRISION RESISTANT FLAME ARRESTOR
SEE DETAIL #1/SHEET P801.2.

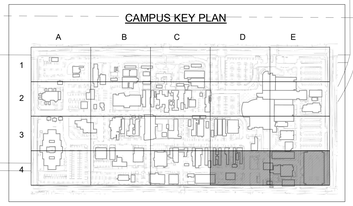
(3) EXISTING TANK VENTS WITH CAPS TO REMAIN.

EXISTING ROOF DRAIN AND OVERFLOW SCUPPER TO REMAIN.

EXISTING ROOF DRAIN AND OVERFLOW SCUPPER TO REMAIN.

EXISTING ROOF DRAIN AND OVERFLOW SCUPPER TO REMAIN.

CAMPUS KEY PLAN



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LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 08/31/2025 — STATE OF CALIFORNIA

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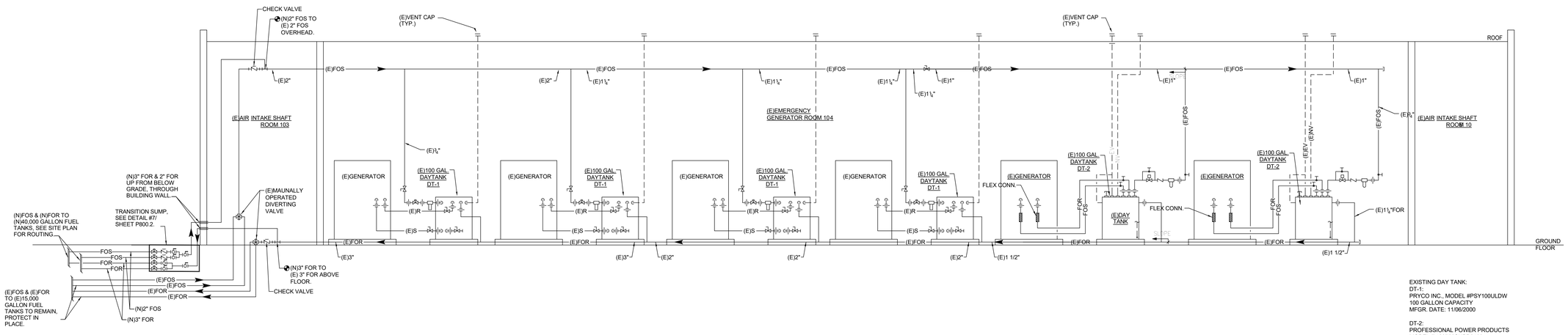
DESCRIPTION
PLUMBING ROOF PLAN

P220.2



EXISTING DAY TANK:
DT-1:
PRYCO INC., MODEL #PSY100ULDW
100 GALLON CAPACITY
MFGR. DATE: 11/06/2000

DT-2:
PROFESSIONAL POWER PRODUCTS
MODEL # 122760SHPD0100
100 GALLON CAPICTY
OSHPD PRE-APPROVAL #OSP-0126-10

EXISTING GENERATOR / DAY TANK PIPING DETAIL

SCALE: NONE | 1

A. ON FALLING LEVEL IN EXISTING DAY TANKS, TANK FLOAT SWITCH #1 SHALL START THE PRIMARY FILL PUMP AND ENERGIZE THE NORMALLY CLOSED SOLENOID VALVE IN THE FILL SUPPLY LINE.

B. ON RISING LEVEL IN EXISTING DAY TANK, TANK FLOAT SWITCH #2 SHALL STOP THE PRIMARY FILL PUMP AND DE-ENERGIZE THE NORMALLY CLOSED SOLENOID VALVE IN THE FILL SUPPLY LINE.

C. IN THE EVENT THAT THE PRIMARY FILL PUMP DOES NOT FILL EXISTING DAY TANK TO "PUMP OFF" LEVEL, A DROP IN FUEL LEVEL TO TANK FLOAT SWITCH #1 WILL START THE SECOND PUMP. SEQUENCE A, B, & C WOULD BE TYPICAL FOR EACH OF THE FOUR (4) FUEL OIL STORAGE TANKS. (2 EXISTING AND 2 NEW TANKS.) ONLY PRIMARY OR LAG PUMP FOR EACH TANK WILL BE ENERGIZED AT ONE TIME.

D. DAY TANK HIGH FUEL LEVEL ALARM - DAY TANK HIGH FUEL LEVEL SHALL BE SENSED BY THE TANK FLOAT SWITCH #3. IN THE EVENT OF A HIGH FUEL LEVEL CONDITION IN DAY TANK, THE FCM SHALL:

1. ACTIVATE AN ALARM AT THE FCM PANEL.
2. SEND A SIGNAL TO THE EMERGENCY GENERATOR FOR ENGINE SHUTDOWN.
3. DEACTIVATE FILL PUMPS AND DE-ENERGIZE CLOSE THE SOLENOID VALVE IN THE FILL SUPPLY LINE.
4. SEND AN ALARM SIGNAL TO THE BUILDING AUTOMATION SYSTEM.

E. DAY TANK LOW FUEL LEVEL ALARM - DAY TANK LOW FUEL LEVEL SHALL BE SENSED BY THE TANK FLOAT SWITCH #4. IN THE EVENT OF A LOW FUEL LEVEL CONDITION IN DAY TANK, THE FCM SHALL:

1. ACTIVATE AN ALARM AT THE FCM PANEL.
2. SEND A SIGNAL TO THE EMERGENCY GENERATOR FOR ENGINE SHUTDOWN.
3. DEACTIVATE FILL PUMPS AND DE-ENERGIZE CLOSE THE SOLENOID VALVE IN THE FILL SUPPLY LINE.
4. SEND AN ALARM SIGNAL TO THE BUILDING AUTOMATION SYSTEM.

F. SECONDARY CONTAINMENT ALARM - CONTAMINATION OF THE SECONDARY CONTAINMENT AREA OF THE DAY TANK SHALL BE SENSED BY A LEAK DETECTION SWITCH. IN THE EVENT OF CONTAMINATION OF THE SECONDARY CONTAINMENT AREA, THE FCM SHALL:

1. ACTIVATE AN ALARM AT THE FCM PANEL.
2. SEND A SIGNAL TO THE EMERGENCY GENERATOR FOR ENGINE SHUTDOWN.
3. DEACTIVATE FILL PUMPS AND DE-ENERGIZE CLOSE THE SOLENOID VALVE IN THE FILL SUPPLY LINE.
4. SEND AN ALARM SIGNAL TO THE BUILDING AUTOMATION SYSTEM.

1 G. ALL MONITORING POINTS DESCRIBED ABOVE SHALL BE TIED BACK TO THE BUILDING MANAGEMENT SYSTEM LOCATED IN THE EXISTING CENTRAL PLANTS BUILDING ENGINEERS OFFICE. ENGINEERS OFFICE WILL BE CONTINUALLY OCCUPIED.

FUEL CONTROL AND MONITORING (FCM)

SCALE: NONE | 2

SEQUENCE OF OPERATION

SCALE: NONE | 3

SCALE: NONE | 4

SCALE: NONE | 5

SCALE: NONE | 6

SCALE: NONE | 7

SCALE: NONE | 8

SCALE: NONE | 9

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LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 08/31/2025 — STATE OF CALIFORNIA

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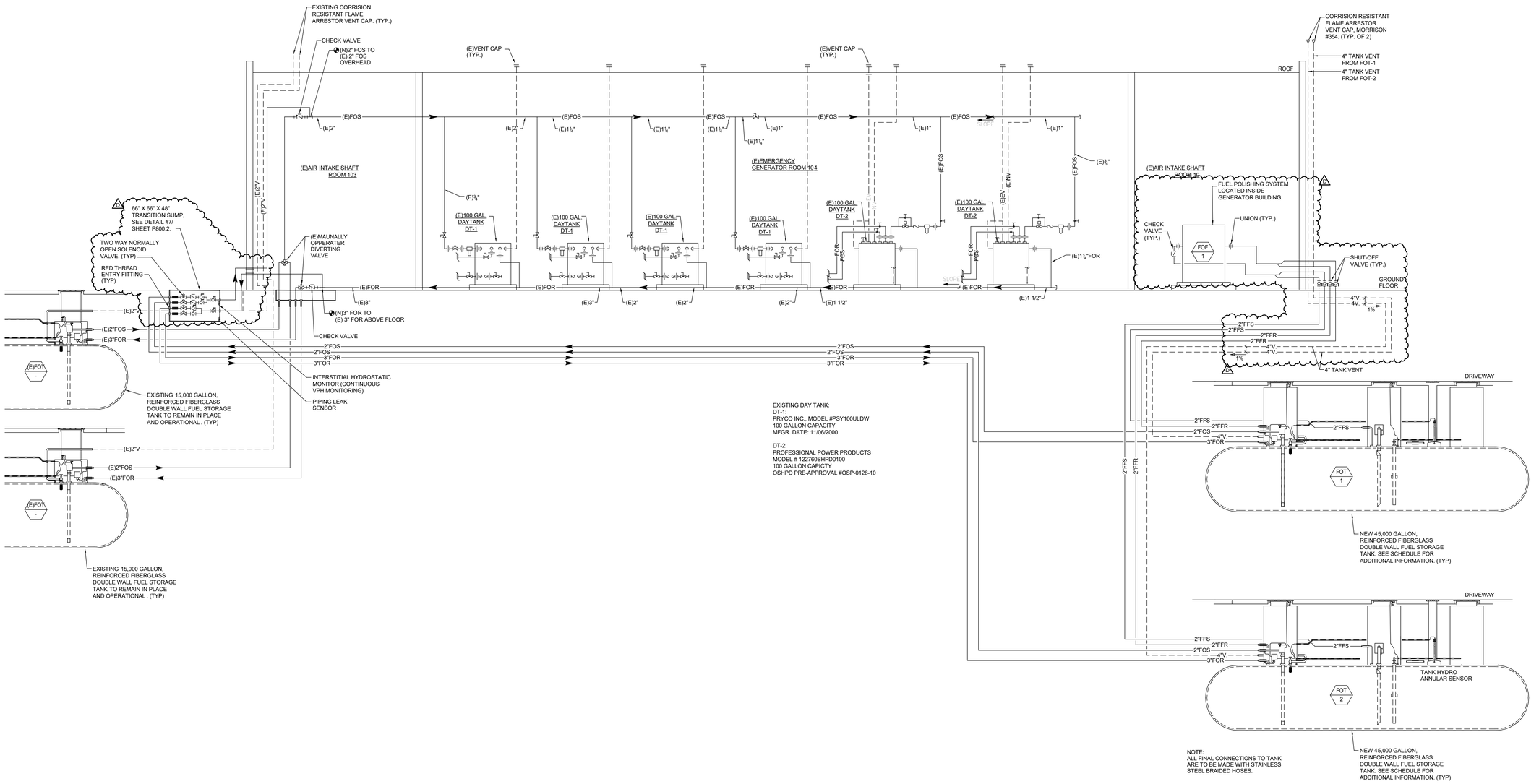
DESCRIPTION
DIAGRAMS & NOTES

P301.2

SEQUENCE OF OPERATION

1. FOR SEQUENCE OF OPERATION NOTES, SEE SHEET P303.2.



FUEL OIL PIPING DIAGRAM

SCALE NONE

1

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REGISTERED PROFESSIONAL ENGINEER — JOSEPH ALBERT BALBONA — No. M36180 — EXP. 12-31-26 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 08/31/2025 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-02

CONSULTANT

tk1sc COLLABORATIVE
515 South Figueroa Street, Suite 1400
Los Angeles, California 90071
213.607.8400 www.tk1sc.com
Project Leader - Michael Huynh
Plumbing Lead - Ron Brick
tk1sc Job #:2017-0456-035

ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
02/10/2025		BID SET
01/31/2025	BC2	HCAI BACKCHECK 2
10/25/2024	BC1	HCAI BACKCHECK 1
06/13/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC2 - GENERATOR BUILDING RETROFIT

1000 West Carson Street, Torrance, CA 90502

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 6/13/2024
RBB PROJECT: 1712076 SCALE: 12" = 1'-0"

DESCRIPTION
FUEL OIL PIPING DIAGRAM

P302.2

SEQUENCE OF OPERATION

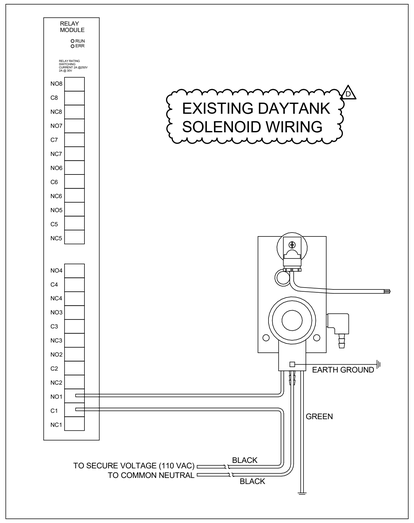
1. THE NEW FUEL FILTER SYSTEM WILL BE PROGRAMMED TO CYCLE ON AND OFF AUTOMATICALLY AT A SPECIFIC FREQUENCY AND DURATION AS RECOMMENDED BY THE SUPPLIER AND SHOWN IN THE SPECIFICATION.
2. THE EXISTING GENERATOR SUCTION SUPPLY IS CONNECTED TO THE SUPPLY PORT OF THE EXISTING DAY TANK.
3. THE EXISTING GENERATOR RETURN LINE IS CONNECTED TO THE OVERFLOW RETURN LINE FROM THE EXISTING DAY TANK.
4. THE EXISTING DAY TANK OVERFLOW DRAINS BY GRAVITY BACK TO EITHER THE EXISTING OR NEW OST THAT IS ACTIVATED AT THE TIME.
5. WHEN THE GENERATOR RUNS AND DRAWS THE DAY TANK FUEL DOWN TO APPROXIMATELY 50%, THE (E)FOT-1 LEAD SUPPLY PUMP WILL BE ACTIVATED BY THE LOW LEVEL FLOAT CONTROLS IN THE DAY TANK, DRAWING FUEL FROM THE UST.
6. WHEN THE LEVEL IN THE DAY TANK REACHES 90%, THE HIGH LEVEL FLOAT CONTROL WILL SHUT DOWN THE PUMP STOPPING THE FLOW OF FUEL TO THE DAY TANK.
7. IF THE HIGH LEVEL CONTROL FLOAT FAILS AND THE PUMP CONTINUES TO FILL THE DAY TANK, THE FUEL WILL OVERFLOW THRU THE RETURN LINE AND GRAVITY FLOW BACK TO THE STORAGE TANK. A LOCAL OVERFILL ALARM WILL BE ACTIVATED ON THE DAY TANK CONTROL PANEL BY THE HI-HI LEVEL FLOAT CONTROL SET AT APPROXIMATELY 95%.
8. IF THE FUEL LEVEL IN THE DAY TANK IS DRAWN DOWN TO APPROXIMATELY 25%, SIGNALING A PUMP FAILURE, THE LOW-LOW LEVEL DAY TANK FLOAT CONTROL WILL ACTIVATE THE (E)FOT-1 LAG PUMP AND SIGNAL A LOCAL LOW LEVEL ALARM ON THE DAY TANK CONTROL PANEL.
9. LINE ITEMS 2 THROUGH 8 ARE TYPICAL FOR ANY OF THE (6) SIX EXISTING GENERATOR AND DAY TANKS.
10. THE FMP-1 HAS THE CAPACITY OF SELECTING FROM 4 MAIN STORAGE TANKS TO SUPPLY FUEL FROM USING RETURN LINE MOTORIZED BALL VALVES. THE OPERATOR CAN SELECT (E)FOT-1, (E)FOT-2, NEW FOT-1 OR FOT-2 ON THE TOUCHSCREEN. WHEN A LEAD TANK IS SELECTED THE FMP-1 WILL ALIGN THE RETURN MOTORIZED BALL VALVES ACCORDINGLY. ONCE THE POSITION OF THE VALVES HAS BEEN VERIFIED, THE FMP-1 WILL DISPLAY THE OPEN AND CLOSED VALVES ON THE TOUCH SCREEN DISPLAY. IF AFTER 10- 120 SECONDS (USER CONFIGURABLE) THE POSITION OF THE VALVE HAS NOT BEEN PROVEN THE FMP-1 WILL DE-ENERGIZE THE SUPPLY PUMPS, DISPLAY THE RESPECTIVE TANK MBV MIS-ALIGNMENT AND SOUND THE ALARM HORN. ONCE THE CONDITION IS CORRECTED THE ALARM WILL AUTOMATICALLY RESET ITSELF.

THERE ARE 2 SUBMERSIBLE PUMPS PER STORAGE TANK. FOT-1 USES PUMPS FOP-1, FOP-2 TO SUPPLY FUEL AND FOT-2 USES PUMPS FOP-3 AND FOP-4 TO SUPPLY FUEL. WHEN A LEAD TANK IS SELECTED, THE FMP-1 WILL USE THOSE RESPECTIVE 2 PUMPS IN A LEAD LAG SCENARIO.

DURING A CALL FOR FUEL, IN THE EVENT THAT BOTH PUMPS FAIL ON THE SAME STORAGE TANK, THE FMP-1 WILL OPEN THE RETURN VALVE TO THE BACKUP TANK, PROVE POSITION AND THEN CLOSE THE VALVE TO THE ORIGINAL SOURCE TANK. ONCE BOTH RETURN VALVES ARE IN THE PROPER POSITION, THE FMP-1 WILL ENERGIZE THE LEAD PUMP OF THE NEW TANK.

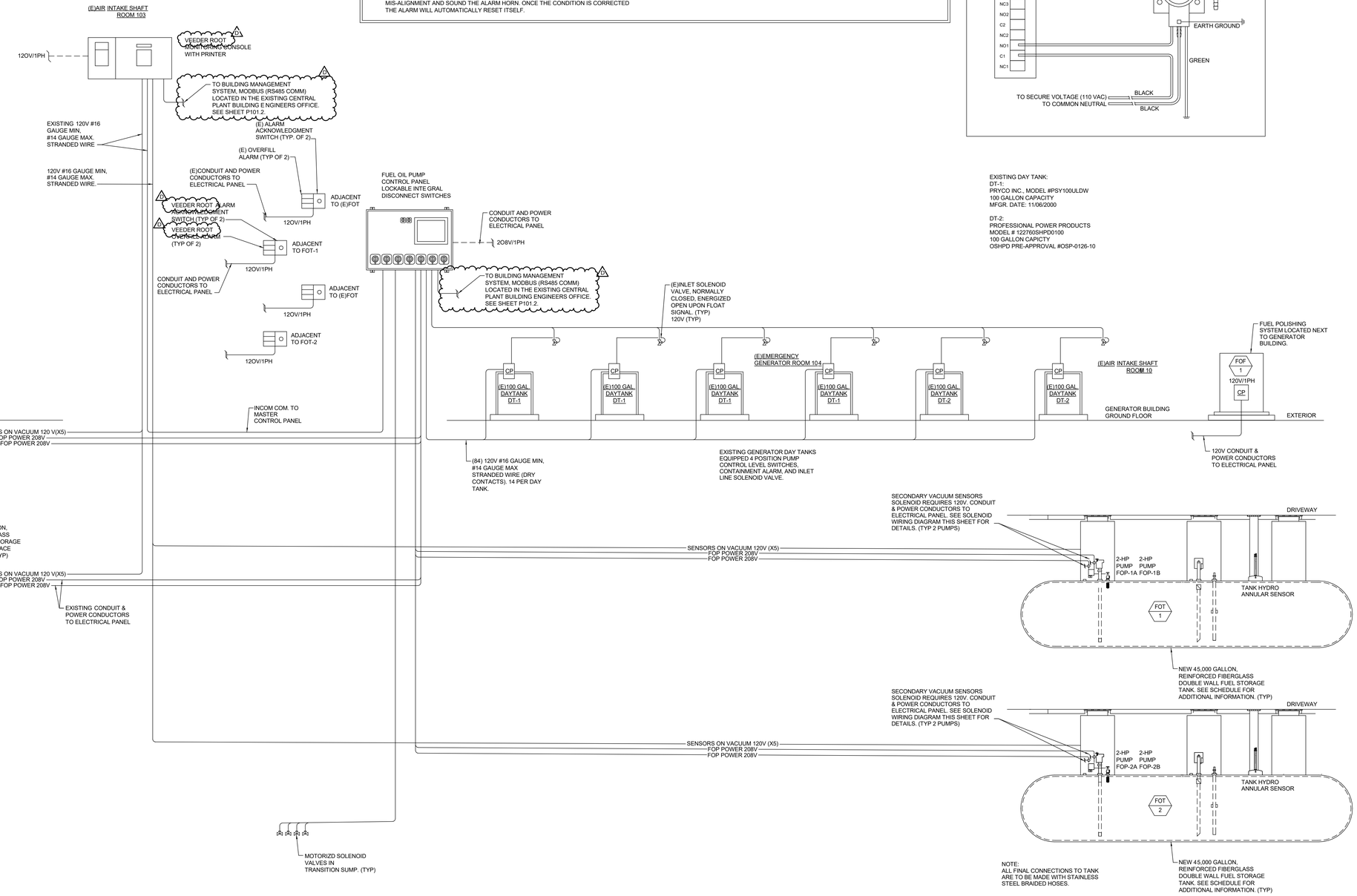
SEQUENCE IS TYPICAL FOR (E)FOT-1M (E)FOT-2, NEW FOT-1 ANF FOT-2 IN THAT ORDER OF OPERATION.

11. AT ANY TIME SHOULD THE OPERATING STORAGE TANK EXPERIENCE A LOW LEVEL CONDITION, THE FMP-1 WILL AUTOMATICALLY ALIGN THE BACK UP TANK FOR OPERATION. THE FMP-1 WILL OPEN THE RETURN VALVE TO THE BACKUP TANK, PROVE POSITION AND THEN CLOSE THE VALVE TO THE ORIPIGINAL SOURCE TANK. THE FMP-1 WILL ALSO SOUND THE ALARM BELL AND DISPLAY THE RESPECTIVE MAIN TANK LOW LEVEL ALARM. SHOULD BOTH TANKS EXPERIENCE A LOW LEVEL CONDITION, THE FMP-1 WILL LEAVE THE VALVES ALIGNED TO THE CURRENT SELECTED TANK.



EXISTING DAY TANK:
DT-1:
PRYCO INC., MODEL #PSY100ULDW
100 GALLON CAPACITY
MFGR. DATE: 11/06/2000

DT-2:
PROFESSIONAL POWER PRODUCTS
MODEL # 122760SHPD0100
100 GALLON CAPICITY
OSHPD PRE-APPROVAL #OSP-0126-10



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06/13/2024		HCAI SUBMITTAL

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC2 - GENERATOR BUILDING RETROFIT

1000 West Carson Street, Torrance, CA 90502

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 6/13/2024
RBB PROJECT: 1712076 SCALE: 12" = 1'-0"

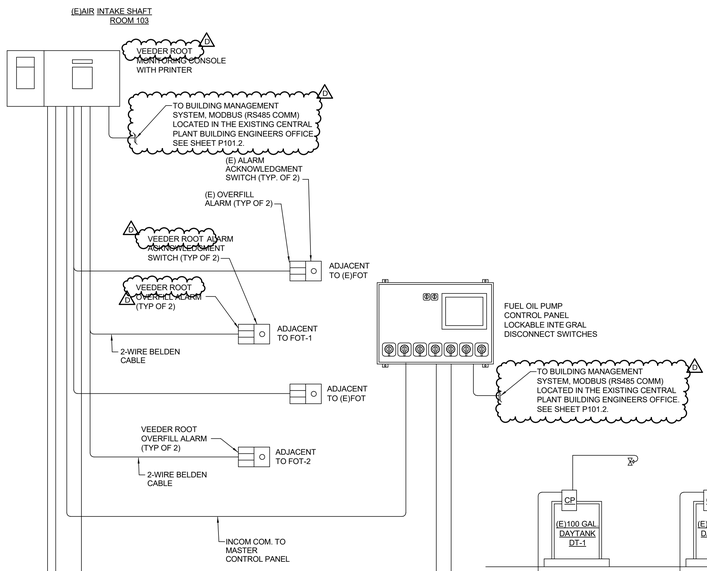
DESCRIPTION
CONTROLS AND MONITORING DIAGRAM - POWER WIRING

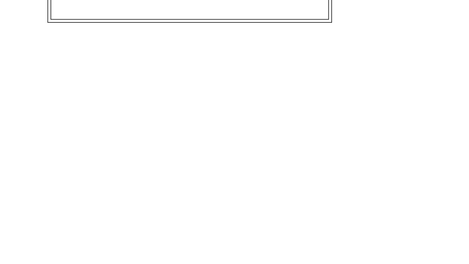
P303.2

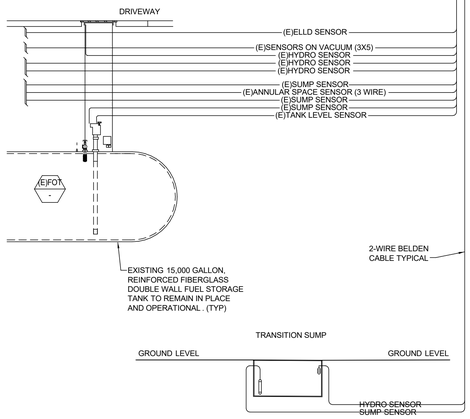
Print Date: 4/10/2025 5:12:18 AM

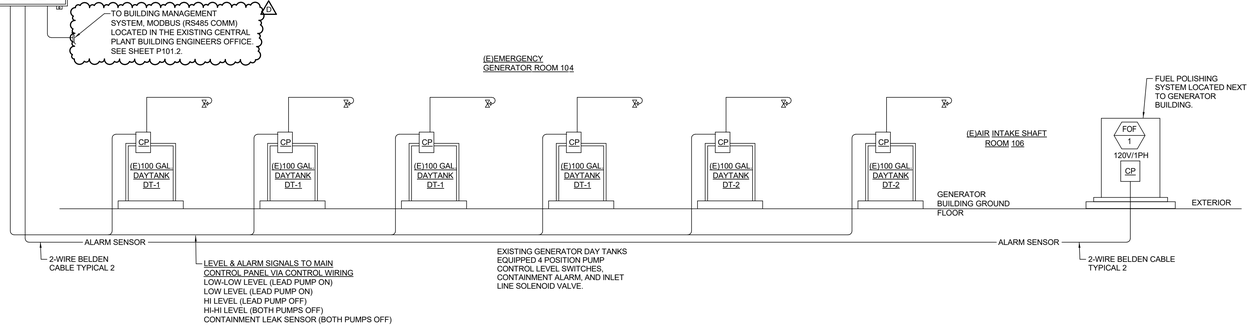
SEQUENCE OF OPERATION

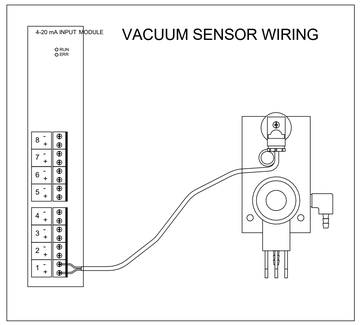
1. FOR SEQUENCE OF OPERATION NOTES, SEE SHEET P303.2.





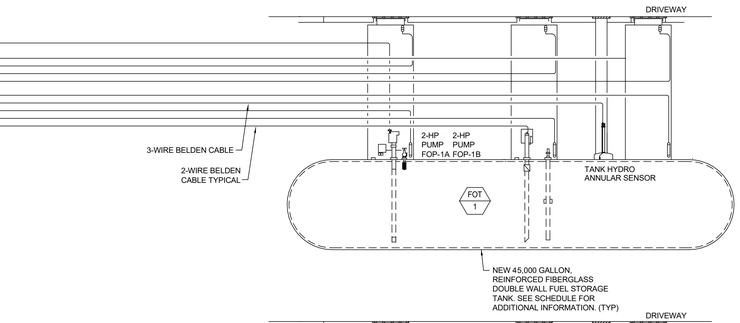


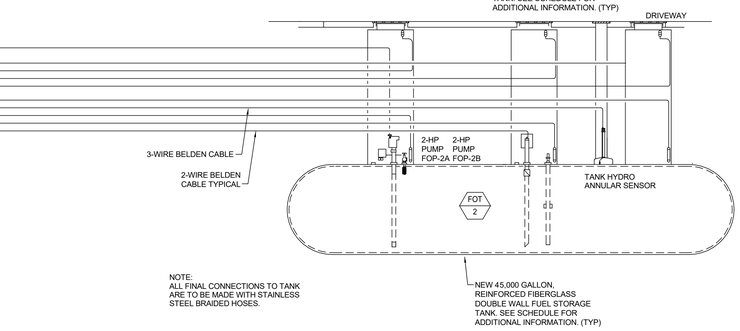




EXISTING DAY TANK:
DT-1:
PRYCO INC., MODEL #PSY100ULDW
100 GALLON CAPACITY
MFGR. DATE: 11/06/2000

DT-2:
PROFESSIONAL POWER PRODUCTS
MODEL # 122760SHPD0100
100 GALLON CAPICTY
OSHPD PRE-APPROVAL #OSP-0126-10





NOTE:
ALL FINAL CONNECTIONS TO TANK
ARE TO BE MADE WITH STAINLESS
STEEL BRAIDED HOSES.

RBB ARCHITECTS INC

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Sylvia Botero, AIA
Kevin S. Boots, AIA

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OSHPD # I240005-19-02

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Project Leader - Michael Huynh
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06/13/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC2 - GENERATOR BUILDING RETROFIT

1000 West Carson Street, Torrance, CA 90502

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 6/13/2024
RBB PROJECT: 1712076 SCALE: 12" = 1'-0"

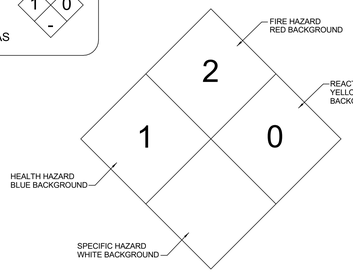
DESCRIPTION
CONTROLS AND MONITORING DIAGRAM - LOW VOLTAGE WIRING

P304.2

Print Date: 4/10/2025 5:12:19 AM

GENERAL NOTES:

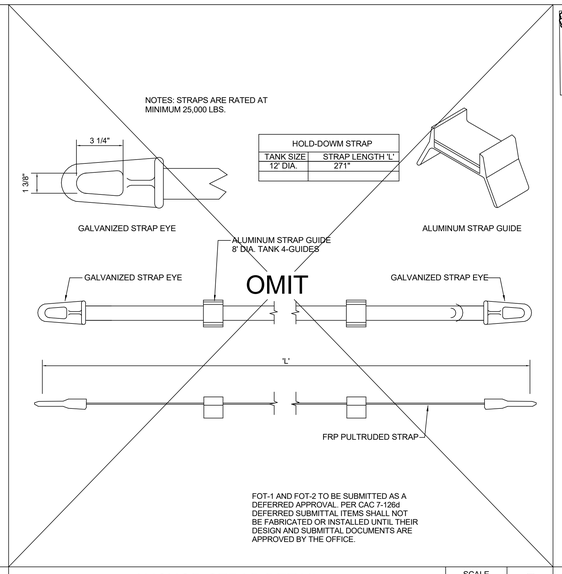
1. SINAGE SHALL CONFORM WITH NFPA 704 GUIDELINES.
2. EXACT LOCATIONS SUBJECT TO APPROVAL BY THE AUTHORITY HAVING JURISDICTION OR OSHPD INSPECTOR.



IDENTIFICATION AND WARNING SIGN

SCALE: NONE

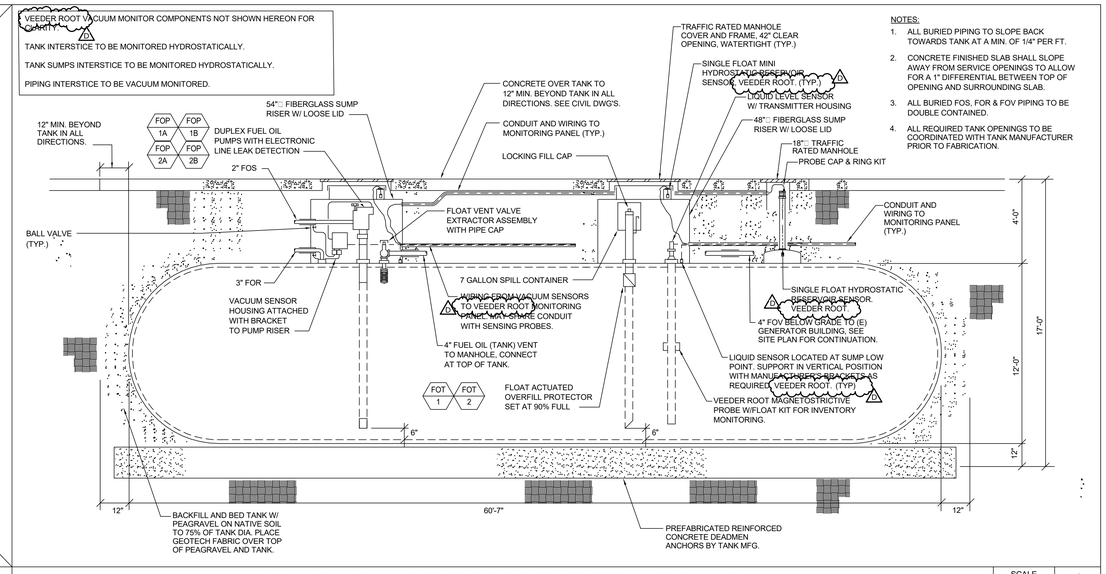
8



ANCHOR STRAP DETAIL

SCALE: NONE

5



NOTES:

1. ALL BURIED PIPING TO SLOPE BACK TOWARDS TANK AT A MIN. OF 1/4" PER FT.
2. CONCRETE FINISHED SLAB SHALL SLOPE AWAY FROM SERVICE OPENINGS TO ALLOW FOR A 1" DIFFERENTIAL BETWEEN TOP OF OPENING AND SURROUNDING SLAB.
3. ALL BURIED FOS, FOR & FOV PIPING TO BE DOUBLE CONTAINED.
4. ALL REQUIRED TANK OPENINGS TO BE COORDINATED WITH TANK MANUFACTURER PRIOR TO FABRICATION.

45,000 GALLON UNDERGROUND FUEL OIL STORAGE TANK(S)

SCALE: NONE

1

NOTES:

1. ALL INTERIOR CONDENSATE DRAIN PIPING SHALL BE INSULATED WITH 25 / 5O PLENUM RATED CLOSED-CELL ELASTOMERIC FOAM INSULATION.
2. SLOPE ALL HORIZONTAL CONDENSATE DRAIN PIPING AT MINIMUM 1% TOWARD DRAIN.
3. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL UNITS & COORDINATE DRAIN CONNECTION SIZE & LOCATION WITH MECHANICAL CONTRACTOR. CONDENSATE DRAIN PUMP PROVIDED BY MECHANICAL CONTRACTOR.

TONS	DRAIN SIZE
0-20	3/4"
21-40	1"
41-90	1-1/4"

CONDENSATE DRAIN AT FAN COIL UNIT

SCALE: NONE

9

DEADMAN HOLD DOWN

SCALE: NONE

6

UNDERGROUND TANK ANCHORAGE

SCALE: NONE

3

PUMP MANHOLE

NOTES:

1. REFER TO MECHANICAL DRAWINGS FOR FAN COIL MOUNTING HEIGHT.
2. MECHANICAL ENGINEER TO SPECIFY UNIT WITH INTERNAL OR EXTERNAL CONDENSATE DRAIN PUMP. PLUMBING CONTRACTOR TO INSTALL PUMP & PIPING.
3. ALL INTERIOR CONDENSATE DRAIN LINES SHALL BE INSULATED.

CONDENSATE DRAIN @ WALL MTD. FAN COIL UNIT

SCALE: NONE

10

TRANSITION SUMP

SCALE: NONE

7

NOTE
SINAGE SHALL CONFORM WITH UFC 7901.9 AND COUNTY OF LOS ANGELES FIRE DEPARTMENT GUIDELINES. EXACT LOCATIONS SUBJECT TO APPROVAL BY COUNTY OF LOS ANGELES FIRE DEPARTMENT INSPECTOR.

IDENTIFICATION AND WARNING SIGN

SCALE: NONE

4

TANK FILL AND LEVEL SENSOR MANHOLE

NOTE:
ALL PIPING CONNECTIONS TO PUMPS AND TANKS TO BE MADE WITH LISTED AND APPROVED STAINLESS STEEL FLEXIBLE JOINTS.

ENLARGED MANHOLE PLAN VIEWS

SCALE: NONE

2

Print Date: 4/10/2025 5:12:19 AM

RBB ARCHITECTS INC

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Harbor-UCLA MEDICAL CENTER

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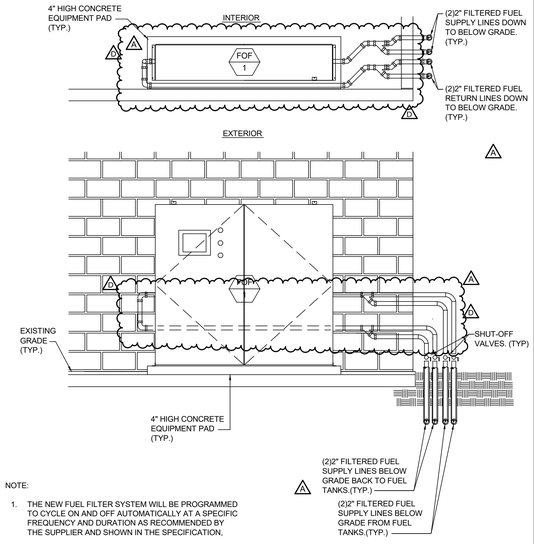
PHASE 2E INC2 - GENERATOR BUILDING RETROFIT

1000 West Carson Street, Torrance, CA 90502

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 6/13/2024
RBB PROJECT: 1712076 SCALE: 12" = 1'-0"

DESCRIPTION
PLUMBING DETAILS

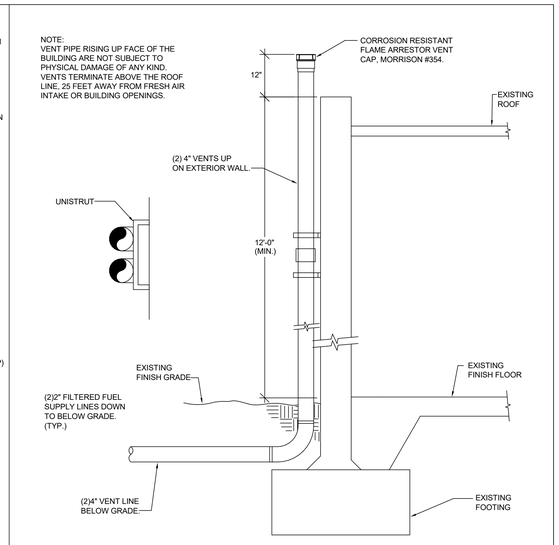
P800.2



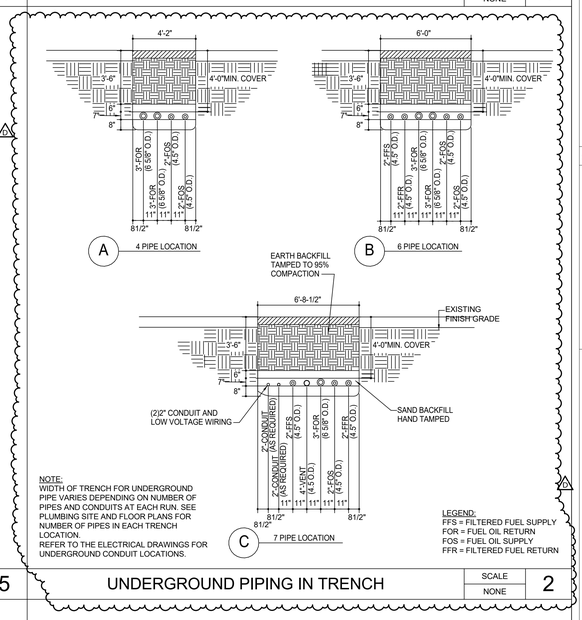
NOTE:

1. THE NEW FUEL FILTER SYSTEM WILL BE PROGRAMMED TO CYCLE ON AND OFF AUTOMATICALLY AT A SPECIFIC FREQUENCY AND DURATION AS RECOMMENDED BY THE SUPPLIER AND SHOWN IN THE SPECIFICATION.

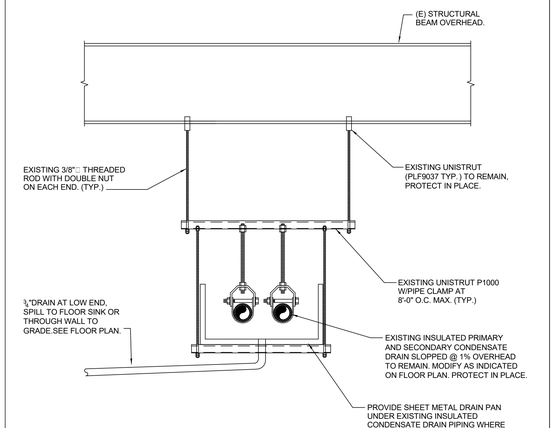
FUEL OIL FILTER CABINET



FUEL TANK VENTS TERMINATION



UNDERGROUND PIPING IN TRENCH



CONTAINMENT OF OVERHEAD PIPING

==	SCALE NONE	10	--	SCALE NONE	7		SCALE	4		SCALE NONE	1
==	SCALE NONE	11	--	SCALE NONE	8	--	SCALE	5		SCALE NONE	2
--	SCALE NONE	12	--	SCALE NONE	9	--	SCALE	6		SCALE NONE	3

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REGISTERED PROFESSIONAL ENGINEER — SYLVIA BEATRIZ BOTERO — No. M35180 — EXP. 12-31-26 — MECHANICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 08/31/2025 — STATE OF CALIFORNIA

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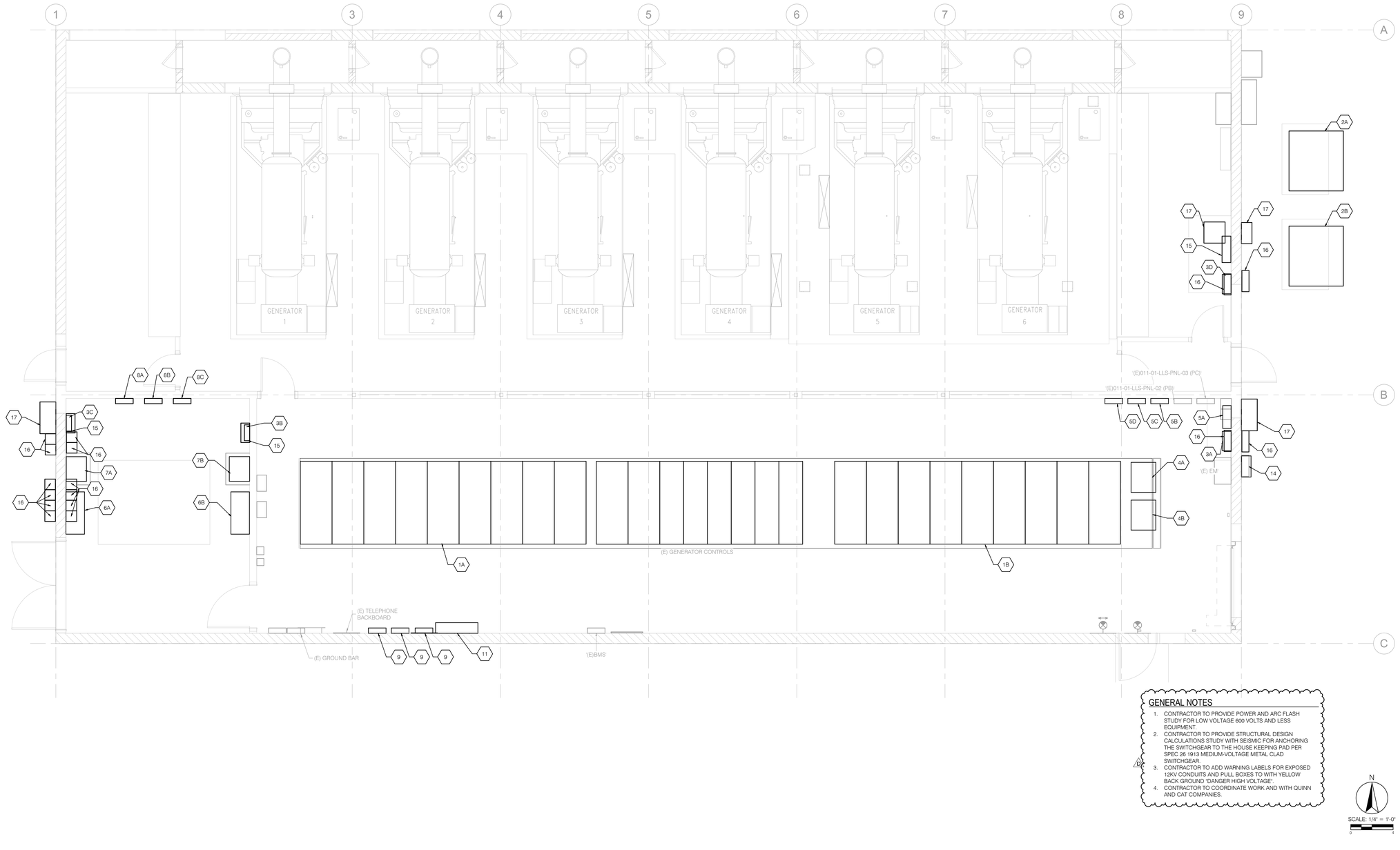
DESCRIPTION
PLUMBING DETAILS

P801.2

Print Date: 4/10/2025 5:12:19 AM

#	EQUIPMENT TYPE	EQUIPMENT ID	MANUFACTURER	DESCRIPTION/CATALOG #	ANCHORAGE DETAIL (#/SHEET #)	OSP CERTIFICATION #	CLASSIFICATION	FURNISHMENT	TESTING BY QUINN CONTRACTOR PROVIDED	TESTING BY 3RD PARTY CONTRACTOR PROVIDED
1A	12kV SWITCHGEAR	011-01-EMV-SGR-01	EATON	VACCLAD-W, 15KV, 1200A, 25kAIC	6/S602.2	OSP-0019	FIXED	OWNER	YES	
1B	12kV SWITCHGEAR	011-01-EMV-SGR-02,03	EATON	VACCLAD-W, 15KV, 1200A, 25kAIC	6/S602.2	OSP-0019	FIXED	OWNER	YES	
2A	12kV-208V TRANSFORMER	011-01-NMV-TRX-01	EATON	CA202003EN, 150kVA, 12kV-208Y/120V, RADIAL FEED	8/S602.2	OSP-0008	FIXED	CONTRACTOR		YES
2B	12kV-208V TRANSFORMER	011-01-NMV-TRX-02	EATON	CA202003EN, 150kVA, 12kV-208Y/120V, LOOP FEED	1/S603.2	OSP-0008	FIXED	CONTRACTOR		YES
3A	ENCLOSED CIRCUIT BREAKER	011-01-LNP-BDS-01	EATON	SLG630E WITH LGE3500AAG CIRCUIT BREAKER	1/S603.2	OSP-0338	FIXED	CONTRACTOR		YES
3B	ENCLOSED CIRCUIT BREAKER	011-01-DNP-BDS-01	EATON	SFD100 WITH FDC2100 CIRCUIT BREAKER	1/S603.2	OSP-0338	FIXED	CONTRACTOR		YES
3C	ENCLOSED CIRCUIT BREAKER	011-01-DNP-BDS-02	EATON	SFD100 WITH FDC2100 CIRCUIT BREAKER	1/S603.2	OSP-0338	FIXED	CONTRACTOR		YES
3D	ENCLOSED CIRCUIT BREAKER	011-01-ENP-BDS-01	EATON	SLG630E WITH LGE3500AAG CIRCUIT BREAKER	1/S603.2	OSP-0338	FIXED	CONTRACTOR		YES
4A	AUTOMATIC TRANSFER SWITCH W/ BYPASS	011-01-LNP-ATS-01	ASCO	J7ACTSB30600C5XC	16/S602.2	OSP-0032	FIXED	CONTRACTOR		YES
4B	AUTOMATIC TRANSFER SWITCH W/ BYPASS	011-01-LNP-ATS-01	ASCO	J7ACTSB30600C5XC	16/S602.2	OSP-0032	FIXED	CONTRACTOR		YES
5A	208/120V PANELBOARD	011-01-LEP-PNL-01	SCHNEIDER ELECTRIC	208Y/120V, 800A, 3PH 4W, 500A/3P MCB, 30CKT	3/S603.2	OSP-0016	FIXED	CONTRACTOR		YES
5B	208/120V PANELBOARD	011-01-LLS-PNL-01	EATON	208Y/120V, 225A, 3PH 4W, 225A/3P MCB, 30CKT	3/S603.2	OSP-0009	FIXED	CONTRACTOR		YES
5C	208/120V PANELBOARD	011-01-LCR-PNL-01	EATON	208Y/120V, 225A, 3PH 4W, 225A/3P MCB, 30CKT	3/S603.2	OSP-0009	FIXED	CONTRACTOR		YES
5D	208/120V PANELBOARD	011-01-LEQ-PNL-01	EATON	208Y/120V, 125A, 3PH 4W, 125A/3P MCB, 30CKT	3/S603.2	OSP-0009	FIXED	CONTRACTOR		YES
6A	BATTERY RACK	011-01-DNP-BAT-01	C&D TECHNOLOGY	RD01266	11/S602.2	OSP-0569	FIXED	CONTRACTOR		YES
6B	BATTERY RACK	011-01-DNP-BAT-02	C&D TECHNOLOGY	RD01266	11/S602.2	OSP-0569	FIXED	CONTRACTOR		YES
7A	BATTERY CHARGER	011-01-DNP-BCH-01	LA MARCHE	TPSD-75-130V-550-017-537	5/S602.2	OSP-0340	FIXED	CONTRACTOR		YES
7B	BATTERY CHARGER	011-01-DNP-BCH-02	LA MARCHE	TPSD-75-130V-550-017-537	5/S602.2	OSP-0340	FIXED	CONTRACTOR		YES
8A	125VDC PANELBOARD	011-01-DNP-PPL-01	EATON	125VDC, 2W, 250A, 100A/2P MCB, 28CKT	3/S603.2	OSP-0009	FIXED	CONTRACTOR		YES
8B	125VDC PANELBOARD	011-01-DNP-PPL-02	EATON	125VDC, 2W, 250A, 100A/2P MCB, 28CKT	3/S603.2	OSP-0009	FIXED	CONTRACTOR		YES
8C	125VDC PANELBOARD	011-01-DNP-PPL-02	EATON	125VDC, 2W, 250A, 100A/2P MCB, 28CKT	3/S603.2	OSP-0009	FIXED	CONTRACTOR		YES
9	FIBER PATCH PANEL	VARIES, SEE ELECTRICAL PLANS	COMMSCOPE	WBE-EMT-BK-4P-MOD	EXEMPT PER CBC 1616A.1.18	-	FIXED	CONTRACTOR		YES
11	ATS-GEN TERMINAL CABINET	ATS-GEN TERMINAL CABINET	HOFFMAN	A2424312WFSSLP	8/S603.2		FIXED	CONTRACTOR		YES
14	GENERATOR QUICK CONNECT	011-01-LEP-GQC-01	ASCO	3QC-UCAA-3-0800-F00F	8/S603.2	OSP-0032	FIXED	CONTRACTOR		YES
15	SPLICE BOX	VARIES, SEE ELECTRICAL PLANS	HOFFMAN	A24RC48	9/S603.2		FIXED	CONTRACTOR		YES
16	LOW VOLTAGE PULL BOX	VARIES, SEE ELECTRICAL PLANS	HOFFMAN				FIXED	CONTRACTOR		YES
17	MEDIUM VOLTAGE PULL BOX	VARIES, SEE ELECTRICAL PLANS	HOFFMAN				FIXED	CONTRACTOR		YES



GENERAL NOTES

1. CONTRACTOR TO PROVIDE POWER AND ARC FLASH STUDY FOR LOW VOLTAGE 600 VOLTS AND LESS EQUIPMENT.
2. CONTRACTOR TO PROVIDE STRUCTURAL DESIGN CALCULATIONS STUDY WITH SEISMIC FOR ANCHORING THE SWITCHGEAR TO THE HOUSE KEEPING PAD PER SPEC 26 1913 MEDIUM-VOLTAGE METAL CLAD SWITCHGEAR.
3. CONTRACTOR TO ADD WARNING LABELS FOR EXPOSED 12KV CONDUITS AND PULL BOXES TO WITH YELLOW BACK GROUND "DANGER HIGH VOLTAGE".
4. CONTRACTOR TO COORDINATE WORK AND WITH QUINN AND CAT COMPANIES.

N

SCALE: 1/4" = 1'-0"

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RBB ARCHITECTS INC

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REGISTERED PROFESSIONAL ENGINEER — JASON K. CHOW — No. E21080 — ELECTRICAL — STATE OF CALIFORNIA
SIGNED: 04/02/2024

LICENSED ARCHITECT — KEVIN S. BOOTS — C-30600 — 08/31/2025 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
04/01/2025	4	HCAI BACKCHECK 3
03/14/2025	A	ADDENDUM A
01/31/2025	3	HCAI BACKCHECK 2
08/08/2024		HCAI BACKCHECK 1
06/13/2024	1	HCAI SUBMITTAL
04/18/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL

MILESTONE DATE: 10/25/2024

RBB PROJECT: 1712105 SCALE: 1/4" = 1'-0"

DESCRIPTION

EQUIPMENT PLAN - GEN BLDG

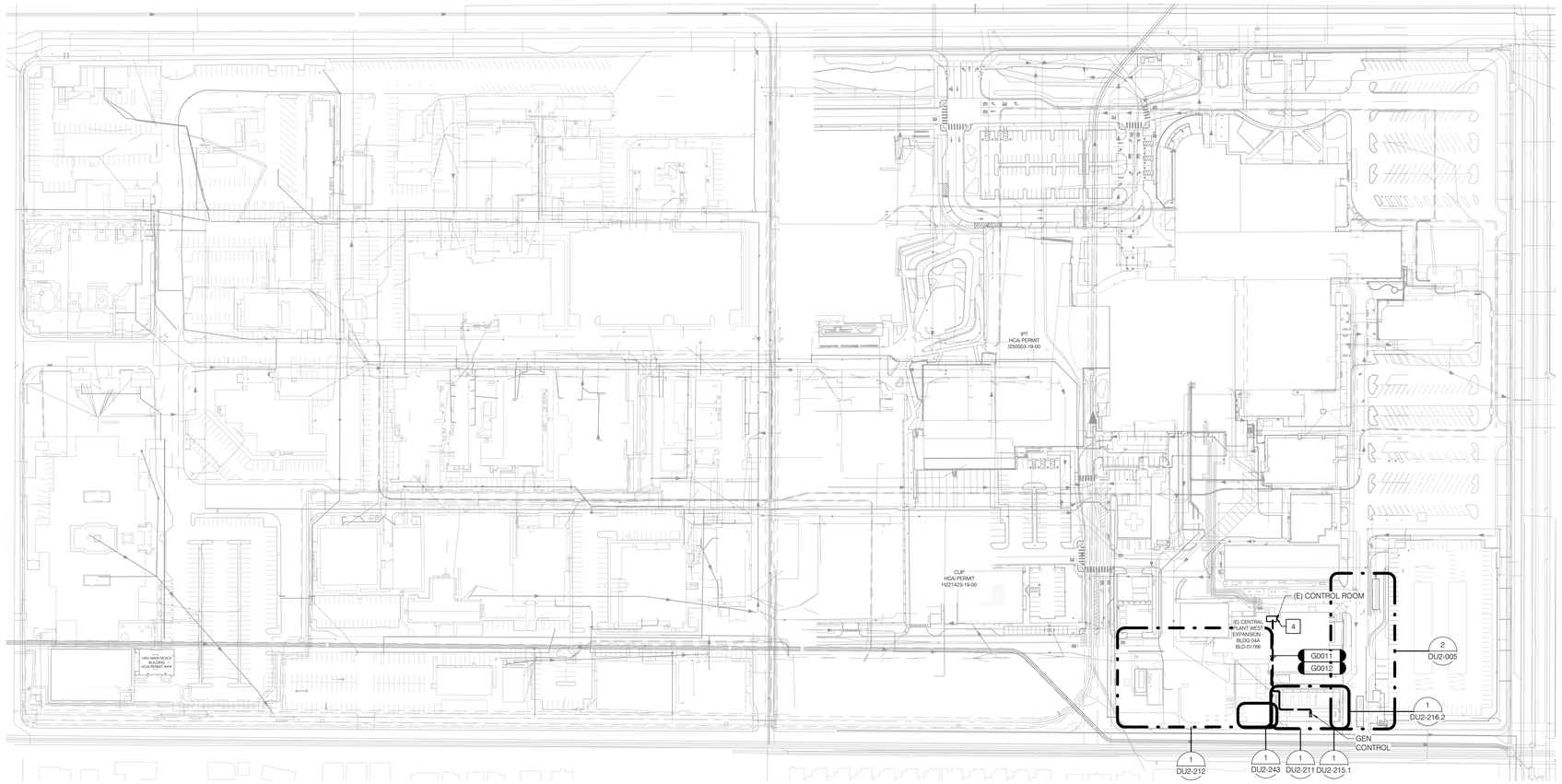
DU2-004

GENERAL NOTES

1. REFER TO TABLE FOR HCAI NUMBERED BUILDINGS.

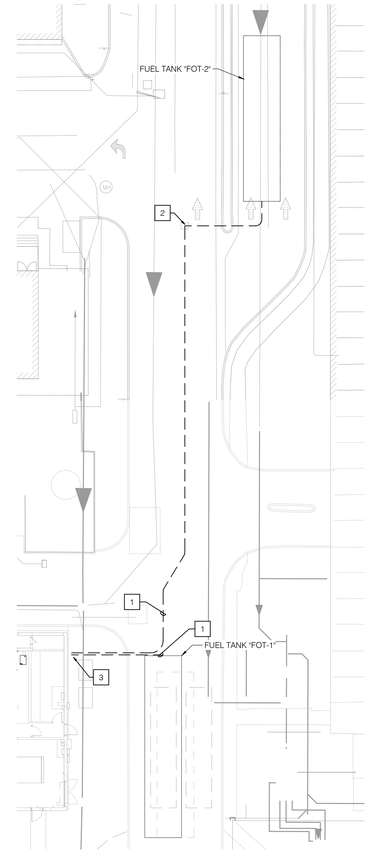
NOTES

1. PROVIDE (2) 2" UNDERGROUND CONDUITS. IN ONE CONDUIT PROVIDE 4#6 AWG & 1#8AWG GND FOR FUEL PUMPS. REFER TO 2/P800.2. COORDINATE WITH PLUMBING CONTRACTOR. (D)
2. PROVIDE TRAFFIC RATED 2.5'LX2'WX3'H LOW VOLTAGE PULLBOX.
3. PROVIDE 2.5'LX2'WX3'H LOW VOLTAGE PULLBOX WITH LOCKING COVER.
4. INSTALL OWNER FURNISHED WALL-MOUNTED ANNUNCIATOR PANEL IN THE CONTROL ROOM.



1 OVERALL SITE PLAN

SCALE: 1" = 100'-0"



2 UNDERGROUND FUEL TANK ROUNTING

SCALE: 1" = 20'-0"

N

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

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REGISTERED PROFESSIONAL ENGINEER — LEXON K. CHU — No. E21060 — CIVIL — STATE OF CALIFORNIA

SIGNED: 04/02/2024

LICENSED ARCHITECT — KEVIN S. BOOTS — RENEWAL 08/31/2025 — C-30600 — STATE OF CALIFORNIA

08/31/2025

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

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DATE		DESCRIPTION
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04/18/2024	-	HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL

MILESTONE DATE: 10/25/2024

RBB PROJECT: 1712105 SCALE: As indicated

DESCRIPTION
OVERALL SITE PLAN

DU2-005

SEQUENCE OF INSTALLATION

INC 1 MILESTONE 1 (INSTALL GAP AREA 12KV UNDERGROUND CONDUITS):

a. INSTALL 12KV CONDUIT AND CABLE FROM SF6-S7 TO CHILLER PLANT 2000KVA, 12KV TO 4160V TRANSFORMER AND TO CHILLER PLANT 1500KVA, 12KV TO 480V TRANSFORMER. REMOVE SOME OF THE EXISTING CONDUIT AND ALL OF THE CABLE FROM THE ORIGINAL 12KV CABLE FROM SF6-S7 TO THE CHILLER PLANT 12KV TO 4160V TRANSFORMER. THE EXISTING POWER PATH TO 12KV TO 4160V TRANSFORMER IS IN THE WAY OF INSTALLING THE NEW GAP BUILDING.
b. INSTALL ALL 12KV UNDERGROUND MANHOLES, CONDUITS AND DUCT BANKS.
c. **INCREMENT 1, MILESTONE 1: UNDERGROUND CONDUIT INSTALLATION SIGN OFF.**

INC 2 MILESTONE 1 (INSTALL NEW LOW VOLTAGE CONFIGURATION FOR POWER SUPPLY TO NEW AND EXISTING PANELS):

a. INSTALL 3 NEW 208/120 VOLT PANELS (011-01-LEP-PNL-01, 011-01-LEQ-PNL-01, AND 011-01-LCR-PNL-01) AND 2 ATS UNITS 011-01-LEP-ATS-01 AND 011-01-LEP-ATS-02 IN THE GENERATOR BUILDING.
b. INSTALL NEW GENERATOR HOUSE TRANSFORMER 011-01-NMV-TRX-01 AND 12KV CABLE FROM SF6-S7 TO TRANSFORMER 011-01-NMV-TRX-01 INPUT SWITCH B. TRANSFORMER FEEDS NORMAL POWER TO NEW ATS UNITS 011-01-LEP-ATS-01.
c. TEMPORARILY MOVE ALL INDIVIDUAL LOADS FROM EXISTING PANEL LSA TO EXISTING PANEL PC. NOTE ALL EXISTING PANELS HAVE MOSTLY LIFE SAFETY LOADS ON THEM WITH OTHER TYPES MIXED IN THEM.
d. REPLACE THE EXISTING 208/120 VOLT, 50A PANEL LSA WITH NEW LARGER 225A BUS RATING.
e. CONNECT A TEMPORARY 208/120V 4W 3 PHASE 150KVA GENERATOR TO ATS 011-01-LEP-ATS-02. ATS 011-01-LEP-ATS-02 WILL SEND A SIGNAL TO THE TEMPORARY GENERATOR ON WHEN TO TURN ON.
f. MOVE SOME INDIVIDUAL LOADS TO THE NEW PANELS. THE 3 NEW PANELS ARE RATED FOR EQUIPMENT, CRITICAL, AND LIFE SAFETY CIRCUITS. THE 2 OLD REMAINING PANELS PB AND PC WILL NOW ONLY HAVE LIFE SAFETY LOADS ON THEM.
g. MOVE EXISTING 208/120 VOLT PANEL PC INTO NEW SYSTEM. NOTE ONLY GEN 5 AND 6 ARE WITHOUT CONTROL POWER DURING THIS MOVE. GEN 1 TO 4 ARE WITH 208/120 VOLT CONTROL POWER.
h. MOVE INDIVIDUAL GENERATOR #4 208/120 VOLT LOADS FROM PANEL PB TO PANEL PC.
i. TEMP MOVE GENERATOR #3 208/120 VOLT LOADS FROM PANEL PB TO PANEL PC.
j. TURN OFF THE GENERATOR SWITCHGEAR BREAKER UE-2 WHICH DE-ENERGIZES THE EXISTING HOUSE POWER TRANSFORMER AND ONLY PANEL PB. MOVE EXISTING 208/120 VOLT PANEL PB INTO NEW SYSTEM. NOTE ONLY GEN 1 AND 2 ARE WITHOUT CONTROL POWER DURING THIS MOVE. GEN 3 TO 6 ARE WITH 208/120 VOLT CONTROL POWER.
k. MOVE INDIVIDUAL GENERATOR #3 208/120 VOLT LOADS FROM PANEL PC BACK TO PANEL PB.
l. WITH GENERATOR SWITCHGEAR BREAKER UE-2 STILL OFF THAT DE-ENERGIZED THE EXISTING HOUSE POWER TRANSFORMER. CONNECT THE EXISTING HOUSE TRANSFORMER TO ATS 011-01-LEP-ATS-01.
m. TURN ON THE GENERATOR SWITCHGEAR BREAKER UE-2 WHICH ENERGIZES THE EXISTING HOUSE POWER TRANSFORMER. THE NEW AND EXISTING 208/120V PANELS ARE NOW WITH GENERATOR BACKUP POWER VIA ATS 011-01-LEP-ATS-01.
n. REMOVE TEMP GENERATOR.
o. RENAME PANELS PB AND PC TO LATEST NAMING CONVENTIONS THAT NOTE THEY ARE NOW ONLY LIFE SAFETY.
p. DEMO EXISTING HVAC.
q. INSTALL NEW HVAC
r. REPLACE FACP SYSTEM WITH NEW.
s. **INCREMENT 2, MILESTONE 1: RECONFIGURE GENERATOR BUILDING HOUSE LOADS SIGN OFF.**

INC 1 MILESTONE 2 (INSTALL GAP BUILDING WITH SWITCHGEAR):

a. INSTALL GAP BUILDING, HOUSE TRANSFORMER WITH EQUIPMENT PANELS, HVAC, FACP AND ASSOCIATED DEVICES.
b. INSTALL GAP SWITCHGEAR IN GAP BUILDING WITH CONTROLS.
c. CONNECT 12KV CABLE FROM GENERATOR ESSENTIAL SWITCHGEAR BREAKER LSC4 TO GAP SWITCHGEAR 010-001-NMV-SGR-03.
d. INSTALL (3) 120V CIRCUITS FROM LIFE SAFETY PANEL IN THE GENERATOR BUILDING TO GAP BUILDING.
e. INSTALL (2) 120V CIRCUITS FROM CRITICAL PANEL IN THE GENERATOR BUILDING TO GAP BUILDING.
f. START UP GAP BUILDING AND SWITCHGEAR AND TEST.
g. PROGRAM TEST CONTROLS FOR GAP SWITCHGEAR 010-001-NMV-SGR-03. SWITCHGEAR 010-001-NMV-SGR-03 WILL BE BACKED UP BY EXISTING GENERATORS AND A LOSS OF POWER TO THIS SWITCHGEAR WILL START THE EXISTING GENERATORS.
h. **INCREMENT 1, MILESTONE 2: GAP BUILDING CONSTRUCTION AND COMMISSIONING SIGN OFF.**

INC 1 MILESTONE 3 (MOVE SOME NORMAL LOADS FROM GENERATOR BUILDING SWITCHGEAR TO GAP SWITCHGEAR):

a. CLOSE GENERATOR SWITCHGEAR BREAKER LSC4 TO GAP SWITCHGEAR. GENERATOR BACKUP POWER IS NOW AVAILABLE TO GAP SWITCHGEAR 010-001-NMV-SGR-03.
b. MOVE 2 NORMAL 12KV LOADS, SUB-6N1 AND SF6-S7 WAY 2, FROM THE GENERATOR NORMAL SWITCHGEAR AND ONE, CHILLER PLANT TRANSFORMER LOAD, FROM SF6-S7 TO THE GAP SWITCHGEAR 010-001-NMV-SGR-01, 010-001-NMV-SGR-02 AND 010-001-NMV-SGR-03. NOTE THAT SOME OF THE NORMAL 12KV LOADS ARE FROM THE EXISTING CHILLER/BOILER PLANT AND WILL BE CONNECTED TO GAP SWITCHGEAR 010-001-NMV-SGR-03. THE TEMP PROGRAMMING FOR GAP SWITCHGEAR 010-001-NMV-SGR-03 WILL PROVIDE GENERATOR EQUIPMENT-LEVEL POWER TO THE CHILLER/BOILER PLANT TO BE ABLE TO RUN THE BOILER PLANT UNDER GENERATOR POWER. THE GENERATOR POWER WILL BE PROVIDED VIA THE EXISTING GENERATOR SWITCHGEAR ESSENTIAL BUS BREAKER LSC4 TO SWITCHGEAR 010-001-NMV-SGR-03.
c. **INCREMENT 1, MILESTONE 3: REFEED NORMAL LOADS PART 1 SIGN OFF**

INC 1 MILESTONE 4 (MOVE REMAINING NORMAL LOADS FROM GENERATOR SWITCHGEAR TO GAP SWITCHGEAR):

a. MOVE 2 NORMAL 12KV LOADS, SF6-S4 WAY 2 AND ONE CHILLER PLANT TRANSFORMER LOAD, FROM THE GENERATOR SWITCHGEAR TO THE GAP SWITCHGEAR 010-001-NMV-SGR-01 AND 010-001-NMV-SGR-03.
b. **INCREMENT 1, MILESTONE 4: REFEED NORMAL LOADS PART 2 SIGN OFF.**

INC 2 MILESTONE 2 (DEMO NORMAL GENERATOR BUILDING SWITCHGEAR AND INSTALL NEW ESSENTIAL SWITCHGEAR):

a. INSTALL 12KV CABLE FROM NEW GENERATOR HOUSE TRANSFORMER 011-01-NMV-TRX-01 SWITCH INPUT A TO GAP SWITCHGEAR 010-001-NMV-SGR-03 BREAKER GP-35.
b. CHANGE A / B SWITCH IN NEW GENERATOR HOUSE TRANSFORMER 011-01-NMV-TRX-01 TO A. THE NEW GENERATOR HOUSE TRANSFORMER 011-01-NMV-TRX-01 IS NOW FED FROM SWITCHGEAR 011-001-NMV-SGR-03. THIS IS A TEMP CONNECTION AND WILL PROVIDE BACK POWER TO THE GENERATOR BUILDING 208/120V PANELS FROM THE GAP SWITCHGEAR 010-010-NMV-SGR-03.
c. TURN OFF THE GENERATOR SWITCHGEAR BREAKER UE-2 AND DE-ENERGIZE THE EXISTING GENERATOR BUILDING HOUSE TRANSFORMER AND REMOVE OLD TRANSFORMER.
d. COORDINATE WITH SCE TO DISCONNECT OLD SERVICE TO THE GENERATOR BUILDING METER SWITCHGEAR AND REMOVE THEIR METER.
e. DEMO THE GENERATOR BUILDING NORMAL SWITCHGEAR AND UTILITY METER SWITCHGEAR.
f. TURN OFF H-O-A SWITCH FOR GENERATORS 1 AND 2 AND RACK OUT 12KV MAIN BREAKERS FOR GENERATORS 1 AND 2.
g. INSTALL NEW SWITCHGEAR 011-01-EMV-SGR-02 PART 1 AND 011-01-EMV-SGR-03 IN GENERATOR BUILDING WITH CONTROLS WHERE THE NORMAL SWITCHGEAR WAS INSTALLED.
h. INSTALL NEW GENERATOR HOUSE TRANSFORMER 011-01-EMV-TRX-01 FED FROM NEW SWITCHGEAR 011-01-EMV-SGR-02 PART 1. CONNECT TRANSFORMER SECONDARY POWER CABLE TO NEW BREAKER 011-01-ENP-BDS-01. CONNECT NEW BREAKER 01-ENP-BDS-01 TO ATS 011-01-LEP-ATS-01 VIA A TERMINAL PANEL ABOVE NEW BREAKER 011-01-ENP-BDS-01.
i. INSTALL NEW 12KV CABLES FROM GENERATORS 1 AND 2 TO NEW SWITCHGEAR 011-01-EMV-SGR-03.
j. CONNECT ATS CONTROLS OF ATS 011-01-LEP-ATS-01 TO CONTROL SYSTEM FOR OPERATING GENERATORS 1 AND 2.
k. PROGRAM AND TEST NEW SWITCHGEAR.
l. TEST TO ENSURE THE NEW SWITCHGEAR IS NOW ABLE TO TAKE ON EMERGENCY LOAD AND POWER FROM GENERATORS 1 AND 2.
m. **INCREMENT 2, MILESTONE 2: DEMOLISH EXISTING NORMAL SWITCHGEAR, INSTALL NEW ESSENTIAL SWITCHGEAR SIGN OFF.**

INC 2 MILESTONE 3 (MOVE EXISTING GENERATOR LOADS FROM EXISTING GENERATOR SWITCHGEAR TO NEW ESSENTIAL SWITCHGEAR 011-01-EMV-SGR-02 AND 011-01-EMV-SGR-03):

a. MOVE 2 ESSENTIAL LOADS, SUB-6E1 AND SUB-6E2, OFF THE OLD GENERATOR SWITCHGEAR TO NEW GENERATOR SWITCHGEAR 011-001-NMV-SGR-02 AND 011-001-NMV-SGR-03.
b. CHANGE THE A / B 12KV SWITCH IN NEW GENERATOR HOUSE TRANSFORMER 011-01-NMV-TRX-01 TO B. THE NEW GENERATOR HOUSE TRANSFORMER 011-01-NMV-TRX-01 IS NOW BEING FED FROM NORMAL POWER SF6-S7 WAY 5. ATS 011-01-LEP-ATS-01 WILL AUTOMATICALLY SWITCH BETWEEN BEING FED FROM 011-01-NMV-TRX-01 OR 011-01-EMV-TRX-01 FOR GENERATOR POWER.
c. IN SWITCHGEAR 010-001-NMV-SGR-03 OPEN 12KV BREAKER GP-35 AND RACK IT OUT FOR 12KV CABLE GOING TO TRANSFORMER 011-01-NMV-TRX-01 INPUT SWITCH A.
d. RECONFIGURE GAP SWITCHGEAR 010-001-NMV-SGR-02 TO BE FED BY 010-001-NMV-SGR-03 BY CLOSING BREAKERS FROM SWITCHGEAR 010-001-NMV-SGR-03 AND OPEN MAIN BREAKER GP-M2 ON SWITCHGEAR 010-001-NMV-SGR-02. CHANGE EAST LOOP 12KV OPEN SWITCH FROM SF6-S7 POSITION 1 TO SF6-S1 POSITION 1. NOTE THE HOSPITAL TOWER NORMAL POWER IS FED FROM GAP SWITCHGEAR 010-001-NMV-SGR-02 AND SWITCHGEAR 010-001-NMV-SGR-02 IS FED FROM SWITCHGEAR 010-001-NMV-SGR-03.
e. CHANGE CONTROL PROGRAM FOR SWITCHGEAR 010-001-NMV-SGR-03 TO HAVE A TEMP PROGRAM SO THAT IF GENERATOR POWER IS NEEDED IT WILL REPOWER 010-001-NMV-SGR-02 AFTER MORE THAN 2 EXITING GENERATORS ARE PARALLELED.
f. TURN OFF THE EXISTING 4160V CHILLERS AND KEEP THEM OFF. STARTUP 3 OF THE 6 GENERATORS IN THE GENERATOR BUILDING AND HAVE THEM PARALLELED AND STAY RUNNING AND PARALLELED. DISCONNECT THE ESSENTIAL 12KV CABLE FROM HOSPITAL TOWER ATS UNITS OFF OF BREAKER LSC1. SPLICE THE OLD HOSPITAL TOWER ATS ESSENTIAL 12KV CABLE IN MANHOLE MVMH-E-01E TO NEW CABLE FROM NEW GENERATOR SWITCHGEAR 011-01-EMV-SGR-02. NOTE THAT IF A UTILITY POWER IS LOST THE HOSPITAL ATS UNITS WILL NOT RECEIVE ESSENTIAL POWER FROM THE ESSENTIAL FEEDER. HOWEVER, THE NORMAL POWER WILL BE BACK UP IN LESS THAN 10 SECTIONS VIA OLD GENERATOR SWITCHGEAR BREAKER LSC4 FEEDING GAP SWITCHGEAR 010-001-NMV-SGR-03 AND GAP SWITCHGEAR 010-001-NMV-SGR-03 FEEDING SWITCHGEAR 010-001-NMV-SGR-02.
g. AFTER SPLICE IS COMPLETED TURN THE 3 GENERATORS FROM FORCE TO RUN BACK TO AUTO AND ALLOW THEM TO AUTO TURN OFF. ENABLE THE EXISTING 4160V CHILLERS TO RUN.
h. REMOVE TEMP CONTROL PROGRAM FOR SWITCHGEAR 010-001-NMV-SGR-03 AND INSTALL THE ORIGINAL ONE BACK.
i. RECONFIGURE GAP SWITCHGEAR 010-001-NMV-SGR-02 TO BE FED BY MAIN BREAKER GP-M2 BY CLOSING GP-M2 ON SWITCHGEAR 010-001-NMV-SGR-02 AND OPEN BREAKERS FROM SWITCHGEAR 010-001-NMV-SGR-03. CHANGE EAST LOOP 12KV OPEN SWITCH BACK TO THE ORIGINAL LOCATION FROM SF6-S1 POSITION 1 TO SF6-S7 POSITION 1.
j. INSTALL NEW 12KV CABLE FROM NEW SWITCHGEAR 011-01-EMV-SGR-02 BREAKER GB-23 TO MANHOLE MVMH-E-01E. TURN OFF EXISTING GENERATOR SWITCHGEAR BREAKER LSC4 THAT FEEDS GENERATOR POWER TO GAP SWITCHGEAR 010-001-NMV-SGR-03 VIA A SPLICE IN MANHOLE MVMH-E-01E. DISCONNECT SPLICE IN MANHOLE MVMH-E-01E AND SPLICE TO NEW CABLE FROM NEW GENERATOR SWITCHGEAR 011-01-EMV-SGR-02 IN MANHOLE MVMH-E-01E. NEW SWITCHGEAR 011-01-EMV-SGR-02 NOW FEEDS GENERATOR POWER TO GAP SWITCHGEAR 010-001-NMV-SGR-03 WHEN NEEDED.
k. **INCREMENT 2, MILESTONE 3: REFEED ESSENTIAL LOADS SIGN OFF.**

INC 2 MILESTONE 4 (DEMO OLD EXISTING GENERATOR BUILDING SWITCHGEAR AND INSTALL NEW ESSENTIAL SWITCHGEAR):

a. TURN OFF THE H-O-A SWITCH FOR GENERATORS 3 THROUGH 6 AND RACK 12KV MAIN BREAKERS FOR GENERATORS 3 THRU 6.
b. DEMO OLD EXISTING GENERATOR ESSENTIAL BUS SWITCHGEAR.
c. INSTALL NEW SWITCHGEAR 011-01-EMV-SGR-01 AND 011-01-EMV-SGR-02 PART 2 IN GENERATOR BUILDING WITH CONTROLS.
d. INSTALL NEW 12KV CABLES FROM GENERATORS 5 AND 6 TO NEW SWITCHGEAR 011-01-EMV-SGR-01 AND NEW 12KV CABLE FROM GENERATORS 3 AND 4 TO NEW SWITCHGEAR 011-01-EMV-SGR-02 PART 2.
e. PROGRAM AND TEST NEW SWITCHGEAR.
f. TEST TO ENSURE THE NEW SWITCHGEAR 011-01-EMV-SGR-01 IS NOW ABLE TO TAKE ON EMERGENCY LOADS AND POWER FROM GENERATORS 5 AND 6.
g. INSTALL NEW FUEL CONTROL SYSTEM AND FILTER.
h. CONVERT EXISTING FUEL SYSTEM TO NEW ONE.
i. DEMO OLD FUEL CONTROL SYSTEM.
j. **INCREMENT 2, MILESTONE 4: DEMOLISH EXISTING SWITCHGEAR, INSTALL NEW SWITCHGEAR SIGN OFF.**

INC 2 MILESTONE 5 (COMPLETE THE INSTALL OF NEW SWITCHGEAR 011-01-EMV-SGR-02):

a. CONNECT 011-01-EMV-SGR-02 PART 1 AND 011-01-EMV-SGR-02 PART 2 WITH 12KV CABLE AND PROGRAM AND TEST SWITCHGEAR.
b. THIS TEST IS TO ENSURE THE NEW SWITCHGEAR IS NOW ABLE TO TAKE ON EMERGENCY LOAD AND POWER FROM GENERATORS 3 AND 4.
c. PROGRAM AND TEST THAT ALL 6 GENERATORS CAN NOW PARALLEL AS ONE.
d. **INCREMENT 2, MILESTONE 5: COMPLETE AND COMMISSIONING ESSENTIAL SWITCHGEAR SIGN-OFF.**

INC 2 MILESTONE 6 (FINAL RECONFIGURATIONS OF THE 12KV SYSTEM):

a. THE SURGERY EMERGENCY BUILDING NORMAL 12KV POWER SUPPLY SUB-6N2 IS CONNECTED FROM GAP SWITCHGEAR TO NEW CUP SWITCHGEAR 007-02-NMV-SGR-02.
b. THE SURGERY EMERGENCY BUILDING NORMAL 12KV POWER SUPPLY SUB-6N21 IS MOVED FROM GAP SWITCHGEAR 010-001-NMV-SGR-01 TO NEW CUP SWITCHGEAR 007-02-NMV-SGR-01 AND NO LONGER FED FROM GAP SWITCHGEAR 010-001-NMV-SGR-01.
c. INSTALL NEW 12KV CABLE FROM THE NEW CUP SWITCHGEAR 007-02-NMV-SGR-02 TO GAP SWITCHGEAR 010-001-NMV-SGR-02 MAIN BREAKER GP-M2. REMOVE NO LONGER USED 12KV POWER SUPPLY CABLE FROM GAP SWITCHGEAR 010-001-NMV-SGR-02 MAIN BREAKER GP-M2 TO GAP SWITCHGEAR 010-001-NMV-SGR-01. GAP SWITCHGEAR 010-001-NMV-SGR-02 IS NOW FED FROM THE NEW CUP SWITCHGEAR 007-02-NMV-SGR-02.
d. INSTALL NEW 12KV CABLE FROM GAP SWITCHGEAR 010-001-NMV-SGR-01 BREAKER GP-11 TO MANHOLE MVMH-N-15. CONNECT NEW CABLE FROM GAP SWITCHGEAR 010-001-NMV-SGR-01 BREAKER GP-11 IN MVMH-N-15 TO 12KV CABLE GOING TO TRANSFORMER 011-01-NMV-TRX-01 INPUT SWITCH A. REMOVE NO LONGER USED 12KV CABLE FROM MANHOLE MVMH-N-15 TO GAP SWITCHGEAR 010-001-NMV-SGR-03 BREAKER GP-35.
e. UPDATE THE CONTROL PROGRAM FOR SWITCHGEAR 010-001-NMV-SGR-03 TO THE FINAL PROGRAM SO THAT WHEN GENERATOR POWER IS NEEDED TO THE CHILLER/BOILER PLANT IT WILL PRIORITIZE THE BOILER PLANT AS FIRST AND EXTRA POWER FOR THE CHILLER PLANT IF AVAILABLE.
f. INSTALL NEW 12KV CABLE TO EXISTING CHILLER PLANT 2000KVA, 12KV TO 4160V TRANSFORMER FROM GAP SWITCHGEAR 010-001-NMV-SGR-03. REMOVE NO LONGER USED 12KV CABLE FROM SF6-S7 TO CHILLER PLANT 2000KVA, 12KV TO 4160V TRANSFORMER.
g. INSTALL NEW 12KV CABLE FROM THE NEW CUP SWITCHGEAR 007-02-NMV-SGR-01 TO GAP SWITCHGEAR 010-001-NMV-SGR-01 MAIN BREAKER GP-M1. REMOVE NO LONGER USED 12KV POWER SUPPLY CABLE FROM GAP SWITCHGEAR 010-001-NMV-SGR-01 MAIN BREAKER GP-M1 TO MANHOLE MVMH-N-15. GAP SWITCHGEAR 010-001-NMV-SGR-01 IS NOW FED FROM THE NEW CUP SWITCHGEAR 007-02-NMV-SGR-01.
h. **INCREMENT 2, MILESTONE 6: FINAL 12KV CONNECTIONS SIGN OFF.**

CONSTRUCTION SEQUENCING

1. INCREMENT 1, MILESTONE 1 AND INCREMENT 2, MILESTONE 1 MAY BE CONSTRUCTED CONCURRENTLY.
2. DO NOT PROCEED WITH CONSTRUCTION OF INCREMENT 1, MILESTONE 2 UNTIL INCREMENT 1, MILESTONE 1 AND INCREMENT 2, MILESTONE 1 ARE COMPLETED WITH HCAI SIGN OFF.
3. DO NOT PROCEED WITH CONSTRUCTION OF INCREMENT 1, MILESTONE 3 UNTIL INCREMENT 1, MILESTONE 2 IS COMPLETE WITH HCAI SIGN OFF.
4. DO NOT PROCEED WITH CONSTRUCTION OF INCREMENT 1, MILESTONE 4 UNTIL INCREMENT 1, MILESTONE 3 IS COMPLETE WITH HCAI SIGN OFF.

CONSTRUCTION SEQUENCE LEGEND

INC 1 MILESTONE 1	INC 2 MILESTONE 3
INC 2 MILESTONE 1	INC 2 MILESTONE 4
INC 1 MILESTONE 2	INC 2 MILESTONE 5
INC 1 MILESTONE 3	INC 2 MILESTONE 6
INC 1 MILESTONE 4	
INC 2 MILESTONE 2	

GENERAL NOTES

1. ALL OUTAGES REQUIRE A MINIMUM 4 WEEKS NOTICE AND AGREEMENT WITH THE OWNER ON TIMING OF THE OUTAGE. MOPS WILL NEED TO BE SUBMITTED AND APPROVED. OUTAGE DURATION TO BE MINIMIZED SUCH AS ADDING 600A T-BODY WITH CAPACITIVE TEST POINT TO NEW CABLES BEFORE CUTTING INTO EXISTING 12KV CABLES.
2. PHASE VOLTAGE ROTATION SHALL BE RECORDED BEFORE THE POWER IS SHUT OFF. CONFIRM THE ROTATION ON THE SUPPLY END AND THE LOAD END OF THE CABLE THAT IS TO BE CUT AND/OR REPLACED. AFTER THE CUT OVER AND BEFORE DOWN STREAM LOADS ARE ALLOWED TO COME ON PERFORM PHASE ROTATION AND PHASE TO PHASE TESTING AT THE NEW SUPPLY AND LOAD END OF THE NEW CABLE. RECORD THE RESULTS AND PROVIDE IN OUTAGE REPORT.
3. IF THE OUTAGE FOR THE LOADS IS REQUIRED TO BE LONGER THAT 2.5 HOURS PROVIDE TEMPORARY GENERATORS FOR THE LOADS.
4. OUTAGES ARE TO BE BETWEEN 11PM AND 6AM. GENERATORS ARE ALWAYS REQUIRED FOR ANY OUTAGE TO THE IT/SHOPS AND THE CHILLER PLANT 1500KVA TRANSFORMER.

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AGENCY APPROVALS

OSHPD # I240005-19-01

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03/14/2025	A	ADDENDUM A
01/31/2025	3	HCAI BACKCHECK 2
10/25/2024	2	HCAI BACKCHECK 1
06/13/2024	1	HCAI SUBMITTAL
04/18/2024		HCAI SUBMITTAL

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712105 SCALE:

DESCRIPTION
SEQUENCE OF OPERATION

DU2-006

Print Date: 4/9/2025 6:05:21 PM

GENERAL NOTES

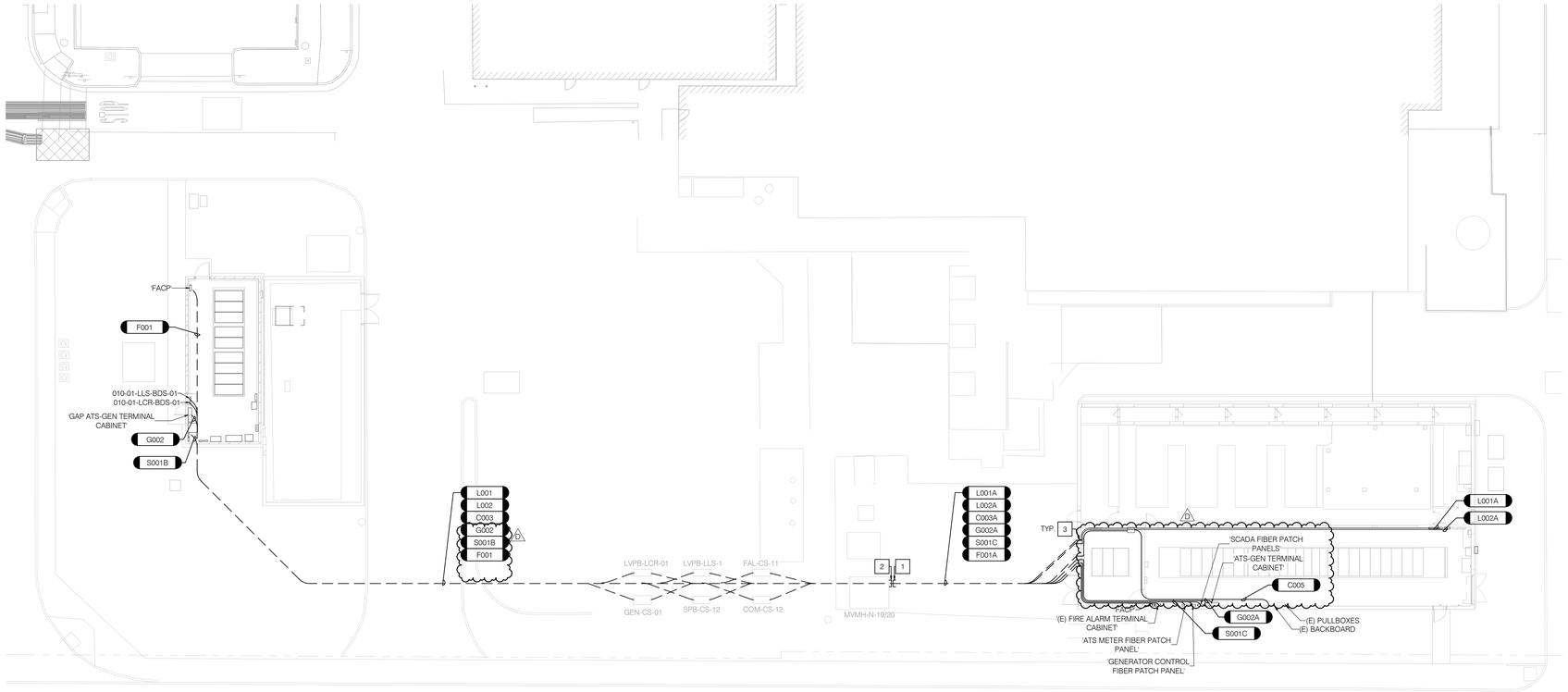
A. FOLLOW SINGLE LINE SHEET DU2-511 AND DU2-513.
B. NO SPLICE IN PULLBOXES INSTALLED BY INC 1 OR INC 2 CONTRACTOR.

NOTES

1 UNDERGROUND EAST CONDUITS BY INC 2 CONTRACTOR. REMOVE CAP AND CONNECT CONDUIT TO INC 1 STUB OUT.

2 UNDERGROUND WEST CONDUITS BY INC 1 CONTRACTOR. REMOVE CAP AND CONNECT CONDUIT TO INC 2 STUB OUT.

3 CORE DRILL AND SEAL AROUND CONDUITS.



(MILESTONE 1)

N
SCALE: 1" = 20'
0 20

Print Date: 4/14/2025 11:55:14 AM

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AGENCY APPROVALS

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02/10/2025		BID SET
01/31/2025	3	HCAI BACKCHECK 2
10/25/2024	2	HCAI BACKCHECK 1

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712105 SCALE: 1/16" = 1'-0"

DESCRIPTION
ENLARGED 208/120V, SCADA, FIRE, COM, GEN START SITE UG POWER PLAN

DU2-213

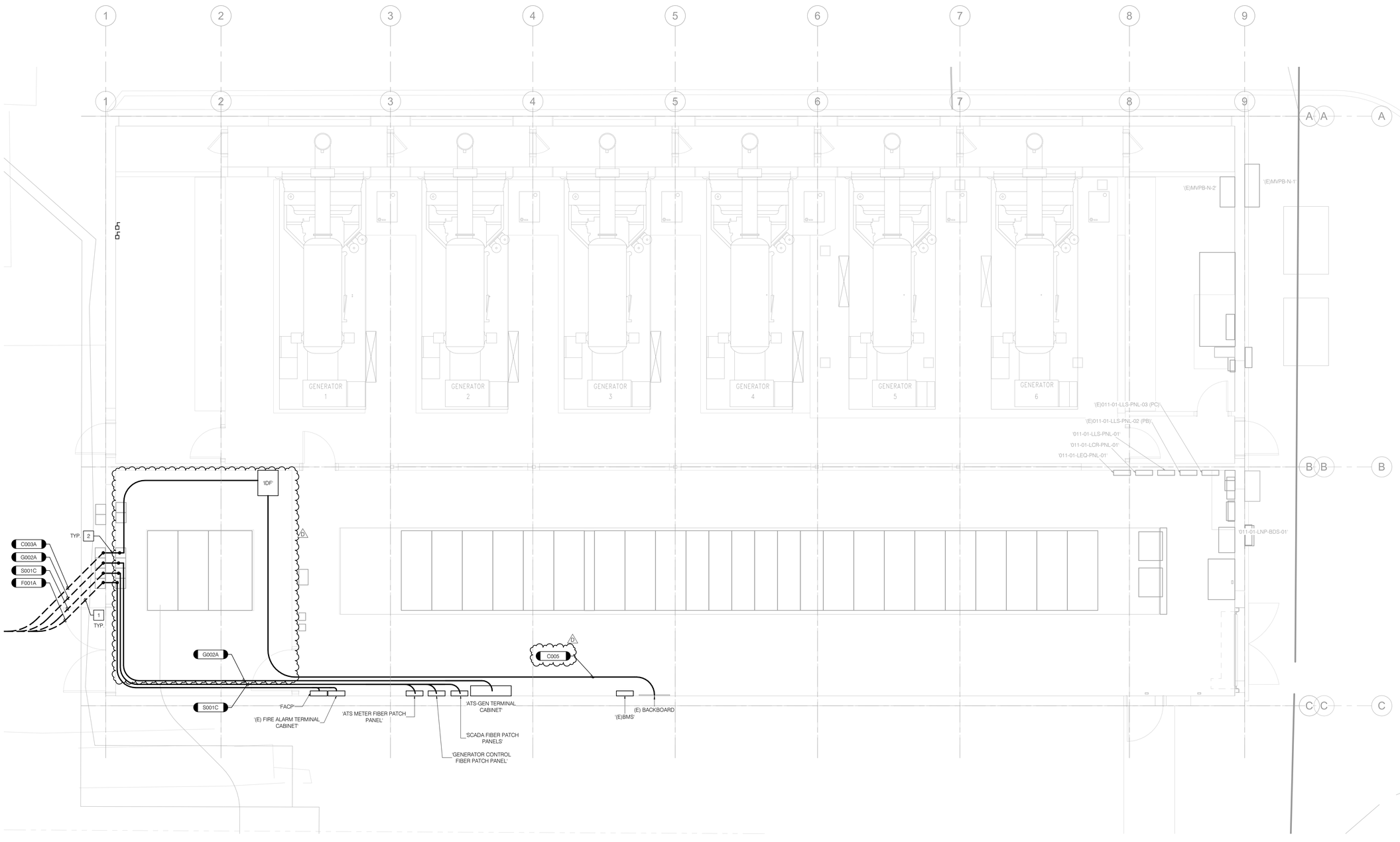
GENERAL NOTES

1. REFER TO SCADA INFORMATION ON SHEET DU2-301.

NOTES

1 ROUTE CONDUIT DEEPER THAN EXISTING WATER AND GAS LINE AND USE COMPACT DIRT ABOVE THE CONDUT BANK TO SURFACE.

2 CORE DRILL AND SEAL AROUND CONDUITS.



(MILESTONE 1)

N

SCALE: 1/4" = 1'-0"

Print Date: 4/14/2025 11:59:42 AM

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04/18/2024		HCAI SUBMITTAL

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL

MILESTONE DATE: 10/25/2024

RBB PROJECT: 1712105 SCALE: 1/4" = 1'-0"

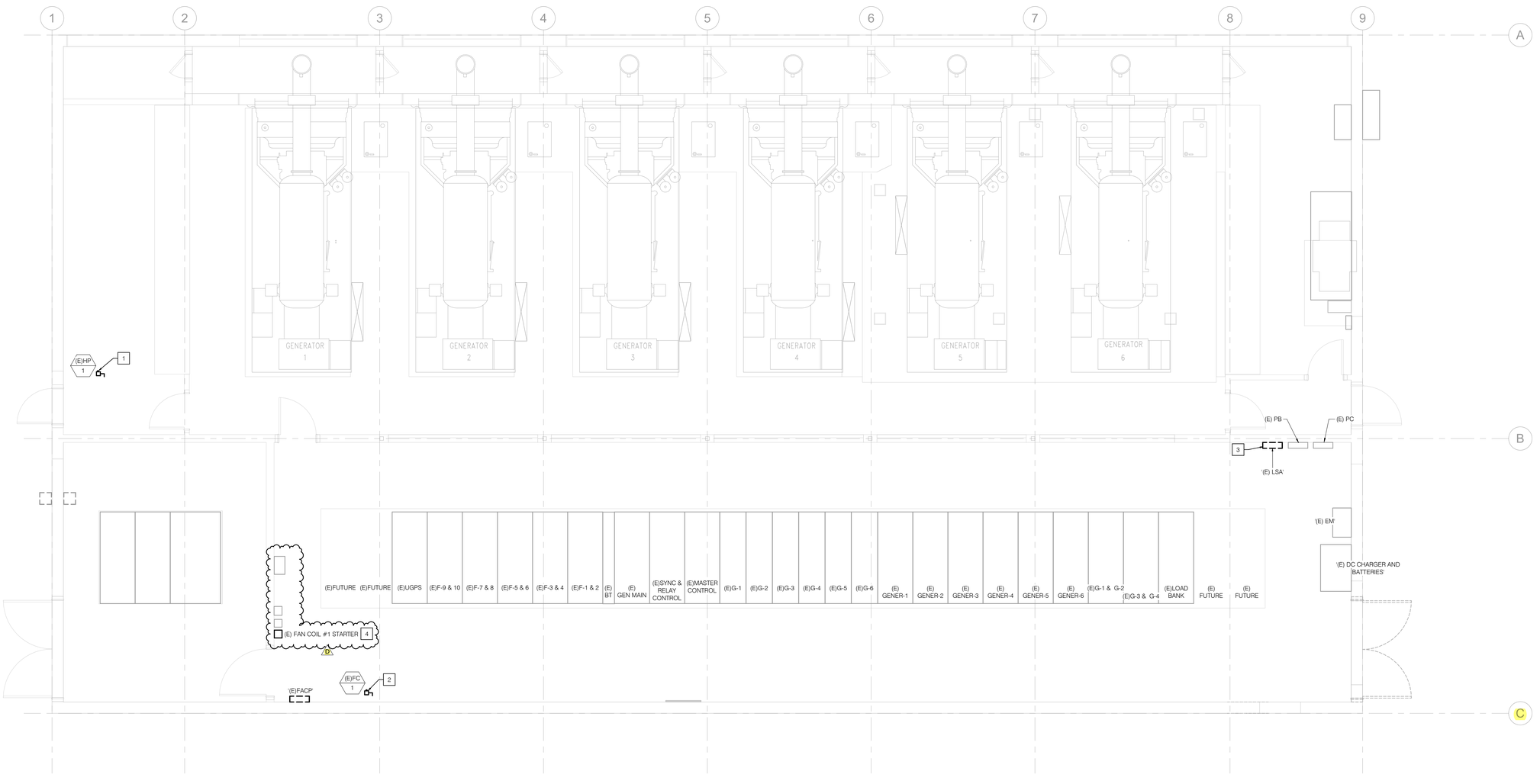
DESCRIPTION

ENLARGED SCADA, ATS-GEN CONTROL, FIRE, AND COM PLAN

DU2-214

NOTES

1. DEMOLISH (E) HEAT PUMP UNIT HP-1 AND CABLE BACK TO SOURCE. RETAIN SOME CONDUIT FOR REUSE.
2. DEMOLISH (E) FAN COIL UNIT FC-1 AND CABLE BACK TO SOURCE. RETAIN SOME CONDUIT FOR REUSE.
3. DEMOLISH (E) PANEL LSA. SEE SINGLE LINE DRAWING DU2-511.
4. DEMOLISH (E) STARTER FOR FC-1 AND CABLE BACK TO SOURCE. RETAIN SOME CONDUIT FOR FUTURE REUSE.



(MILESTONE 1)

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SCALE: 1/4" = 1'-0"

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04/18/2024		HCAI SUBMITTAL

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MILESTONE:	HCAI SUBMITTAL
MILESTONE DATE:	10/25/2024
RBB PROJECT: 1712105	SCALE: 1/4" = 1'-0"

DESCRIPTION

ENLARGED DEMOLITION 208/120VAC POWER PLAN - GEN BLDG

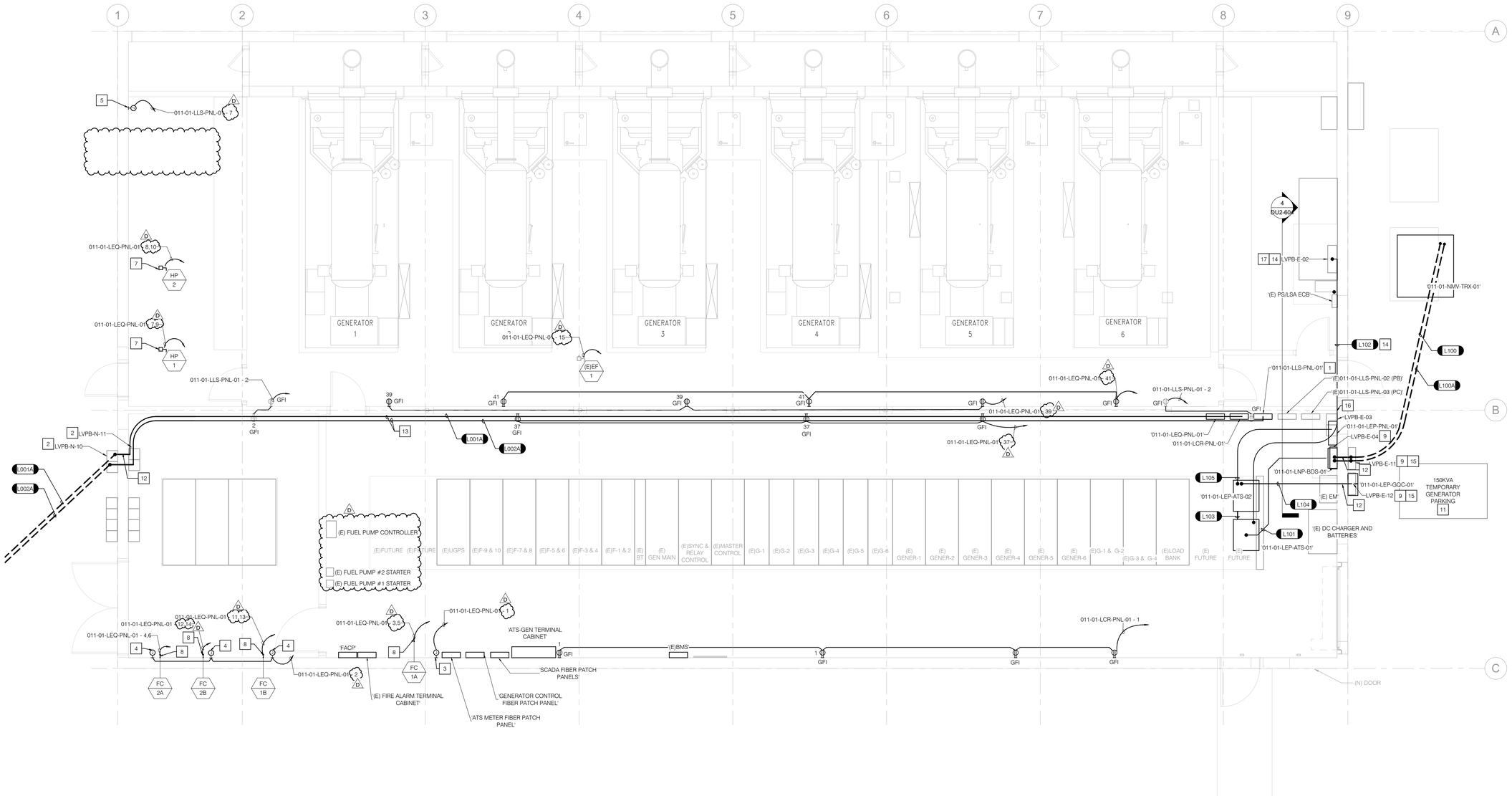
DU2-215.1

GENERAL NOTES

1. FOLLOW SINGLE LINE SHEET DU2-513.
2. FOLLOW DC SINGLE LINE DIAGRAM ON SHEET DU2-401.4.

NOTES

1. (E) PANEL DEMOLISHED PER SINGLE LINE SHEET DU2-511, CIRCUITS TO BE MOVED TO (E) PANEL PC PER PHASING SCHEDULES ON SHEET DU2-401.2 (N) PANEL TO BE INSTALLED IN PLACE.
2. PROVIDE MINIMUM 12'L X 12'W X 6'D LOW VOLTAGE PULLBOX.
3. PROVIDE 120V/1P POWER TO MECHANICAL CONTROLS TRANSFORMER.
4. PROVIDE 120V/1P POWER TO CONDENSATE DRAIN PUMP.
5. PROVIDE 120V/1P POWER TO LEAK DETECTION AND TANK MONITORING PANEL.
6. NOT USED. /D
7. PROVIDE 60AS/3SAF 2P DISCONNECT FOR HEAT PUMP UNIT.
8. PROVIDE TOGGLE SWITCH DISCONNECT FOR FAN COIL UNIT.
9. PROVIDE MINIMUM 24'L X 24'W X 8'D LOW VOLTAGE PULL BOX.
10. NOT USED. /D
11. TEMPORARY GENERATOR MUST BE PARKED 5' FROM DOOR.
12. CORE DRILL AND SEAL AROUND CONDUITS.
13. MOUNT CONDUIT TO UNISTRUT ON WALL.
14. IN TERMINAL BOX LVPB-E-02 INSTALL MULTI TAP INSULATED CONNECTOR ON END OF CABLES.
15. PULLBOX WITH PAD LOCKABLE COVER.
16. SEAL HOLE AROUND CONDUITS
17. PROVIDE MINIMUM 30'L X 30'W X 10'D LOW VOLTAGE SPLICE BOX.



(MILESTONE 1)

N

SCALE: 1/4" = 1'-0"

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712105 SCALE: 1/4" = 1'-0"

DESCRIPTION
ENLARGED 208/120VAC POWER PLAN - GEN BLDG

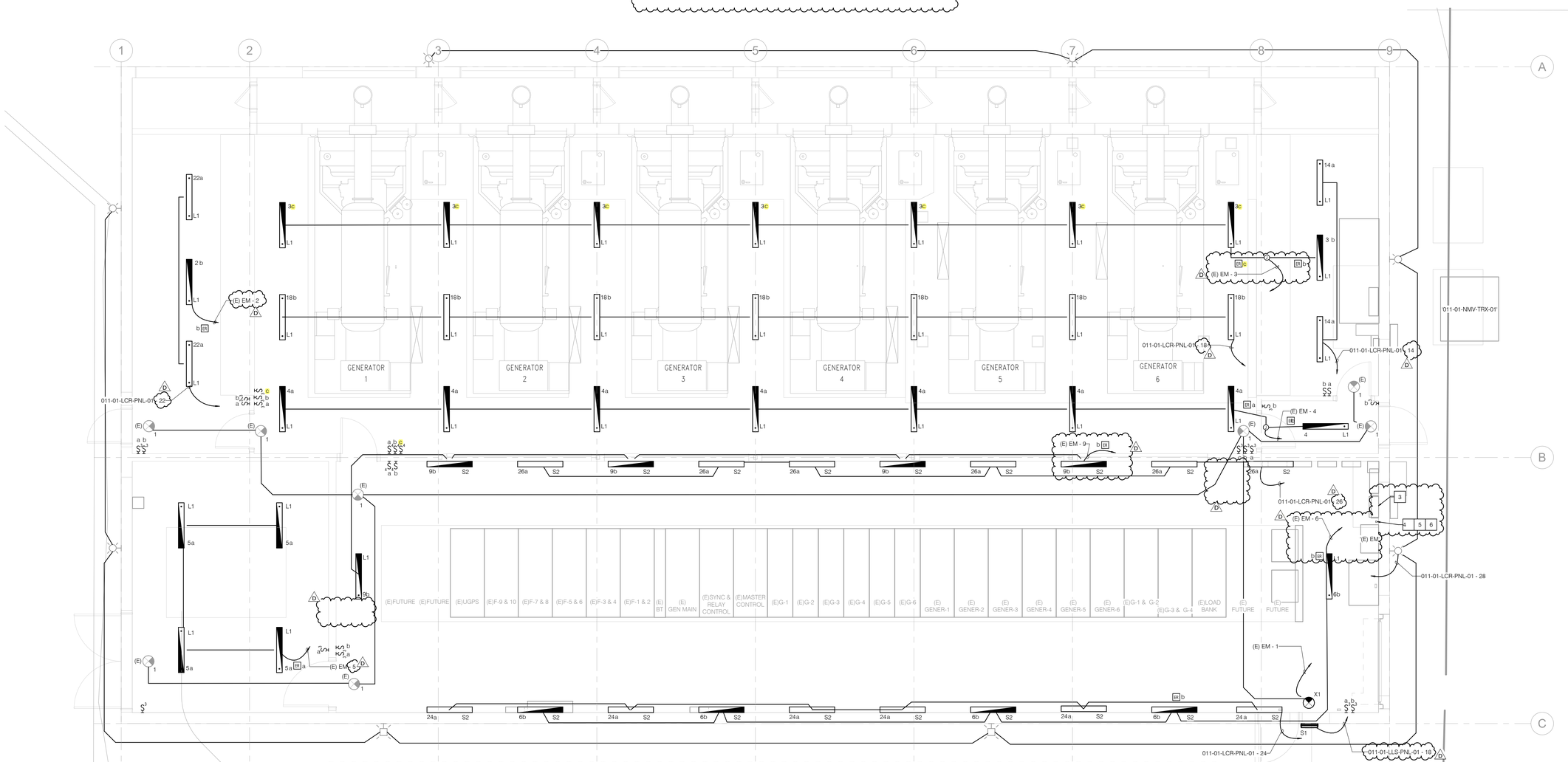
DU2-215.2

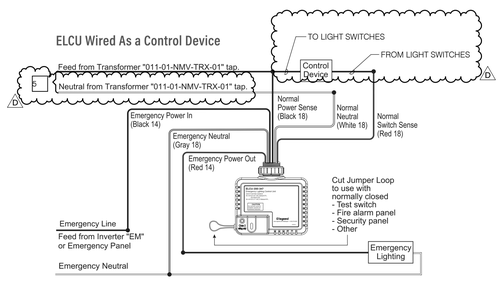
LIGHT FIXTURE SCHEDULE

TYPE	FIXTURE DESCIPTION	MANUFACTURER & MODEL	TOTAL V-A	LAMP TYPE	LUMENS	COLOR TEMP	CRI	VOLTAGE	MTG	REMARKS
X1	EMERGENCY EXIT SIGN	PROGRESS LIGHTING #PETPE-UR-30-RC	3.6	LED				120/277		
S2	LED LINEAR WALL LIGHT	COLUMBIA LIGHTING #MPS4-9-40-HLHE-C-W-ED-U-NXS	41.7	LED	5800	4000K	90	U	WALL	MOUNT ON 2' 6" STEM, 8' 9" AFF.
S1	LED LINEAR WALL PACK	LITHONIA LIGHTING # TWX3-LED-P1-40K-MVOLT-PE-DBLXD	65	LED	8450	4000K	80	MVOLT	WALL	
L1	LED LINEAR PENDANT LIGHT	COLUMBIA LIGHTING #MPS4-9-40-HLHE-C-W-ED-U-NXS	41.7	LED	5800	4000K	90	U	PENDANT	MOUNT ON 2' 6" STEM, 8' 9" AFF.

NOTES

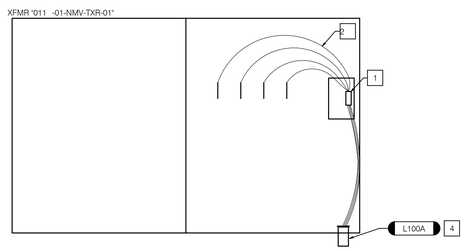
1. INSTALL EATON FLIP OPEN FUSE BLOCKS WITH 3 AMP CC FUSES FOR ALL 3 PHASES. INSTALLED IN PROTECTIVE BOX.
2. INSTALL 4#12 AWG CABLES FROM TRANSFORMER OUTPUT LUGS TO FLIP OPEN FUSE.
3. PULLBOX LVPB-E-04.
4. INSTALL CABLE FROM TRANSFORMER TO PULL BOX LVPB-E-04 AND EXTEND CONDUIT AND CABLE ABOVE PULL BOX TO 3 POLE TOGGLE SWITCH.
5. FROM TOGGLE SWITCH USE ONE PHASE TO RUN TO EMERGENCY RELAY.
6. TOGGLE SWITCH TO BE TURNED OFF IN MILESTONE 2 AND KEPT OFF UNTIL MILESTONE 3 AND TRANSFORMER 011-01-NMV-TRX-01 INPUT SWITCH IS CHANGED TO INPUT B. SEE SINGLE LINE DU2-533.





2 EMERGENCY RELAY WIRING DIAGRAM

SCALE: NONE



3 HOUSE TRANSFORMER 011-01-NMV-TXR-01 TAP

SCALE: NONE

(MILESTONE 1)

N

SCALE: 1/4" = 1'-0"

Print Date: 4/9/2025 6:05:37 PM

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL

MILESTONE DATE: 10/25/2024

RBB PROJECT: 1712105 SCALE: As indicated

DESCRIPTION

ENLARGED NEW LIGHTING PLAN - GEN BLDG

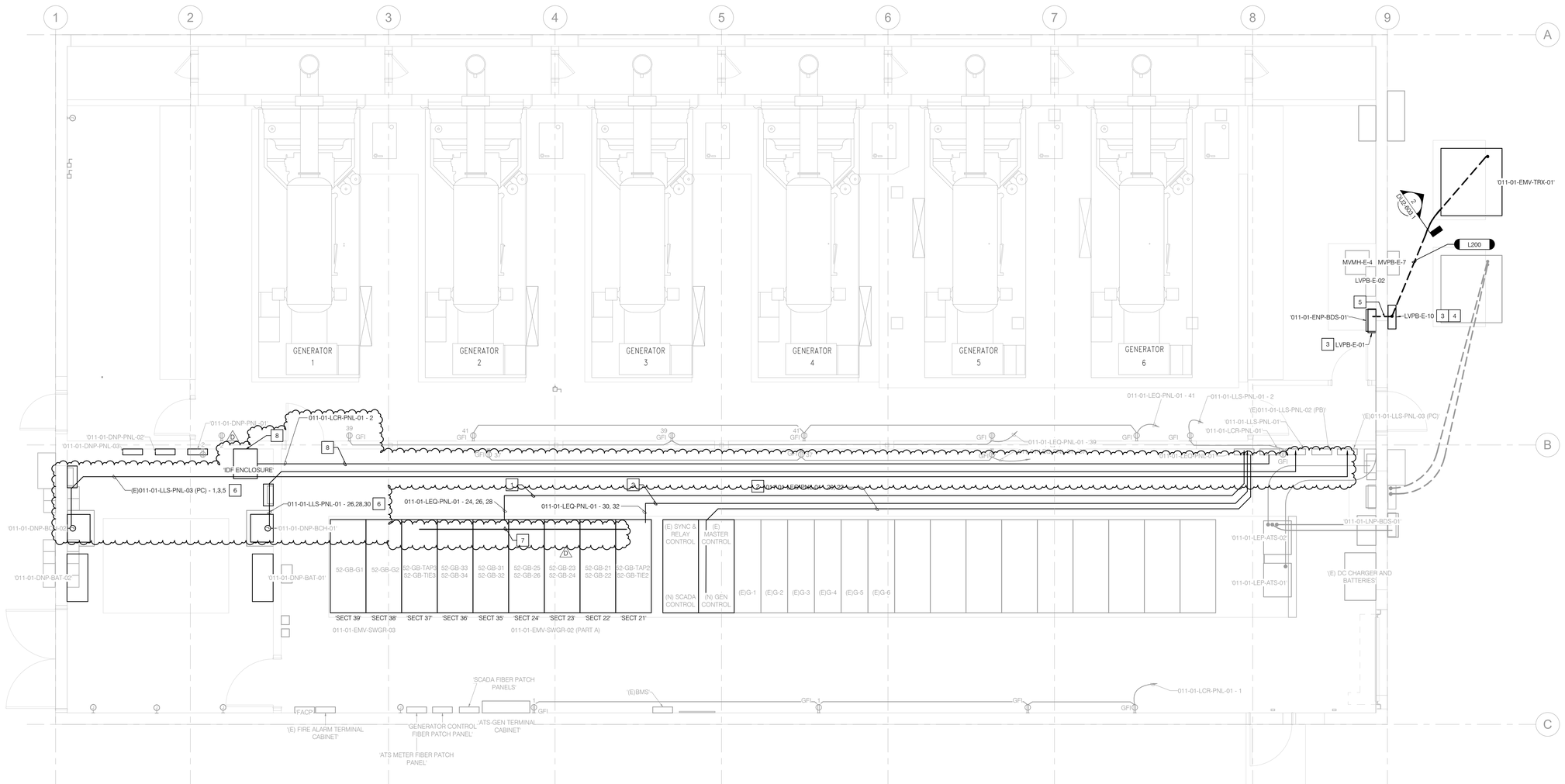
DU2-216.2

GENERAL NOTES

A. FOLLOW SINGLE LINE SHEET DU2-521.

NOTES

1. PROVIDE 3/4"C WITH 6#12 AWG & 1#12 AWG GND FOR SWITCHGEAR HEATER BLOCKS AND LIGHTS.
2. PROVIDE 3/4"C WITH 4#12 AWG & 1#12 AWG GND FOR SWITCHGEAR HEATER BLOCKS AND LIGHTS.
3. PROVIDE MINIMUM 24"L X 24"W X 8"D LOW VOLTAGE PULLBOX.
4. PULLBOX WITH PAD LOCKABLE COVER.
5. CORE DRILL AND SEAL AROUND CONDUITS.
6. PROVIDE 1"C WITH 3#6 AWG & 1#8 AWG GND FOR BATTERY CHARGER.
7. PROVIDE 3/4"C WITH 3#10 AWG AND 1#10 AWG CABLES FROM CTS IN SECTION 37 TO DIFFERENTIAL IN SECTION 21.
8. PROVIDE 3/4"C WITH 3#12 AWG AND 1#12 AWG GND FOR POWER TO IDF ENCLOSURE. INSIDE IDF ENCLOSURE PROVIDE R5-15 OUTLET.



(MILESTONE 2)

N

SCALE: 1/4" = 1'-0"

Print Date: 4/15/2025 2:47:55 PM

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE:	HCAI SUBMITTAL
MILESTONE DATE:	10/25/2024
RBB PROJECT: 1712105	SCALE: 1/4" = 1'-0"

DESCRIPTION

ENLARGED 208/120VAC POWER PLAN - GEN BLDG

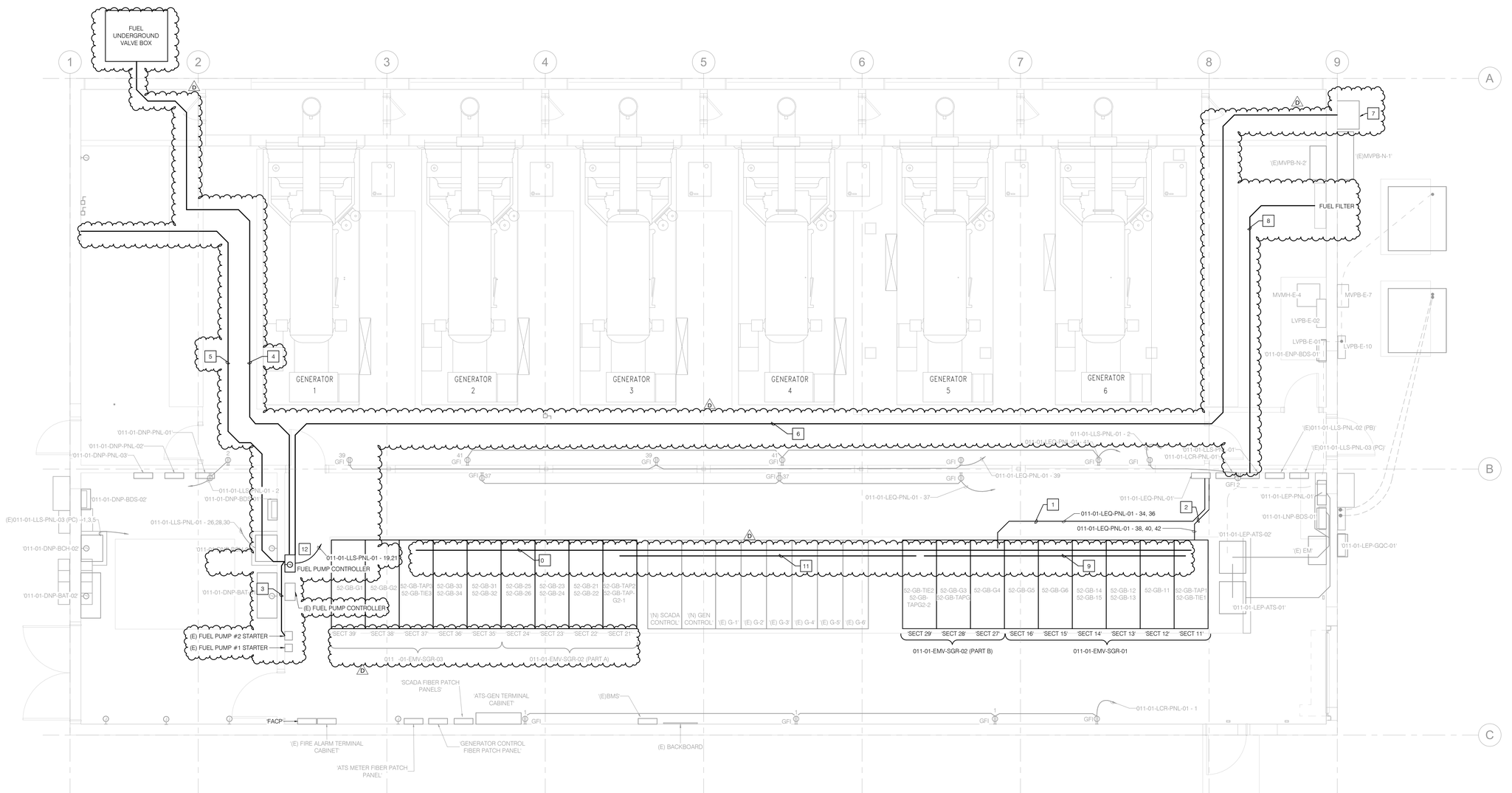
DU2-225

GENERAL NOTES

A. FOLLOW SINGLE LINE SHEET DU2-513.

NOTES

1. PROVIDE 3/4"C - 4#12 AWG & 1#12 AWG GND FOR SWITCHGEAR HEATER BLOCKS AND LIGHTS.
2. PROVIDE 3/4"C - 6#12 AWG & 1#12 AWG GND FOR SWITCHGEAR HEATER BLOCKS AND LIGHTS.
3. PROVIDE (2) 3/4" CONDUIT FROM PULL BOX UNDER STARTERS FOR RECONNECTION OF FUEL PUMPS TO NEW CONTROL PANEL.
4. PROVIDE (2) 3/4"C FROM UNDERGROUND FUEL VALVE BOX TO FUEL PUMP CONTROL PANEL. PROVIDE 8#12 AWG AND 1#12 AWG GND CABLES IN CONDUIT.
5. PROVIDE (2) 3/4"C FROM EXISTING FUEL VALVES TO FUEL PUMP CONTROL PANEL.
6. PROVIDE (4) 1 1/4"C FROM FUEL PUMP CONTROLLER TO PULLBOX. PROVIDE 4#6 AWG AND 1#8 AWG GND CABLES IN TWO OF THE CONDUITS.
7. TRANSITION AT PULLBOX TO (4) 2" UNDERGROUND CONDUITS TO FUEL TANKS. PULLBOX TO BE LOCKABLE.
8. PROVIDE 3/4"C WITH 3#12 AWG AND 1#12 AWG CABLES FROM PANEL 011-01-LLS-PNL-01 TO FUEL FILTER SYSTEM.
9. PROVIDE 3/4"C WITH 3#10 AWG AND 1#10 AWG CABLES FROM CTS IN SECTION 29 TO DIFFERENTIAL IN SECTION 11.
10. PROVIDE 3/4"C WITH 3#10 AWG AND 1#10 AWG CABLES FROM CTS IN SECTION 11 TO DIFFERENTIAL IN SECTION 37.
11. PROVIDE 3/4"C WITH 3#10 AWG AND 1#10 AWG CABLES FROM CTS IN SECTION 29 TO DIFFERENTIAL IN SECTION 21.
12. PROVIDE 208/2P POWER TO FUEL CONTROL PANEL IN 3/4"C WITH 3#10 AWG AND 1 #12 AWG GND.



(MILESTONE 4)

N

SCALE: 1/4" = 1'-0"

Print Date: 4/9/2025 6:06:07 PM

RBB

RBB ARCHITECTS INC

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REGISTERED PROFESSIONAL ENGINEER — JASON K. CHU — No. E21060 — CIVIL — STATE OF CALIFORNIA — SIGNED: 04/02/2024

LICENSED ARCHITECT — KEVIN S. BOOTS — RC-30600 — 08/31/2025 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
03/14/2025	A	ADDENDUM A
01/31/2025	3	HCAI BACKCHECK 2
10/25/2024	2	HCAI BACKCHECK 1
06/13/2024	1	HCAI SUBMITTAL
04/18/2024	-	HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL

MILESTONE DATE: 10/25/2024

RBB PROJECT: 1712105 SCALE: 1/4" = 1'-0"

DESCRIPTION

ENLARGED 208/120VAC POWER PLAN - GEN BLDG

DU2-245

NON-SEGREGATED, NOT CURRENTLY COMPLIANT WITH CEC 517.31(A).

(E) PANEL: LSA

LOCATION : BUILDING 11 **VOLTAGE/PHASE :** 120/208V, 3Ø, 4W **FED FROM :** HOUSE XFMR
FLOOR : LEVEL 1 **BUS AMPS :** 225A **RATING :** 10 KAIC
MOUNTING : SURFACE **MAIN BREAKER :** MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT... A	VOLT... B	VOLT... C	VOLT... A	VOLT... B	VOLT... C	BKR/POLE		LOADS	TYPE	CKT
1	P	(E) EM LTG UNIT	35 A	2	1,500			360			1	20 A	(E) RECPT	R	2
3						1,500			500		1	20 A	(E) TELEPHONE	R	4
5		SPARE	20 A	1						500	1	20 A	(E) FACP	P	6
7		SPARE	20 A	1									SPACE		8
9		LLD ALARM	20 A	1		400							SPACE		10
11		LLD CONTROLLER	20 A	1			400						SPACE		12
13		SPACE											SPACE		14
15		SPACE											SPACE		16
17		SPACE											SPACE		18
19		SPACE											SPACE		20
21		SPACE											SPACE		22
23		SPACE											SPACE		24
25															26
27		MAIN	50 A	3											28
29															30
31															32
33															34
35															36
37															38
39															40
41															42
					1,500	1,900	400	360	500	500					

TOTAL ØA = 1,860 VOLT-AMPS
TOTAL ØB = 2,400 VOLT-AMPS
TOTAL ØC = 900 VOLT-AMPS

TOTAL PANEL = 5,160 VA @ 208V, 3Ø = **14.3 AMPS** [1]

NON-SEGREGATED, NOT CURRENTLY COMPLIANT WITH CEC 517.31(A).

(E) PANEL: PC

LOCATION : BUILDING 11 **VOLTAGE/PHASE :** 120/208V, 3Ø, 4W **FED FROM :** (E) PB
FLOOR : LEVEL 1 **BUS AMPS :** 225A **MAIN BUS RATING :** 10 KAIC
MOUNTING : SURFACE **MAIN BREAKER :** MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	BKR/POLE		LOADS	TYPE	CKT
1	M	(E) FUEL PUMP	20 A	2	500			300			1	20 A	(E) MECH CTR DT CONT	M	2
3						500			360		1	20 A	(E) ELEC RMS RBC	R	4
5	M	(E) FUEL PUMP 2	20 A	2			500			100	1	20 A	(E) FUEL ALARM	P	6
7					500						1	20 A	SPARE		8
9	P	(E) STAT. BATT.	30A	2		1,800			200		1	20 A	(E) CONTROL CVB CC	P	10
11							1,800			200	1	20 A	(E) CONTROL VT CVB	P	12
13		SPARE	20 A	1	0			1,520			1	20 A	(E) LTG 101, 102	L	14
15	M	(E) EF-1	20 A	1		500			1,360		1	20 A	(E) LTG 102	L	16
17		SPARE	20 A	1			0				1	20 A	SPARE		18
19		SPARE	30A	1	0						1	20 A	(E) FUEL CONT. RELAY	P	20
21	M	(E) G5 PUMP	20 A	1		1,200			1,200		1	20 A	(E) LTG 104	L	22
23	P	(E) G5 BATT CHGR	20 A	1			1,200			800	1	20 A	(E) LTG 104	L	24
25	P	(E) G5 HTR JWH	30 A	1	1,800			1,500			1	20 A	(E) LTG 103, 4, 6	L	26
27	P	(E) G5 HTR JWH	30 A	1		1,800			1,800		1	20 A	(E) EXTERIOR LTG	L	28
29	P	(E) G5 HTR GEN SPACE	20 A	2			1,200			1,200	1	20 A	(E) G6 PUMP	M	30
31					1,200			1,200			1	20 A	(E) G6 BATT CHGR	P	32
33		SPACE	-	-					1,800		1	30 A	(E) G6 HTR JWH	P	34
35		SPACE	-	-						1,800	1	30 A	(E) G6 HTR JWH	P	36
37		SPACE	-	-							2	20 A	(E) G6 HTR GEN SPACE	P	38
39		SPACE	-	-					1,200						40
41		SPACE	-	-							-	-	SPACE		42
					4,000	5,800	4,700	4,520	7,920	4,100					

TOTAL ØA = 8,520 VOLT-AMPS
TOTAL ØB = 13,720 VOLT-AMPS
TOTAL ØC = 8,800 VOLT-AMPS

TOTAL PANEL = 31,040 VA @ 208V, 3Ø = **86.2 AMPS** [1]

NON-SEGREGATED, NOT CURRENTLY COMPLIANT WITH CEC 517.31(A).

(E) PANEL: PB

LOCATION : BUILDING 11 **VOLTAGE/PHASE :** 120/208V, 3Ø, 4W **FED FROM :** (E) HOUSE XFMR
FLOOR : LEVEL 1 **BUS AMPS :** 400A **RATING :** 10 KAIC
MOUNTING : SURFACE **MAIN BREAKER :** MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	BKR/POLE		LOADS	TYPE	CKT
1								1,000			1	20 A	(E) G2 BATT	P	2
3						13,720			200		1	20 A	(E) G2 TANK	P	4
5										1,000	1	20 A	(E) G2 HTR	P	6
7		PANEL PC	150A	3	8,520			1,656			1	20 A	(E) G2 PUMP	M	8
9									2,500		1	30 A	(E) G2 HTR JWR	P	10
11							7,600			2,500	1	30 A	(E) G2 HTR JWR	P	12
13	P	(E) G3 HTR	20 A	1	1,000			1,000			1	20 A	(E) G4 HTR	P	14
15	P	(E) G3 BATT	20 A	1		1,000			1,000		1	20 A	(E) G4 BATT	P	16
17	P	(E) G3 TANK	20 A	1			200			200	1	20 A	(E) G4 TANK	P	18
19	M	(E) G3 PUMP	20 A	1	1,656			1,656			1	20 A	(E) G4 PUMP	M	20
21	P	(E) G3 HTR JWR	30 A	1		2,500			2,500		1	30 A	(E) G4 HTR JWR	P	22
23	P	(E) G3 HTR JWR	30 A	1			2,500			2,500	1	30 A	(E) G4 HTR JWR	P	24
25					3,213			1,000			1	20 A	(E) G1 HTR		26
27	M	(E) HP-1	40 A	3		3,213			1,000		1	20 A	(E) G1 BATT		28
29							3,213			200	1	20 A	(E) G1 TANK		30
31	M	(E) FC-1	20 A	2	562			1,656			1	20 A	(E) G1 PUMP		32
33						562			2,500		1	30 A	(E) G1 HTR JWR		34
35		SPACE	-	-						2,500	1	30 A	(E) G1 HTR JWR		36
37		SPACE	-	-							1	20 A	SPARE		38
39		SPACE	-	-							1	20 A	SPARE		40
41		SPACE	-	-						1,000	1	20 A	EXIST. SERV	P	42
					14,951	20,995	13,513	7,968	9,700	9,900					

TOTAL ØA = 22,919 VOLT-AMPS
TOTAL ØB = 30,695 VOLT-AMPS
TOTAL ØC = 23,413 VOLT-AMPS

TOTAL PANEL = 77,027 VA @ 208V, 3Ø = **214.0 AMPS** [2]

GENERAL NOTES

1. REFER TO SHEET DU2-006 FOR STEP SEQUENCE.

NOTES

1 POWER METER READING FROM 02/20/2024 TO 02/26/2024 INCLUDING 125% DEMAND FACTOR.

2 POWER METER READING FROM 02/20/2024 TO 02/26/2024 INCLUDING 125% DEMAND FACTOR SHOWS PANEL PB AT 162 AMPS. CONNECTED LOADS ARE SHOWN ON THE SCHEDULE.

RBB ARCHITECTS INC

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REGISTERED PROFESSIONAL ENGINEER — JASON K. CHOU — No. E21060 — ELECTRICAL — STATE OF CALIFORNIA
SIGNED: 04/02/2024

LICENSED ARCHITECT — KEVIN S. BOOTS — RC-30500 — 08/31/2025 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
04/01/2025	4	HCAI BACKCHECK 3
03/14/2025	A	ADDENDUM A
01/31/2025	3	HCAI BACKCHECK 2
10/25/2024	2	HCAI BACKCHECK 1
06/13/2024	1	HCAI SUBMITTAL
04/18/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER
PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712105 SCALE:

DESCRIPTION
EXISTING PANEL SCHEDULES

DU2-401.1

Print Date: 4/9/2025 6:06:27 PM

NON-SEGREGATED

(E) PANEL: LSA

LOCATION : BUILDING 11 | VOLTAGE/PHASE: 120/208V, 3Ø, 4W | FED FROM : HOUSE XFMR
FLOOR : LEVEL 1 | BUS AMPS : 100A | MAIN BUS RATING : 10 KAIC
MOUNTING : SURFACE | MAIN BREAKER : 50A/3P

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	B	C	VOLT-AMPS A	B	C	BKR/POLE		LOADS	TYPE	CKT
1		SPARE	35 A	2							1	20 A	SPARE		2
3											1	20 A	SPARE		4
5		SPARE	20 A	1							1	20 A	SPARE		6
7		SPARE	20 A	1									SPACE		8
9		SPARE	20 A	1									SPACE		10
11													SPACE		12
13													SPACE		14
15													SPACE		16
17													SPACE		18
19													SPACE		20
21													SPACE		22
23													SPACE		24
25															
27		MAIN	50 A	3											
29															
					0	0		0	0	0					

TOTAL ØA = 0 VOLT-AMPS
TOTAL ØB = 0 VOLT-AMPS
TOTAL ØC = 0 VOLT-AMPS
LCL = 0 VOLT-AMPS

TOTAL PANEL = 0 VA @ 208V, 3Ø = **0 AMPS**

NON-SEGREGATED

(E) PANEL: PC

LOCATION : BUILDING 11 | VOLTAGE/PHASE : 120/208V, 3Ø, 4W | FED FROM : (E) PB
FLOOR : LEVEL 1 | BUS AMPS : 225A | MAIN BUS RATING : 10 KAIC
MOUNTING : SURFACE | MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	B	C	VOLT-AMPS A	B	C	BKR/POLE		LOADS	TYPE	CKT
1	M	(E) FUEL PUMP	20 A	2	500			300			1	20 A	(E) MECH CTR DT CONT	M	2
3						500			360		1	20 A	(E) ELEC RMS RBC	R	4
5	M	(E) FUEL PUMP 2	20 A	2			500			100	1	20 A	(E) FUEL ALARM	P	6
7					500			360			1	20 A	(E) RECPT	R	8
9	P	(E) STAT. BATT.	30A	2		1,800			200		1	20 A	(E) CONTROL CVB CC	P	10
11							1,800			200	1	20 A	(E) CONTROL VT CVB	P	12
13		(E) LLD ALARM	20 A	1	400			1,520			1	20 A	(E) LTG 101, 102	L	14
15	M	(E) EF-1	20 A	1		500			1,360		1	20 A	(E) LTG 102	L	16
17		(E) LLD CONTROLLER	20 A	1			400			500	1	20 A	(E) FACP	P	18
19		SPARE	30A	1	500						1	20 A	(E) FUEL CONT. RELAY	P	20
21	M	(E) G5 PUMP	20 A	1		1,200			1,200		1	20 A	(E) LTG 104	L	22
23	P	(E) G5 BATT CHGR	20 A	1			1,200			800	1	20 A	(E) LTG 104	L	24
25	P	(E) G5 HTR JWH	30 A	1	1,800			1,500			1	20 A	(E) LTG 103, 4, 6	L	26
27	P	(E) G5 HTR JWH	30 A	1		1,800			1,800		1	20 A	(E) EXTERIOR LTG	L	28
29	P	(E) G5 HTR GEN SPACE	20 A	1			1,200			1,200	1	20 A	(E) G6 PUMP	M	30
31					1,200			1,200			1	20 A	(E) G6 BATT CHGR	P	32
33	R	(E) TELEPHONE	20 A	1		500			1,800		1	30 A	(E) G6 HTR JWH	P	34
35	P	(E) EM LTG UNIT	35 A	2			1,500			1,800	1	30 A	(E) G6 HTR JWH	P	36
37					1,500						2	20 A	(E) G6 HTR GEN SPACE	P	38
39		SPACE	-	-					1,200						40
41		SPACE	-	-							-	-	SPACE		42
					6,400	6,300	6,600	4,880	7,920	4,600					

TOTAL ØA = 11,280 VOLT-AMPS
TOTAL ØB = 14,220 VOLT-AMPS
TOTAL ØC = 11,200 VOLT-AMPS

TOTAL PANEL = 36,700 VA @ 208V, 3Ø = **101.9 AMPS**

1 INC 2 MILESTONE 1 - STEP C

SCALE: NONE

GENERAL NOTES

1. REFER TO SHEET DU2-006 FOR STEP SEQUENCE.
2. MOVING 120/208 VOLT LOADS BETWEEN PANELS SHALL BE DONE ONE AT A TIME TO MINIMIZE THE LOSS OF FUNCTION. IF THE GENERATORS START FINISH PUTTING ONE LOAD IN PROGRESS ON THE NEW PANEL OR PUT IT BACK ON THE ORIGINAL PANEL OF WHAT IS QUICKER.

NOTES

1. IN THIS STEP MOVE LOAD FROM PANEL LSA TO PANEL PC.
2. IN THIS STEP ADD BREAKER WITH AMP RATING AS SHOWN TO PANEL PC THAT IS THE SAME MANUFACTURER AND SHORT CIRCUIT RATING AS THE ORIGINAL PANEL PC. MOVE LOAD FROM PANEL LSA TO PANEL PC.
3. MOVE LOADS THAT WAS ORIGINALLY ON PANEL LSA TO PANEL 011-01-LLS-PNL-01 IN THIS STEP.
4. MOVE LOADS FROM PANEL 011-01-LLS-PNL-02 (PB) TO 011-01-LEQ-PNL-01.
5. MOVE LOADS FROM PANEL 011-01-LLS-PNL-03 (PC) TO 011-01-LEQ-PNL-01.
6. MOVE LOADS FROM PANEL 011-01-LLS-PNL-03 (PC) TO 011-01-LCR-PNL-01.
7. MOVE LOADS FROM PANEL 011-01-LLS-PNL-03 (PC) TO 011-01-LLS-PNL-01.
8. INSTALL LISTED SURGE PROTECTION DEVICES.
9. PROVIDE PANEL WITH LISTED SURGE PROTECTION DEVICES.

9 EQUIPMENT BRANCH

PANEL: 011-01-LEQ-PNL-01

LOCATION : BUILDING 11 | VOLTAGE/PHASE : 120/208V, 3Ø, 4W | FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVE... | BUS AMPS : 225A | RATING : 10 KAIC
MOUNTING : SURFACE | MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	B	C	VOLT-AMPS A	B	C	BKR/POLE		LOADS	TYPE	CKT
1		SPARE	20 A	1							1	20 A	SPARE		2
3		SPARE	15 A	2							2	15 A	SPARE		4
5															6
7		SPARE	35 A	2							2	35 A	SPARE		8
9															10
11		SPARE	15 A	12							2	15 A	SPARE		12
13															14
15	M	(E) EF-1	20 A	1		500					1	20 A	SPARE		16
17		SPARE	20 A	1							1	20 A	SPARE		18
19					3,213						1	20 A	SPARE		20
21	M	(E) HP-1	40 A	3		3,213					1	20 A	SPARE		22
23							3,213				1	20 A	SPARE		24
25	M	(E) FC-1	20 A	2	562						1	20 A	SPARE		26
27						562					1	20 A	SPARE		28
29		SPARE	20 A	1							1	20 A	SPARE		30
31		SPARE	20 A	1							1	20 A	SPARE		32
33		SPARE	20 A	1							1	20 A	SPARE		34
35	P	EXIST. SERV	20 A	1			1,000				1	20 A	SPARE		36
37		SPARE	20 A	1							1	20 A	SPARE		38
39		SPARE	20 A	1							1	20 A	SPARE		40
41		SPARE	20 A	1							1	20 A	SPARE		42
					3,775	4,275	4,213	0	0	0					

TOTAL ØA = 3,775 VOLT-AMPS
TOTAL ØB = 4,275 VOLT-AMPS
TOTAL ØC = 4,213 VOLT-AMPS
LCL = 125 VOLT-AMPS

TOTAL PANEL = 12,388 VA @ 208V, 3Ø = **34.4 AMPS**

9 CRITICAL BRANCH

PANEL: 011-01-LCR-PNL-01

LOCATION : BUILDING 11 | VOLTAGE/PHASE : 120/208V, 3Ø, 4W | FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVE... | BUS AMPS : 225A | RATING : 10 KAIC
MOUNTING : SURFACE | MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	B	C	VOLT-AMPS A	B	C	BKR/POLE		LOADS	TYPE	CKT
1		SPARE	20 A	1							1	20 A	SPARE		2
3		SPARE	20 A	1							1	20 A	SPARE		4
5		SPARE	20 A	1							1	20 A	SPARE		6
7		SPARE	20 A	1							1	20 A	SPARE		8
9		SPARE	20 A	1							1	20 A	SPARE		10
11		SPARE	20 A	1							1	20 A	SPARE		12
13		SPARE	20 A	1				1,520			1	20 A	(E) LTG 101, 102	L	14
15		SPARE	20 A	1					1,360		1	20 A	(E) LTG 102	L	16
17		SPARE	20 A	1							1	20 A	SPARE		18
19		SPARE	20 A	1							1	20 A	SPACE		20
21		SPARE	20 A	1					1,200		1	20 A	(E) LTG 104	L	22
23		SPARE	20 A	1						800	1	20 A	(E) LTG 104	L	24
25		SPARE	20 A	1				1,800			1	20 A	(E) LTG 103, 4, 6	L	26
27		SPARE	20 A	1					1,800		1	20 A	(E) EXTERIOR LTG	L	28
29		SPARE	20 A	1							1	20 A	SPARE		30
31		SPACE											SPACE		32
33		SPACE											SPACE		34
35		SPACE											SPACE		36
					0	0	0	3,320	4,360	800					

TOTAL ØA = 3,320 VOLT-AMPS
TOTAL ØB = 4,360 VOLT-AMPS
TOTAL ØC = 800 VOLT-AMPS
LCL = 900 VOLT-AMPS

TOTAL PANEL = 9,380 VA @ 208V, 3Ø = **26.1 AMPS**

9

PANEL: 011-01-LLS-PNL-01

LOCATION : BUILDING 11 | VOLTAGE/PHASE : 120/208V, 3Ø, 4W | FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVE... | BUS AMPS : 225A | RATING : 10 KAIC
MOUNTING : SURFACE | MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	B	C	VOLT-AMPS A	B	C	BKR/POLE		LOADS	TYPE	CKT
1		SPARE	20 A	1				360			1	20 A	(E) RECPT	R	2
3		SPARE	20 A	1					500		1	20 A	(E) TELEPHONE	R	4
5		SPARE	40 A	1						500	1	20 A	(E) FACP	P	6
7		SPARE	20 A	1				300			1	20 A	(E) MECH CTR DT CONT	M	8
9		LLD ALARM	20 A	1		400			360		1	20 A	(E) ELEC RMS RBC	R	10
11		LLD CONTROLLER	20 A	1			400				1	20 A	SPERE		12
13		SPARE	15 A	3							1	20 A	SPARE		14
15											1	20 A	SPARE		16
17											1	20 A	SPARE		18
19		SPARE	30 A	2				1,500			2	35 A	(E) EM LTG INVERTER	P	20
21									1,500						22
23	P	(E) CONTROL VT CVB	20 A	1				200			1	20 A	SPARE		24
25	P	(E) FUEL CONT. RELAY	20 A	1	100										26
27	P	(E) CONTROL CVB CC	20 A	1		200					3	50 A	SPARE		28
29	P	(E) FUEL ALARM	20 A	1			100								30
31	M	(E) FUEL PUMP	20 A	2	500						3	50 A	SPARE		32
33						500									34
35	M	(E) FUEL PUMP 2	20 A	2			500				1	20 A	SPARE		36
37					500										38
39		SPARE	20 A	2					1,800		2	30 A	(E) STAT. BATT.	P	40
41										1,800					42
					1,100	1,100	1,200	2,160	4,160	2,300					

TOTAL ØA = 3,260 VOLT-AMPS
TOTAL ØB = 5,260 VOLT-AMPS
TOTAL ØC = 3,500 VOLT-AMPS

TOTAL PANEL = 12,020 VA @ 208V, 3Ø = **33.4 AMPS**

8

(E) PANEL: 011-01-LLS-PNL-02 (PB)

LOCATION : BUILDING 11 | VOLTAGE/PHASE : 120/208V, 3Ø, 4W | FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVE... | BUS AMPS : 400A | RATING : 10 KAIC
MOUNTING : SURFACE | MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	B	C	VOLT-AMPS A	B	C	BKR/POLE		LOADS	TYPE	CKT
1		SPARE	150A	3				1,000			1	20 A	(E) G2 BATT	P	2
3									200		1	20 A	(E) G2 TANK	P	4
5										1,000	1	20 A	(E) G2 HTR	P	6
7								1,656			1	20 A	(E) G2 PUMP	M	8
9									2,500		1	30 A	(E) G2 HTR JWR	P	10
11										2,500	1	30 A	(E) G2 HTR JWR	P	12
13	P	(E) G3 HTR	20 A	1	1,000			1,000			1	20 A	(E) G4 HTR	P	14
15	P	(E) G3 BATT	20 A	1		1,000			1,000		1	20 A	(E) G4 BATT	P	16
17	P	(E) G3 TANK	20 A	1			200			200	1	20 A	(E) G4 TANK	P	18
19	M	(E) G3 PUMP	20 A	1	1,656			1,656			1	20 A	(E) G4 PUMP	M	20
21	P	(E) G3 HTR JWR	30 A	1		2,500			2,500		1	30 A	(E) G4 HTR JWR	P	22
23	P	(E) G3 HTR JWR	30 A	1			2,500			2,500	1	30 A	(E) G4 HTR JWR	P	24
25		SPARE	40 A	3				1,000			1	20 A	(E) G1 HTR		26
27									1,000		1	20 A	(E) G1 BATT		28
29										200	1	20 A	(E) G1 TANK		30
31		SPARE	20 A	2				1,656			1	20 A	(E) G1 PUMP		32
33									2,500		1	30 A	(E) G1 HTR JWR		34
35		SPACE	-	-						2,500	1	30 A	(E) G1 HTR JWR		36
37		SPACE	-	-							1	20 A	SPARE		38
39		SPACE	-	-							1	20 A	SPARE		40
41		SPACE	-	-							1	20 A	SPARE		42
					2,656	3,500	2,700	7,968	9,700	8,900					

TOTAL ØA = 10,624 VOLT-AMPS
TOTAL ØB = 13,200 VOLT-AMPS
TOTAL ØC = 11,600 VOLT-AMPS

TOTAL PANEL = 35,424 VA @ 208V, 3Ø = **98.4 AMPS**

8

(E) PANEL: 011-01-LLS-PNL-03 (PC)

LOCATION : BUILDING 11 | VOLTAGE/PHASE : 120/208V, 3Ø, 4W | FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVEL 1 | BUS AMPS : 225A | MAIN BUS... 10 KAIC
MOUNTING : SURFACE | MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	B	C	VOLT-AMPS A	B	C	BKR/POLE		LOADS	TYPE	CKT
1		SPARE	20 A	2							1	20 A	SPARE		2
3											1	20 A	SPARE		4
5		SPARE	20 A	2							1	20 A	SPARE		6
7											1	20 A	SPARE		8
9		SPARE	30A	2							1	20 A	SPARE		10
11											1	20 A	SPARE		12
13		SPARE	20 A	1							1	20 A	SPARE		14
15		SPARE	20 A	1							1	20 A	SPARE		16
17		SPARE	20 A	1							1	20 A	SPARE		18
19		SPARE	30A	1							1	20 A	SPARE		20
21	M	(E) G5 PUMP	20 A	1			1,200				1	20 A	SPARE		22
23	P	(E) G5 BATT CHGR	20 A	1				1,200			1	20 A	SPARE		24
25	P	(E) G5 HTR JWH	30 A	1	1,800						1	20 A	SPARE		26
27	P	(E) G5 HTR JWH	30 A	1		1,800					1	20 A	SPARE		28
29	P	(E) G5 HTR GEN SPACE	20 A	2			1,200			1,200	1	20 A	(E) G6 PUMP	M	30
31					1,200			1,200			1	20 A	(E) G6 BATT CHGR	P	32
33		SPARE	20 A	1						1,800	1	30 A	(E) G6 HTR JWH	P	34
35		SPARE	35 A	2						1,800	1	30 A	(E) G6 HTR JWH	P	36
37								1,200			2	20 A	(E) G6 HTR GEN SPACE	P	38
39		SPACE	-	-					1,200						40
41		SPACE	-	-							-	-	SPACE		42
					3,000	3,000	2,400	2,400	3,000	3,000					

TOTAL ØA = 5,400 VOLT-AMPS
TOTAL ØB = 6,000 VOLT-AMPS
TOTAL ØC = 5,400 VOLT-AMPS

TOTAL PANEL = 16,800 VA @ 208V, 3Ø = **46.7 AMPS**

9

PANEL: 011-01-LEP-PNL-01

LOCATION : BUILDING 11 | VOLTAGE/PHASE : 120/20... | FED FROM : 120/208V, 3Ø, 4W
FLOOR : LEVEL 1 | BUS AMPS : 800A | MAIN BUS RATING : 10 KAIC
MOUNTING : SURFACE | MAIN BREAKER : 500A...

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS
1		250AF SPACE	-	3	
2		250AF SPACE	-	3	
3		250AF SPACE	-	3	
4		250AF SPACE	-	3	
5		011-01-LEQ-PNL-01	225	3	12,388
6		011-01-LCR-PNL-01	150	3	9,380
7		011-01-LLS-PNL-01	225	3	12,020
8		011-01-LLS-PNL-02 (PB)	225	3	35,424
9		011-01-LLS-PNL-03 (PC)	225	3	15,600
10		250AF SPACE	-	3	
11		250AF SPACE	-	3	
12		250AF SPACE	-	3	
					84,812

TOTAL PANEL = 84,812 VA @ 208V, 3Ø = **235.6 AMPS**

2 INC 2 MILESTONE 1 - STEP F

SCALE: NONE

Print Date: 4/14/2025 5:54:10 PM

RBB ARCHITECTS INC

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REGISTERED PROFESSIONAL ENGINEER — JASON K. CHAN — No. E21060 — ELECTRICAL — STATE OF CALIFORNIA
SIGNED: 04/02/2024

LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 08/31/2023 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

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San Diego // San Jose // Seattle
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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
04/01/2025	4	HCAI BACKCHECK 3
03/14/2025	A	ADDENDUM A
01/31/2025	3	HCAI BACKCHECK 2
10/25/2024	2	HCAI BACKCHECK 1
06/13/2024	1	HCAI SUBMITTAL
04/18/2024	-	HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712105 SCALE:

DESCRIPTION
PHASING PANEL SCHEDULES

DU2-401.2

GENERAL NOTES

1. REFER TO SHEET DU2-006 FOR STEP SEQUENCE.

NOTES

1. MOVE LOAD FROM PANEL 011-01-LLS-PNL-02 TO PANEL 011-01-LLS-PNL-03.
2. WHEN ADDING LOAD FROM PANEL 011-01-LSS-PNL-03 CHANGE BREAKER WITH AMP RATING AS SHOWN TO PANEL 011-01-LCR-PNL-02 THAT IS THE SAME MANUFACTURERS AND SHORT CIRCUIT RATING AS THE ORIGINAL PANEL 011-01-LLS-02.
3. MOVE LOADS BACK FROM PANEL 011-01-LLS-PNL-03 TO 011-01-LSS-PNL-02.
4. IN PANEL 011-01-LLS-PNL-03 CHANGE BREAKERS IN 1, 3, 5, 7 WITH AMP RATING AS SHOWN WITH THE SAME MANUFACTURERS AND SHORT CIRCUIT RATING AS 011-01-LLS-PNL-03.
5. LOADS ARE IN BUILDING 10. LIGHTING, FACP, AND GEN CONTROL PANEL.
6. LOADS ARE IN BUILDING 10. LIGHTING, RECEPTACLES, AND SPARE.

LIFE SAFETY BRANCH

(E) PANEL: 011-01-LLS-PNL-03 (PC)

LOCATION : BUILDING 11 — VOLTAGE/PHASE : 120/208V, 3Ø,... — FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVEL 1 — BUS AMPS : 225A — MAIN BUS... 10 KAIC
MOUNTING : SURFACE — MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	BKR/POLE		LOADS	TYPE	CKT
1								1,000			1	20 A	(E) G3 HTR	P	2
3		SPARE	50 A	3					1,000		1	20 A	(E) G3 BATT	P	4
5										20	1	20 A	(E) G3 TANK	P	6
7		SPARE	20 A	1				1,656			1	20 A	(E) G3 PUMP	M	8
9		SPARE	30A	2					2,500		1	30 A	(E) G3 HTR JWR	P	10
11										2,500	1	30 A	(E) G3 HTR JWR	P	12
13		SPARE	20 A	1				1,000			1	20 A	(E) G4 HTR	P	14
15		SPARE	20 A	1					1,000		1	20 A	(E) G4 BATT	P	16
17		SPARE	20 A	1						200	1	20 A	(E) G4 TANK	P	18
19		SPARE	30A	1							1	20 A	(E) G4 PUMP	M	20
21	M	(E) G5 PUMP	20 A	1		1,200		1,656	2,500		1	30 A	(E) G4 HTR JWR	P	22
23	P	(E) G5 BATT CHGR	20 A	1			1,200			2,500	1	30 A	(E) G4 HTR JWR	P	24
25	P	(E) G5 HTR JWH	30 A	1	1,800						1	20 A	SPARE		26
27	P	(E) G5 HTR JWH	30 A	1		1,800					1	20 A	SPARE		28
29	P	(E) G5 HTR GEN SPACE	20 A	2			1,200			1,200	1	20 A	(E) G6 PUMP	M	30
31					1,200			1,200			1	20 A	(E) G6 BATT CHGR	P	32
33		SPARE	20 A	1					1,800		1	30 A	(E) G6 HTR JWH	P	34
35		SPARE	35 A	2						1,800	1	30 A	(E) G6 HTR JWH	P	36
37											2	20 A	(E) G6 HTR GEN SPACE	P	38
39		SPACE	-	-					1,200						40
41		SPACE	-	-							-	-	SPACE		42
					3,000	3,000	2,400	6,512	10,000	8,220					

TOTAL ØA = 9,512 VOLT-AMPS
TOTAL ØB = 13,000 VOLT-AMPS
TOTAL ØC = 10,620 VOLT-AMPS

TOTAL PANEL = 33,132 VA @ 208V, 3Ø = **92.0 AMPS**

LIFE SAFETY BRANCH

(E) PANEL: 011-01-LLS-PNL-02 (PB)

LOCATION : BUILDING 11 — VOLTAGE/PHASE : 120/208V, 3Ø, 4W — FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVE... — BUS AMPS : 400A — RATING : 10 KAIC
MOUNTING : SURFACE — MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	BKR/POLE		LOADS	TYPE	CKT
1								1,000			1	20 A	(E) G2 BATT	P	2
3		SPARE	150A	3					200		1	20 A	(E) G2 TANK	P	4
5										1,000	1	20 A	(E) G2 HTR	P	6
7								1,656			1	20 A	(E) G2 PUMP	M	8
9									2,500		1	30 A	(E) G2 HTR JWR	P	10
11										2,500	1	30 A	(E) G2 HTR JWR	P	12
13		SPARE	20 A	1							1	20 A	SPARE		14
15		SPARE	20 A	1							1	20 A	SPARE		16
17		SPARE	20 A	1							1	20 A	SPARE		18
19		SPARE	20 A	1							1	20 A	SPARE		20
21		SPARE	30 A	1							1	30 A	SPARE		22
23		SPARE	30 A	1							1	30 A	SPARE		24
25								1,000			1	20 A	(E) G1 HTR		26
27		SPARE	40 A	3					1,000		1	20 A	(E) G1 BATT		28
29										200	1	20 A	(E) G1 TANK		30
31								1,656			1	20 A	(E) G1 PUMP		32
33		SPARE	20 A	2					2,500		1	30 A	(E) G1 HTR JWR		34
35		SPACE	-	-						2,500	1	30 A	(E) G1 HTR JWR		36
37		SPACE	-	-							1	20 A	SPARE		38
39		SPACE	-	-							1	20 A	SPARE		40
41		SPACE	-	-							1	20 A	SPARE		42
					0	0	0	5,312	6,200	6,200					

TOTAL ØA = 5,312 VOLT-AMPS
TOTAL ØB = 6,200 VOLT-AMPS
TOTAL ØC = 6,200 VOLT-AMPS

TOTAL PANEL = 17,712 VA @ 208V, 3Ø = **49.2 AMPS**

(E) PANEL: 011-01-LLS-PNL-02 (PB)

LOCATION : BUILDING 11 — VOLTAGE/PHASE : 120/208V, 3Ø, 4W — FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVE... — BUS AMPS : 400A — RATING : 10 KAIC
MOUNTING : SURFACE — MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	BKR/POLE		LOADS	TYPE	CKT
1								1,000			1	20 A	(E) G2 BATT	P	2
3		SPARE	150A	3					200		1	20 A	(E) G2 TANK	P	4
5										1,000	1	20 A	(E) G2 HTR	P	6
7								1,656			1	20 A	(E) G2 PUMP	M	8
9									2,500		1	30 A	(E) G2 HTR JWR	P	10
11										2,500	1	30 A	(E) G2 HTR JWR	P	12
13	P	(E) G3 HTR	20 A	1	1,000						1	20 A	SPARE		14
15	P	(E) G3 BATT	20 A	1		1,000					1	20 A	SPARE		16
17	P	(E) G3 TANK	20 A	1			200				1	20 A	SPARE		18
19	M	(E) G3 PUMP	20 A	1	1,656						1	20 A	SPARE		20
21	P	(E) G3 HTR JWR	30 A	1		2,500					1	30 A	SPARE		22
23	P	(E) G3 HTR JWR	30 A	1			2,500				1	30 A	SPARE		24
25								1,000			1	20 A	(E) G1 HTR		26
27		SPARE	40 A	3					1,000		1	20 A	(E) G1 BATT		28
29										200	1	20 A	(E) G1 TANK		30
31								1,656			1	20 A	(E) G1 PUMP		32
33		SPARE	20 A	2					2,500		1	30 A	(E) G1 HTR JWR		34
35		SPACE	-	-						2,500	1	30 A	(E) G1 HTR JWR		36
37		SPACE	-	-							1	20 A	SPARE		38
39		SPACE	-	-							1	20 A	SPARE		40
41		SPACE	-	-							1	20 A	SPARE		42
					2,656	3,500	2,700	5,312	6,200	6,200					

TOTAL ØA = 7,968 VOLT-AMPS
TOTAL ØB = 9,700 VOLT-AMPS
TOTAL ØC = 8,900 VOLT-AMPS

TOTAL PANEL = 26,568 VA @ 208V, 3Ø = **73.8 AMPS**

1 INC 2 MILESTONE 1 - STEP H & I
SCALE: NONE

2 INC 2 MILESTONE 1 - STEP K
SCALE: NONE

PANEL: 011-01-LEQ-PNL-01

LOCATION : BUILDING 11 — VOLTAGE/PHASE : 120/208V, 3Ø, 4W — FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVE... — BUS AMPS : 225A — RATING : 10 KAIC
MOUNTING : SURFACE — MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	BKR/POLE		LOADS	TYPE	CKT
1	P	HVAC CONTROL PANEL	20 A	1	600			60			1	20 A	CONDENSATE PUMPS	P	2
3	M	FC-1A	15 A	2		741			62		2	15 A	FC-2A	M	4
5	M						741			62				M	6
7	M	HP-1	35 A	2	2,413			1,976			2	35 A	HP-2	M	8
9	M					2,413			1,976					M	10
11	M	FC-1B	15 A	12			42			62	2	15 A	FC-2B	M	12
13	M				42			62						M	14
15	M	(E) EF-1	20 A	1		500					1	20 A	SPARE		16
17		SPARE	20 A	1							1	20 A	SPARE		18
19		SPARE	40 A	3							1	20 A	SPARE		20
21											1	20 A	SPARE		22
23											1	20 A	SPARE		24
25		SPARE	20 A	2							1	20 A	SPARE		26
27											1	20 A	SPARE		28
29		SPARE	20 A	1							1	20 A	SPARE		30
31		SPARE	20 A	1							1	20 A	SPARE		32
33		SPARE	20 A	1							1	20 A	SPARE		34
35	P	EXIST. SERV	20 A	1				1,000			1	20 A	SPARE		36
37	R	REC SWGR ER ROOM	20 A	1	540						1	20 A	SPARE		38
39	R	REC GEN ROOM	20 A	1		540					1	20 A	SPARE		40
41	R	REC GEN ROOM	20 A	1			540				1	20 A	SPARE		42
					3,595	4,194	2,323	2,098	2,038	124					

TOTAL ØA = 5,693 VOLT-AMPS
TOTAL ØB = 6,232 VOLT-AMPS
TOTAL ØC = 2,447 VOLT-AMPS
LCL = 729 VOLT-AMPS

TOTAL PANEL = 15,101 VA @ 208V, 3Ø = **41.9 AMPS**

PANEL: 011-01-LCR-PNL-01

LOCATION : BUILDING 11 — VOLTAGE/PHASE : 120/208V, 3Ø, 4W — FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVE... — BUS AMPS : 225A — RATING : 10 KAIC
MOUNTING : SURFACE — MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	BKR/POLE		LOADS	TYPE	CKT
1	R	REC 12KV EM SWGR RM	20 A	1	720						1	20 A	IDF ENCLOSURE	P	2
3		SPARE	20 A	1							1	20 A	SPARE		4
5	L	010-01-LCR-BDS-01 - P1	20 A	1			167				1	20 A	SPARE		6
7	R, P	010-01-LCR-BDS-01 - P1	20 A	1	360						1	20 A	SPARE		8
9		SPARE	20 A	1							1	20 A	SPARE		10
11		SPARE	20 A	1							1	20 A	SPARE		12
13		SPARE	20 A	1				334			1	20 A	LTG GENERATOR RM	L	14
15		SPARE	20 A	1							1	20 A	SPARE		16
17		SPARE	20 A	1						1,168	1	20 A	LTG GENERATOR RM	L	18
19		SPARE	20 A	1							1	20 A	SPARE		20
21		SPARE	20 A	1					334		1	20 A	LTG GENERATOR RM	L	22
23		SPARE	20 A	1						1,001	1	20 A	LTG 12KV EM SWGR RM	L	24
25		SPARE	20 A	1				1,001			1	20 A	LTG 12KV EM SWGR RM	L	26
27		SPARE	20 A	1					1,800		1	20 A	(E) EXTERIOR LTG	L	28
29		SPARE	20 A	1							1	20 A	SPARE		30
31		SPACE											SPACE		32
33		SPACE											SPACE		34
35		SPACE											SPACE		36
					1,080	0	167	1,735	2,134	2,169					

TOTAL ØA = 2,815 VOLT-AMPS
TOTAL ØB = 2,134 VOLT-AMPS
TOTAL ØC = 2,336 VOLT-AMPS
LCL = 702 VOLT-AMPS

TOTAL PANEL = 7,587 VA @ 208V, 3Ø = **22.2 AMPS**

PANEL: 011-01-LLS-PNL-01

LOCATION : BUILDING 11 — VOLTAGE/PHASE : 120/208V, 3Ø, 4W — FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVE... — BUS AMPS : 225A — RATING : 10 KAIC
MOUNTING : SURFACE — MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	BKR/POLE		LOADS	TYPE	CKT
1	L, P	010-01-LLS-BDS-01 - P1	20 A	1	667				360		1	20 A	(E) RECPT	R	2
3	L	010-01-LLS-BDS-01 - P2	20 A	1			397			500	1	20 A	(E) TELEPHONE	R	4
5	P	010-01-LLS-BDS-01 - P3	40 A	1				1,200			1	20 A	(E) FACP	P	6
7		SPARE	20 A	1					300		1	20 A	(E) MECH CTR DT CONT	M	8
9		LLD ALARM	20 A	1			400			360	1	20 A	(E) ELEC RMS RBC	R	10
11		LLD CONTROLLER	20 A	1				400			1	20 A	SPERE		12
13		SPARE	15 A	3							1	20 A	SPARE		14
15											1	20 A	SPARE		16
17										65	1	20 A	EXTERIOR DOOR LTG		18
19		SPARE	30 A	2					1,500		2	35 A	(E) EM LTG INVERTER	P	20
21										1,500					22
23	P	(E) CONTROL VT CVB	20 A	1				200			1	20 A	SPARE		24
25	P	(E) FUEL CONT. RELAY	20 A	1	100										26
27	P	(E) CONTROL CVB CC	20 A	1		200					3	50 A	SPARE		28
29	P	(E) FUEL ALARM	20 A	1				100							30
31	M	(E) FUEL PUMP	20 A	2	500										32
33						500					3	50 A	SPARE		34
35	M	(E) FUEL PUMP 2	20 A	2			500								36
37					500						1	20 A	SPARE		38
39		SPARE	20 A	2					1,800		2	30 A	(E) STAT. BATT.	P	40
41										1,800					42
					1,767	1,497	2,400	2,160	4,160	2,365					

TOTAL ØA = 3,927 VOLT-AMPS
TOTAL ØB = 5,657 VOLT-AMPS
TOTAL ØC = 4,765 VOLT-AMPS

TOTAL PANEL = 14,349 VA @ 208V, 3Ø = **39.9 AMPS**

(E) PANEL: 011-01-LLS-PNL-02 (PB)

LOCATION : BUILDING 11 — VOLTAGE/PHASE : 120/208V, 3Ø, 4W — FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVE... — BUS AMPS : 400A — RATING : 10 KAIC
MOUNTING : SURFACE — MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	BKR/POLE		LOADS	TYPE	CKT
1								1,000			1	20 A	(E) G2 BATT	P	2
3		SPARE	150A	3					200		1	20 A	(E) G2 TANK	P	4
5										1,000	1	20 A	(E) G2 HTR	P	6
7								1,656			1	20 A	(E) G2 PUMP	M	8
9									2,500		1	30 A	(E) G2 HTR JWR	P	10
11										2,500	1	30 A	(E) G2 HTR JWR	P	12
13	P	(E) G3 HTR	20 A	1	1,000						1	20 A	SPARE		14
15	P	(E) G3 BATT	20 A	1		1,000					1	20 A	SPARE		16
17	P	(E) G3 TANK	20 A	1			200				1	20 A	SPARE		18
19	M	(E) G3 PUMP	20 A	1	1,656						1	20 A	SPARE		20
21	P	(E) G3 HTR JWR	30 A	1		2,500					1	30 A	SPARE		22
23	P	(E) G3 HTR JWR	30 A	1			2,500				1	30 A	SPARE		24
25								1,000			1	20 A	(E) G1 HTR		26
27		SPARE	40 A	3					1,000		1	20 A	(E) G1 BATT		28
29										200	1	20 A	(E) G1 TANK		30
31								1,656			1	20 A	(E) G1 PUMP		32
33		SPARE	20 A	2					2,500		1	30 A	(E) G1 HTR JWR		34
35		SPACE	-	-						2,500	1	30 A	(E) G1 HTR JWR		36
37		SPACE	-	-							1	20 A	SPARE		38
39		SPACE	-	-							1	20 A	SPARE		40
41		SPACE	-	-							1	20 A	SPARE		42
					2,656	3,500	2,700	5,312	6,200	6,200					

TOTAL ØA = 7,968 VOLT-AMPS
TOTAL ØB = 9,700 VOLT-AMPS
TOTAL ØC = 8,900 VOLT-AMPS

TOTAL PANEL = 26,568 VA @ 208V, 3Ø = **73.8 AMPS**

(E) PANEL: 011-01-LLS-PNL-03 (PC)

LOCATION : BUILDING 11 — VOLTAGE/PHASE : 120/208V, 3Ø, 4W — FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVEL 1 — BUS AMPS : 225A — MAIN BUS... 10 KAIC
MOUNTING : SURFACE — MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	VOLT-AMPS A	VOLT-AMPS B	VOLT-AMPS C	BKR/POLE		LOADS	TYPE	CKT
1											1	20 A	SPARE	P	2
3		SPARE	50 A	3							1	20 A	SPARE	P	4
5											1	20 A	SPARE	P	6
7		SPARE	20 A	1							1	20 A	SPARE	M	8
9		SPARE	30A	2							1	30 A	SPARE	P	10
11											1	30 A	SPARE	P	12
13		SPARE	20 A	1				1,000			1	20 A	(E) G4 HTR	P	14
15		SPARE	20 A	1					1,000		1	20 A	(E) G4 BATT	P	16
17		SPARE	20 A	1						200	1	20 A	(E) G4 TANK	P	18
19		SPARE	30A	1				1,656			1	20 A	(E) G4 PUMP	M	20
21	M	(E) G5 PUMP	20 A	1		1,200			2,500		1	30 A	(E) G4 HTR JWR	P	22
23	P	(E) G5 BATT CHGR	20 A	1			1,200			2,500	1	30 A	(E) G4 HTR JWR	P	24
25	P	(E) G5 HTR JWH	30 A	1	1,800						1	20 A	SPARE		26
27	P	(E) G5 HTR JWH	30 A	1		1,800					1	20 A	SPARE		28
29	P	(E) G5 HTR GEN SPACE	20 A	2			1,200			1,200	1	20 A	(E) G6 PUMP	M	30
31					1,200			1,200			1	20 A	(E) G6 BATT CHGR	P	32
33		SPARE	20 A	1					1,800		1	30 A	(E) G6 HTR JWH	P	34
35		SPARE	35 A	2						1,800	1	30 A	(E) G6 HTR JWH	P	36
37								1,200			2	20 A	(E) G6 HTR GEN SPACE	P	38
39		SPACE	-	-					1,200						40
41		SPACE	-	-							-	-	SPACE		42
					3,000	3,000	2,400	5,056	6,500	5,700					

TOTAL ØA = 8,056 VOLT-AMPS
TOTAL ØB = 9,500 VOLT-AMPS
TOTAL ØC = 8,100 VOLT-AMPS

TOTAL PANEL = 25,656 VA @ 208V, 3Ø = **71.3 AMPS**

PANEL: 011-01-LEP-PNL-01

LOCATION : BUILDING 11 — VOLTAGE/PHASE : 120/20... — FED FROM : 120/208V, 3Ø, 4W
FLOOR : LEVEL 1 — BUS AMPS : 800A — MAIN BUS RATING : 10 KAIC
MOUNTING : SURFACE — MAIN BREAKER : 500A,...

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS
1		250AF SPACE	-	3	
2		250AF SPACE	-	3	
3		250AF SPACE	-	3	
4		250AF SPACE	-	3	
5		011-01-LEQ-PNL-01	225	3	15,101
6		011-01-LCR-PNL-01	150	3	7,587
7		011-01-LLS-PNL-01	225	3	14,284
8		011-01-LLS-PNL-02 (PB)	225	3	26,568
9		011-01-LLS-PNL-03 (PC)	225	3	24,456
10		250AF SPACE	-	3	
11		250AF SPACE	-	3	
12		250AF SPACE	-	3	
					87,996

TOTAL PANEL = 87,996 VA @ 208V, 3Ø = **24... AMPS**

3 INC 2 MILESTONE 1 - END OF STEP SEQUENCE
SCALE: NONE

Print Date: 4/15/2025 2:54:15 PM

RBB ARCHITECTS INC

Joseph A. Balbona, AIA
Sylvia Botero, AIA
Kevin S. Boots, AIA

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REGISTERED PROFESSIONAL ENGINEER — CARSON K. CHOW — No. E21060 — STATE ELECTRICAL — STATE OF CALIFORNIA — SIGNED: 04/02/2024

LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 08/31/2023 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

P2S ENG
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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
03/14/2025	A	ADDENDUM A
01/31/2025	3	HCAI BACKCHECK 2
10/25/2024	2	HCAI BACKCHECK 1
06/13/2024	1	HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712105 SCALE:

DESCRIPTION
PHASING PANEL SCHEDULES

DU2-401.3

PANEL: 011-01-LEQ-PNL-01 EQUIPMENT BRANCH

LOCATION: ELECTRICAL SWITCHGEAR | VOLTAGE/PHASE: 120/208 WYE,3PH,4W | FED FROM: 011-01-LEP-PNL-01
FLOOR: LEVEL 01 | BUS AMPS: 225 A | RATING: 10 KAIC
MOUNTING: SURFACE | MAIN BREAKER: MLO

CKT	TYPE	LOAD	BKR/POLE	A	B	C	A	B	C	BKR/POLE	LOAD	TYPE	CKT
1	P	P MECH CONTROLS PANEL	20 A 1	600			60			1 20 A	P CONDENSATE PUMPS	P	2
3	M	FC-1A	15 A 2		741			62		2 15 A	FC-2A	M	4
5	--	--	-- --			741			62	-- --	--	--	6
7	M	HP-1	35 A 2	2413			1976			2 35 A	HP-2	M	8
9	--	--	-- --		2413			1976		-- --	--	--	10
11	M	FC-1B	15 A 2			42			62	2 15 A	FC-2B	M	12
13	--	--	-- --	42			62			-- --	--	--	14
15	M	(E) EF-1	20 A 1		500			0		1 20 A	SPARE	--	16
17	--	SPARE	20 A 1			0			0	1 20 A	SPARE	--	18
19	--	SPARE	40 A 3	0			400			1 20 A	SWGR CONTROL LIGHTS	P	20
21	--	--	-- --		0			1000		1 20 A	SWGR CONTROL HT	P	22
23	--	--	-- --			0			500	1 20 A	SWGR-03 SECT 39 HT LITS	P	24
25	--	SPARE	20 A 2	0			1000			1 20 A	SWGR-03 SECT 37,38 HT LITS	P	26
27	--	--	-- --		0			1000		1 20 A	SWGR-03 SECT 35, 36 HT LITS	P	28
29	--	SPARE	20 A 1			0			1000	1 20 A	SWGR-02 SECT 23, 24 HT LITS	P	30
31	--	SPARE	20 A 1	0			1000			1 20 A	SWGR-02 SECT 21, 22 HT LITS	P	32
33	--	SPARE	20 A 1		0			400		1 20 A	SWGR - 02 SECT 29 HIT LITS	P	34
35	--	(E) SERV	20 A 1			1000			1000	1 20 A	SWGR-02 SECT 27, 28 HT LITS	P	36
37	R	R ELECTRICAL SWITCHGEAR 2	20 A 1	540			1000			1 20 A	SWGR-01 SEC 15, 16 HT LITS	--	38
39	R	R EMERGENCY GENERATOR 1	20 A 1		540			1000		1 20 A	SWGR-01 SEC 13, 14 HI LITS	--	40
41	R	R EMERGENCY GENERATOR 1	20 A 1			540			1000	1 20 A	SWGR-01 SEC 11, 12 HI LITS	--	42

LOAD TYPE KEY:
N=NON CONTINUOUS M=MECH EQUIP
P=POWER R=RECEPTACLE
L=LIGHTING K=KITCHEN

TOTAL A: 9093 VA 80 A
TOTAL B 9632 VA 84 A
TOTAL C: 5947 VA 50 A

LOAD TYPE	CONNECTED	DEMAND FACTOR	ESTIMATED	PANEL TOTALS		
R	1620 VA	100.00%	1620 VA			
M	11092 VA	100.00%	11092 VA			
P	7960 VA	100.00%	7960 VA	TOTAL CONNECTED LOAD:	24672 VA	68 A
				TOTAL DEMAND LOAD:	24672 VA	68 A

PANEL: 011-01-LCR-PNL-01 CRITICAL BRANCH

LOCATION: ELECTRICAL... | VOLTAGE/PHASE: 120/208 WYE,3PH,4W | FED FROM: 011-01-LEP-PNL-01
FLOOR: LEVEL 01 | BUS AMPS: 225 A | RATING: 10 KAIC
MOUNTING: SURFACE | MAIN BREAKER: MLO

CKT	TYPE	LOAD	NOTES	BKR/POLE	VOLT-AMPS A	B	C	VOLT-AMPS A	B	C	BKR/POLE	NOTES	LOAD	TYPE	CKT
1	R	REC 12KV EM SWGR RM		20 A 1	720			400			1 20 A		IDF ENCLOSURE	P	2
3	--	SPARE		20 A 1		0			0		1 20 A		SPARE	--	4
5	L	010-01-LCR-BDS-01 - P1	1	20 A 1			167			0	1 20 A		SPARE	--	6
7	R; P	010-01-LCR-BDS-01 - P2	1	20 A 1	360			0			1 20 A		SPARE	--	8
9	--	SPARE		20 A 1		0			0		1 20 A		SPARE	--	10
11	--	SPARE		20 A 1			0			0	1 20 A		SPARE	--	12
13	--	SPARE		20 A 1	0			334			1 20 A		LTG GENERATOR RM	L	14
15	--	SPARE		20 A 1		0			0		1 20 A		SPARE	--	16
17	--	SPARE		20 A 1			0			1168	1 20 A		LTG GENERATOR RM	L	18
19	--	SPARE		20 A 1	0			0			1 20 A		SPARE	--	20
21	--	SPARE		20 A 1		0			334		1 20 A		LTG GENERATOR RM	L	22
23	--	SPARE		20 A 1			0			1001	1 20 A		LTG 12KV EM SWGR RM	L	24
25	--	SPARE		20 A 1	0			1001			1 20 A		LTG 12KV EM SWGR RM	L	26
27	--	SPARE		20 A 1		0			1800		1 20 A		(E) LTG EXTERIOR	L	28
29	--	SPARE		20 A 1			0			0	1 20 A		SPARE	--	30
31	--	SPACE	--	-- --	0			0			-- --	--	SPACE	--	32
33	--	SPACE	--	-- --		0			0		-- --	--	SPACE	--	34
35	--	SPACE	--	-- --			0			0	-- --	--	SPACE	--	36

LOAD TYPE KEY:
N=NON CONTINUOUS M=MECH EQUIP
P=POWER R=RECEPTACLE
L=LIGHTING K=KITCHEN

TOTAL A: 2814 VA 24 A
TOTAL B: 2134 VA 18 A
TOTAL C: 2335 VA 20 A

LOAD TYPE	CONNECTED	DEMAND FACTOR	ESTIMATED	PANEL TOTALS		
L	5803 VA	125.00%	7254 VA	TOTAL CONNECTED LOAD:	6883 VA	19 A
R	1080 VA	100.00%	1080 VA			
P	0 VA	0.00%	0 VA	TOTAL DEMAND LOAD:	8334 VA	23 A

NOTES:
1. SERVING LOADS IN BUILDING 10

PANEL: 011-01-LLS-PNL-01 LIFE SAFETY BRANCH

LOCATION: ELECTRICAL... | VOLTAGE/PHASE: 120/208 WYE,3PH,4W | FED FROM: 011-01-LEP-PNL-01
FLOOR: LEVEL 01 | BUS AMPS: 125 A | RATING: 10 KAIC
MOUNTING: SURFACE | MAIN BREAKER: MLO

CKT	TYPE	LOAD	NOTES	BKR/POLE	VOLT-AMPS A	B	C	VOLT-AMPS A	B	C	BKR/POLE	NOTES	LOAD	TYPE	CKT
1	L; P	010-01-LLS-BDS-01 - P1	1	20 A 1	667			720			1 20 A		(E) RECEPTACLES	R	2
3	L	010-01-LLS-BDS-01 - P2	1	20 A 1		397			500		1 20 A		(E) TELEPHONE	--	4
5	P	010-01-LLS-BDS-01 - P3	1	40 A 1			1200			500	1 20 A		FACP	P	6
7	P	LEAK DETECTION		20 A 1	100			300			1 20 A		(E) MECH CTR DT CONT	M	8
9	--	SPARE		20 A 1		0			360		1 20 A		(E) ELEC RMS RBC	R	10
11	--	SPARE		20 A 1			0			0	1 20 A		SPARE	--	12
13	--	FUEL FILTER		15 A 3	900			0			1 20 A		SPARE	--	14
15	--	--	--	-- --		900			0		1 20 A		SPARE	--	16
17	--	--	--	-- --			900			65	1 20 A		(E) LTG EXTERIOR	L	18
19	P	FUEL PUMP CONTROL		30 A 2	1600			2534			2 35 A		(E) EM LTG INVERTER	L; P	20
21	--	--	--	-- --		1600			2669		-- --	--	--	--	22
23	--	SPARE		20 A 1			0			0	1 20 A		SPARE	--	24
25	--	SPARE		20 A 1	0			1400			3 50 A		011-01-DNP-BCH-01	P	26
27	--	SPARE		20 A 1		0			1400		-- --	--	BATTERY CHARGER 1	--	28
29	--	SPARE		20 A 1			0			1400	-- --	--	--	--	30
31	--	SPARE		20 A 2	0			0			3 50 A		SPARE	--	32
33	--	--	--	-- --		0			0		-- --	--	--	--	34
35	--	SPARE		20 A 2			0			0	-- --	--	--	--	36
37	--	--	--	-- --	0			0			1 20 A		SPARE	--	38
39	--	SPARE		20 A 2		0			0		2 30 A		SPARE	--	40
41	--	--	--	-- --			0			0	-- --	--	--	--	42

LOAD TYPE KEY:
N=NON CONTINUOUS M=MECH EQUIP
P=POWER R=RECEPTACLE
L=LIGHTING K=KITCHEN

TOTAL A: 8221 VA 73 A
TOTAL B: 7826 VA 70 A
TOTAL C: 4065 VA 34 A

LOAD TYPE	CONNECTED	DEMAND FACTOR	ESTIMATED	PANEL TOTALS		
L	5832 VA	125.00%	7290 VA	TOTAL CONNECTED LOAD:	18012 VA	50 A
R	720 VA	100.00%	720 VA			
P	7600 VA	100.00%	7600 VA	TOTAL DEMAND LOAD:	19470 VA	54 A

NOTES:
1. SERVING LOADS IN BUILDING 10

(E) PANEL: 011-01-LLS-PNL-02 (PB)

LOCATION : BUILDING 11 | VOLTAGE/PHASE : 120/208V, 3Ø, 4W | FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVE... | BUS AMPS : 400A | RATING : 10 KAIC
MOUNTING : SURFACE | MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	B	C	VOLT-AMPS A	B	C	BKR/POLE	LOADS	TYPE	CKT
1								1,000			1 20 A	(E) G2 BATT	P	2
3									200		1 20 A	(E) G2 TANK	P	4
5		SPARE	150A	3						1,000	1 20 A	(E) G2 HTR	P	6
7								1,656			1 20 A	(E) G2 PUMP	M	8
9									2,500		1 30 A	(E) G2 HTR JWR	P	10
11										2,500	1 30 A	(E) G2 HTR JWR	P	12
13	P	(E) G3 HTR	20 A	1	1,000						1 20 A	SPARE		14
15	P	(E) G3 BATT	20 A	1		1,000					1 20 A	SPARE		16
17	P	(E) G3 TANK	20 A	1			200				1 20 A	SPARE		18
19	M	(E) G3 PUMP	20 A	1	1,656						1 20 A	SPARE		20
21	P	(E) G3 HTR JWR	30 A	1		2,500					1 30 A	SPARE		22
23	P	(E) G3 HTR JWR	30 A	1			2,500				1 30 A	SPARE		24
25								1,000			1 20 A	(E) G1 HTR		26
27		SPARE	40 A	3					1,000		1 20 A	(E) G1 BATT		28
29										200	1 20 A	(E) G1 TANK		30
31		SPARE	20 A	2				1,656			1 20 A	(E) G1 PUMP		32
33									2,500		1 30 A	(E) G1 HTR JWR		34
35		SPACE	-	-						2,500	1 30 A	(E) G1 HTR JWR		36
37		SPACE	-	-							1 20 A	SPARE		38
39		SPACE	-	-							1 20 A	SPARE		40
41		SPACE	-	-							1 20 A	SPARE		42
					2,656	3,500	2,700	5,312	6,200	6,200				

TOTAL ØA = 7,968 VOLT-AMPS
TOTAL ØB = 9,700 VOLT-AMPS
TOTAL ØC = 8,900 VOLT-AMPS

TOTAL PANEL = 26,568 VA @ 208V, 3Ø = **73.8 AMPS**

(E) PANEL: 011-01-LLS-PNL-03 (PC)

LOCATION : BUILDING 11 | VOLTAGE/PHASE : 120/208V, 3Ø, 4W | FED FROM : 011-01-LEP-PNL-01
FLOOR : LEVEL 1 | BUS AMPS : 225A | MAIN BUS... 10 KAIC
MOUNTING : SURFACE | MAIN BREAKER : MLO

CKT	TYPE	LOADS	BKR/POLE		VOLT-AMPS A	B	C	VOLT-AMPS A	B	C	BKR/POLE	LOADS	TYPE	CKT
1					1,400						1 20 A	SPARE	P	2
3	P	011-01-DNP-BCH-02 BATTERY CHARGER 02	50 A	3		1,400					1 20 A	SPARE	P	4
5							1,400				1 20 A	SPARE	P	6
7		SPARE	20 A	1							1 20 A	SPARE	M	8
9		SPARE	30A	2							1 30 A	SPARE	P	10
11											1 30 A	SPARE	P	12
13		SPARE	20 A	1				1,000			1 20 A	(E) G4 HTR	P	14
15		SPARE	20 A	1					1,000		1 20 A	(E) G4 BATT	P	16
17		SPARE	20 A	1						200	1 20 A	(E) G4 TANK	P	18
19		SPARE	30A	1				1,656			1 20 A	(E) G4 PUMP	M	20
21	M	(E) G5 PUMP	20 A	1		1,200			2,500		1 30 A	(E) G4 HTR JWR	P	22
23	P	(E) G5 BATT CHGR	20 A	1			1,200			2,500	1 30 A	(E) G4 HTR JWR	P	24
25	P	(E) G5 HTR JWH	30 A	1	1,800						1 20 A	SPARE		26
27	P	(E) G5 HTR JWH	30 A	1		1,800					1 20 A	SPARE		28
29	P	(E) G5 HTR GEN SPACE	20 A	2			1,200			1,200	1 20 A	(E) G6 PUMP	M	30
31					1,200			1,200			1 20 A	(E) G6 BATT CHGR	P	32
33		SPACE	20 A	1					1,800		1 30 A	(E) G6 HTR JWH	P	34
35		SPARE	35 A	2						1,800	1 30 A	(E) G6 HTR JWH	P	36
37								1,200			2 20 A	(E) G6 HTR GEN SPACE	P	38
39		SPACE	-	-					1,200					40
41		SPACE	-	-							- -	SPACE		42
					4,400	4,400	3,800	5,056	6,500	5,700				

TOTAL ØA = 9,456 VOLT-AMPS
TOTAL ØB = 10,900 VOLT-AMPS
TOTAL ØC = 9,500 VOLT-AMPS

TOTAL PANEL = 29,856 VA @ 208V, 3Ø = **82.9 AMPS**

PANEL: 011-01-LEP-PNL-01

LOCATION: ELECTRICAL SWITCHGEA... | VOLTAGE/PHASE 120/208 WYE,3PH,4W | FED FROM: 011-01-LEP-ATS-02
FLOOR: LEVEL 01 | BUS AMPS: 800 A | RATING: 10 KAIC
MOUNTING: FLOOR | MAIN BREAKER: 500A, 3P

CIRCUIT	BREAKER	LOAD DESCRIPTION	LOAD	AMPS
1	--	SPACE	0 VA	--
2	--	SPACE	0 VA	--
3	--	SPACE	0 VA	--
4	--	SPACE	0 VA	--
5	225 A	011-01-LEQ-PNL-01	24672 VA	68 A
6	150 A	011-01-LCR-PNL-01	7283 VA	20 A
7	225 A	011-01-LLS-PNL-01	20112 VA	56 A
8	225 A	(E)011-01-LLS-PNL-02 (PB)	26568 VA	74 A
9	225 A	(E)011-01-LLS-PNL-03 (PC)	29856 VA	83 A
10	--	SPACE	0 VA	--
11	--	SPACE	0 VA	--
12	--	SPACE	0 VA	--

LOAD TYPE	CONNECTED	DEMAND FACTOR	ESTIMATED	PANEL TOTALS		
L	11635 VA	125.00%	14544 VA			
R	3420 VA	100.00%	3420 VA			
M	11092 VA	100.00%	11092 VA			
P	19760 VA	100.00%	19760 VA			
				TOTAL CONN. LOAD:	105991 VA	294 A
				TOTAL DEMAND LOAD:	108900 VA	302 A

PANEL: (E) EM

LOCATION: ELECTRICAL SWITCHGEAR | VOLTAGE/PHASE: 120/208 SINGLE,1PH,3W | FED FROM: 011-01-LLS-PNL-01
FLOOR: LEVEL 01 | BUS AMPS: 800 A | RATING: 10 KAIC
MOUNTING: SURFACE | MAIN BREAKER: MLO

CKT	TYPE	LOAD	BKR/POLE	A	B	A	B	BKR/POLE	LOAD	TYPE	CKT
1	L	LTG EM EXIT SIGNS	20 A 1	32 VA		167 VA		1 20 A	L GEN RM WEST	L	2
3	L; P	LTG GEN RM NORTH	20 A 1		1334 VA		1334 VA	1 20 A	LTG GEN RM SOUTH	L; P	4
5	L	LTG EAST	20 A 1	667 VA		834 VA		1 20 A	LTG SWGR RM NORTH	L	6
7	--	SPARE	20 A 1		0 VA		0 VA	1 20 A	SPARE	--	8
9	L	LTG SWGR RM SOUTH	20 A 1	834 VA		0 VA		1 20 A	SPARE	--	10
11	--	SPARE	20 A 1		0 VA		0 VA	1 20 A	SPARE	--	12
13	--	SPARE	20 A 1	0 VA		0 VA		1 20 A	SPARE	--	14
15	--	SPARE	20 A 1		0 VA		0 VA	1 20 A	SPARE	--	16
17	--	SPARE	20 A 1	0 VA		0 VA		1 20 A	SPARE	--	18

LOAD TYPE KEY:
N=NON CONTINUOUS M=MECH EQUIP
P=POWER R=RECEPTACLE
L=LIGHTING K=KITCHEN

TOTAL A: 24 A
TOTAL B 25 A

LOAD TYPE	CONNECTED	DEMAND FACTOR	ESTIMATED	PANEL TOTALS		
L	5203 VA	125.00%	6504 VA			
P	0 VA	0.00%	0 VA			
				TOTAL CONNECTED LOAD:	5203 VA	25 A
				TOTAL DEMAND LOAD:	6504 VA	31 A

PANEL SCHEDULE INDEX

LEQ | LCR | LLS 1 | LLS 2 | LLS 3 | LEP | (E) EM

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REGISTERED PROFESSIONAL ENGINEER — JASON K. CHIN — No. E21060 — STATE OF CALIFORNIA — SIGNED: 04/02/2024

LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 08/31/2023 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
03/14/2025	A	ADDENDUM A
01/31/2025	3	HCAI BACKCHECK 2
10/25/2024	2	HCAI BACKCHECK 1
06/13/2024	1	HCAI SUBMITTAL
04/18/2024	-	HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712105 SCALE:

DESCRIPTION
FINAL PANEL SCHEDULES

DU2-401.4

Print Date: 4/15/2025 2:53:52 PM

1 PANEL: 011-01-DNP-PNL-01

LOCATION : BLD 11 **VOLTAGE/PHASE :** 125V, DC **FED FROM :** 011-01-DNP-BCH-01
FLOOR : LEVE... **BUS AMPS :** 100 **RATING :** 10 KAIC
MOUNTING : SURFACE **MAIN BREAKER :** 100/2P

CKT	LOADS	SEE NOTE	*	BKR/ POLE	VOLT-AMPS +	VOLT-AMPS -	VOLT-AMPS +	VOLT-AMPS -	BKR/ POLE	*	SEE NOTE	LOADS	CKT
1	011-01-DNP-PNL-02			100/2					100/2			011-01-DNP-PNL-03	2
				-					-				
3	BREAKER OPEN 011-01-EMV-SGR-01	1		20/2	200		600		40/2		1	BREAKER CLOSE 011-01-EMV-SGR-01	4
				-		200		600	-				
5	BREAKER RELAYS 011-01-EMV-SGR-01			20/2	137		60		20/2			POWER METERS 011-01-EMV-SGR-01	6
				-		137		60	-				
7	SPARE			20/2					20/2			SPARE	8
				-					-				
9	SCADA CONTROL CKT #1A			15/2					40/2			GEN CONTROL CKT #1	10
				-					-				
11	SCADA CONTROL CKT #2A			15/2					15/2			SCADA CONTROL CKT #3A	12
				-					-				
13	SPARE			20/2					20/2			SPARE	14
				-					-				
15	SPARE			20/2					20/2			SPARE	16
				-					-				
17	SPACE											SPACE	18
19	SPACE											SPACE	20
21	SPACE											SPACE	22
					337	337	660	660					

TOTAL ØA = 997 VOLT-AMPS
TOTAL ØB = 997 VOLT-AMPS

TOTAL PANEL = 1,994 VA @ 125V, DC = **16** **AMPS**

2 PANEL: 011-01-DNP-PNL-02

LOCATION : BLD 11 **VOLTAGE/PHASE :** 125V, DC **FED FROM :** 011-01-DNP-PNL-03
FLOOR : LEVEL 1 **BUS AMPS :** 100 **RATING :** 10 KAIC
MOUNTING : SURFACE **MAIN BREAKER :** 100/2P

CKT	LOADS	SEE NOTE	*	BKR/ POLE	VOLT-AMPS +	VOLT-AMPS -	VOLT-AMPS +	VOLT-AMPS -	BKR/ POLE	*	SEE NOTE	LOADS	CKT
2	1 SUPPLY FROM 011-01-DNP-PNL-01			100/2					100/2			SPARE	2
				-					-				
3	BREAKER OPEN 011-01-EMV-SGR-02 (A)	1		20/2	200		600		40/2		1	BREAKER CLOSE 011-01-EMV-SGR-02 (A)	4
				-		200		600	-				
5	BREAKER RELAYS 011-01-EMV-SGR-02 (A)			20/2	63		30		20/2			POWER METERS 011-01-EMV-SGR-02 (A)	6
				-		63		30	-				
7	BREAKER OPEN 011-01-EMV-SGR-02 (B)	1		20/2	200		600		40/2		1	BREAKER CLOSE 011-01-EMV-SGR-02 (B)	8
				-		200		600	-				
9	BREAKER RELAYS 011-01-EMV-SGR-02 (B)			20/2	88		40		20/2			POWER METERS 011-01-EMV-SGR-02 (B)	10
				-		88		40	-				
11	SPARE			20/2					20/2			SPARE	12
				-					-				
13	SPACE											SPACE	14
15	SPACE											SPACE	16
17	SPACE											SPACE	18
19	SPACE											SPACE	20
21	SPACE											SPACE	22
					551	551	1,270	1,270					

TOTAL ØA = 1,821 VOLT-AMPS
TOTAL ØB = 1,821 VOLT-AMPS

TOTAL PANEL = 3,642 VA @ 125V, DC = **29** **AMPS**

1 PANEL: 011-01-DNP-PNL-03

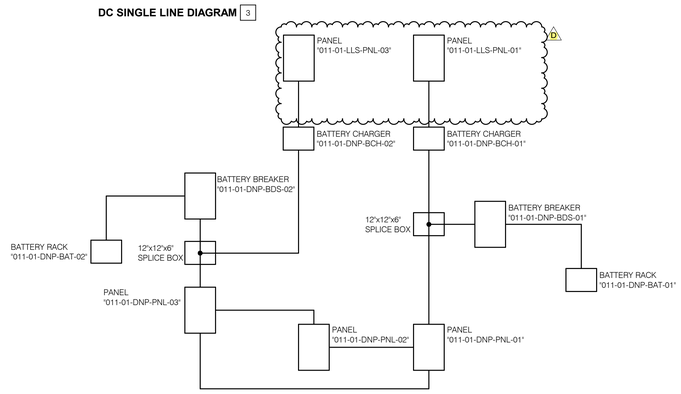
LOCATION : BLD 11 **VOLTAGE/PHASE :** 125V, DC **FED FROM :** 011-01-DNP-BCH-02
FLOOR : LEVEL 1 **BUS AMPS :** 100 **RATING :** 10 KAIC
MOUNTING : SURFACE **MAIN BREAKER :** 100/2P

CKT	LOADS	SEE NOTE	*	BKR/ POLE	VOLT-AMPS +	VOLT-AMPS -	VOLT-AMPS +	VOLT-AMPS -	BKR/ POLE	*	SEE NOTE	LOADS	CKT
1	011-01-DNP-PNL-02			100/2	1,821				100/2			TIE TO PANEL 011-01-DNP-PNL-01	2
				-		1,821			-				
3	BREAKER OPEN 011-01-EMV-SGR-03	1		20/2	200		600		40/2		1	BREAKER CLOSE 011-01-EMV-SGR-03	4
				-		200		600	-				
5	BREAKER RELAYS 011-01-EMV-SGR-03			20/2	110		50		20/2			POWER METERS 011-01-EMV-SGR-03	6
				-		110		50	-				
7	SPARE			20/2					20/2			SPARE	8
				-					-				
9	SCADA CONTROL CKT #1B			15/2	50		200		40/2			GEN CONTROL CKT #2	10
				-		50		200	-				
11	SCADA CONTROL CKT #2B			15/2	50		50		15/2			SCADA CONTROL CKT #3B	12
				-				50	-				
13	SPARE			20/2					20/2			SPARE	14
				-					-				
15	SPARE			20/2					20/2			SPARE	16
				-					-				
17	SPACE											SPACE	18
19	SPACE											SPACE	20
21	SPACE											SPACE	22
					2,231	2,181	900	900					

TOTAL ØA = 3,131 VOLT-AMPS
TOTAL ØB = 3,081 VOLT-AMPS

TOTAL PANEL = 6,212 VA @ 125V, DC = **50** **AMPS**

DC SINGLE LINE DIAGRAM 3



GENERAL NOTES

1. PANELBOARDS SHALL BE EQUIPED WITH SURGE PROTECTIVE DEVICES.

NOTES

1 PANELS 011-01-DNP-PNL 01 AND 011-01-DNP-PNL-03 MAIN BREAKERS AND 100A FEEDER BREAKER ON PANEL 011-01-DNP-PNL-01 FEEDING PANEL 011-01-DNP-PNL-03 WITH KIRK KEY INTERLOCKS SO THAT FEEDER BREAKER CAN ONLY BE CLOSED IF ONE OF THE MAIN BREAKERS OF PANELS 011-01-DNP-PNL-01 AND 011-01-DNP-PNL-03 ARE OPENED.

2 PANEL 011-01-DNP-PNL-02 MAIN BREAKER FED FROM PANEL 011-01-DNP-PNL-03 AND 100A BREAKER FED FROM PANEL 011-01-DNP-PNL-01 ARE WITH KIRK KEY INTERLOCKS SO THAT ONLY ONE SOURCE BREAKER CAN BE CLOSED AT ONE TIME.

3 FOR CABLE AND CONDUIT SIZE SEE PLAN DRAWINGS DU2-224 AND DU2-244.

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LICENSED ARCHITECT — KEVIN S. BOOTS — RC-30600 — 08/31/2025 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
04/01/2025	4	HCAI BACKCHECK 3
03/14/2025	A	ADDENDUM A
10/25/2024	2	HCAI BACKCHECK 1
06/13/2024	1	HCAI SUBMITTAL
04/18/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712105 SCALE: 1 1/2" = 1'-0"

DESCRIPTION
DC PANEL SCHEDULES AND SINGLE LINE DIAGRAM

DU2-401.5

Print Date: 4/9/2025 6:06:47 PM

GENERAL NOTES

1. TYPE MV CABLE SHALL BE INSTALLED, TERMINATED AND TESTED BY QUALIFIED PERSONS AND SHALL BE MARKED AS REQUIRED BY CEC 310.120.
2. SEE THE CONDUIT AND CABLE SCHEDULE FOR CONDUIT TYPES. CONDUIT INDOORS SHALL BE RGS FOR CONDUITS CONTAINING HIGH VOLTAGE CABLE OF 1000V OR GREATER. CONDUIT OUTSIDE SHALL BE RGS. CONDUIT CONTAINING VOLTAGES 600V OR LESS INSTALLED INDOORS AND ABOVE 9' CAN BE EMT.
3. SPLICING OF MV CABLES ARE TO BE MADE WITH 600A T-BODY WITH CAPACITIVE TEST POINT.

ID	FROM	TO	PHASE CABLE SIZE	PHASE CABLE TYPE	GROUND CONDUCTOR SIZE	GROUND CONDUCTOR TYPE	NEW CONDUIT SIZE	NEW CONDUIT TYPE	VIA	CONTRACTOR SCOPE	REMARKS
C001	PULLBOX "COM-MH23"	STUB UP IN GAP BUILDING BUILDING	-	-	-	-	4"	PVC	-	INC 1	
C002	PULLBOX "COM-MH23"	PULLBOX "COM-CS-13"	-	-	-	-	(2) 4"	PVC	A	INC 1	
C003	PULLBOX "COM-MH23"	STUB OUT NEAR MVMH-N-19/20	-	-	-	-	(3) 2"	PVC	COM-CS-12, COM-CS-12	INC 1	
C003A	STUB OUT NEAR MVMH-N-19/20	GEN BUILDING	-	-	-	-	(3) 2"	PVC	-	INC 2	
C004	PULLBOX "COM-CS-13"	STUB UP IN GAP BUILDING BUILDING	-	-	-	-	(1) 2"	PVC	-	INC 1	B
C005	GEN BUILDING IDF ENCLOSURE	GEN BUILDING BACKBOARD	B -	-	-	-	(1) 2"	PVC A	-	INC 2	
D100	BATTERY RACK "011-01-DNB-BAT-01"	DISCONNECT "011-01-DNP-BDS-01"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D101	DISCONNECT "011-01-DNP-BDS-01"	SPLICE BOX	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D102	BATTERY CHARGER "011-01-DNP-BCH-01"	SPLICE BOX	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D103	SPLICE BOX	PANEL "011-01-DNP-PNL-01"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D104	PANEL "011-01-DNP-PNL-01"	PANEL "011-01-DNP-PNL-02"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D105	PANEL "011-01-DNP-PNL-01"	PANEL "011-01-DNP-PNL-03"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D106	PANEL "011-01-DNP-PNL-01"	011-01-EMV-SGR-01 RELAYS, POWER METERS AND SWGR CIRCUIT BREAKERS "OPEN"	4#12AWG,...	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D107	PANEL "011-01-DNP-PNL-01"	011-01-EMV-SGR-01 CIRCUIT BREAKERS "CLOSE"	2#6AWG	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1.25"	IMC		INC 2	
D108	PANEL "011-01-DNP-PNL-01"	SCADA CONTROL AND GEN CONTROL	6#12AWG,...	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D200	BATTERY RACK "011-01-DNB-BAT-02"	DISCONNECT "011-01-DNP-BDS-02"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D201	DISCONNECT "011-01-DNP-BDS-0"	SPLICE BOX	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D202	BATTERY CHARGER "011-01-DNP-BCH-02"	SPLICE BOX	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D203	SPLICE BOX	PANEL "011-01-DNP-PNL-02"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D204	PANEL "011-01-DNP-PNL-02"	PANEL "011-01-DNP-PNL-03"	2-2 AWG	0.6 KV, CU, THHN/THWN	1-8 AWG	THHN/THWN	1"	IMC		INC 2	
D205	PANEL "011-01-DNP-PNL-02"	011-01-EMV-SGR-02 (PART A) RELAYS, POWER METERS AND SWGR CIRCUIT BREAKERS "OPEN"	4#12AWG,...	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D206	PANEL "011-01-DNP-PNL-02"	011-01-EMV-SGR-02 (PART A) CIRCUIT BREAKERS "CLOSE"	2#6AWG	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D207	PANEL "011-01-DNP-PNL-02"	011-01-EMV-SGR-02 (PART B) RELAYS, POWER METERS AND SWGR CIRCUIT BREAKERS "OPEN"	4#12AWG,...	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D208	PANEL "011-01-DNP-PNL-02"	011-01-EMV-SGR-02 (PART B) SWGR CIRCUIT BREAKERS "CLOSE"	2#6AWG	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D301	PANEL "011-01-DNP-PNL-03"	011-01-EMV-SGR-03 RELAYS, POWER METERS AND SWGR CIRCUIT BREAKERS "OPEN"	4#12AWG,...	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D302	PANEL "011-01-DNP-PNL-03"	011-01-EMV-SGR-03 SWGR CIRCUIT BREAKERS "CLOSE"	2#6AWG	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1"	IMC		INC 2	
D303	PANEL "011-01-DNP-PNL-03"	SCADA CONTROL AND GEN CONTROL	6#12AWG,...	0.6 KV, CU, THHN/THWN	1#10AWG	THHN/THWN	1.25"	IMC		INC 2	
F001	FACP IN GAP BUILDING	STUB OUT NEAR MVMH-N-19/20	-	-	-	-	(2) 2"	PVC	FAL-CS-11	INC 1	
F001A	STUB OUT NEAR MVMH-N-19/20	(E) FIRE ALARM TERMINAL CABINET IN GENERATOR BUILDING	-	-	-	-	(2) 2"	PVC	-	INC 2	
S001	EXISTING CONDUITS INSTALLED BY PHASE 1A, INC 3 DUCTBANK PROJECT	PULLBOX "SPB-CS-11"	-	-	-	-	(4) 2"	PVC	-	INC 1	CONNECT (2) CONDUITS FORM SPB-CS-09 AND (2) FROM SPB-CS-10
S001A	PULLBOX "SPB-CS-11"	SCADA FIBER PATCH PANEL IN GAP SWITCHGEAR BUILDING	-	-	-	-	(4) 2"	PVC	-	INC 1	SEE DU2-403.2 FOR CABLE REQUIREMENTS
S001B	(4) FIBER PATCH PANELS: (2) SCADA, GEN CONTROL, AND ATS METER FIBER PATCH PANELS IN GAP...	STUB OUT NEAR MVMH-N-19/20	-	-	-	-	(4) 2"	PVC/IMC	SPB-CS-12	INC 1	
S001C	STUB OUT NEAR MVMH-N-19/20	(4) FIBER PATCH PANELS: (2) SCADA, GEN CONTROL, AND ATS METER FIBER PATCH PANELS IN...	-	-	-	-	(4) 2"	PVC/IMC	-	INC 2	
S001D	(4) FIBER PATCH PANELS: (2) SCADA, GEN CONTROL, AND ATS METER FIBER PATCH PANELS IN GAP...	(4) FIBER PATCH PANELS: (4) FIBER PATCH PANELS: (2) SCADA, GEN CONTROL, AND ATS METER...								INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
S001E	(4) FIBER PATCH PANELS: (2) SCADA, GEN CONTROL, AND ATS METER FIBER PATCH PANELS IN GEN...	GENERATOR BLDG SWGR SCADA AND GEN CONTROL SECTION								INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENT INSTALL IN WIREWAY
G001	EXISTING CONDUITS FROM PULLBOX "GEN-CS-03" INSTALLED BY PHASE 1A, INC 3 DUCTBANK...	PULLBOX "GEN-CS-02"	-	-	-	-	(7) 2"	PVC	-	INC 1	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G001A	PULLBOX "GEN-CS-02"	ATS-GEN TERMINAL CABINET IN GAP BUILDING	-	-	-	-	(9) 2"	PVC	-	INC 1	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G002	ATS-GEN TERMINAL CABINET IN GAP BUILDING	STUB OUT NEAR MVMH-N-19/20	-	-	-	-	(7) 2"	PVC/IMC	GEN-CS-01W	INC 1	
G002A	STUB OUT NEAR MVMH-N-19/20	ATS-GEN TERMINAL CABINET IN GENERATOR BUILDING	-	-	-	-	(7) 2"	PVC/IMC/RMC	-	INC 2	USE RMC OUTSIDE
G002B	ATS-GEN TERMINAL CABINET IN GENERATOR BUILDING	GENERATOR BLDG SWGR GEN CONTROL SECTION	156#12AWG				-	-		INC 2	INSTALL IN WIREWAY
G002C	ATS-GEN TERMINAL CABINET IN GAP BUILDING	ATS-GEN TERMINAL CABINET IN GENERATOR BUILDING	264#12 AWG							INC 2	(1) 2"C-36#12, (1) 2"C-48#12, (3) 2"C-60#12
G003	GENERATOR CONTROL CABINET IN EXISTING GENERATOR BUILDING	TRANSFER SWITCH #1 IN SUB 1	-	-	-	-	-	-	GEN-CS-01E, GEN-CS-02E	INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G004	GENERATOR CONTROL CABINET IN EXISTING GENERATOR BUILDING	TRANSFER SWITCH #2 IN SUB 1	-	-	-	-	-	-	GEN-CS-01E, GEN-CS-02E	INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G005	GENERATOR CONTROL CABINET IN EXISTING GENERATOR BUILDING	TRANSFER SWITCH #3 IN SUB 1	-	-	-	-	-	-	GEN-CS-01E, GEN-CS-02E	INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G006	GENERATOR CONTROL CABINET IN EXISTING GENERATOR BUILDING	TRANSFER SWITCH #4 IN PCDC	-	-	-	-	-	-	GEN-CS-01E, GEN-CS-02E	INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G007	GENERATOR CONTROL CABINET IN EXISTING GENERATOR BUILDING	TRANSFER SWITCH #5 IN PCDC	-	-	-	-	-	-	GEN-CS-01E, GEN-CS-02E	INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G008	GENERATOR CONTROL CABINET IN EXISTING GENERATOR BUILDING	TRANSFER SWITCH #6 IN PCDC	-	-	-	-	-	-	GEN-CS-01E, GEN-CS-02E	INC 2	SEE DU2-403.2 FOR CABLE REQUIREMENTS
G009	PULLBOX "GEN-CS-02"	STUB OUT INTO EMERGENCY RESPONSE HAZ MAT AREA	-	-	-	-	(2) 2"C	PVC	-	INC 1	
G010	ATS "011-01-LEP-ATS-01"	ATS-GEN TERMINAL CABINET IN GENERATOR BUILDING	12#12 AWG	-	-	-	2"	IMC	-	INC 2	
G011	GENERATOR BLDG SWGR GEN CONTROL SECTION	(E) CHILLER PLANT BMS/EMS CONTROL SYSTEM	20#14 AWG	-	-	-	2"	RMC		INC 2	INSTALL FLEX CONDUIT SEISMIC CONNECTION BETWEEN GENERATOR BUILDING AND OVER SHADE STRUCTURE
G012	GENERATOR BLDG SWGR GEN CONTROL SECTION	(E) CHILLER PLANT BMS/EMS CONTROL SYSTEM		6-PAIR MULTI-MODE FIBER OPTIC CABLE	-	-	1.5"	RMC		INC 2	INSTALL FLEX CONDUIT SEISMIC CONNECTION BETWEEN GENERATOR BUILDING AND OVER SHADE STRUCTURE
L001	DISCONNECT "010-01-LCR-BDS-01"	STUB OUT NEAR MVMH-N-19/20	-	-	-	-	(2) 2"	PVC/IMC	LVPB-LCR-01	INC 1	
L001A	STUB OUT NEAR MVMH-N-19/20	PANEL "011-01-LCR-PNL-01	-	-	-	-	(2) 2"	PVC/IMC	-	INC 2	
L001B	PANEL "011-01-LCR-PNL-01"	DISCONNECT "010-01-LCR-BDS-01"	4-6 AWG	0.6 KV, CU, THHN/THWN	6 AWG	THHN/THWN	-	-	LVPB-LCR-01	INC 1	
L002	DISCONNECT "010-01-LLS-BDS-01"	STUB OUT NEAR MVMH-N-19/20	-	-	-	-	(2) 2"	PVC/IMC	LVPB-LLS-01	INC 1	
L002A	STUB OUT NEAR MVMH-N-19/20	PANEL "011-01-LLS-PNL-01"	-	-	-	-	(2) 2"	PVC/IMC	-	INC 2	
L002B	PANEL "011-01-LLS-PNL-01"	DISCONNECT "010-01-LLS-BDS-01"	6-6 AWG	0.6 KV, CU, THHN/THWN	6 AWG	THHN/THWN	-	-	LVPB-LLS-01	INC 1	
L003	TRANSFORMER "010-01-NMV-TRX-01"	PANEL "010-01-LEQ-PNL-01"	4-4/0 AWG	0.6 KV, CU, THHN/THWN	4 AWG	THHN/THWN	2.5"	PVC		INC 1	
L100	TRANSFORMER "011-01-NMV-TRX-01"	DISCONNECT SWITCH ABOVE LVPB-E-04	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) #1/0AWG	THHN/THWN	(2) 3"	PVC/RMC	VIA LVPB-E-11 AND LVPB-E-04	INC 2	
L100A	TRANSFORMER "011-01-NMV-TRX-01"	DISCONNECT "011-01-LNP-BDS-01"	4- 12 AWG	0.6 KV, CU, THHN/THWN	12 AWG	THHN/THWN	1"	PVC/RMC	LVPB-E-04		
L101	DISCONNECT "011-01-LNP-BDS-01"	TRANSFER SWITCH "011-01-LEP-ATS-01"	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) 2#AWG	THHN/THWN	(2) 3"	IMC		INC 2	
L102	JUNCTION BOX "LVPB-E-02"	TRANSFER SWITCH "011-01-LEP-ATS-01"	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) 2#AWG	THHN/THWN	(2) 3"	IMC		INC 2	
L103	TRANSFER SWITCH "011-01-LEP-ATS-01"	TRANSFER SWITCH "011-01-LEP-ATS-02"	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) 2#AWG	THHN/THWN	(2) 3"	IMC		INC 2	
L104	GENERATOR QUICK CONNECT BOX "011-01-LEP-GQC-01"	TRANSFER SWITCH "011-01-LEP-ATS-02"	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) 2#AWG	THHN/THWN	(2) 3"	IMC		INC 2	
L105	TRANSFER SWITCH "011-01-LEP-ATS-02"	PANEL "011-01-LEP-PNL-01"	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) 2#AWG	THHN/THWN	(2) 3"	IMC		INC 2	
L106	EXISTING PS/LSA ENCLOSED CIRCUIT BREAKER	JUNCTION BOX "LVPB-E-02"	4-500KCMIL	0.6 KV, CU, THHN/THWN	2#AWG	THHN/THWN	4"	IMC		INC 2	
L111	PANEL "011-01-LEP-PNL-01"	PANEL "011-01-LEQ-PNL-01"	4- 3/0 AWG	0.6 KV, CU, THHN/THWN	4 AWG	THHN/THWN	2"	IMC		INC 2	
L110	PANEL "011-01-LEP-PNL-01"	PANEL "011-01-LCR-PNL-01"	4-4/0 AWG	0.6 KV, CU, THHN/THWN	4 AWG	THHN/THWN	2.5"	IMC		INC 2	
L112	PANEL "011-01-LEP-PNL-01"	PANEL "011-01-LLS-PNL-01"	4-4/0 AWG	0.6 KV, CU, THHN/THWN	4 AWG	THHN/THWN	2.5"	IMC		INC 2	
L113	PANEL "011-01-LEP-PNL-01"	PANEL "011-01-LLS-PNL-02"	4-4/0 AWG	0.6 KV, CU, THHN/THWN	4 AWG	THHN/THWN	2.5"	IMC		INC 2	
L114	PANEL "011-01-LEP-PNL-01"	PANEL "011-01-LLS-PNL-03"	4-4/0 AWG	0.6 KV, CU, THHN/THWN	4 AWG	THHN/THWN	2.5"	IMC		INC 2	
L200	TRANSFORMER "011-01-EMV-TRX-01"	DISCONNECT "011-01-ENP-BDS-01"	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) #1/0AWG	THHN/THWN	(2) 3"	PVC/RMC	VIA LVPB-E-10 AND LVPB-E-01	INC 2	
L201	DISCONNECT "011-01-ENP-BDS-01"	J-BOX LVPB-E-02	(2) 4-250KCMIL	0.6 KV, CU, THHN/THWN	(2) 2#AWG	THHN/THWN	(2) 3"	IMC		INC 2	

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SIGNED 04/02/2024

LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 08/31/2023 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
04/01/2025	4	HCAI BACKCHECK 3
03/14/2025	A	ADDENDUM A
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10/25/2024	2	HCAI BACKCHECK 1
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04/18/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712105 SCALE:

DESCRIPTION
CONDUIT AND CABLE SCHEDULE

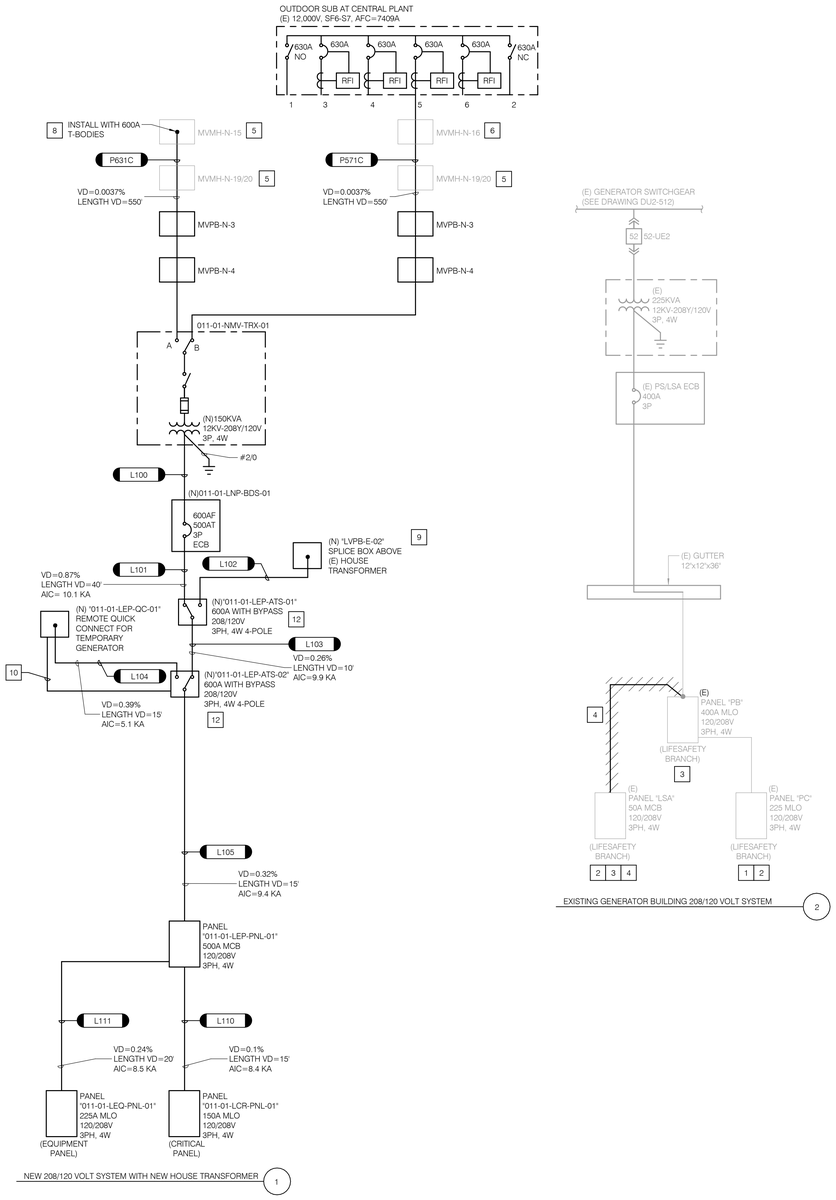
DU2-402.1

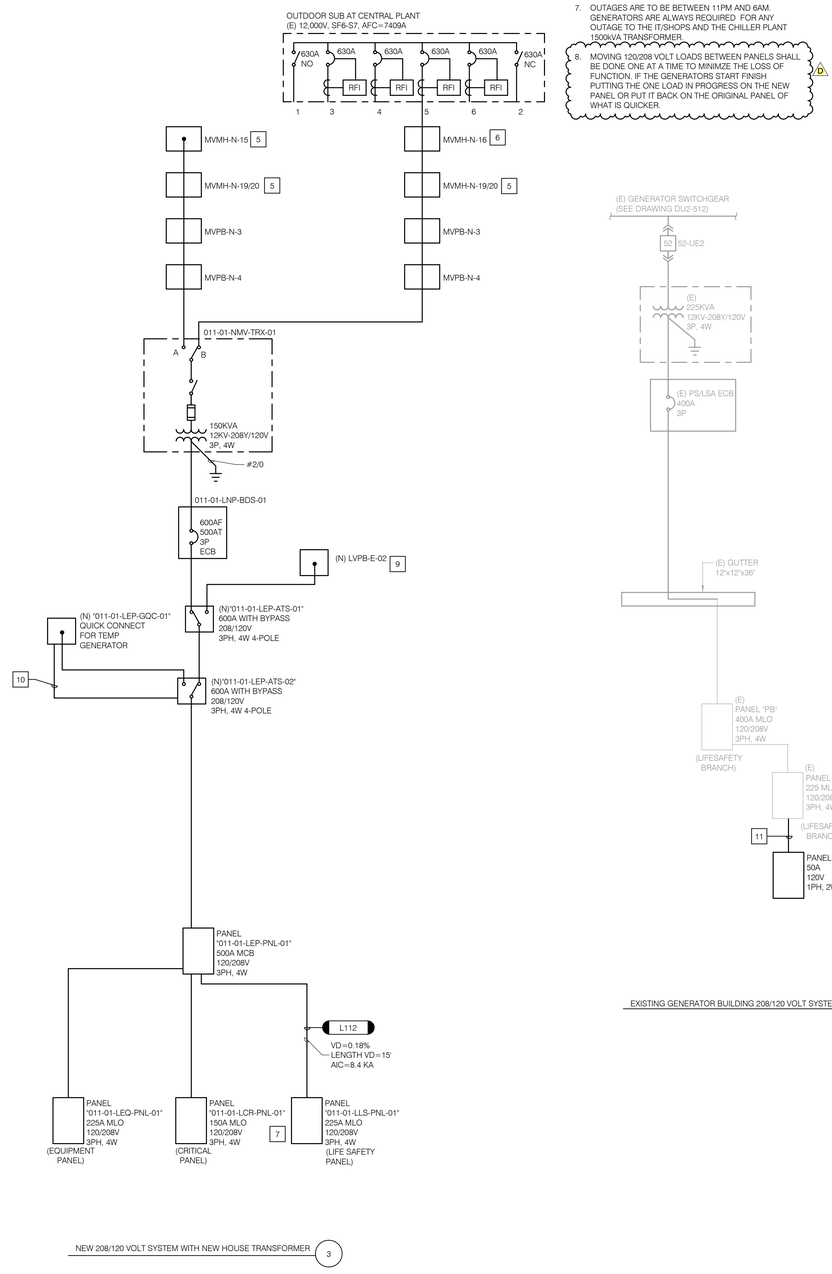
GENERAL NOTES

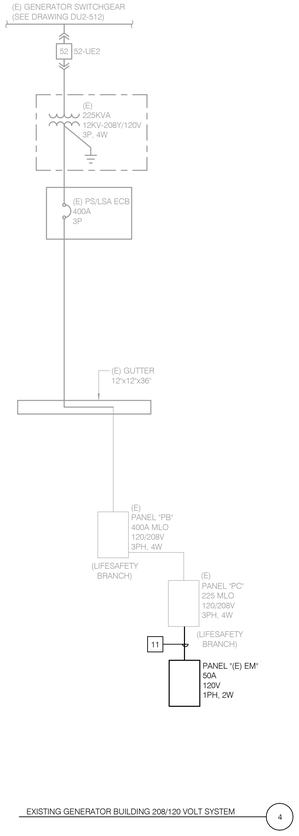
1. ALL OUTAGES REQUIRE A MINIMUM 4 WEEK NOTICE AND AGREEMENT WITH THE OWNER ON TIMING OF THE OUTAGE. MOPS WILL NEED TO BE SUBMITTED AND APPROVED. OUTAGE DURATIONS SHALL BE MINIMIZED SUCH AS ADDING 600A T-BODY TO NEW CABLESBEFORE CUTTING INTO EXISTING 12KV CABLES.
2. FOR OVER 1000V SYSTEMS, PROVIDE INSPECTIONS AND TEST REPORT TO HCAI/OSHPD PRIOR TO ENERGIZATION.
3. A PERMANENT, SINGLE-LINE DIAGRAM OF THE SWITCHGEAR SHALL BE PROVIDED IN A READILY VISIBLE LOCATION WITHIN THE SAME ROOM OR ENCLOSED AREA WITH THE SWITCHGEAR, AND THIS DIAGRAM SHALL CLEARLY IDENTIFY INTERLOCKS, ISOLATION MEANS, AND ALL POSSIBLE SOURCES OF VOLTAGE TO THE INSTALLATION UNDER NORMAL OR EMERGENCY CONDITIONS. THE MARKING ON THE SWITCHGEAR SHALL CROSS-REFERENCE THE DIAGRAM.
4. LENGTHS USED ON THESE SINGLE LINE DIAGRAMS ARE ONLY TO BE USED FOR VOLTAGE DROP CALCULATIONS.
5. PHASE VOLTAGE ROTATION SHALL BE RECORDED BEFORE THE POWER IS SHUT OFF. CONFIRM THE ROTATION ON THE SUPPLY END AND THE LOAD END OF THE CABLE THAT IS TO BE CUT AND/OR REPALCED. AFTER THE CUT OVER AND BEFORE DOWN STREAM LOADS ARE ALLOWED TO COME ON PERFORM PHASE ROTATION AND PHASE TO PHASE TESTING AT THE NEW SUPPLY AND LOAD END OF THE NEW CABLE. RECORD THE RESULTS AND PROVIDE IN OUTAGE REPORT.
6. IF THE OUTAGE FOR THE LOADS IS REQUIRED TO BE LONGER THAN 2.5 HOURS PROVIDE TEMPORARY GENERATORS FOR THE LOADS.
7. OUTAGES ARE TO BE BETWEEN 11PM AND 6AM. GENERATORS ARE ALWAYS REQUIRED FOR ANY OUTAGE TO THE IT/SHOPS AND THE CHILLER PLANT 1500kVA TRANSFORMER.
8. MOVING 120/208 VOLT LOADS BETWEEN PANELS SHALL BE DONE ONE AT A TIME TO MINIMIZE THE LOSS OF FUNCTION. IF THE GENERATORS START FINISH PUTTING THE ONE LOAD IN PROGRESS ON THE NEW PANEL OR PUT IT BACK ON THE ORIGINAL PANEL OF WHAT IS QUICKER. D

NOTES

1. INSTALL NEW BREAKERS IN (E) PANEL PC. SEE DRAWING DU2-401.2 FOR TYPE OF BREAKERS AND LOCATIONS.
2. AFTER NEW BREAKERS ARE ADDED TO (E) PANEL PC TEMPORARY MOVE INDIVIDUAL LOADS FROM PANEL LSA TO PANEL PC. NOTE PANEL LSA TO BE REMOVED AND CONDUITS LEAVING THE TOP WILL NEED TO BE REWORKED. SEE PLAN DRAWING DU2-604.
3. IN A 10 MINUTE OUTAGE TURN OFF (E) 400A BREAKER AND CUT SUPPLY CABLES TO PANEL LSA AT THE TOP OF PANEL PB. PULL THEM OUT INTO PANEL PB AND CUT THEM SHORTER IF NEEDED. ADD HEAT SHRINK CAPS RATED 1000 VOLTS. IF MORE THEN 10 MINUTES OUTAGE IS REQUIRED FOR THE HEAT SHRINK TAPE CAP IN PLACE AND TURN ON POWER FOR AT LEAST 1 HOUR AND WITH NO ALARMS HAVE ANOTHER 10 MINUTE OUTAGE TO COMPLETE. NOTE THAT IF ANY GENERATORS START UP SAFE OFF THE WORK IMMEDIATELY AND TURN THE POWER BACK ON FOR KEEPING THE GENERATOR SYSTEMS GOING.
4. AFTER ALL LOADS ON PANEL LSA ARE MOVED TO PANEL PC AND POWER SUPPLY TO LSA IS REMOVED DEMO PANEL LSA.
5. NEW MANHOLE INSTALLED BY INC. 1 CONTRACTOR.
6. EXISTING MANHOLE.
7. INSTALL NEW PANEL 011-01-LLS-PNL-01 IN LOCATION OF OLD LSA PANEL.
8. CAP T-BODIES TO PROTECT FUTURE CONNECTIONS.
9. NEW CABLES TERMINATED IN A INSULATED TAP CONNECTOR WITH INSULATED COVER OVER SOCKET TO TORQUE THE LUG.
10. NEW 3/4" INCH CONDUIT WITH 2-#12 AWG AND 1-#12 GROUND FOR GEN START SIGNAL.
11. NEW 2-#6 AWG AND 1-#10 GND IN NEW 0.75" CONDUIT FOR EMERGENCY LIGHTING INVERTER.
12. ATS UNIT TO HAVE SPEC 26 3600 OPTIONS AND OPTIONS NOTED ON DRAWING DU2-403.5.







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REGISTERED PROFESSIONAL ENGINEER — JASON K. CHOW — No. E21060 — CIVIL — STATE OF CALIFORNIA
SIGNED: 04/02/2024

LICENSED ARCHITECT — KEVIN S. BOOTS — RC-30600 — 08/31/2025 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
04/01/2025	4	HCAI BACKCHECK 3
03/14/2025	A	ADDENDUM A
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10/25/2024	2	HCAI BACKCHECK 1
06/13/2024	1	HCAI SUBMITTAL
04/18/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712105 SCALE: 12" = 1'-0"

DESCRIPTION
LOW VOLTAGE - SINGLE LINE DIAGRAM

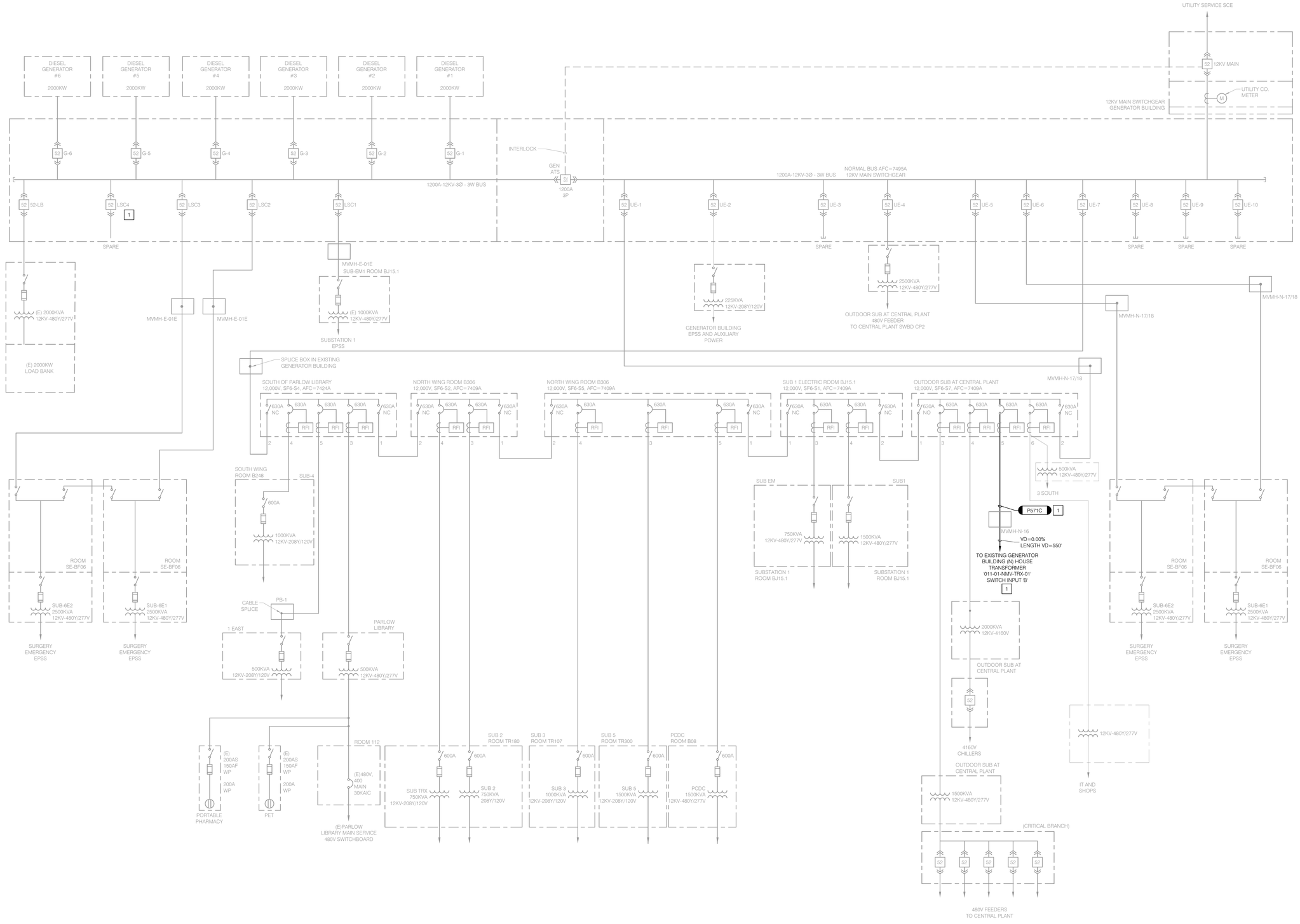
DU2-511

NOTES

1 NEW 12KV CABLE AND NEW HOUSE TRANSFORMER '011-01-NMV-TRX-01'.

GENERAL NOTES

1. EVERYTHING ON THIS ONE LINE IS EXISTING EXCEPT AS NOTED.
2. MAXIMUM DEMAND FOR TOTAL HOSPITAL ON GENERATOR BUS IS 3.6 MVA AT THIS MILESTONE. (D)



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LICENSED ARCHITECT — KEVIN S. BOOTS — RC-30500 — 08/31/2025 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
04/01/2025	4	HCAI BACKCHECK 3
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04/18/2024		HCAI SUBMITTAL

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL

MILESTONE DATE: 10/25/2024

RBB PROJECT: 1712105 SCALE: 12" = 1'-0"

DESCRIPTION

NEW LSC4 FEED - GEN BLDG - SINGLE LINE DIAGRAM

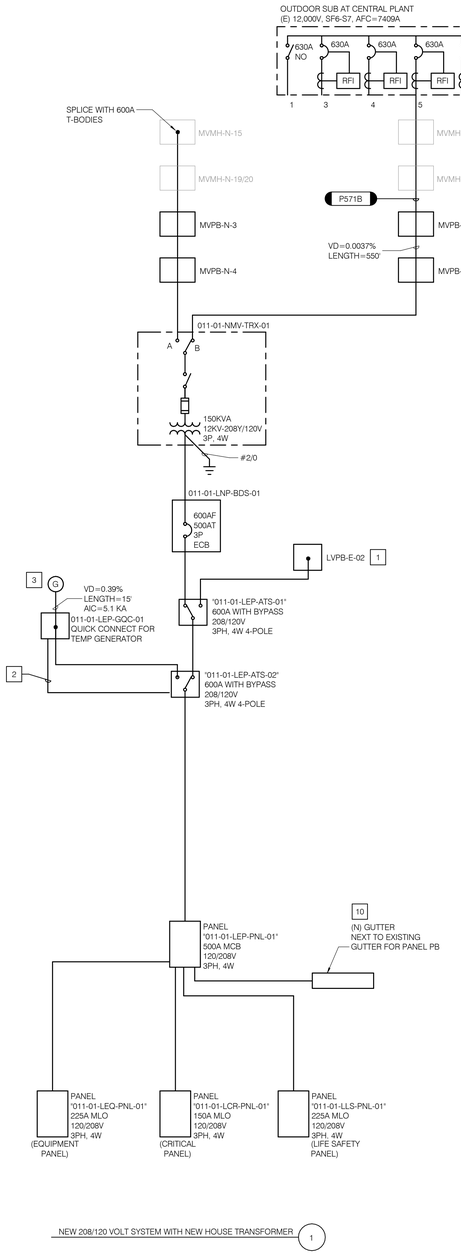
DU2-512

GENERAL NOTES

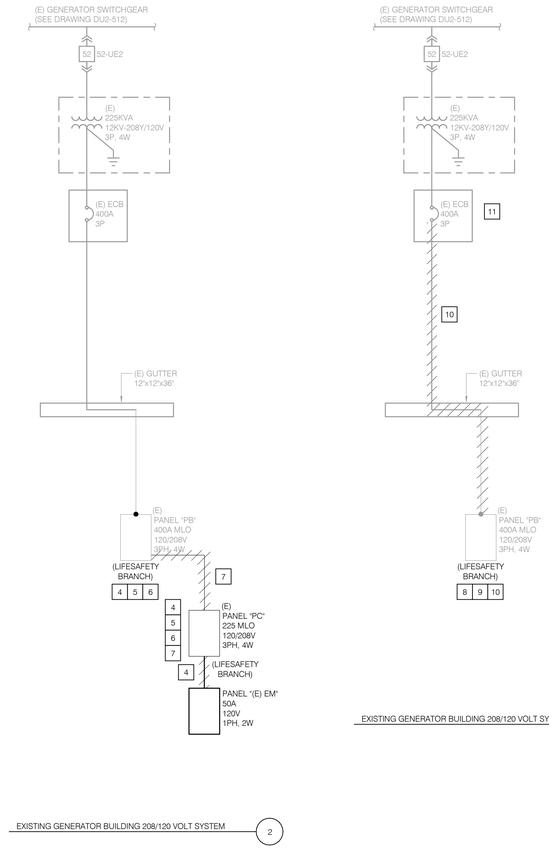
1. ALL OUTAGES REQUIRE A MINIMUM 4 WEEK NOTICE AND AGREEMENT WITH THE OWNER ON TIMING OF THE OUTAGE. MOPS WILL NEED TO BE SUBMITTED AND APPROVED. OUTAGE DURATIONS SHALL BE MINIMIZED SUCH AS ADDING 600A T-BODY TO NEW CABLES BEFORE CUTTING INTO EXISTING 12KV CABLES.
2. FOLLOW KEYNOTES IN ORDER.
3. PHASE VOLTAGE ROTATION SHALL BE RECORDED BEFORE THE POWER IS SHUT OFF. CONFIRM THE ROTATION ON THE SUPPLY END AND THE LOAD END OF THE CABLE THAT IS TO BE CUT AND/OR REPALCED. AFTER THE CUT OVER AND BEFORE DOWN STREAM LOADS ARE ALLOWED TO COME ON PERFORM PHASE ROTATION AND PHASE TO PHASE TESTING AT THE NEW SUPPLY AND LOAD END OF THE NEW CABLE. RECORD THE RESULTS AND PROVIDE IN OUTAGE REPORT.
4. IF THE OUTAGE FOR THE LOADS IS REQUIRED TO BE LONGER THAN 2.5 HOURS PROVIDE TEMPORARY GENERATORS FOR THE LOADS.
5. OUTAGES ARE TO BE BETWEEN 11PM AND 6AM. GENERATORS ARE ALWAYS REQUIRED FOR ANY OUTAGE TO THE IT/SHOPS AND THE CHILLER PLANT 1500KVA TRANSFORMER
6. MOVING 120/208 VOLT LOADS BETWEEN PANELS SHALL BE DONE ONE AT A TIME TO MINIMIZE THE LOSS OF FUNCTION. IF THE GENERATORS START FINISH PUTTING THE ONE LOAD IN PROGRESS ON THE NEW PANEL OR PUT IT BACK ON THE ORIGINAL PANEL OF WHAT IS QUICKER. D

NOTES

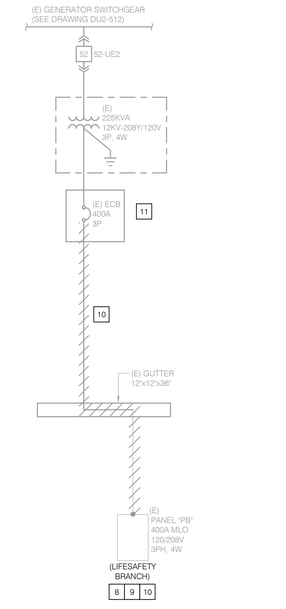
1. NEW CABLES TERMINATED IN AN INSULATED TAP CONNECTOR WITH INSULATED COVER OVER SOCKET TO TORQUE THE LUG.
2. CONDUIT AND CABLE FOR GEN START SIGNALS.
3. CONNECT A TEMPORARY 208/120V, 4W, 3 PHASE, 150kVA GENERATOR TO ATS 011-01-LEP-ATS-02. ATS 011-01-LEP-ATS-2 WILL SEND A SIGNAL TO THE TEMPORARY GENERATOR WHEN TO TURN ON AND OFF.
4. MOVE INDIVIDUAL LOADS FROM PANEL PB AND PC TO PANEL 011-01-LLS-PNL-01. LOADS TO MOVE ARE SHOWN ON NEW PANEL ON DRAWING DU2-401.2.
5. MOVE INDIVIDUAL LOADS FROM PANEL PB AND PC TO PANEL 011-01-LCR-PNL-01. LOADS TO MOVE ARE SHOWN ON NEW PANEL ON DRAWING DU2-401.2.
6. MOVE INDIVIDUAL LOADS FROM PANEL PB AND PC TO PANEL 011-01-LEQ-PNL-01. LOADS TO MOVE ARE SHOWN ON NEW PANEL ON DRAWING DU2-401.2.
7. ENSURE GENERATORS 1 TO 4 ARE AVAILABLE TO RUN. TURN OFF 150A BREAKER IN PANEL PB THAT FEEDS PANEL PC AND REMOVE SUPPLY CABLES FROM THIS BREAKER TO PANEL PC. INSTALL NEW CONDUIT AND CABLE FROM PANEL 011-01-LEP-PNL-01 TO PANEL PC. AFTER CONNECTED, TURN ON FEEDER BREAKER IN PANEL 011-01-LEP-PNL-01 TO RE-POWER PANEL PC. NOTE GENERATORS 3 AND 6 DO NOT HAVE ACCESSORY POWER DURING THIS TRANSITION.
8. MOVE INDIVIDUAL GENERATOR #4 208/120 VOLT CIRCUIT LOADS FROM PANEL PB TO PANEL PC. SEE DRAWING DU2-401.2 FOR THE CIRCUITS TO MOVE TO PANEL PC.
9. TEMPORARALY MOVE INDIVIDUAL GENERATOR #3 208/120 VOLT LOADS FROM PANEL PB TO PANEL PC. SEE DRAWING DU2-401.2 FOR THE CIRCUITS TO MOVE TO PANEL PC.
10. ENSURE GENERATORS 3 AND 4 ARE AVAILABLE TO RUN. AFTER INDIVIDUAL GENERATOR #3 AND #4 LOADS ARE MOVED FROM PANEL PB TO PANEL PC TURN OFF THE GENERATOR SWITCHGEAR BREAKER UE-2 WHICH DE-ENERGIZES THE EXISTING HOUSE POWER TRANSFORMER, ECB 400A BREAKER ENCLOSURE, AND PANEL PB. REMOVE PANEL SUPPLY CABLES FROM ECB 400A TO PANEL PB. INSTALL NEW CABLE FROM PANEL 011-01-LEP-PNL-01 TO PANEL PB USING NEW AND EXISTING CONDUIT AND GUTTER. SEE DRAWING DU2-604 DETAIL 1. AFTER CONNECTED, TURN ON FEEDER BREAKER IN PANEL 011-01-LEP-PNL-01 TO RE-POWER PANEL PB. NOTE GENERATORS 1 AND 2 DO NOT HAVE ACCESSORY POWER DURING THIS TRANSITION.
11. WITH THE GENERATOR SWITCHGEAR BREAKER UE-2 OFF, ECB 400A BREAKER ENCLOSURE STILL DE-ENERGIZED, AND POWER CABLE REMOVED FROM ECB TO PANEL PB REMOVE CONDUIT ABOVE ECB AND CONNECT TO TERMINAL BOX ABOVE ECB. INSTALL CABLE FROM ECB TO TERMINAL BOX AND CONNECT.
12. NOTE THAT UE-2 BREAKER BACKUP BY THE GENERATOR SYSTEM. TURN ON THE GENERATOR SWITCHGEAR BREAKER UE-2 WHICH ENERGIZES THE EXISTING HOUSE POWER TRANSFORMER AND TO ECB 400A BREAKER. THE NEW AND EXISTING 208/120 VOLT PANELS ARE NOW WITH GENERATOR BACKUP POWER VIA ATS 011-01-LEP-ATS-01.
13. REMOVE TEMPORARY GENERATOR AFTER EXISTING 400A ECB IS CONNECTED TO ATS 011-01-LEP-ATS-01 AND 12kV BREAKER UE-2 IS TURNED ON.
14. AFTER PANEL PB IS SUPPLIED BY PANEL "011-01-LEP-PNL-01" MOVE BACK THE TEMPORARALY MOVED INDIVIDUAL GENERATOR #3 208/120 VOLT LOADS THAT ARE NOW ON PANEL PC BACK TO PANEL PB. SEE DRAWING DU2-401.2 FOR THE CIRCUITS TO MOVE BACK TO PANEL PC.
15. RENAME PANEL PB AND PC TO LATEST REQUIREMENTS THAT NOTE THEY ARE NOW ONLY LIFE SAFETY LOADS.
16. NEW 2-#16 AWG AND 1-#10 AWG GND IN NEW 0.75" CONDUIT FOR EMERGENCY LIGHTING INVERTER.



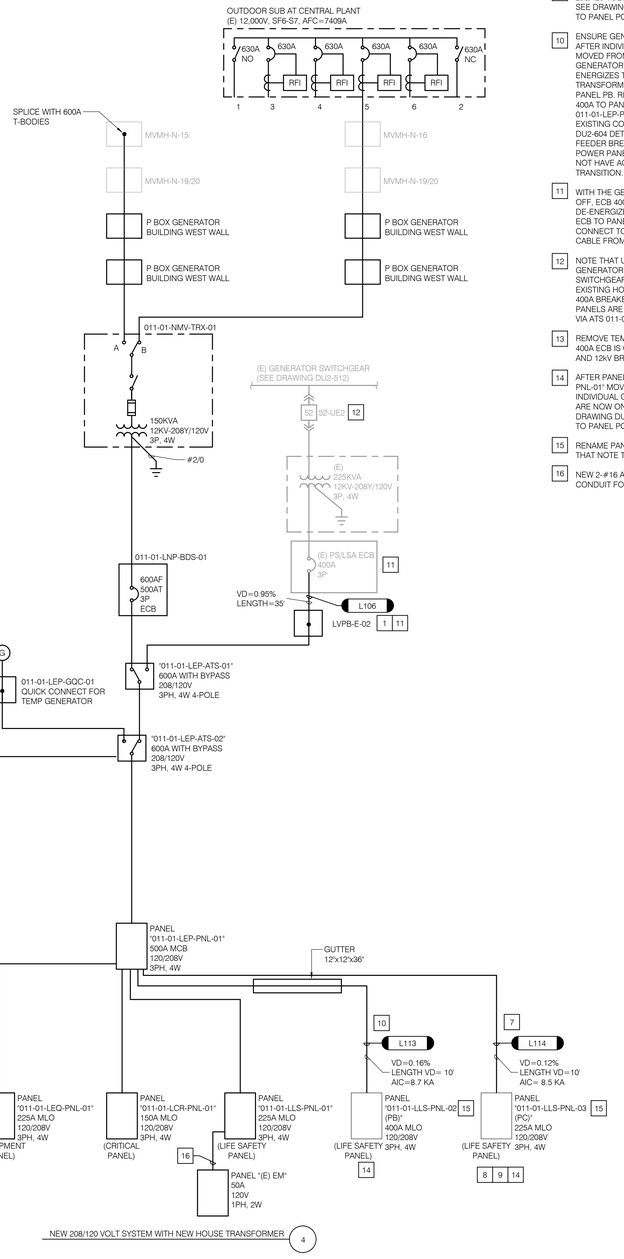
NEW 208/120 VOLT SYSTEM WITH NEW HOUSE TRANSFORMER 1



EXISTING GENERATOR BUILDING 208/120 VOLT SYSTEM 2



EXISTING GENERATOR BUILDING 208/120 VOLT SYSTEM 3



NEW 208/120 VOLT SYSTEM WITH NEW HOUSE TRANSFORMER 4

(MILESTONE 1)

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REGISTERED PROFESSIONAL ENGINEER — JASON K. CHOW — No. E21060 — STATE OF CALIFORNIA — SIGNED: 04/02/2024

LICENSED ARCHITECT — KEVIN S. BOOTS — RC-30600 — 08/31/2025 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

P2S ENG
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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
04/01/2025	4	HCAI BACKCHECK 3
03/14/2025	A	ADDENDUM A
01/31/2025	3	HCAI BACKCHECK 2
10/25/2024	2	HCAI BACKCHECK 1
06/13/2024	1	HCAI SUBMITTAL
04/18/2024	-	HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

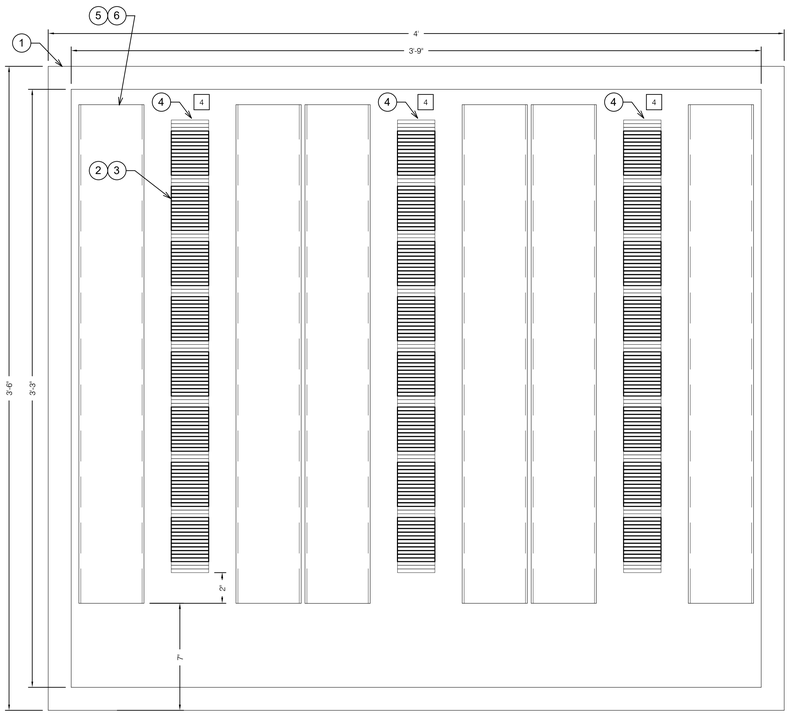
1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712105 SCALE: 12" = 1'-0"

DESCRIPTION
LOW VOLTAGE CUT OVERS - SINGLE-LINE DIAGRAM

DU2-513

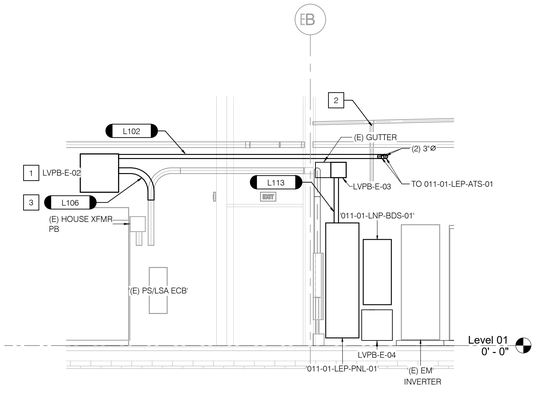
Print Date: 4/9/2025 6:07:45 PM



ENCLOSURE EQUIPMENT				
ITEM	MANUFACTURER	DESCRIPTION	CATALOG #	WEIGHT
1	HOFFMAN 42T X 48W X 12D	CONTINUOUS HINGE ENCLOSURE WITH BACK PANEL	A424812WFSSLP	156 LBS
2	-	2 POINT WITH TEST HOLE TERMINAL STRIP, SPRING CLAMP CONNECTION, #26 to 10AWG	1492-L4 (GRAY)	<1 LB
3	-	2 POINT WITH TEST HOLE TERMINAL STRIP, SPRING CLAMP CONNECTION, #26 to 10AWG	1492-L4-B (BLUE)	<1 LB
4	-	DIN RAIL	-	<1 LB
5	PANDUIT 4"W X 3"D	BASE WIRING DUCT	F4X3WH6	<1 LB
6	PANDUIT	WIRING DUCT COVER	C4WH6	<1 LB
7	NAMEPLATE BLACK WITH WHITE LETTERING	NAMEPLATE TO READ CUP AND IPT ATS ID'S	-	<1 LB

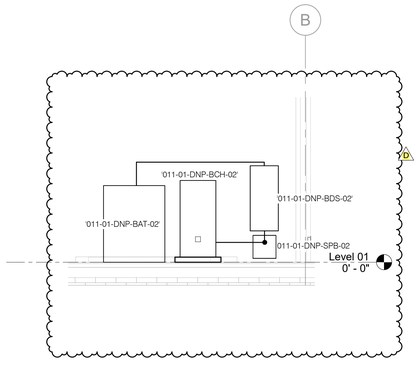
5 ATS-GEN TERMINAL CABINET

SCALE: NONE



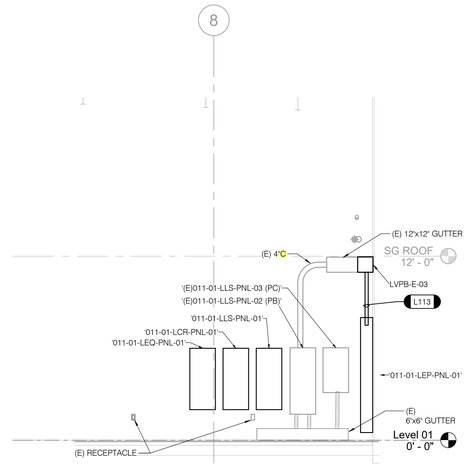
4 GENERATOR BUILDING TRANSFORMER FEED ELEVATION

SCALE: 1/4" = 1'-0"



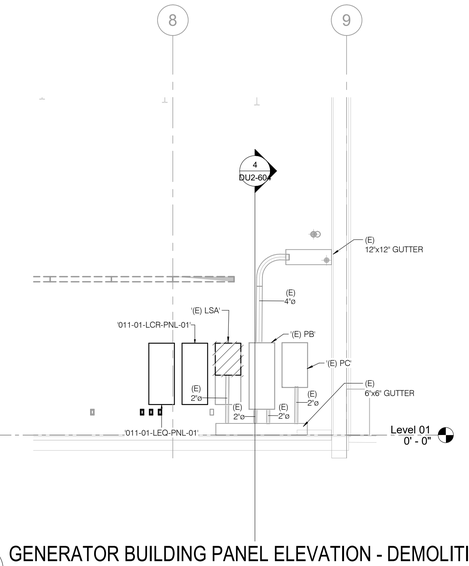
3 DC CHARGER ELEVATION

SCALE: 1/4" = 1'-0"



2 GENERATOR BUILDING PANEL ELEVATION - RENOVATION

SCALE: NONE



1 GENERATOR BUILDING PANEL ELEVATION - DEMOLITION

SCALE: 1/4" = 1'-0"

NOTES

1. IN SPLICE BOX LVPB-02 INSTALL MULTI TAP INSULATED CONNECTORS ON END OF CABLES. TERMINATE CABLE FROM 011-01-LEP-ATS-01 TO PULLBOX LVPB-E-02.
2. (E) VERTICAL SECONDARY CONDENSATE DRAIN PIPE TO BE REMOVED AND RELOCATED TO SOUTH SIDE OF BUILDING. SEE DRAWING P211.2.
3. IN MILESTONE 1 STEP I CONDUIT LEAVING TOP RIGHT OF (E) PS/LSA ECB TO BE REMOVED AND ROUTED TO LVPB-E-02. SEE SINGLE LINE DRAWING DU2-513.
4. INSTALL 3 GRAY TERMINALS THEN 12 BLUE TERMINALS AND REPEAT FOR 8 TIMES FOR EACH COLUMN. AT END OF EACH COLUMN ADD 3 GRAY TERMINALS. TOTAL TERMINALS PER COLUMN IS 96 BLUE AND 27 GRAY.

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REGISTERED PROFESSIONAL ENGINEER — CARSON K. CHOW — No. E21080 — CIVIL — STATE OF CALIFORNIA
SIGNED: 04/02/2024

LICENSED ARCHITECT — KEVIN S. BOOTS — RENEWAL 08/31/2025 — C-30600 — STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-01

CONSULTANT

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712105 SCALE: As indicated

DESCRIPTION
DETAILS - ELEVATION

DU2-604

Print Date: 4/9/2025 6:13:10 PM

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

RBB#1712076

HCAI NOTES

1. THE FIRE ALARM SYSTEM SHALL CONFORM TO ARTICLE 760 OF THE CALIFORNIA ELECTRICAL CODE.
2. INSTALLATION OF THE FIRE ALARM SYSTEM SHALL NOT BE STARTED UNTIL DETAILED PLANS AND SPECIFICATIONS. INCLUDING CALIFORNIA STATE FIRE MARSHALL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAVE BEEN APPROVED BY DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION.
3. UPON COMPLETION OF THE INSTALLATION OF THE FIRE ALARM SYSTEM A SATISFACTORY TEST OF THE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE FIRE MARSHAL.
4. A MINIMUM OF 48 HOURS NOTICE SHALL BE REQUIRED FOR ANY INSPECTION AND/OR TESTING.
5. ALL DEVICES OF THE FIRE ALARM SYSTEM SHALL BE APPROVED AND LISTED BY THE CALIFORNIA STATE FIRE MARSHAL.
6. A STAMPED SET OF APPROVED FIRE ALARM PLANS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION. ANY DEVIATION FROM APPROVED PLANS, INCLUDING THE SUBSTITUTION OF DEVICES SHALL BE APPROVED BY THE FIRE MARSHALL.
7. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE, OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF THE INSPECTOR OF RECORD.
8. A CERTIFICATE OF COMPLIANCE SHALL BE PREPARED BY THE INSTALLER AND GIVEN TO THE FIRE MARSHAL UPON COMPLETION OF THE INSTALLATION.
9. AN AIR VELOCITY TEST SHALL BE CONDUCTED WITH TEST REPORT SUBMITTED TO HCAI FIELD FIRE MARSHAL.

HCAI PLAN REVIEW CHECKLIST

X	SCOPE OF PROJECT
X	FLOOR PLAN SHOWING FIRE ALARM DEVICES
X	RISER DIAGRAM
X	POINT TO POINT DIAGRAM
X	CALIFORNIA STATE FIRE MARSHAL LISTING SHEET SHOWING EXPIRATION DATE FOR ALL COMPONENTS
X	MANUFACTURERS SPECIFICATION SHEET ON ALL FIRE ALARM EQUIPMENT.
X	BATTERY CALCULATION OR RECALCULATION
X	VOLTAGE DROP CALCULATION OR RECALCULATION
X	ACCURATE LEGEND OF SYMBOLS FOR ALL FIRE ALARM DEVICES BEING INSTALLED
X	ELEVATION DETAIL OF MANUAL PULL STATION INSTALLATION
X	ELEVATION DETAIL OF VISUAL ALARM SIGNALING DEVICES
X	LOCATION OF FIRE/SMOKE BARRIER WALLS ON FLOOR PLAN
X	INDENTIFICATION OF TYPE OF WIRING USED, INCLUDING GAUGE AND WIRE COUNTS
X	DESIGN NUBER AND DETAIL OF THROUGH PENETRATION FIRESTOP SYSTEM
X	FLOOR PLAN SHOWING ROOM IDENTIFICATION/USE
N/A	DETAILS ON SUPPORT AND ANCHORAGE OF ANY FIRE ALARM EQUIPMENT WEIGHING OVER 20 POUNDS
X	SEQUENCE OF OPERATION/EVENTS WHEN ALARM SYSTEM IS ACTIVATED
X	HCAI PROJECT NUMBER

SCOPE OF WORK

- THE GENERATOR BUILDING WILL BE PROVIDED WITH A NEW FIRE ALARM SYSTEM IN COMPLIANCE WITH THE CALIFORNIA BUILDIGN CODE (CBC), CALIFORNIA ELECTRICAL CODE (CEC), AND NFPA 72. THE EXISTING FIRE ALARM SYSTEM WILL REMAIN OPERATIONAL UNTIL THE NEW FIRE ALARM SYSTEM HAS BEEN TESTED AND APPROVED BY THE APPLICABLE AUTHORITY HAVING JURISDICATION.
- THE CONTRACTOR WILL PROVIDE AND INSTALL A NEW FIRE ALARM SYSTEM THAT WILL INCLUDE BUT NOT LIMITED TO A NEW FIRE ALARM CONTROL PANEL (FACP) AND FIELD DEVICES AS SHOWN ON DRAWINGS AT THE GENERATOR BUILDING.
- THE ADDED INITIATING DEVICES ARE WIRED IN CLASS B, AND THE SYSTEM IS POWER LIMITED.
- CONTRACTOR WILL PROVIDE ALL PROGRAMMING AND SYSTEM TEST, CHECKOUT AND FINAL INSPECTION WITH THE AUTHORITY HAVING JURISDICTION. THE SEQUENCE OF OPERATIONS REMAINS THE SAME.
- THE EXISTING FIRE ALARM SYSTEM SHALL NOT BE DISCONNECTED OR TAKEN OUT OF SERVICE WITHOUT AUTHORITY HAVING JURISDICTION'S APPROVAL AND WRITTEN PERMISSION FROM THE OWNER. AFTER THE NEW SYSTEM HAS BEEN ACCEPTED, THE EXISTING FIRE ALARM SYSTEM SHALL BE DEMOLISHED IN ITS ENTIRETY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER THE TIMING OF ANY EXISTING FIRE ALARM SYSTEM DEMOLITION WORK.

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SYSTEM TESTING NOTES

1. CONTRACTOR SHALL PROVIDE A CERTIFIED IMPARTIAL FIRE ALARM INSPECTOR.
2. 100% OF THE SYSTEM IN CONTRACT WILL BE TESTED AND INSPECTED WITH THE CONTRACTOR OR CONTRACTOR'S SUB AND DISTRICT'S ETS STAFF MEMBER PRESENT. INSPECTION WILL INCLUDE, BUT NOT LIMITED TO, REMOVING STROBES/HORNS TO CHECK FOR "T-TAPS", REMOVING J-BOX TO CHECK WIRE GAGES AND SPLICES.
3. FOLLOW ALL REQUIREMENTS AND INSTRUCTIONS PROVIDED BY MANUFACTURER UPON INSTALLATION OF MANUFACTURER'S PRODUCTS AND DEVICES.
4. PRIOR TO REQUESTING FINAL APPROVAL OF THE INSTALLATION, THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE FIRE CODE OFFICIAL THAT THE SUBJECT FIRE PROTECTION SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS AND HAS BEEN TESTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND THE APPROPRIATE INSTALLATION STANDARD. ANY DEVIATIONS FROM THE DESIGN STANDARD SHALL BE NOTED AND COPIES OF THE APPROVALS FOR SUCH DEVIATIONS SHALL BE ATTACHED TO THE WRITTEN STATEMENT. (CFC 901.2.1.)
5. UPON COMPLETION OF A SYSTEM INSTALLATION, THE SYSTEM SHALL BE TESTED IN THE PRESENCE OF AND IN A MANNER ACCEPTABLE TO D.S.A./I.O.R. CONTRACTOR SHALL SUPPLY NECESSARY TESTING EQUIPMENT, INCLUDING A "SOUND LEVEL METER" TO CHECK ACCEPTABLE NOISE LEVELS OF AUDIBLE DEVICES. PROVIDE TEST RESULTS PER NFPA 72 TO ARCHITECT, I.O.R. AND TO LOCAL FIRE AUTHORITY, PER CFC 907.8.2.
6. INSPECTION, TESTING AND MAINTENANCE SHALL BE IN ACCORDANCE WITH NFPA 72 14.4.1. AND TABLE 14.4.3.2. REACCEPTANCE TESTING.
7. LOCAL FIRE AUTHORITY NOTIFICATION TO BE DOCUMENTED AND RECORDED AS "UNAVAILABLE" OR "CONFIRM WHEN PRESENT".

APPLICABLE CODES

2022	CALIFORNIA ADMINISTRATIVE CODE (CAC) PART 1, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
2022	CALIFORNIA BUILDING CODE (CBC) PART 2, TITLE 24, CCR
2022	CALIFORNIA ELECTRICAL CODE (CEC) PART 3, TITLE 24, CCR BASED ON THE 2020 NATIONAL ELECTRICAL CODE (NEC)
2022	CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24, CCR BASED ON THE 2021 UNIFORM MECHANICAL CODE (UMC)
2022	CALIFORNIA PLUMBING CODE (CPC) PART 5, TITLE 24, CCR BASED ON THE 2021 UNIFORM PLUMBING CODE (UPC)
2022	CALIFORNIA FIRE CODE (CFC) PART 9, TITLE 24, CCR BASED ON THE 2021 INTERNATIONAL FIRE CODE (IFC)
2022	CALIFORNIA ENERGY STANDARDS
2022	CAL GREEN CODE ALL OTHER APPLICABLE LOCAL AND STATE LAWS AND REGULATIONS
2022	NATIONAL FIRE ALARM AND SIGNALING CODE, NFPA 72
2020	NATIONAL ELECTRICA CODE, NFPA 70

PHASING NOTES

A (revision delta)

NEW FIRE ALARM SYSTEM SHALL BE INSTALLED, TESTED, AND FULLY FUNCTIONAL AS A PART OF DRY UTILITY (DU) INC 2 MILESTONE 1. REFER TO SHEET DU2-006 FOR CONSTRUCTION SEQUENCING.

PHASE 1 – INSTALLATION PHASE

A. CONTRACTOR TO PROVIDE AND INSTALL A NEW FIRE ALARM SYSTEM. THE NEW FACP LOCATION WILL BE ON THE SOUTH WALL WITHIN THE ELECTRICAL SWITCHGEAR ROOM (SEE FA210.2).
B. CONTRACTOR TO CORRIDINATE WITH THE GENERAL CONTRACTOR AND OWNERSHIP PRIOR TO COMPLETING ANY WORK.
C. NEW DEVICES AND CIRCUITS WILL BE PROVIDED WITHIN THE SCOPE OF WORK.
D. THE CONTRACTOR SHALL COORDINATE WITH OWNERSHIP AND THE GENERAL CONTRACTOR PRIOR TO PRETESTING AND CONDUCTING AN ACCEPTANCE TEST WITH THE APPLICABLE AUTHORITY HAVING JURISDICATION.

PHASE 2 - DEMOLITION PHASE

A. UPON THE COMPLETION AND APPROVAL OF THE ACCEPTANCE TESTING WITH THE APPLICABLE AUTHORITY HAVING JURISDICATION THE CONTACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND OWNERSHIP TO CONDUCT THE DEMOLITION OF THE EXISTING/ORIGINAL FIRE ALARM SYSTEM.
B. ALL EXISTING CONTROL EQUIPMENT AND FIELD DEVICES SHALL BE REMOVED AND PROVIDED TO THE FACILITY.
C. ALL EXISTING CONDUIT AND WIRE SHALL BE REMOVED. ALL UNACCESSIBLE / ABANDONED CONDUITS AND WIRES SHALL BE TAGGED ON BOTH ENDS.
D. PATCH AND PAINT SHALL BE COORDINATED BY THE GENERAL CONTRACTOR WITH THE FIRE ALARM CONTRACTOR AND FACILITY.

FIRE ALARM SYBOLS AND LEGEND

SYMBOL	MANUFACTURER	MODEL #	DESCRIPTION	C.S.F.M. #	ROUGH-IN-BOX CONDUIT	QTY
TVSS	Ditek	DTK-120HW	TRANSIENT VOLTAGE SURGE SUPRESSOR	4945-2105:0102	PROVIDED BY ELECTRICIAN	1
	SIMPLEX	4098-5611	CONVENTIONAL HEAT SENSOR	7270-0026:0514	4S, 2-1/8" DEEP BOX	16
S	SIMPLEX	4098-9714	TRUEALARM PHOTO SMOKE SENSOR	7272-0026:0218	4S, 2-1/8" DEEP BOX	5
FACP	Simplex-Tyco Fire Protection Products	4007-9101(BA)	Basic control unit with 2x40 LCD Operator Interface and (1) Twoloop Isolated IDNet+ Communications Channel, Class A or Class B operation, with support for up to 248 addressable analog devices	7165-0026:0378	PROVIDED BY SIMPLEX	1
AIM	Simplex	4090-9001	IDNET SUPERVISED IAM	7300-0026:0223	4S, 2-1/8" DEEP BOX	2
75cd	Simplex	4906-9127	Horn Strobe, 75CD, A/V M-C NON Address, Notification Appliance	7125-0026:0317	4S, 2-1/8" DEEP BOX	3
110cd	Simplex	4906-9127	Horn Strobe, 110CD, A/V M-C NON Address, Notification Appliance	7125-0026:0317	4S, 2-1/8" DEEP BOX	3
15cd	Simplex	4906-9101	Strobe, 15CD, V/O M-C NON-Address, Notification Appliance	7125-0026:0316	4S, 2-1/8" DEEP BOX	1
75cd	Simplex	4906-9101	Strobe, 75CD, V/O M-C NON-Address, Notification Appliance	7125-0026:0316	4S, 2-1/8" DEEP BOX	4
F	SIMPLEX	4099-9004	ADDRESSABLE MANUAL PULL STATION - SINGLE ACTION	7150-0026:0224	4S, 2-1/8" DEEP BOX W/ SINGLE GANG RING	4

WIRING LEGEND

	CIRCUIT DESCRIPTION	CONSTRUCTION	GAUGE	CIRCUIT PROPERTIES	FPLR	FPLP	THHN	TFFN	OUTDOOR	C.I.
					ACCEPTABLE CABLE TYPES					
A	ADDRESSABLE NOTIFICATION	UTP SOLID	14 AWG	60pf/ft. MAX CAPACITANCE; 3 twists/ft. RECOMMENDED	X	X				
M	IDNET	UTP SOLID	18 AWG		X	X				
P	POWER	2 COND. SOLID	16 AWG		X	X				
R	RELAY	2 COND. SOLID	14 AWG		X	X				
S	AUDIO	STP SOLID	18 AWG	LOW CAPACITANCE CABLE MAY BE REQUIRED	X	X				
Z	ZONE (IDC)	2 COND. STRANDED	16 AWG		X	X				

CONDUIT SIZE	MAX CONDUCTOR AREA	CONDUIT SIZE	MAX CONDUCTOR AREA	NOTES
1/2"	0.12 SQ INCH *	1-1/4"	0.60 SQ INCH *	*40% FILL PER N.E.C.
3/4"	0.21 SQ INCH *	1-1/2"	0.82 SQ INCH *	SUBSCRIPT "u": UNSHIELDED CABLES MIXED WITH
1"	0.34 SQ INCH *	2"	1.34 SQ INCH *	SHIELDED CABLES OF SAME CIRCUIT DESIGNATION.

****OUTDOOR AERIAL CABLE REQUIRES MESSENGER** **STP = SHIELDED TWISTED PAIR, UTP = UNSHIELDED TWISTED PAIR**

ITEMS SUCH AS CAPACITANCE BETWEEN CONDUCTORS AND WIRE GAUGE CAN BE CRUCIAL TO THE CIRCUIT DESIGN OF THIS SYSTEM INSTALLATION. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR SELECTING AND INSTALLING CABLE MANUFACTURER AND MODEL THAT MEETS OR EXCEEDS THE ABOVE REQUIREMENTS. RECOMMENDED CABLE MANUFACTURERS AND MODEL NUMBERS ARE AVAILABLE UPON REQUEST.

SEQUENCE OF OPERATION

	MANUAL PULL STATION	AREA SMOKE / HEAT DETECTOR	BUILDING POWER FAILURE TROUBLE
ANNUNCIATE AT FIRE CONTROL PANEL	YES (ALARM)	YES (ALARM)	YES (TROUBLE)
ANNUNCIATE AT 24 HOUR ATTENDED LOCATION (PBX)	YES (ALARM)	YES (ALARM)	YES (TROUBLE)
ANNUNCIATE AUDIO/VISUAL THROUGHOUT BUILDING	YES	YES	NO

FIRE ALARM SHEET INDEX

FIRE ALARM INSTALLATION NOTES

1. ALL WALL-MOUNTED AUDIBLE APPLIANCES SHALL HAVE THEIR HEIGHTS ABOVE THE FINISHED FLOOR AT NOT LESS THAN 90" TO THE FINISHED FLOOR AND AT NOT LESS THAN 6" TO THE FINISHED CEILING, AS CEILING HEIGHT PERMITS (NFPA 72, 2022 CH. 18.4.9.1). ALL WALL MOUNTED VISUAL APPLIANCES AND COMBINATION AUDIBLE/ VISUAL APPLIANCES SHALL BE MOUNTED NOT LESS THAN 80" AND NOT GREATER THAN 96" ABOVE THE FINISHED FLOOR. (NFPA 72, 2022, CH. 18.5.5.1).
2. ALL EQUIPMENT SHALL BE U.L. AND C.S.F.M. LISTED.
3. ALL WIRING SHALL BE IN ACCORDANCE WITH THE CEC.
4. ALL JUNCTION BOXES SHALL BE SIZED IN ACCORDANCE WITH THE CEC AND SHALL HAVE THEIR COVERS PAINTED RED WHERE APPLICABLE.
5. ELECTRICAL CONTRACTOR SHALL FURNISH ACCESS PANELS TO AREAS THAT REQUIRE SERVICING, TROUBLESHOOTING, ETC.
6. DO NOT DEVIATE FROM CONDUIT RUNS AS SHOWN ON FLOOR PLANS WITHOUT PRIOR APPROVAL FROM THE ELECTRICAL ENGINEER. FACTORS SUCH AS EXCESSIVE VOLTAGE DROPS, ADDITIONAL PARTS, ENGINEERING, ETC., THAT ARE A RESULT OF CONDUIT RUN DEVIATIONS SHALL BE THE SOLE RESPONSIBILITY OF THE ELECTRICAL CONTRACTORS.
7. DETECTORS SHALL NOT BE LOCATED IN A DIRECT AIR-FLOW NOR CLOSER THAN THREE (3) FEET FROM AN AIR SUPPLY DIFFUSER.
8. ALL FAN SHUDOWN FUNCTIONS, DAMPER CLOSURES, AND ASSOCIATED MECHANICAL SYSTEM FIRE ALARM INTERFACES SHALL BE BY MECHANICAL CONTRACTOR AND SHALL BE COORDINATED WITH FIRE ALARM SYSTEMS.
9. ALL DUCT SMOKE DETECTORS SHALL BE MOUNTED BY THE MECHANICAL CONTRACTOR. DUCT SMOKE DETECTORS EXPOSED TO THE WEATHER SHALL BE C.S.F.M. LISTED FOR OUTDOOR INSTALLATION AND WEATHER PROTECTED BY THE MECHANICAL CONTRACTOR. ALL AIR VELOCITY TESTING SHALL BE PERFORMED BY THE MECHANICAL CONTRATOR.
10. ALL 120VAC POWER REQUIREMENTS FOR THE FIRE ALARM SYSTEM SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR AND SHALL MEET ALL REQUIREMENTS OF THE CEC
11. ALL FIRE ALARM DEVICE BACKBOXES, FIRE ALARM TERMINAL CABINETS, GUTTERS, JUNCTION BOXES, AND ASSOCIATED CONDUITS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. REFER TO THE FIRE SYMBOL LIST AND/OR MOUNTING DETAILS FOR ADDITIONAL INFORMATION. SYSTEM SUPPLIER PROVIDED BACKBOXES SHALL BE INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
12. SMOKE DETECTOR TESTING SHALL BE PERFORMED TO ENSURE THAT EACH DETECTOR IS WITHIN ITS LISTED AND MARKED SENSITIVITY RANGE USING THE METHODS RECOMMENDED PER CFC 907.8.4 AND NFPA 72, 2022 14.4.4.3 AND 17.7.3.
13. ALL WIRING, INTIATING DEVICES, AND ANNUNCIATOR PANEL SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION. THE FIRE ALARM CONTROL PANEL TO SUPERVISE THE ANNUNCIATOR PANEL, ALL INITIATING AND INDICATING DEVICE CIRCUITS.
    A. SINGLE INITIATING DEVICE CIRCUITS (IDC): CLASS B
    B. SIGNALING LINE CIRCUITS (SLC): CLASS A
    C. NOTIFICATION APPLIANCE CIRCUITS (NAC): CLASS B
14. ALL WIRING SHALL BE CUT FOR IN AND OUT. WIRING SHALL NOT BE LOOPED THROUGH DEVICES.
15. POINT AND COMMON ANNUNCIATION AND T-TAPPING ARE PROHIBITED.
16. FIRE ALARM CONTRACTOR SHALL INDIVIDUALLY SET FIRE ALARM SYSTEM SPEAKER UNITS TO BEST SUIT INDIVIDUAL ROOM CHARACTERISTICS, AND TO INSURE ALARM SOUND LEVELS OF 15dB OVER AMBIENT LEVELS, OR A MINIMUM OF 70dB, WHICHEVER IS HIGHER, IN ALL AREAS OF THE BUILDING. TAP ALL SPEAKERS AT 0.5W UNLESS NOTED OTHERWISE.
17. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70.7V SETTING.
18. ALL FLOW SWITCHES SHALL BE TWO (2) WIRE WITH NON-ELECTRONIC RETARD TYPE SIMILAR TO THE SYSTEM SENSOR MODEL "WFD SERIES" ONLY.
19. ALL DEVICES IN THE ALARM SYSTEM SHALL BE COMPATIBLE AND INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.
20. SYSTEM SHALL BE FURNISHED AND INSTALLED BY AN AUTHORIZED DISTRIBUTOR.
21. FIRE ALARM SYSTEM INSTALLATION COMPANY SHALL BE UL LISTED (UUJS).
22. "DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER THE CONSTRUCTION CLEAN-UP OF ALL TRADES IS COMPLETE AND FINAL. DETECTORS THAT HAVE BEEN INSTALLED PRIOR TO FINAL CLEAN-UP BY ALL TRADES SHALL BE CLEANED OR REPLACED IN ACCORDANCE WITH CHAPTER 17." CLEANING OR REPLACEMENT OF DEVICES THAT WERE MOUNTED AT THE REQUEST OF THE CONTRACTOR WILL NOT BE PERFORMED WITHOUT WRITTEN AUTHORIZATION THAT ASSUMES FINANCIAL RESPONSIBILITY FOR THE COST INCURRED. TEST OF DETECTORS SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 14.4.5.3 AND CFC 907.8.4.
23. PER CBC 11B-309, ACTIVATION OF THE INITIATING DEVICE SHALL NOT REQUIRE MORE THAN 5 LBS. (22.2N) OF FORCE OR REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST.
24. THE SYSTEM SHALL CONFORM TO THE CALIFORNIA CODE OF REGULATIONS (CCF) TITLES 19 AND 24 AS APPLICABLE TO THIS PROJECT.
25. THE AUDIBLE ALARM SIGNAL SHALL BE THE STANDARD FIRE ALARM EVACUATION SIGNAL, ANSI S34.1 AUDIBLE EMERGENCY EVACUATION SIGNAL, "THREE PULSE TEMPORAL PATTERN", AS DESCRIBED IN NFPA 72. EXCEPTION: THE USE OF THE EXISTING EVACUATION SIGNALING SCHEME SHALL BE PERMITTED WHERE APPROVED BY THE ENFORCING AGENT. (CFC 907.5.2.1.4).
26. PROVIDE A LABLE WITHIN THE FACP AND EACH POWER SUPPLY WITH THE PANEL NUMBER AND CIRCUIT NUMBER OF THE 120-VOLT POWER SOURCE.
27. THE "END OF LINE RESISTANCE" OF EACH CIRCUIT SHALL BE TESTED IN THE PRESENCE OF THE I.O.R. AND SHALL NOT EXCEED A MAXIMUM OF 20% VOLTAGE DROP, OR LISTED MANUFACTURER'S MINIMUM OPERATING VOLTAGE.
28. PROVIDE APPROPRIATE MANUFACTURER PRODUCT DATA SHEETS AND APPLICABLE CSFM LISTINGS FOR ALL SUBSTITUTED MANUFACTURER'S MATERIAL, EQUIPMENT, OR APPLIANCES TO THE AUTHORITY HAVING JURISDICTION.
29. CONTRACTOR SHALL PROVIDE FIRE WATCH FOR ALL OCCUPIED ARES OF WORK WHERE THE REQUIRED FIRE ALARM SYSTEM IS OUT OF SERVICE FOR THE DURATION OF THE SYSTEM OUTAGE. FIRE AND SYSTEM/ EQUIPMENT SHALL BE PER 2022 CFC 901.7.
30. THESE DRAWINGS ARE A GENERAL GRAPHIC REPRESENTATION OF THE WORK. FIRE ALARM DEVICES AND WIRING LAYOUTS, AS SHOWN, ARE CHEMATIC. FIRE ALARM CONTRACTOR TO PROVIDE A COMPLETE SET OF SHOP DRAWINGS THAT INCLUDES BUT NOT LIMITED TO WIRING DIAGRAMS, VOLTAGE DROP CALCULATIONS, BATTERY CAPACITY CALCULATIONS, ETC.
31. THE CONTRACTOR SHALL ENSURE THAT ALL PENETRATIONS THROUGH FIRE RATED BUILDING STRUCTURES, WALLS, AND FLOORS SHALL BE SEALED WITH AN APPROPRIATE FIRE STOP SYSTEM. THIS REQUIREMENT APPLISES TO THROUGH PENETRATIONS COMPLETE PENETRATION AND MEMBRANE PENETRATIONS (THROUGH ONE SIDE OF A FOLLOW FIRE RATED STRUCTURE). ANY PENETRATING ITEMS I.E., RISER SLOTS AND SLEEVES, ABLES, CONDUIT, CABLE TRAY, AND RACEWAYS, ETC. SHALL BE PROPERLY FIRE STOPPED.
32. THE CONTRACTOR SHALL ENSURE THAT ANY FIRE STOP SYSTEMS SHALL BE UL CLASSIFIED TO ASTM E8 14(UL 1479). A DRAWING SHOWING THE PROPOSED FIRE STOPED SYSTEM SHALL BE PROVIDED TO THE ARCHITECT PRIOR TO INSTALLING THE FIRE STOP SYSTEM(S).
33. THE CONTRACTOR SHALL ENSURE THAT ALL FIRE STOP SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHALL BE COMPLETELY INSTALLED AND AVAILABLE FOR INSPECTION BY THE LOCAL INSPECTION AUTHORITIES PRIOR TO CABLE SYSTEM ACCEPTANCE.

GENERAL NOTES

1. THE FACP IS NOT TO BE USED AS A TERMINAL CABINET.
2. ALL FIRE ALARM WIRING MUST TEST FREE OF OPENS, SHORTS, AND GROUNDS.
3. CONDUIT AND JUNCTION BOXES ARE NOT TO BE USED FOR UNRELATED WIRING.
4. INSTALLATION METHODS AND MATERIALS SHALL CONFORM WITH ALL APPLICABLE SECTIONS OF NEC/CEC.
5. SEE SPECIFICATIONS FOR ADDITIONAL INSTALLATION REQUIREMENTS.
6. 120 VAC 60HZ INPUT POWER FOR FIRE ALARM CONTROLS SHALL BE A DEDICATED BRANCH CIRCUIT OF AN EMERGENCY SYSTEM [CEC 517.32(C)(1) WITH LOCKING BREAKER PROPERLY LABELED "FIRE ALARM CIRCUIT CONTROL" AND PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL PANEL AS PER NFPA 72 10.6.5.2. ALL 120V BRANCH CIRCUITS SHALL HAVE SURGE ARRESTORS INSTALLED.
7. ANY SMOKE DETECTOR HEAD INSTALLED BEFORE BUILDING IS CLEANED AND ACCEPTED SHALL BE COVERED TO PROTECT FROM DUST. ANY FALSE ALARMS DUE TO DIRT-CONTAMINATED HEADS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
8. THESE DRAWINGS ARE DIAGRAMMATIC. THEY SHOW DEVICE LOCATION, NUMBER OF CONDUCTORS, WIRE TYPE, CIRCUITING AND ROUTING. THE BACK BOX SCHEDULE LISTS THE BACK BOXES FOR THAT SPECIFIC DEVICE. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO ENSURE THAT ALL CONDUIT AND PULL BOXES ARE SIZED IN ACCORDANCE WITH THE FILL REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE / CALIFORNIA ELECTRICAL CODE ARTICLE #370. 3/4" MINIMUM.
9. DOOR HOLDERS ARE NOT POWERED BY BATTERIES AND NOT INCLUDED IN BATTERY CALCULATIONS.
10. ALL STROBES TO BE SYNCHRONIZED.
11. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO RECONSTRUCT THE HOSPITAL BUILDING IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH SAID TITLE 24, CALIFORNIA CODE OF REGULATIONS, A CHANGE ORDER DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY HCAI BEFORE PROCEEDING WITH THE WORK. [SECTION 7-125 (B)(2), PART 1, TITLE 24]
12. ALL WIRING INITIATING DEVICE AND ANNUNCIATOR PANEL WIRING SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION (F/A PANEL TO SUPERVISE THE ANNUNCIATOR PANEL, ALL CIRCUITS AND INITIATING DEVICES).
13. WIRING SHALL NOT BE LOOPED THROUGH DEVICES, WIRE MUST BE CUT FOR IN AND OUT. POINT AND COMMON ANNUNCIATION AND T-TAPPING PROHIBITED EXCEPTION:
14. ALL WIRING TO BE IN CONDUIT WITH SIZES AS INDICATED ON CONDUIT SCHEDULE. THE FIRE ALARM CONTROL PANEL IS NOT TO BE USED AS A TERMINAL CABINET. ALL CONDUIT SIZES INDICATED IN DRAWINGS ARE MINIMUMS. CONTRACTOR TO ADJUST SIZE FOR FIELD CONDITIONS (IE. NO OF BENDS, ETC.) BUT SHALL NOT BE SMALLER THAN 3/4".
15. ALL FIRE ALARM WIRING MUST TEST FREE OF OPENS, SHORTS AND GROUNDS. ALL FIRE ALARM WIRING MUST ENTER AT THE TOP AND BOTTOM RIGHT OF THE FIRE ALARM CONTROL PANEL.
16. FIRE ALARM DRAWINGS ARE SCHEMATIC IN NATURE ONLY CONTRACTOR TO ROUTE CONDUIT AS FIELD CONDITIONS INDICATE.
17. CONDUIT AND JUNCTION/BACK BOXES ARE NOT TO BE USED FOR UNRELATED WIRING.
18. PULL STATIONS SHALL BE MOUNTED PER DETAIL THIS SHEET PER NFPA-72 SECTION 17.15.
19. PENETRATIONS TO FIRE RATED ASSEMBLIES SHALL BE PROTECTED BY A UL APPROVED THROUGH-PENETRATION FIRE-STOP SYSTEM.
20. ALL CABLE SHIELDING SHALL BE ISOLATED FROM GROUND EXCEPT AT THE FACP AND SHALL MAINTAIN CONTINUITY THROUGHOUT.
21. CHANGES TO SUGGEST WIRE TYPE AND ROUTE MUST BE APPROVED IN WRITING PRIOR TO USE.
22. THE FIRE ALARM SYSTEM SHALL CONFORM TO ARTICLE 760 OF CALIFORNIA ELECTRICAL CODE.
23. INSTALLATION OF THE FIRE ALARM SYSTEM SHALL NOT BE STARTED UNTIL DETAILED PLANS AND SPECIFICATIONS, INCLUDING CALIFORNIA STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAVE BEEN APPROVED BY HCAI.
24. UPON COMPLETION OF THE INSTALLATION OF THE FIRE ALARM SYSTEM A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE ENFORCING AGENCY.
25. ALL DEVICES IN THE ALARM SYSTEM SHALL BE COMPATIBLE AND INSTALLED TO MANUFACTURERS SPECIFICATIONS.
26. AUDIBILITY OF ALARM AND VOICE COMMUNICATION SHALL BE NOT LESS THAN 15 dBA ABOVE AMBIENT SOUND, BUT NOT LESS THAN 75 dBA, THROUGHOUT AREA OF ALARM.
27. AREAS HAVING MORE THAN 2 STROBES IN THE FIELD OF VIEW SHALL BE SYNCHRONIZED.
28. SMOKE DETECTORS AND HEAT DETECTOR LOCATIONS ARE BASED ON SMOOTH CEILING WITH MAXIMUM HEIGHT OF 10 FEET UNLESS OTHERWISE NOTED.
29. STROBE LOCATION IS BASE ON I0 FOOT CEILING HEIGHT AND ARE INSTALLED ACCORDING TO NFPA 72 REQUIREMENTS UNLESS OTHERWISE NOTED.
30. ALL-MOUNTED STROBES SHALL HAVE THEIR BOTTOMS NOT LESS THAN 80 INCHES ABOVE FINISHED FLOOR AND NO GREATER THEN 96 INCHES ABOVE FINISHED FLOOR.
31. NO HORIZONTAL OR VERTICAL CONDUIT RUNS ARE PERMITTED IN CMU OR CONCRETE WALLS.FIRE ALARM INSTALLER SHALL BE RESPONSIBLE FOR IDENTIFYING REQUIRED TESTING BY THE STATE FIRE MARSHAL AND LOCAL AUTHORITIES HAVING JURISDICTION (AHJ), COORDINATING, SCHEDULING, AND CONDUCTING TEST BEFORE SUBSTANTIAL COMPLETION.
32. FIRE ALARM INSTALLER SHALL BE RESPONSIBLE FOR IDENTIFYING REQUIRED TESTING BY THE STATE FIRE MARSHAL AND LOCAL AUTHORITIES HAVING JURISDICTION (AHJ), COORDINATING, SCHEDULING, AND CONDUCTING TEST BEFORE SUBSTATIAL COMPLETION.
33. EACH EXISTING AND/OR NEW FIRE ALARM DEVICE IN THE PROJECT SCOPE WORK AREA SHALL BE PROTECTED DURING CONSTRUCTION, CLEANED AND TESTED FOR PROPER OPERATION PRIOR TO FINAL TEST REQUIRED BY STATE FIRE MARSHAL/AHJ.
34. FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AN APPROVED FIRE WATCH SERVICE WHERE A REQUIRED FIRE PROTECTION SYSTEM OUT OF SERVICE OR IMPAIRMENT DURING CONSTRUCTION. FIRE WATCH SERVICE SHALL BE PROVIDED UNTIL THE FIRE PROTECTION SYSTEM IS RETURNED TO SERVICE.
35. ALL EXPOSED CONDUIT & PIPE TO BE PAINTED - FINISH COLOR PER ARCHITECT. ALL F.A. CONDUITS SHALL BE PAINTED RED.
36. CONSULT SIMPLEX GRINNELL PRIOR TO MAKING MODIFICATIONS TO THE SYSTEM WIRING.

RBB

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LICENSED ARCHITECT KEVIN S. BOOTS C-30500 08/31/2025 STATE OF CALIFORNIA

AGENCY APPROVALS

OSHPD # I240005-19-02

CONSULTANT

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213.607.8400 www.tk1sc.com
Project Leader - Michael Huynh

tk1sc Job #:2017-0456-035

ISSUE RECORD

DATE	△	DESCRIPTION
04/09/2025	D	ADDENDUM D
03/14/2025	A	ADDENDUM A
02/10/2025		BID SET
01/31/2025	BC2	HCAI BACKCHECK 2
10/25/2024	BC1	HCAI BACKCHECK 1
06/13/2024		HCAI RESUBMITTAL
04/18/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrance, CA 90509

MILESTONE: HCAI SUBMITTAL

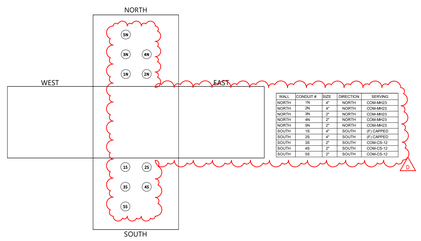
MILESTONE DATE: 10/25/2024

RBB PROJECT: 1712076 SCALE: NTS

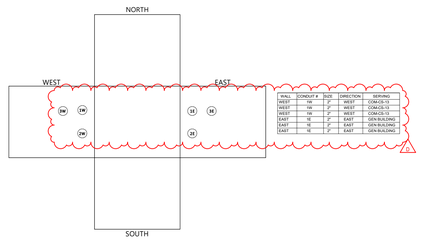
DESCRIPTION

FIRE ALARM SYMBOLS AND ABBREVIATIONS

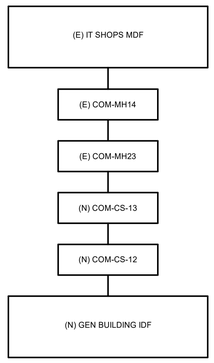
FA010.2



COM-CS-13 BUTTERFLY DETAIL | NTS | 4



COM-CS-12 BUTTERFLY DETAIL | NTS | 3



GEN BUILDING NETWORK CONNECTION | NTS | 2

GENERAL NOTES:

A. TECHNOLOGY DRAWINGS ARE DIAGRAMMATIC. REFER TO DIVISION 26 ELECTRICAL DRAWINGS FOR EXACT PLACEMENT.

B. 3/8" MINIMUM TRACEABLE POLYPROPYLENE PULL ROPE OR EQUIVALENT STRENGTH TRACEABLE POLYESTER WOVEN MULE TAPE MUST BE INSTALLED IN TERMINATED CONDUIT END TO END. LEAVE A MINIMUM OF 3'-0" OF SECURED ROPE IN EACH BOX. ROPES MUST BE ONE CONTINUOUS LENGTH FOR EACH SECTION AND TO THE BUILDING ENTRANCE FACILITY IN THE BUILDING.

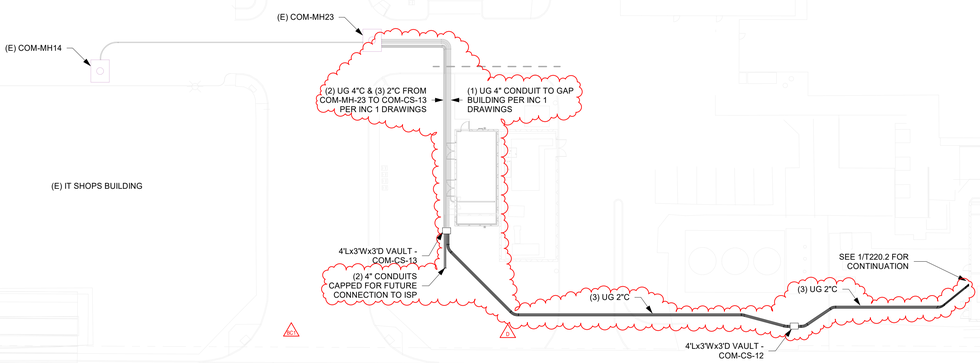
C. COORDINATE FINAL LOCATIONS AND POSITIONING OF CONDUITS AND PULL BOXES WITH CIVIL.

NOTES:

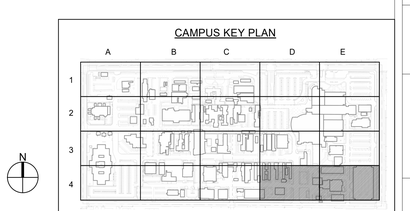
A. CONNECTION TO HARBOR UCLA NETWORK PROVIDED VIA SERVICE PROVIDER DATA CIRCUIT PROVISIONED BY HARBOR UCLA.

B. ALL FIBER OPTIC CABLING SHALL MAINTAIN A MINIMUM 12" SEPARATION FROM CONDUCTIVE CABLING PER CEC 770.47, AND GROUNDED PER CEC 770.93 AND CEC 770.100.

C. PROVIDE (1) SINGLE MODE 12S FIBER OPTIC CABLE FROM (N) GEN BUILDING TO (E) IT SHOPS MDF.



PARTIAL OVERALL SITE PLAN | 1" = 30'-0" | 1



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REGISTERED PROFESSIONAL ENGINEER — JOHN K. POON — No. E012687 — Exp. 3/31/26 — ELECTRICAL — STATE OF CALIFORNIA

LICENSED ARCHITECT — KEVIN S. BOOTS — C-30500 — 08/31/2025 — STATE OF CALIFORNIA

AGENCY APPROVALS

HCAI# I240005-19-02

CONSULTANT

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
10/25/2024	BC1	HCAI BACKCHECK 1
06/13/2024		HCAI SUBMITTAL
04/18/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

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PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

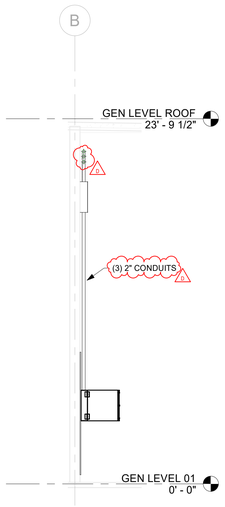
1000 West Carson Street, Torrence, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712076 SCALE: As indicated

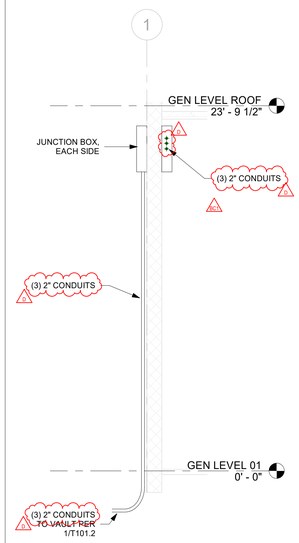
DESCRIPTION
TECHNOLOGY SITE PLAN

T101.2

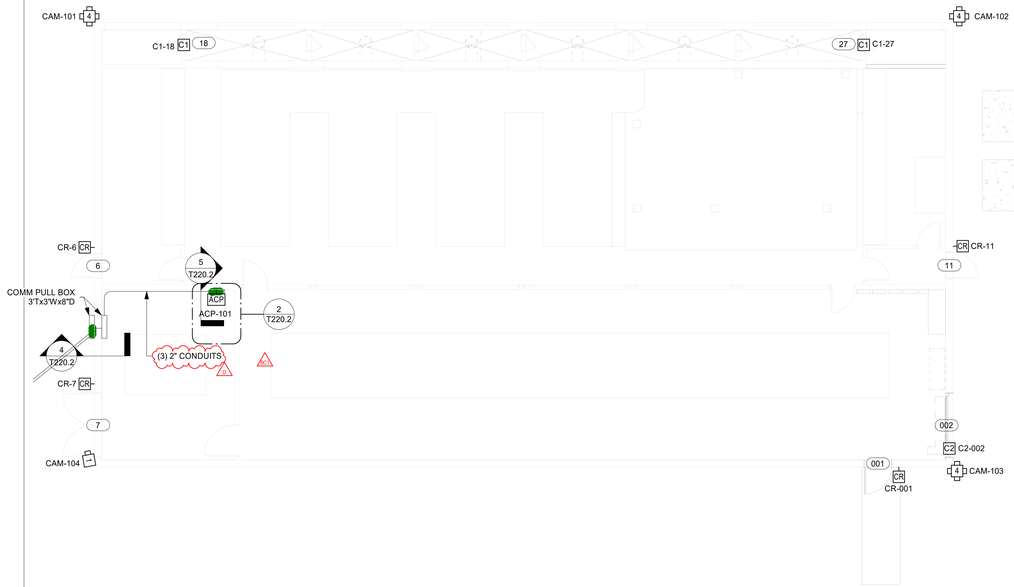
Print Date: 4/14/2025 1:50:15 PM



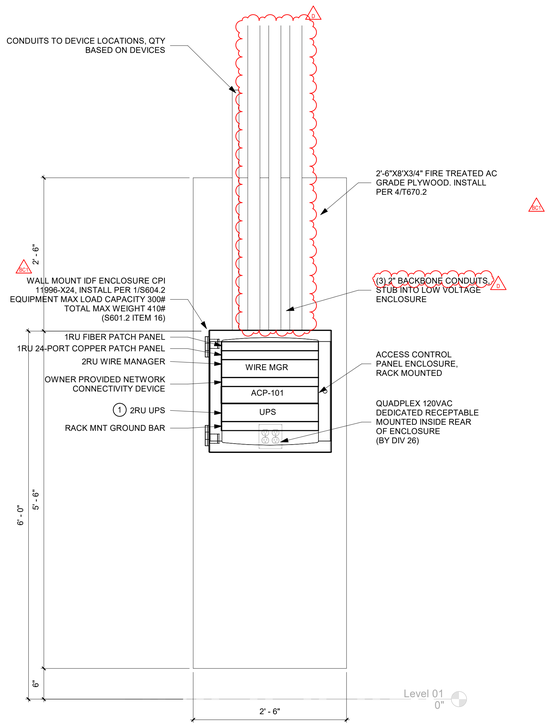
SECTION - CONDUIT TO IDF ENCLOSURE | 1/4" = 1'-0" | 5



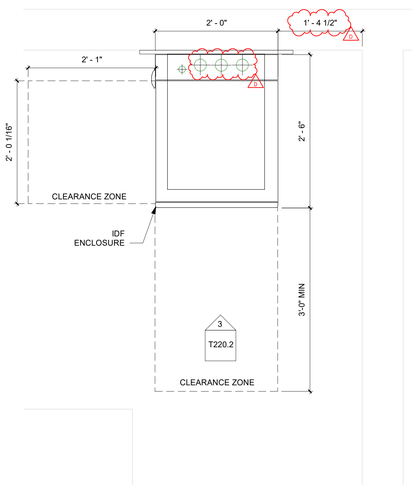
SECTION - CONDUIT ENTRY | 1/4" = 1'-0" | 4



TECHNOLOGY GENERATOR BLDG. (E) FIRST FLOOR PLAN | 1/8" = 1'-0" | 1



WALL ELEVATION | 1" = 1'-0" | 3



GENERATOR BLDG. ENLARGED PLAN | 1" = 1'-0" | 2

GENERAL NOTES:

A. ALL CABLING SHALL BE WITHIN EMT CONDUIT. NO CABLING SHALL BE EXPOSED. CONDUIT PATHWAYS MAY BE COMBINED WHILE MAINTAINING 40% MAX FILL RATIO. PROVIDE JUNCTION BOXES FOR EVERY 180 DEGREES OF BENDS AND EVERY 100FT OF CONDUIT. CONDUIT BEND RADIUS AND JUNCTION BOX SIZES SHALL BE BASED ON CABLING MAX BEND RADIUS.

B. CONDUITS TO DEVICE LOCATIONS ARE NOT PERMITTED TO BE WITHIN SLAB. CONDUITS SHALL BE ANCHORED TO WALLS AND INSTALLED PER 5/T670.

C. INSTALL NEW WALL MOUNTED IDF ENCLOSURE AND ACCESS CONTROL PANEL AS SPECIFIED. ROUTE CONDUITS FROM DEVICES TO APPICABLE HEAD END EQUIPMENT.

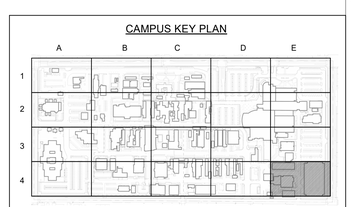
D. INSTALL NEW PATCH PANEL WITHIN IDF ENCLOSURE FOR NEW HORIZONTAL CABLING TERMINATIONS.

E. IDF ENCLOSURE SHALL BE INSTALLED PER 1/T671. ENCLOSURE MAX WEIGHT DEFINED IN OPM-0196.

SHEET NOTES:

1. INSTALL APC SMART UPS SMT1500RM2U CERTIFIED UNDER OSP-0179. UPS WEIGHT 58.42 LBS.

CAMPUS KEY PLAN



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STATE OF CALIFORNIA

AGENCY APPROVALS

HCAI# I240005-19-02

CONSULTANT

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ISSUE RECORD

DATE		DESCRIPTION
04/09/2025	D	ADDENDUM D
10/25/2024	BC1	HCAI BACKCHECK 1
06/13/2024		HCAI SUBMITTAL
04/18/2024		HCAI SUBMITTAL

Harbor-UCLA MEDICAL CENTER

HARBOR-UCLA MEDICAL CENTER

PHASE 2E INC 2 - GENERATOR BLDG. RETROFIT

1000 West Carson Street, Torrence, CA 90509

MILESTONE: HCAI SUBMITTAL
MILESTONE DATE: 10/25/2024
RBB PROJECT: 1712076 SCALE: As indicated

DESCRIPTION
TECHNOLOGY GENERATOR BLDG. FIRST FLOOR PLAN

T220.2

Print Date: 4/14/2025 1:50:18 PM

_____ _____

Name of Bidder (Firm Name) Vendor Identification Number

SECTION 00 03 00
FORM OF BID TO BE USED BY BIDDERS

The undersigned proposes to furnish all materials, labor, and equipment required for the construction to complete the Harbor-UCLA Medical Center Replacement Program Generator Building Retrofit Project Component, in accordance with Drawings and Specifications 7962, including addenda thereto, if any, adopted by the Board of Supervisors, and on file in the office of the Board of Supervisors, as follows:

1. INCREMENT 1 LUMP SUM BID:

The lump sum bid for the work, including Best Management Practices (BMP) and Construction and Demolition Debris Recycling, and Mandatory Jobs Coordinator requirements complete according to the Drawings and Specifications **for Increment 1**, will be:

($_____) (_____)

Lump sum bid in figures Lump sum bid in words

LUMP SUM BID BREAKDOWN FOR INCREMENT 1:

	Item	Value in Dollars
Division 0	**PROCUREMENT & CONTRACTING REQUIREMENTS**	**$**
	00 72 00 General Conditions	**$**
Division 1	**GENERAL REQUIREMENTS**	**$**
	01 50 00 – Temporary Facilities and Controls (Including Temp. Generators and Infrastructure for Shutdowns)	**$**
	01 73 00 – Execution (Related to Unforeseen Conditions)	**$**
Division 2	**EXISTING CONDITIONS**	**$**
	02 41 00 – Demolition and Deconstruction	**$**
	02 82 00 – Hazardous Material Abatement	**$**
Division 3	**CONCRETE**	**$**
Division 4	**MASONRY**	**$**
Division 5	**METALS**	**$**
Division 6	**Wood and Plastic Products**	**$**
Division 7	**THERMAL AND MOISTURE PROTECTION**	**$**
Division 8	**OPENINGS**	**$**
Division 9	**FINISHES**	**$**
Division 10	**SPECIALTIES**	**$**
Division 22	**PLUMBING**	**$**
Division 23	**HEATING, VENTILATING & AIR CONDITIONING (HVAC)**	**$**
Division 26	**ELECTRICAL**	**$**
Division 27	**COMMUNICATIONS**	**$**
Division 28	**ELECTRONIC SAFETY AND SECURITY**	**$**
Division 31	**EARTHWORK**	**$**
Division 32	**EXTERIOR IMPROVEMENTS**	**$**
Division 33	**UTILITIES**	**$**
Any Other Divisions	**Other Division Not Included in the Above**	**$**

LUMP SUM BID BREAKDOWN TOTAL: **$**_____

LUMP SUM BID BREAKDOWN IN WORDS: **$**_____

---

2. INCREMENT 2 LUMP SUM BID:

The lump sum bid for the work, including Best Management Practices (BMP) and Construction and Demolition Debris Recycling, and Mandatory Jobs Coordinator requirements complete according to the Drawings and Specifications **for Increment 2**, will be:

($_____) (_____)
Lump sum bid in figures Lump sum bid in words

LUMP SUM BID BREAKDOWN FOR INCREMENT 2:

Item		Value in Dollars
Division 0	**PROCUREMENT & CONTRACTING REQUIREMENTS**	**$**
	00 72 00 General Conditions	**$**
Division 1	**GENERAL REQUIREMENTS**	**$**
	01 50 00 – Temporary Facilities and Controls (Including Temp. Generators and Infrastructure for Shutdowns)	**$**
	01 73 00 – Execution (Related to Unforeseen Conditions)	**$**
Division 2	**EXISTING CONDITIONS**	**$**
	02 41 00 – Demolition and Deconstruction	**$**
	02 82 00 – Hazardous Material Abatement	**$**
Division 3	**CONCRETE**	**$**
Division 4	**MASONRY**	**$**
Division 5	**METALS**	**$**
Division 6	**Wood and Plastic Products**	**$**
Division 7	**THERMAL AND MOISTURE PROTECTION**	**$**
Division 8	**OPENINGS**	**$**
Division 9	**FINISHES**	**$**
Division 10	**SPECIALTIES**	**$**
Division 22	**PLUMBING**	**$**
Division 23	**HEATING, VENTILATING & AIR CONDITIONING (HVAC)**	**$**
Division 26	**ELECTRICAL**	**$**
Division 27	**COMMUNICATIONS**	**$**
Division 28	**ELECTRONIC SAFETY AND SECURITY**	**$**
Division 31	**EARTHWORK**	**$**
Division 32	**EXTERIOR IMPROVEMENTS**	**$**
Division 33	**UTILITIES**	**$**
Any Other Divisions	**Other Division Not Included in the Above**	**$**

LUMP SUM BID BREAKDOWN TOTAL: **$**_____

LUMP SUM BID BREAKDOWN IN WORDS: **$**_____

---

3. EXTENDED OVERHEAD DAILY RATE:

The daily rate for the sum of the Contractor's field office and home office overhead applicable to this project, for each day of compensable delay will be:

($_____) (_____)
Daily rate in figures Daily rate in words

Extended Overhead Daily Rate X 30 days: $_____

4. TOTAL LUMP SUM BID PRICE

The lowest bid price shall be determined by adding the following items: Increment 1 Lump Sum Bid in Words + Increment 2 Lump Sum Bid in Words + Extended Overhead Daily Rate x 30 days + Additive Alternate in Words = Total Lump Sum Bid. The lowest Total Lump Sum Bid Price will be used to determine award.

($_____) ($_____)
Total Lump Sum Bid Price in figures Total Lump Sum Bid Price in words

Preference as stated in Section 00 01 00, 1.30, will be applied to the Total Lump Sum Bid, if applicable, to determine the final total bid amount.

5. ADDITIVE ALTERNATE :

ADDITIVE ALTERNATE NO. 1: Extend the standard one (1) year warranty Period, as noted in General Conditions Section 00 07 00-38, to three (3) years from the date of Substantial Completion of the project.

The amount to be added to the Lump Sum Proposal for inclusion of Alternate 1, Three (3) Year Warranty, will be as follows:

($_____) (_____)
In Figures In Words

6. The General Contractor shall provide a comprehensive list of all exclusions as part of their bid submission. Any scope, material, or service not explicitly listed as an exclusion shall be deemed included in the Contractor's bid and fully accounted for in the contract price. Failure to identify exclusions shall not be grounds for change orders or additional compensation. The County reserves the right to review, clarify, and reject any exclusions that are deemed unreasonable or inconsistent with the project requirements.

7. COUNTY PROGRAM PREFERENCE:

The Local Small Business Enterprise Program Preference is provided by the County for purposes of bid evaluation only, as specified in Article 1.30 of Section 00 01 00. If Bidder is a qualifying Local Small Business Enterprise, check "yes" in the box below. Section 00 04 38 Request for County Program Preference Consideration must be submitted at the time of bid with a copy of the certification letter issued by the County of Los Angeles Department of Consumer and Business Affairs. If non-qualifying, check "no" in the appropriate box.

LSBE Yes ☐ No ☐

8. RECEIPT OF NOTICE TO BIDDERS:

The Bidder hereby certifies and declares that it has received, reviewed, and incorporated the following Notices to Bidders into its Bid:

1. Notice to Bidders A, dated March 24, 2025
2. Notice to Bidders B, dated March 25, 2025
3. Notice to Bidders C, dated April 3, 2025.
4. Notice to Bidders D, dated April 16, 2025.

NOTE: Any alteration or addition to the Form of Bid may invalidate same. All blank spaces shall be filled out completely. Line out nonapplicable blanks. An incomplete form may invalidate bid. The County reserves the right to waive any informalities or to reject any or all bids or to accept any alternatives when called for.

I (We) certify that on _____, 20____, License No. _____, license classification(s) _____, was issued to me (us), in the name of _____, by the Contractors' State License Board, pursuant to California Statutes of 1929, as amended, and that said license has not been revoked.

Firm Ownership Information
Check where applicable:

1. ( ) Minority-Owned
   ( ) Woman-Owned
   ( ) Disadvantaged-Owned
   ( ) Disabled Veteran-Owned
   ( ) LGBTQQ-Owned

2. ( ) An individual
   ( ) A corporation. Name state or territory of Incorporation
   _____
   ( ) A copartnership
   ( ) A joint venture

Race/Ethnic Composition
For statistical purposes only.
( ) Black/African American
( ) Hispanic/Latino
( ) Asian or Pacific Islander
( ) Native Americans
( ) Subcontinent Asian
( ) White

If a copartnership or joint venture, list names of individuals comprising same below
_____
_____
_____

Date signed _____, 20_____

Place _____
City and State

Respectfully submitted,

_____
Firm Name (if applicable)

Bidder's address, E-mail address, and telephone:

_____
Number and Street

_____
City and State Zip Code

_____
Telephone

_____
Fax

_____
Signature and Print Name

_____
Title and E-mail Address

_____
Signature and Print Name

_____
Title and E-mail Address