Invitation for Bids

Leahi Hospital Renovation of Adult Day Health
23L-0421

The Hawaii Health Systems Corporation (HHSC) Oahu Region is requesting bids from qualified companies for the renovation of the Adult Day Health area at Leahi Hospital located at 3675 Kilauea Ave., Honolulu, HI 96816.

The IFB may be obtained electronically from the following website:
http://leahi.hhsc.org/procurement/notices/

A site visit is scheduled for May 2, 2024 at 10:30 a.m. All interested companies shall meet in the Leahi Hospital Parking Lot entrance area. The deadline for submission of written/emailed questions pertaining to the IFB is May 9, 2024.

All bids must be received by HHSC by May 23, 2024, 2:00 p.m. Hawaii Standard Time. All bids shall be sent digitally to skawai@hhsc.org. E-mail bids not received by deadline will be disqualified for consideration. No exceptions will be made even if network provider or software (e.g. MS Outlook) delays delivery. Please note that large files (>10MB) may experience network delivery issues.

Addenda to the IFB will be posted on the website listed above.

For any inquiries, please contact Scott Kawai, Oahu Region Contracts Department, at (808) 832-3025 or by email at skawai@hhsc.org.

Leahi Hospital
3675 Kilauea Ave.
Honolulu, HI 96816

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SECTION 1
ADMINISTRATION

1.0 INTRODUCTION

This Invitation for Bid (hereinafter "IFB") is issued by the Hawaii Health Systems Corporation (hereinafter "HHSC"), a public body corporate and politic and an instrumentality and agency of the State of Hawaii. All procedures and processes will be in accordance with HHSC Oahu Region policy and procedures.

In order for HHSC to accept Bidder's response in a timely manner, please thoroughly read this IFB and follow instructions as presented.

1.1 IFB TIMETABLE AS FOLLOWS

The timetable as presented represents HHSC's best estimated schedule. If an activity of the timetable, such as "Closing Date for Receipt of Bids" is delayed, the rest of the timetable dates may be modified. BIDDER will be advised, by addendum to the IFB, of any such modifications to the timetable. Contract start date will be subject to the issuance of a Notice to Proceed.

ACTIVITY		SCHEDULED DATES
1.	IFB Public Announcement	April 26, 2024
2.	Pre-Bid Orientation Leahi Hospital parking lot entrance 10:30 a.m.	May 2, 2024
3.	Closing Date for Receipt of Questions	May 9, 2024
4.	**Closing Date for Receipt of Bids 2:00 p.m.**	**May 23, 2024**
5.	Contractor Selection/Award Notification (on/about)	May 24, 2024
6.	Contract Start Date (on/about)	June 14, 2024

1.2 AUTHORITY

This IFB is issued following the provisions of Chapter 323F, Hawaii Revised Statutes (HRS), and its administrative rules. All BIDDERS are charged with presumptive knowledge of all requirements of the cited authorities. Submission of a valid executed bid by any BIDDER shall constitute admission of such knowledge on the part of such BIDDER.

1.2.1 IFB ORGANIZATION

This IFB is organized into four sections:

SECTION 1: ADMINISTRATIVE
Provides information regarding administrative requirements.

SECTION 2: SCOPE OF SERVICES
Provides a detailed description of goods and/or services to be provided and delineates HHSC and CONTRACTOR responsibilities.

SECTION 3: BID FORMS AND GENERAL CONDITIONS
Describes the required format and content for submission of the bid.

SECTION 4: BID EVALUATION AND AWARD
Describes how bids will be evaluation and procedures for selection and award of contract.

1.3 HEAD OF PURCHASING AGENCY (HOPA)

The HOPA for HHSC, or designee, is authorized to execute any and all Agreements (Contracts), resulting from this IFB.

The HOPA for this IFB is:

Derek Akiyoshi
Regional Chief Executive Officer
Hawaii Health Systems Corporation

1.4 DESIGNATED OFFICIALS

The officials identified in the following paragraphs have been designated by the HOPA as HHSC's procurement officials responsible for execution of this IFB, award of Agreement and coordination of CONTRACTOR's satisfactory completion of contract requirements.

1.4.1 ISSUING OFFICER

The Issuing Officer is responsible for administrating/facilitating all requirements of the IFB solicitation process and is the **sole point of contact** for BIDDER from date of public announcement of the IFB until the selection of the successful BIDDER. The Issuing Officer will also be responsible for contractual actions throughout the term of the contract. For purposes of this IFB, the designated Issuing Officer is:

Scott Kawai
Director of Contracts and Project Management
e-mail: skawai@hhsc.org
phone: (808) 832-3025

1.5.1 CHARTER

HHSC is a public body corporate and politic and an instrumentality and agency of the State of Hawaii. HHSC is administratively attached to the Department of Health, State of Hawaii and was created by the legislature with passage of Act 262, Session Laws of the State of Hawaii 1996. Act 262 affirms the State's commitment to provide quality health care for the people in the State of Hawaii, including those served by small rural facilities.

1.5.2 STRUCTURE AND SERVICES

HHSC is organized into four operational regions and provides a broad range of healthcare services including acute, long term, rural and ambulatory health care services. As the fourth largest public health system in the country, HHSC is the largest provider of healthcare in the Islands, other than on Oahu. This solicitation is for the Oahu Region.

1.5.3 MISSION

The mission of HHSC is to provide and enhance accessible, comprehensive health care services that are quality-driven, customer-focused and cost-effective.

1.6 FACILITY INFORMATION

Detailed information pertaining to HHSC facilities is located at http://www.hhsc.org.

1.7 SUBMISSION OF QUESTIONS

Questions must be submitted in writing via electronic mail, facsimile or post mail to the Issuing Officer no later than the "Closing Date for Receipt of Questions", identified in paragraph 1.1 in order to generate an official answer. All written questions will receive an official written response from HHSC and become addenda to the IFB.

IMPORTANT

BIDDER may request changes and/or propose alternate language to the attached HHSC General and Special Terms and Conditions during this phase only. All requests will be presented to the HHSC Legal Department for review. No requests to change the HHSC General or Special Terms and Conditions will be entertained after the bids have been submitted or during the contracting process. All written questions and/or approved changes will receive an official written response from HHSC and shall be recorded as addenda to the IFB.

HHSC reserves the right to reject or deny any request(s) made by BIDDER.

Responses by HHSC shall be due to the BIDDER prior to notice of award.

Impromptu, un-written questions are permitted and verbal answers will be provided during pre-bid conferences and other occasions, but are only intended as general direction and will not represent the official HHSC position. The only official position of HHSC is that which is stated in writing and issued in the IFB as addenda thereto.

No other means of communication, whether oral or written, shall be construed as a formal or official response/statement and may not be relied upon.

SEND QUESTIONS TO:

Scott Kawai, Issuing Officer
e-mail: skawai@hhsc.org

1.8 SOLICITATION REVIEW

BIDDER should carefully review this solicitation for defects and questionable or objectionable matter. Comments concerning defects and questionable or objectionable matter, **excluding requests to revise the General or Special Conditions**, must be made in writing and should be received by the Issuing Officer, no later than the "Closing Date for Receipt of Bids" as identified in Section 1.1. This will allow issuance of any necessary amendments to the IFB. It will also assist in preventing the opening of bids upon which award may not be made due to a defective solicitation package.

1.9 IFB AMENDMENTS

HHSC reserves the right to amend the IFB any time prior to the deadline date of the IFB. IFB Amendments will be in the form of addenda.

1.10 CANCELLATION OF IFB

The IFB may be canceled when it is determined to be in the best interests of HHSC.

1.11 PROTESTS

Any protest shall be submitted in writing to the HOPA as noted below.

A protest based upon the content of the solicitation shall be submitted in writing within five (5) working days **after** the aggrieved individual/business knows or should have known of the facts giving rise thereto; provided further that the protest shall not be considered unless it is submitted in writing prior to and not later than the "Closing Date for Receipt of Bid" identified in section 1.1.

A protest of an award or proposed award shall be submitted within five (5) working days after the posting of award of the contract. The notice of award, if any, resulting from this solicitation shall be posted at the following website: http://leahi.hhsc.org/procurement/notices/

Any and all protests shall be submitted in writing to the HOPA, as follows:

Derek Akiyoshi
Hawaii Health Systems Corporation
Oahu Region
3675 Kilauea Avenue
Honolulu, Hawaii 96816

1.12 PERFORMANCE AND PAYMENT BOND

Performance and payment bonds shall be required for contracts $25,000 and higher. At the time of the execution of the contract, the successful Bidder shall file good and sufficient performance and payment bonds, each in an amount equal to one hundred percent (100%) of the amount of the contract price unless otherwise stated in the solicitation of bids.

1.13 SPECIALTY CONTRACTOR'S LICENSE

A. Contractor shall be solely responsible to ensure that all specialty licenses required to perform the Work are covered by the Contractor and/or its subcontractor(s).

1.14 WORKING HOURS

A. Regular working hours for this project shall take place between the hours of 8:00 AM to 4:30 PM Monday through Friday, excluding State Holidays, unless otherwise noted or restricted.

B. The Contractor may be given approval to work beyond the regular hours including Saturdays, Sundays, State Holidays, night work, or after hours under the provisions of the GENERAL CONDITIONS.

1.15 SPECIAL PROCEDURES DURING BIDDING

A. All bids shall be submitted to the Issuing Officer.

B. All questions regarding the IFB shall be submitted, in writing, to the Issuing Officer, who shall review the questions and issue any responses via Addendum. Only information received by Addendum shall be binding.

C. Any visitation to the site to examine the scope of work shall be requested through the HHSC Representative. Disruption of facility operations shall not be permitted.

SECTION 2
SCOPE OF SERVICES

2.0 INTRODUCTION

LEAHI HOSPITAL RENOVATION OF ADULT DAY HEALTH

Work for this project shall include, but is not limited to the demolition of existing offices and the addition of two new bathrooms and a conference room, and miscellaneous work as indicated on the drawings.

2.1 CONTRACT PERIOD

The work shall be completed within **210** consecutive calendar days.

2.2 SCOPE OF SERVICES

A. The CONTRACTOR shall complete the work specified in the specifications and drawings in APPENDIX C.

B. Qualifications. The CONTRACTOR shall have:

1. A current and valid license to perform the scope of work.
2. Have been in business for the past three (3) consecutive years.
3. A permanent, on-island office location in conducting business which is accessible to telephone calls. An answering service is not acceptable.

C. HOSPITAL shall provide:

Technical Representatives who shall have the authority to oversee the successful completion of contract requirements, including monitoring, coordinating and assessing CONTRACTOR performance; placing requests for services; and, approving completed work/services with verification of same for CONTRACTOR's invoices. Technical Representatives will also serve as points of contact for "technical" matters throughout the term of the contract.

SECTION 3
Bid Forms and General Conditions

General Instructions for Completing Forms

- *Bids shall be submitted in the prescribed format outlined in this IFB*
- *No supplemental literature, brochures or other unsolicited information should be included in the bid packet.*
- *A written response is required for each item unless indicated otherwise.*

3.0 Bid Form

The bid form must be completed and submitted to HHSC by the required due date and time, and in the form prescribed by the HHSC. Facsimile transmissions shall not be accepted.

Interested bidders shall submit their bid under the interested bidder's exact legal name that is registered with the Department of Commerce and Consumer Affairs and shall indicate this exact legal name in the appropriate space on page 1 of the bid form. Failure to do so may delay proper execution of the Contract.

Interested bidders shall certify its ability to provide services on June 14, 2024 or upon execution of the Contract agreement by both parties. The Hospital reserves the right to apply liquidated damages for the delay in Contract execution on the part of the Contractor.

The interested bidder's authorized signature shall certify bid documents. If the Bid Form on Appendix A is unsigned the bid shall be automatically rejected.

The option to extend the Contract shall be at the sole discretion of the Hospital and determined to be in the best interests of the State.

3.1 Bid Security

All lump sum bids of $25,000 and higher, or lump sum base bids including alternates of $25,000 and higher, that are not accompanied by bid security are non –responsive.

a. The bid security shall be in an amount equal to at least five percent (5%) of the lump sum bid or lump sum base bid including alternates or in an amount required by the terms of the federal funding, where applicable.

3.2 General Conditions

The State of Hawaii INTERIM GENERAL CONDITIONS, dated August 1999, and AMENDMENTS shall be read by the Contractor as they form a part of the Agreement to be entered into between the Contractor and HHSC. The Interim General Conditions are not physically included in these specifications, but are included by reference. Copies of the INTERIM GENERAL CONDITIONS may be obtained from the Division of Public works, Department of Accounting and General Services, State of Hawaii at the following website: http://hawaii.gov/pwd/construction_bids/Members/qc/gen_cond_constr

The General Conditions are hereby amended as follows:

a. The following terms specified in Section 1 are hereby defined:

i) Bidder shall have the same definition as Contractor.

ii) Comptroller shall be the Chief Financial Officer at HHSC or his authorized representative.

iii) Department shall be HHSC or its designee.

iv) Engineer shall be the person so designated by HHSC.

v) State shall be HHSC or its designee.

b. Section 1.20 and 1.25 replace "State of Hawaii" with "State".

c. The last two sentences of the third paragraph of Section 2.1.1.2, in the Interim General Conditions is deleted and is replaced with the following:

" If the notice is faxed, the time of receipt by the CEO's fax machine shall be official. The submittal of intention to bid via fax is acceptable only to this office."

d. Section 2.1.2.1: second sentence is hereby deleted in its entirety.

e. Last sentence of paragraph 2.1.2.3 of the Interim General Conditions is amended to read as follows:

"Failure to submit either the required tax clearance certificate or Bid Form will be sufficient grounds for HHSC to refuse to receive or consider the prospective bidder's proposal."

f. The addresses specified in Section 2.6.1 of the Interim General Conditions shall be changed to Leahi Hospital 3675 Kilauea Avenue Honolulu Hawaii 96816.

g. Sections 2.10 through 2.11 are hereby deleted in their entirety.

h. Paragraph 3.8.1 of the Interim General Conditions is amended to read as follows:

“The contract shall be signed and forwarded to HHSC (Contracts Office), by the successful bidder all within three (3) days of receipt of the contract. The performance and payment bonds shall be received by HHSC (Contracts Office) within ten (10) calendar days after the bidders is awarded the contract. No proposal or contract shall be considered binding until the contract has been fully and properly executed by all parties thereto.”

i. In paragraph 3.9.2 of the Interim General Conditions, “ten (10) calendar days after such award or within such further time as the Comptroller may allow” shall be replaced with, “the time allowed in the previous section.”

j. Section 4.1: the words “accepted bid” is deleted from the first sentence.

k. Section 4.9.3: the words “submission of bids” is replaced with the words “execution of this contract”.

l. Section 5.5: the last sentence is hereby deleted in its entirety and replaced with the following:

"In the event of conflict among the Contract Documents, the order of precedence is listed in paragraph 5 of this contract and is further detailed in the following subparagraphs:"

m. Sections 5.5.1 and 5.5.2 are hereby deleted in their entirety.

n. Section 5.8.1: "twenty-four (24)" is hereby changed to "three (3)".

o. Section 5.11 is hereby deleted in its entirety.

p. Section 5.12.4 is hereby deleted in its entirety.

q. Section 7.3.7.4, subparagraphs a and b: Replace "If the project falls within the State University System, The University of Hawaii" with "HHSC."

r. Section 7.4.1 is hereby deleted in its entirety and replaced with the following:

"The Contractor shall prepare, process, obtain, and pay for all permits necessary for the proper execution of the work."

s. Section 7.7.2 is amended to read as follows: "The wage rate schedule is attached to this contract."

t. Sections 7.14.2, 7.19.2, and 7.19.4: delete "Departments and Agencies and their" and insert "directors" between "officers" and "representatives".

u. Section 7.14.4 is hereby added and reads as follows:

"Contractor warrants that it and none of its employees, agents or subcontractors performing services or providing goods pursuant to this Agreement are excluded from participation in federal health care programs, as defined in the Social Security Act (section 1128 and 1128A), and other federal laws and regulations relating to health care. HHSC reserves the right to verify that the above warranty is true and to immediately cancel this Agreement in the event it is violated."

v. Section 7.15 delete "and its Departments and Agencies".

w. Section 7.21.8.6 — Delete the word "bad" before the words "weather day conditions."

x. Section 7.35.1: the last word "earlier" is changed to "later".

3. CORPORATE COMPLIANCE PROGRAM. A description of the Corporate Compliance Program of HHSC is posted on the HHSC Internet (www.hhsc.org). The CONTRACTOR, by signing this contract, acknowledges that it has read said description, and that the CONTRACTOR knows of the fact and substance of the Corporate Compliance Program, which governs operations at all facilities of the HHSC. The CONTRACTOR understands and agrees that employees, agents, and contractors performing any services at any of the HHSC facilities shall be fully subject to such Corporate Compliance Program, as may be amended from time to time, as well as all federal program requirements and applicable policies and procedures of HHSC and its facilities. The Corporate Compliance Program requires periodic training, including an orientation program, of all people who provide financial, business office, personnel, coding, medical records information systems and clinical services in the facility. The CONTRACTOR agrees to cause its employees, agents, and contractors who provide any services at any financial, business office, personnel, coding, medical records information systems and clinical services at any of the HHSC facilities to participate in the orientation and training programs.

4. CONFIDENTIAL INFORMATION. It is acknowledged and agreed that all of the trade secrets, business plans, marketing plans, know how, data, contracts, documents, scientific and medical concepts, billing records, personnel records, medical records of any kind, and referral resources for existing or future services, products, operations, management, business, pricing, financial status, valuations, business plans, goals, strategies, objectives and agreements of HHSC and any of its facilities, affiliates or subsidiaries, and all patient information, in any form, whether written, verbal, or electronic, are confidential ("Confidential Information"); provided, however, that Confidential Information, with the exception of patient information, shall not include information that is in the public domain.

5. CONTRACTOR EXCLUSION FROM FEDERAL PROGRAMS. CONTRACTOR warrants that it and none of its employees, agents or subcontractors performing services or providing goods pursuant to this Agreement are excluded from participation in federal health care programs, as defined in the Social Security Act (section 1128 and 1128A), and other federal laws and regulations relating to health care. HHSC reserves the right to verify that the above warranty is true and to immediately cancel this Agreement in the event it is violated.

6. CAMPAIGN CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS.
CONTRACTORs are hereby notified of the applicability of Section 11-205.5, HRS, which states that campaign contributions are prohibited from specified State or county government contractors during the term of the contract if the contractors are paid with funds appropriated by a legislative body. For more information, please consult with the Campaign Spending Commission, or visit its website, www.hawaii.govicampaign.

(END OF SECTION)

SECTION 4
BID EVALUATION AND AWARD

4.0 Bid Evaluation

Each bid offer will be reviewed for exact conformity of the requirements in the IFB, known as a responsible bid. Information provided in/with the bid offer will be used to determine whether the interested bidder has the technical and financial capacity to deliver the goods or services, known as a responsive bid.

4.1 Method of Award

A. The contract will be awarded to the lowest responsive and responsible Bidder whose bid (including any alternates which may be selected) meets the requirements and criteria set forth in the solicitation documents.

B. In the event the total lump sum bid of all bidders exceeds the project control budget, HHSC reserves the right to make an award to the apparent Low Bidder if additional funds are available or by reducing the scope of work through negotiation.

4.2 Contract Execution

Upon receipt of the Contract document, the CONTRACTOR shall have ten (10) business days to execute and return the Contract to the Issuing Officer. Explicit execution instructions will accompany the Contract. A copy of the fully executed Contract will be provided the CONTRACTOR within seven (7) business days of Contract execution.

Award of Contract may be withdrawn if the CONTRACTOR is unable to meet Contract execution requirements.

(END OF SECTION)

APPENDIX A

SAMPLE
BID TRANSMITTAL COVER LETTER

Dear Mr. Kawai,

(Name of Business) proposes to provide any and all goods and services as set forth in the "Invitation for Bid" for Leahi Hospital Renovation of Adult Day Health IFB No. 23L-0421, for which fees/costs have been set. The fees/costs offered herein shall apply from XXX, 2024 to XXX, 2025.

It is understood and agreed that (Name of Business) have read HHSC's Scope of Services described in the IFB and that this bid is made in accordance with the provisions of such Scope of Services. By signing this bid, (Name of Business) guarantee and certify that all items included in this bid meet or exceed any and all such Scope of Services. (Name of Business) agree, if awarded the contract, to provide the goods and services set forth in the IFB; and comply with all terms and conditions indicated in the IFB; and at the fees/costs set forth in this bid. The following individual(s) may be contacted regarding this bid:_____

_____

Other information:

Address:		Federal Tax ID #:	
Phone No.:		Hawaii GET ID #:	
E-mail address:			

(Name of Business) is a: ☐ Sole Proprietor ☐ Partnership ☐ Corporation ☐ Joint Venture Other (Specify)_____

State of Incorporation is: (Specify)_____

Year of Business started: _____

The exact legal name of the business under which the contract, if awarded, shall be executed is:_____

_____

(Authorized Bidder's Signature, Printed Name/Title; Corporate Seal or Notarized)

APPENDIX B

IFB No. 23L-0421
Leahi Hospital Renovation of Adult Day Health

BID FORM

After carefully examining the bid documents, drawings and specifications identified above, the Bidder proposes to furnish at its own expense all necessary labor, materials, tools and equipment to complete the work according to the true intent and meaning of the drawings and specifications, all for the Lump Sum Base Bid of:

_____DOLLARS ($_____)

(Schedule of Values must be submitted with the Bid).

Respectfully Submitted:

_____ _____
Signature / Printed Name Date

_____
Title

OTHER CONDITIONS

1. Bidder agrees to liquidated damages as specified.

2. By submitting this proposal, the Bidder is declaring that its firm has not been assisted or represented on this matter by an individual who has, in a County capacity, been involved in the subject matter of this contract in the past two years;

3. Anti-collusion certification. In accordance with HAR 3-122-192, by submitting this proposal, the Bidder is declaring that the price submitted is independently arrived at without collusion.

4. Certification for Safety and Health Program for bids in excess of $100,000. In accordance with HRS 396-18, the Bidder certifies that its organization will have a written safety and health plan for this project that will be available and implemented by the Notice to Proceed date of this project. Details of the requirements of this plan may be obtained from the Department of Labor and Industrial Relations, Occupational Safety and Health Division (HIOSH); and

5. Upon the acceptance of the proposal by the HHSC, the Bidder must enter into and execute a contract for the same and furnish a Performance and Payment bond, as required by law.

RECEIPT OF ADDENDA
Receipt of the following addenda issued by HHSC is acknowledged by the date (s) of receipt indicated below:

Addendum No. 1 _____ Addendum No. 3 _____
Date
Addendum No. 2 _____ Addendum No. 4_____

It is understood that failure to receive any such addendum shall not relieve the Bidder from any obligation under this Proposal as submitted.

ALL JOINT CONTRACTORS OR SUBCONTRACTORS TO BE ENGAGED ON THIS PROJECT

The Bidder certifies that the following is a complete listing of all joint contractors or subcontractors covered under Chapter 444, Hawaii Revised Statutes, who will be engaged by the Bidder on this project to perform the nature and scope of work indicated and understands that failure to comply with this requirement may be just cause for rejection of the bid.

The Bidder further understands that only those joint contractors or subcontractors listed shall be allowed to perform work on this project and that all other work necessary shall be performed by the Bidder with his own employees. If no joint contractor or subcontractor is listed, it shall be construed that all of the work shall be performed by the Bidder with its own employees.

The Bidder must be sure that it has and that the subcontractor(s) listed in the proposal have all the necessary specialty licenses needed to perform the work for this project. The Bidder shall be solely responsible for assuring that all the specialty licenses required to perform the work are covered in its bid.

The Bidder shall include the license number of the joint contractors or subcontractors listed below. Failure to provide the correct names and license numbers as registered with the Contractor's Licensing Board may cause rejection of the bid submitted.

Complete Firm Name Joint Contractor or Subcontractor for Lump Sum Base Bid	License Number	Nature and Scope of Work to be Performed

Enclosed herewith:

1. Surety Bond (*1))
2. Legal Tender (*2))
3. Cashier's Check (*3))
4. Certified Check (*3))

(Cross Out Those Not Applicable)

in the amount of:

_____ DOLLARS ($_____).

as required by law.

Respectfully submitted,

_____
Name of Company, Joint Venture or Partnership

_____
License

By _____
Signature (*4)

Title _____

Date: _____

(CORPORATE SEAL)
(*5)

NOTES:

1. Surety bond underwritten by a company licensed to issue bonds in this State;

2. Legal tender; or

3. A cashier's or a certified check accepted by, and payable on demand to the HHSC by a bank, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation.

   a. These instruments may be utilized only to a maximum of $100,000.

   b. If the required security or bond amount totals over $100,000, more than one instrument not exceeding $100,000 each and issued by different financial institutions shall be accepted.

4. Please attach to this page evidence of the authority of this officer to submit bids on behalf of the Company, and also the names and residence addresses of all officers of the Company.

5. Fill in all blank spaces with information asked for or bid may be invalidated. PROPOSAL MUST BE INTACT. MISSING PAGES MAY INVALIDATE YOUR BID.

END OF BID FORM

APPENDIX C

S P E C I F I C A T I O N S

FOR

FURNISHING LABOR AND MATERIALS

REQUIRED FOR

LEAHI HOSPITAL,

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA ST.
HONOLULU, OAHU, HAWAII

TMK: 3-2-031:001

FOR THE

HAWAII HEALTH SYSTEMS CORPORATION (HHSC)

STATE OF HAWAII

ELECTRICAL: ALBERT CHONG ASSOCIATES, INC.

MECHANICAL: MECHANICAL ENTERPRISES, INC.

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SECTION 00210 - INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

1.01 GENERAL

A. Only Bidders with the required contractor's license(s) are eligible to submit a Bid.

B. Bidders (Contractors) shall be incorporated or organized under the laws of the State or be registered to do business in the State as a separate branch or division that is capable of fully performing under the contract. The following definitions are used in the solicitation documents.

1. Hawaii Business §3-1222-112 HAR: A bidder who is registered and incorporated or organized under the laws of the State is a "Hawaii Business" and eligible for an award.

2. Compliant non-Hawaii Business §3-122-112 HAR: A bidder not incorporated or organized under the laws of the State, but is registered to do business in the State and complies with or is exempt from the requirements of §3-122-112 HAR, is a "Compliant Non-Hawaii Business" and eligible for an award.

3. Non-compliant Bidder: If a bidder is a non-Hawaii business and is not registered with the DCCA Business Registration Division (BREG) or cannot comply with §3-122-112 HAR, then the bidder in non-compliant and is ineligible for an award.

C. Prospective Bidders shall submit their "Intention to Bid".

D. Bidders shall submit the "Sealed Bid Form", bid bond (if required), tax clearances, Hawaii business certificates, and any other documents required by the bidding documents.

E. The GENERAL CONDITIONS set forth additional terms and conditions for the bid and award process. The GENERAL CONDITIONS will be part of the contract documents by which HHSC and the bidder (prospective contractor) will be bound. Bidders are directed to the GENERAL CONDITIONS for contract and statutory requirements and for Bidding and Execution of the Contract Requirements. Bidders are also directed to "Section 00800 – Special Conditions" of these specifications for definitions and modifications to the GENERAL CONDITIONS.

1.02 OFFEROR(S) or BIDDER(S)

A. The terms "Offeror" and "Bidder" are synonymous when used in this Section 00210 and other solicitation documents.

1.03 ADDENDA, CLARIFICATIONS

A. Addenda: The HHSC may periodically issue an addendum that may increase or decrease the scope of work or contract time, provisions or conditions. The HHSC will make the addenda available online on the facility website. Bidders are responsible for the information contained in the addenda or bid clarification whether or not the Bidder receives the addenda or clarification.

B. Bidders discovering an ambiguity, inconsistency or error when examining the bidding documents or the site and local conditions or bidders with questions or clarification requests shall send their written requests (email or fax notification are acceptable) to the Project Architect. Bidders shall comply with the following procedures:

1. Identify each request with the Project Name.

2. Indicate the appropriate section number, paragraph, drawing and detail number, schedule or other identifier.

3. The request should be brief, concise, but complete enough to properly evaluate and determine the merits or non-merits of the question or request.

C. Bidders shall make any requests for clarifications no later than fourteen (14) calendar days prior to the submission date for sealed bids. Refer to the “Notice to Bidders” for submission date.

D. HHSC will respond to important requests or clarifications by way of addenda. HHSC may not address or respond to all bidders inquiries, if the HHSC determines the request is unimportant or not required to disseminate to all Bidders.

1.04 SEALED BID FORM (BID FORM)

A. Bidder shall fill out the “Sealed Bid Form” completely. Write in ink or type. Besides the following paragraphs with instructions, there are supplemental Bidder’s Instructions within the text of the “Sealed Bid Form” and bidders shall comply with the instructions. Do not alter the “Sealed Bid Form”, and maintain the form intact.

B. RECYCLED PRODUCT PREFERENCE is not applicable to this project.

C. OTHER CONDITIONS: Bidder acknowledges and agrees to the provisions and certifications stated in this article.

D. RECEIPT OF ADDENDA: Bidder shall fill in the appropriate dates any addenda were received.

E. LISTING JOINT CONTRACTORS OR SUBCONTRACTORS:

1. Bidder shall complete the "Joint Contractors or Subcontractors List." It is the sole responsibility of the bidder to review the requirements of this project and determine the appropriate specialty contractor's licenses that are required to complete the project. Failure of the bidder to provide the correct names, license numbers, specialty class number, classification description and to indicate that the specialty contractor is required for this project, may cause the bid to be rejected.

2. Bidder agrees the completed listing of joint contractors or subcontractors is required for the project and that the bidder, together with the listed joint contractors and subcontractors, have all the specialty contractor's licenses to complete the work.

3. Based on the Hawaii Supreme Court's January 28, 2002 decision in Okada Trucking Co., Ltd. v. Board of Water Supply, et al., 97 Hawaii 450 (2002), the bidder as a general contractor ('A' or 'B' license) is prohibited from undertaking any work solely or as part of a larger project, which would require the bidder ('A' or 'B' general contractor) to act as a specialty ('C' license) contractor in any area in which the bidder ('A' or 'B' general contractor) has no specialty contractor's license. Although the 'A' and 'B' contractor may still bid on and act as the "Prime Contractor" on an 'A' or 'B' project (*See, HRS §444-7 for the definitions of an "A" and "B" project*), respectively, the 'A' and 'B' contractor may only perform work in the areas in which they have the appropriate contractor's license. The bidder ('A' or 'B' general contractor) must have the appropriate 'C' specialty contractor's licenses either obtained on its own, or obtained automatically under HAR §16-77-32.

4. General Engineering 'A' Contractors automatically have these 'C' specialty contractor's licenses: C-3, C-9, C-10, C-17, C-24, C-31a, C-32, C-35, C-37a, C-37b, C-38, C-43, C-56, C-57a, C-57b, and C-61.

5. General Building 'B' Contractors automatically have these 'C' specialty contractor's licenses: C-5, C-6, C-10, C-12, C-24, C-25, C-31a, C-42a, and C-42b.

6. The table that lists the specialty contractor' classifications in the bid form is from the Department of Commerce and Consumer Affairs' (DCCA) website www.state.hi.us/dcca/har/index.html. Bidders shall provide the appropriate classifications numbers and descriptions for any specialty contractors that are not included in the bid form and bidders are directed to the DCCA web site for the latest updated list.

7. Instructions to complete the Joint Contractors or Subcontractors List:

   a. Determine the specialty contractor classification(s) required for this project and provide the complete firm name and license number of the joint contractor or subcontractor in the respective columns. If the bidder is a general contractor and providing the work of the required specialty contractor classification, fill in the bidder's (general contractor's) license number and name.

   b. List only one joint contractor or subcontractor per required specialty contractor's classification.

   c. For projects with alternate(s), fill out the respective "Joint Contractors or Subcontractors List for the Alternate(s)." Bidder shall determine the specialty contractor's classification and description required for the respective alternate. Bidders shall fill in the complete class number, class description, firm name and license number of the respective joint contractor or subcontractor. The bidder shall not include any joint contractor or subcontractor previously listed for the base bid.

F. COST AND TIME: Bidder shall completely fill out the article and enter the cost for the Project Bid Price, and Alternates when provided. Bidder shall tabulate the Project Bid Price, and Alternates when provided, and the Bidders shall then enter the Total Lump Sum Bid Price. **BE SURE TO ENTER THE TOTAL LUMP SUM BID PRICE IN WORDS AND NUMERALS**. Refer to Bidder's Instructions located within the article.

   1. If provided, bidder shall fill in total costs for each alternate.

   2. The bidder is directed to the construction time information paragraph "B" for the list of contract times and dates which may include: contract duration, project start date, jobsite start date, jobsite completion, contract completion date and construction time for alternates. Bidder shall refer to "Section 01100" of these specifications for additional construction time information, as applicable.

G. SIGNATORY PAGE: Bidder shall completely fill out article (page). Bidder shall indicate if it is a "Hawaii Business" or a "Compliant Non-Hawaii Business." Also, bidder shall refer to Bidder's Instructions located within the article.

1.05 EVALUATION CRITERIA

A. EVALUTATING BIDS: The lowest responsive, responsible bid is determined by the following procedures:

1. The total lump sum bid price is adjusted to reflect the applicable preferences.

a. For projects with alternates, the total lump sum base bid price and alternates will be adjusted to reflect the applicable preferences.

2. Project control budget is established prior to the submission of bids.

1.06 METHOD OF AWARD

A. The contract will be awarded to the lowest responsive and responsible Bidder whose bid (including any alternates which may be selected) meets the requirements and criteria set forth in the solicitation documents.

B. In the event the total lump sum bid of all bidders exceeds the project control budget, HHSC reserves the right to make an award to the apparent Low Bidder if additional funds are available or by reducing the scope of work through negotiation.

1.07 OTHER CONDITIONS FOR AWARD

A. The Chief Procurement Officer may reject any or all bids and waive any defects if the Chief Procurement Officer believes the rejection or waiver is in the best interest of HHSC.

B. The Chief Procurement Officer may hold all bids up to 60 calendar days from the date bids were opened. Unless otherwise required by law, bids may not be withdrawn without penalty.

C. The award of the contract is conditioned upon funds made available for the project (or projects if applicable)

1.08 COMPLIANCE WITH §3-122-112 HAR:

A. As a condition for award of the contract and as proof of compliance with the requirements of 103D-310(c) HRS, the bidder shall meet the “Hawaii Business” or “Compliant non-Hawaii Business” requirements and shall provide the following documents:

1. Department of Taxation (DOTAX) and the IRS tax clearance certificates.

2. Department of Labor (DLIR) certificate of compliance.

3. Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG) certificate of good standing.

a. A Hawaii business that is a sole proprietorship is not required to register with the BREG and therefore not required to submit the DCCA, BREG "Certificate of Good Standing."

B. The apparent three low bidders shall furnish the required documents to HHSC within seven calendar days from the bid opening date. If a valid certificate is not submitted on a timely basis for award of a contract, a bidder otherwise responsive and responsible may not receive the award. Bidder is responsible to apply for and submit the documents by the required deadlines.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 REQUIRED DOCUMENTATION FOR HAWAII BUSINESS OR COMPLIANT NON-HAWAII BUSINESS (§3-122-112 HAR)

A. TAX CLEARANCE REQUIREMENTS (HRS Chapter 237): Bidder shall obtain a tax clearance certificate from the Hawaii State Department of Taxation (DOTAX) and the Internal Revenue Service (IRS). The certificate is ~~are~~ valid for six months from the most recently approved stamp date on the certificate; the certificate must be valid on the date received by HHSC.

1. DOTAX *TAX CLEARANCE APPLICATION* Form A-6 (Rev 2003) is available at DOTAX and IRS (State of Hawaii) offices or DOTAX website, and by mail or fax.

a. DOTAX website: http://www.state.hi.us/tax/alphalist.html#a

b. DOTAX forms by fax/mail: (808) 587-7572 or 1-800-222-7572

2. Mail, fax or submit in person completed tax clearance application forms to the Department of Taxation, Taxpayer Services Branch or to the address listed on the application. Facsimile numbers are:

a. DOTAX: (808) 587-1488

b. IRS: (808) 539-1573

3. DOTAX will return the form to the bidder. The bidder is reminded that it is responsible to submit the applications for the tax clearance directly to DOTAX or IRS and not to HHSC.

B. DLIR CERTIFICATE of COMPLIANCE (HRS Chapter 383 - Unemployment Insurance, Chapter 386 - Workers' Compensation, Chapter 392 - Temporary Disability Insurance, and 393 – Prepaid Health Care): Bidder shall obtain a certificate of compliance from the Hawaii State Department of Labor and Industrial Relations (DLIR). The certificate is valid for six months from the date of issue; certificates must be valid on the date received by HHSC.

1. DLIR *APPLICATION FOR CERTIFICATE OF COMPLIANCE WITH SECTION 3-122-112 HAR*, Form LIR#27 is available at DLIR website or at the neighbor island DLIR District Office.

   a. DLIR website: http://www.dlir.state.hi.us/LIR#27

2. Mail, fax or submit in person completed application form to the Department of Labor and Industrial Relations, Administrative Services Office at the address listed on the application.

3. DLIR will return the form to the bidder. The bidder is reminded that it is responsible to submit the application for the certificate directly to DLIR and not to HHSC.

C. DCCA CERTIFICATE OF GOOD STANDING: Bidder shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG). The certificate of good standing is valid for six months from the date of issue; certificates must be valid on the date received by HHSC.

1. DCCA *CERTIFICATE OF GOOD STANDING* is available from the business registrations website or by telephone. Bidders are advised there are costs associated with registering and obtaining the certificate.

   a. DCCA form website: http//www.BusinessRegistrations.com

   b. DCCA telephone: (808) 586-2727, M - F 7:45 to 4:30 HST

2. Submit the application per DCCA's requirements.

3. DCCA will return the form to the bidder. The bidder is reminded that it is responsible to submit the application for the certificate directly to DCCA and not to HHSC.

END OF SECTION

SECTION 00800 - SPECIAL PROVISIONS

PART 1 - GENERAL

1.01 SUBSTITUTION REQUESTS

A. Written substitution requests must be submitted with your Invitation for Bid (IFB) in accordance with IFG Section 3. All substitutions will be reviewed and approved in accordance with Section 6.3 Substitution of Materials and Equipment.

B. Substitution requests by FAX are not acceptable.

1.02 PROJECT CONTACT PERSON

A. HHSC Representative – For access to the site.

NAME:	Mr. Ron Kurasaki
POSITION OR TITLE:	Project Manager
TELEPHONE NUMBER:	(808) 497-9350
Email:	rkurasaki@hhsc.org

B. Procurement Agency – For questions regarding proposal and contract requirements.

NAME:	Mr. Scott Kawai
POSITION OR TITLE:	Contracts Manager
TELEPHONE NUMBER:	(808) 832-3001
Email:	skawai@hhsc.org

C. Prepare Drawings and Specifications.

NAME:	Mrs. Margaret Mok
POSITION OR TITLE:	Architect
TELEPHONE NUMBER:	(808) 356-5906
Email:	mmok@inkarch.com

1.03 OFFEROR'S RESPONSIBILITY FOR EXAMINING PLANS, SPECIFICATIONS AND SITE OF WORK

A. Offerors herewith refers to sub-contractors, suppliers, manufacturer's representatives as well as contractors.

1.04 LIQUIDATED DAMAGES

A. The time of completion for the Work shall be within 210 consecutive calendar days from the official commencement date of the Notice to Proceed (NTP).

B. In accordance with the General Conditions, upon failure to complete Work or any portion of the Work within the time or times fixed in the contract or extension thereof, the Contractor shall pay liquidated damages to the Department in the amount of $500.00 per calendar day of delay.

C. In accordance with the General Conditions, PROJECT ACCEPTANCE DATE, for failure to correct punch list deficiencies, within the time or times fixed in the contract or extension thereof, the Contractor shall pay liquidated damages to the HHSC, in the amount equal to ten percent (10%) of the liquidated damages per calendar day of delay.

D. In accordance with the General Conditions FINAL SETTLEMENT OF THE CONTRACT, for failure to submit closing documents within the time or times fixed in the contract or extension thereof, it is agreed that the Bidder shall pay liquidated damages to HHSC in the amount equal to five percent (5%) of the liquidated damages per calendar day of delay.

1.05 SPECIALTY CONTRACTOR'S LICENSE

A. Contractor shall be solely responsible to assure that all the specialty licenses required to perform the Work are covered by the Contractor or its subcontractor(s).

1.06 WORKING HOURS

A. The regular working hours for this project is from 8:00 AM to 4:30 PM Monday through Friday, excluding State Holidays, unless otherwise noted or restricted under "Section 01100". The Working Hours provisions of specification "Section 01100" shall govern over this article 1.06.

B. The Contractor may be given approval to work beyond the regular hours including Saturdays, Sundays, State Holidays, night work, or after hours under the provisions of the GENERAL CONDITIONS, "Overtime And Night Work Section" and under specification "Section 01100".

1.07 SPECIAL PROCEDURES DURING BIDDING

A. Bid documents will be available online and from the Contracts Manager's office, at Maluhia, 1027 Hala Drive, Honolulu, HI, 96817.

B. All bids shall be submitted to the Contracts Manager.

C. All questions regarding the plans and specifications shall be submitted, in writing, to the OWNER REP. The OWNER REP will review the questions and issue any responses via Addendum. Only information received by Addendum shall be binding.

D. All questions regarding the proposal or contractual requirements shall be submitted, in writing to the Contracts Manager. The Contracts Manager will review the questions and issue any responses via Addendum. Only information received by Addendum shall be binding.

E. Any visitation to the site to examine the scope of work shall be requested through the HHSC Representative. Disruption of facility operations shall not be permitted.

1.08 PROCEDURES DURING CONSTRUCTION

A. Upon issuance of the Notice to Proceed, the Contractor shall submit a work schedule for review and discussion. The work schedule shall be updated on a weekly or bi-weekly basis as directed by the OWNER REP.

B. On a weekly or bi-weekly basis, the Contractor shall conduct a progress meeting with the Hospital and OWNER REP. The meeting will discuss the progress of the construction, discussion of problems, and review of outstanding issues. The Contractor shall conduct the meeting and prepare the meeting notes and minutes and distribute to all parties.

C. During the construction, submittals and RFIs shall be submitted to the OWNER REP for review and action. To expedite the review, the Contractor may make submittals via email.

D. Periodic requests for payment shall be submitted to the OWNER REP for review and confirmation. Approved requests for payment will be forwarded to the Contracts Officer for processing of payment.

E. Upon substantial completion of the project, the Contractor shall submit in writing to the OWNER REP a request for a pre-final inspection. The Contractor shall have completed their own inspection and completed all noted discrepancies. Include with the request for the pre-final inspection a list of all outstanding work not completed or corrected.

F. Upon conducting a pre-final inspection, the OWNER REP shall prepare a punchlist of noted discrepancies for the Contractor's remedial action. A final inspection will be performed upon completion of all punchlist items.

1.09 PROJECT RESTRICTIONS

A. The Contractor is informed that the facilities will be fully occupied and work shall be performed in close coordination with the HHSC representative. Work shall be phased and may be limited to one Bathroom or area at a time. Work will require the relocation of clients from the work area. Time shall be allocated for the Hospital to conduct this relocation. Scheduling of the work shall be closely monitored and work performed to minimize the disruption to the remaining areas of the facility. All work schedules shall be approved by HHSC prior to starting.

B. Staging and storage of materials on-site is limited and shall be coordinated with the HHSC representative. Contractor may be required to store materials off-site at his own expense.

C. Parking on-site is limited and may be restricted to only active delivery of materials and equipment. Coordinate with the HHSC representative. If on-site parking not be available, the Contractor shall park off-site.

D. The above restrictions shall be considered in the work of this project and shall be included in the Contractor's cost. No additional compensation shall be made for not considering these restrictions.

PART 2 - MATERIALS (Not Used)

PART 3 - EXECUTION

3.01 FINAL PAYMENT REQUIREMENTS

A. In addition to the requirements in the GENERAL CONDITIONS “Final Payment” section, the contractor shall submit”

1. Tax clearance certificate from DOTAX and IRS, current within two months of the issuance date; and

2. An originally signed Certificate of Compliance for Final Payment (SPO Form - 22, modified), affirming that the contractor remained in compliance with all laws as required by (§3-122-112 HAR). A contractor making a false affirmation shall be suspended and may be debarred pursuant to section 103D-702 HRS.

END OF SECTION

SECTION 01019 - GENERAL PROJECT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY OF WORK

A. Perform operations and furnish equipment, tools, materials, related items and labor necessary to execute, complete and deliver the Work as required by the Contract Documents.

1.02 DIVISION OF WORK

A. The Division and Sections into which these specifications are divided shall not be considered an accurate or complete segregation of work by trades. This also applies to work specified within each section.

B. Where devices, or items, or parts thereof are referred to in the singular, it is intended that such reference shall apply to as many such devices, items or parts as are required to properly complete the Work.

C. Specifications and Drawings are prepared in abbreviated form and include incomplete sentences. Omission of words or phrases such as “the Contractor shall”, “as shown on the drawings”, “a”, “an”, and “the” are intentional. Omitted words and phrases shall be provided by inference to form complete sentences.

D. Specifying of interface and coordination in the various Specification Sections is provided for information and convenience only. Such requirements in the various Sections shall complement the requirements of this Section.

1.03 NOTIFICATION

A. Contact the OWNER REP and HHSC Representative at least five (5) working days prior to starting any onsite work.

1.04 SAFETY REQUIREMENTS

A. The Hawaii Occupational Safety and Health Law, Chapter 396, Hawaii Revised Statutes, effective May 16, 1972, as amended, is applicable and made a part of the Contract. Carefully read and strictly comply with its requirements.

B. Protect the facility personnel, students, and the public whenever power driven equipment is used. Ensure adequate safety precautions are used when operating any power-driven equipment.

1.05 PERFORMANCE AND COORDINATION

A. Contractor shall be in charge of the Work and the Project Contract Limits, as well as the directing and scheduling of all work. Contractor shall include general supervision, management and control of the Work of this project, and in addition to other areas more specifically noted throughout the Specifications. Final responsibility for performance, interface, and completion of the Work and the Project shall be the Contractor's.

B. Jobsite Administration shall be the responsibility of the Contractor. Provide a competent superintendent on the job and provide an adequate staff to execute the Work. In addition, all workers shall dress neatly and conduct themselves properly at all times. Loud abusive behavior, sexual harassment and misconduct will not be tolerated. Workers found in violation of the above shall be removed from the job site as directed by the HHSC Technical Representative.

C. The HHSC and/or Hospital will hold the Contractor liable for all the acts of Subcontractors and shall deal only with the Prime Contractor in matters pertaining to other trades employed on the job.

D. Coordination: Provide project interface and coordination to properly and accurately bring together the several parts, components, systems, and assemblies as required to complete the Work.

1. Provide interface and coordination of all trades, crafts and subcontracts. Ensure and make correct and accurate connections of abutting, adjoining, overlapping, and related work. Provide anchors, fasteners, accessories, appurtenances, and incidental items needed to complete the Work, fully, and correctly in accordance with the Contract Documents.

2. Provide additional structural components, bracing, blocking, miscellaneous metal, backing, anchors, fasteners, and installation accessories required to properly anchor, fasten, or attach material, equipment, hardware, systems and assemblies to the structure.

3. Provide caulking, sealing, and flashing as required to waterproof the building complete and as required to insulate the building thermally and acoustically. Include sealing, flashing, and related work as required to prevent moisture intrusion, air infiltration, and light leakage.

4. Materials, equipment, component parts, accessories, incidental items, connections, and services required to complete the Work which is not provided by subcontractors shall be provided by the Contractor.

1.06 COOPERATION WITH OTHER CONTRACTORS

A. The Hospital reserves the right at any time to contract for or otherwise perform other or additional work within the Project Contract Limits. The Contractor of this project shall to the extent ordered by the HHSC Representative, conduct its work so as not to interfere with or hinder the progress or completion of the work performed by the Hospital or other contractors.

1.07 SUBMITTALS

A. Furnish required submittals specified in this Section and in the Technical Sections. Submittals include one or more of the following: shop drawings, color samples, material samples, technical data, material safety data information, schedules of materials, schedules of operations, guarantees, certifications, operating and maintenance manuals, and field posted as-built drawings.

B. Record Drawings: Field Posted As-Built Drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be prepared and submitted by the Contractor. To accomplish this, the following procedure shall be followed by the Contractor:

1. A full-size set of field posted as-built drawings shall be maintained at the job site. All deviations from alignments, elevations and dimensions which are stipulated on the drawings and authorizations given by the HHSC Technical Representative to deviate from the drawings shall be clearly and accurately recorded by the Contractor on this set of record drawings.

2. Changes shall be recorded immediately after they are constructed in place to assure they are not forgotten. Record the changes in red pencil and where applicable, refer to the authorizing document or Change Order. The field posted as-built drawings shall be made available to the OWNER REP and HHSC Technical Representative at any time so that its clarity and accuracy can be monitored.

3. The words “FIELD POSTED AS-BUILT” shall be labeled on the title sheet and certified by the Contractor as to accuracy and completeness as shown below:

FIELD POSTED AS-BUILT

Certified By: _____Date:_____
Contractor (Include name and company)

4. The words “FIELD POSTED AS-BUILT” shall be labeled on all sheets in the margin space to the right of the sheet number written from the bottom upward.

5. The Index to Drawings shall be revised with the label “FIELD POSTED AS-BUILT” for each sheet. The index shall conclude with the following note: “A COMPLETE SET CONTAINS ____ SHEETS” with the total number of sheets comprising the set to be placed in the blank.

6. Any “FIELD POSTED AS-BUILT” drawing which the OWNER REP determines does not accurately record the deviation may be corrected by the OWNER REP and the Contractor shall be charged for the services.

7. Submit the set of “FIELD POSTED AS-BUILT” drawings to the OWNER REP and notify the HHSC Technical Representative no later than five (5) calendar days prior to the date of final inspection.

8. “AS-BUILT” drawings will be prepared by the design consultant using the “FIELD POSTED AS-BUILT”. Both sets of drawings will be sent to the Contractor for review and approval. The Contractor shall retain the “FIELD POSTED AS-BUILT” drawings for records, sign the “AS-BUILT” set of drawings, indicating approval, and return the drawings in a timely manner to the OWNER REP and notify the HHSC Technical Representative.

1.08 CONSTRUCTION SCHEDULE:

A. The Construction Schedule completion date will be approved prior to award. The daily activities of the Construction Schedule will be reviewed within fifteen (15) calendar days after the Notice to Proceed or upon earlier written instruction by HHSC.

B. The schedule shall be related to the entire project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the work. If requested by the OWNER REP or HHSC Representative, the Contractor shall participate in a preliminary meeting to discuss the proposed schedule and requirements prior to submission of the schedule.

C. Contractor shall prosecute the work according to the Schedule. The OWNER REP and HHSC Representative shall rely on the reviewed Contractor’s Schedule and regular updates for planning and coordination. The HHSC Representative’s review of the Contractor’s Construction Schedule does not relieve the Contractor of its obligation to complete the work within the allotted contract time. Nor does the review grant, reject or in any other way act on the Contractor’s request for adjustment(s)to complete remaining contract work, or for claims of additional

compensation. Such requests shall be processed in accordance with other relevant provisions of the contract.

D. If the OWNER REP issues a Field Order or Change Order or requires Force Account Work that affects the sequence or duration of work activities noted on the construction progress schedule, the Contractor shall promptly update the schedule. This shall be accomplished by adding, deleting or revising the work activities noted, or changing the logic in the schedule to show the Contractor's plan for incorporating the change into the flow of work. All Change Orders and Time Extension requests that affect the construction schedule shall be evaluated based on their impact on the approved Construction Schedule.

1.09 MEETINGS

A. Contractor shall meet with the hospital's representative, weekly or other interval as determined, to discuss the progress of the Work.

B. For each meeting, Contractor shall take meeting minutes and provide a list stating all items, work or material, which may cause a delay or have an impact on the project's contractual dates. The list shall be inclusive of items requiring action from all responsible parties such as outstanding submittal status, request for information (clarification), force account work, change order, and change proposals. The format of this list shall be at the Contractor's discretion, subject to the OWNER REP's approval. Submit the list to all parties for discussions as a meeting agenda. Contractor shall provide a plan of corrective action for any item, which is delayed or expected to be delayed, where that item impacts the contractual dates.

1.10 PROJECT AND SITE CONDITIONS

A. Project Contract Limits (Contract Zone Limits) shown on the drawings indicate only in general the limits of the work involved. Perform necessary and incidental work, which may fall outside of these demarcation lines. Confine construction activities within the Project Contract Limits and do not spread equipment and materials indiscriminately about the area.

1.11 SANITARY FACILITIES

A. The Contractor shall be allowed to utilize on-site restrooms as directed by the OWNER REP and/or HHSC Representative. The Contractor shall maintain the facility in clean and sanitary condition at all time. Failure to do so, may require the Contractor to provide portable temporary toilet facilities for the contractor's use.

1.12 CONSTRUCTION AIDS

A. Provide construction aids and equipment required by construction personnel and to facilitate execution of the Work including: scaffolds, ladders, ramps, platforms, railings, and other such facilities and equipment.

PART 2 - MATERIALS

2.01 QUALITY

A. Materials, items, equipment and fixtures specified in the various Divisions and Sections shall be new unless otherwise specified.

2.02 STORAGE AND HANDLING

A. Contractor shall supervise jobsite delivery and handling, and assign storage space for materials, items, equipment and fixtures of all trades. Contractor and installer are responsible for delivery, unloading, unpacking, handling, storage, distribution, installation and protection of its materials at the jobsite.

B. Except as otherwise required by these specifications or by the Hospital, determine and comply with manufacturer(s) recommendation(s) on product handling, storage and protection.

C. Deliver products to the jobsite in manufacturer's original containers, with labels intact and legible. Maintain packaged material with seals unbroken and labels intact until time of use. Promptly remove damaged materials and unusable items from the jobsite, and promptly replace with material meeting the specified requirements, at no additional cost to the Hospital.

D. The OWNER REP may reject as non-complying such material and products that do not bear identification satisfactory to the OWNER REP as to manufacturer, grade, quality, and other pertinent information.

PART 3 - EXECUTION

3.01 EXAMINING THE SITE

A. Contractor and Subcontractors are expected to visit the site and make due allowances for difficulties and contingencies to be encountered. Compare contract documents with work in place. Become familiar, with existing conditions, the conditions to be encountered in performing the Work, and the requirements of the drawings and specifications.

B. Verify construction dimensions and elevations indicated on the drawings before any construction begins. Any discrepancy shall be immediately brought to the attention of the OWNER REP, and any change shall be made in accordance with the OWNER REP's instruction. Contractor shall not be entitled to extra payment if it fails to report the discrepancies before proceeding with any work whether within the area affected or not.

C. Obtain all field measurements required for the accurate fabrication and installation of the Work included in this Contract. Exact measurements are the Contractor's responsibility.

D. Furnish or obtain templates, patterns, and setting instructions as required for the installation of all Work. All dimensions shall be verified in the field.

E. The Contractor shall accept the site in the condition which exists at the time access is granted to begin the Work.

1. Verify existing conditions and dimensions shown and other dimensions not indicated but necessary to accomplish the Work.

2. Locate general reference points and take action to prevent their destruction. Lay out work and be responsible for lines, elevations and measurements and the work executed. Exercise precautions to verify figures and conditions shown on drawings before layout of work.

3. Before starting the Work, the Contractor and each Subcontractor, shall verify governing dimensions and shall examine adjoining work on which the Contractor's work is in any way dependent. No additional compensation will be allowed on account of differences between actual measurements and dimensions shown. Submit differences discovered during the verification work to the OWNER REP for interpretations before proceeding with the associated work.

3.02 UTILITY SERVICE

A. Electricity - Make arrangements with the facilities for temporary use of electricity for construction use.

B. Telephone - Make arrangements with the utility companies for temporary telephone service for construction use or utilize cellular phone service.

C. Water - Make arrangements for temporary water use with the facilities.

3.03 ENVIRONMENTAL

A. General Contractor shall oversee that proper environmental conditions are met regarding temperature, humidity, lighting and ventilation.

3.04 PREPARATION AND PROTECTION

A. Protection of Property: Continually maintain adequate protection of the Work from damage and protect all property, including but not limited to buildings, interior or exterior finishes, equipment, furniture, grounds, vegetation, material, utility systems located at and adjoining the job site. Repair, replace or pay the expense to repair damages resulting from Contractor's work, fault or negligence.

B. Before starting work to be applied to previously erected constructions, make a thorough and complete investigation of such recipient surfaces and determine their suitability to receive required additional construction and finishes. Contractor, at its expense, shall make whatever repairs and conditioning required to properly prepare such surfaces. Contractor shall coordinate the work to provide a suitable surface to receive following work.

C. Commencement of work by any trade will be construed as acceptance of existing conditions and surfaces as being satisfactory for application of subsequent work, and full responsibility for finished results and assumption of warranty obligations under the Contract.

D. Protect existing work in a manner to prevent damage including interior work from damage by vandals or the elements. Provide temporary protection. Use curtains, barricades, or other appropriate methods. Take positive measures to prevent breakage of glass and damage to plastic, aluminum and other finishes.

E. Repairs and Replacements: In event of damage, promptly make replacements and repairs to the approval of the OWNER REP and/or HHSC Representative and at no additional cost to the Hospital. Additional time required to secure replacements and to make repairs will not be considered to justify an extension in the Contract Time or completion.

3.05 BARRICADE

A. Erect temporary construction barricade(s) to prevent unauthorized persons from entering the project area and to the extent required by the OWNER REP and/or HHSC Representative.

B. Maintain temporary construction barricade(s) throughout the duration of the Work. During the course of the project, the OWNER REP and/or HHSC Representative may require additional barricades be provided for the safety of the public. Contractor shall erect the additional barricade(s) at its own expense.

3.06 INSTALLATION

A. Materials, items, fixtures required by the various Divisions and Sections of the Specifications shall be installed in accordance with Contract Documents, by workers specially trained and skilled in performance of the particular type of work, to meet guarantee and regulatory agency requirements. Should the drawings or specifications be void of installation requirements, install the materials, items, fixtures in accordance with the manufacturer's current specifications, recommendations, instructions, and directions, and/or best construction industry standards.

3.07 PATCHING

A. General Contractor shall oversee cutting and patching of concrete, masonry, structural members and other materials where indicated on drawings and as job conditions require. Unless noted elsewhere in the Drawings and Specifications, no cutting or patching of existing or new structural members will be permitted without previously notifying the HHSC Technical Representative.

B. Patching materials and workmanship shall be of equal quality to that indicated on the drawings, specified for new work, and/or to match the construction of item to be patched.

3.08 CLEAN-UP

A. Rubbish and debris resulting from work of the various Divisions and Sections of the specifications shall be collected and disposed of by the Contractor at legal disposal areas away from the project site. Clean up and remove from premises all debris accumulated from operations from time to time and as directed by the OWNER REP and/or HHSC Representative. Permission to provide on-site trash containers shall be granted by the Hospital and shall be placed where directed by the OWNER REP and/or HHSC Representative.

END OF SECTION

SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: The work shall generally consist of demolition of existing offices and the addition of two new bathrooms and a conference room. Demolition work shall include, but not be limited to, demolition of existing stud walls, ceilings, doors, millwork, flooring, plumbing fixtures, and electrical devices. New work shall include, but note be limited to, installation of new gyp board walls, ceilings, doors, resilient flooring, ceramic tiling, painting, toilet partitions and accessories, plumbing fixtures, electrical devices and miscellaneous related work.

1. Project Location: Leahi Hospital, 3675 Kilauea St., Honolulu, Hawaii.

B. Perform operations and furnish equipment, tools, materials, related items and labor necessary to execute, complete and deliver the Work as required by the Contract Documents.

C. The Division and Sections into which these specifications are divided shall not be considered an accurate or complete segregation of work by trades. This also applies to work specified within each section

D. Contractor shall not alter the Drawings and Specification. If an error or discrepancy is found, notify the OWNER REP.

E. Specifying of interface and coordination in the various specification sections is provided for information and convenience only. These requirements in the various sections shall complement the requirements of this Section.

1.02 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated and include incomplete sentences. Omission of words or phrases such as “the Contractor shall”, “as shown on the drawings”, “a”, “an”, and “the” are intentional. Omitted words and phrases shall be provided by inference to form complete sentences. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred, as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract

Documents indicates. Where devices, or items, or parts thereof are referred to in the singular, it is intended that such reference shall apply to as many such devices, items or parts as are required to properly complete the Work.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

    a. The words “shall,” “shall be,” or “shall comply with,” depending on the context, are implied where a colon (:) is used within a sentence or phrase.

3. Abbreviations and Acronyms for Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale Research’s “Encyclopedia of Associations” or in Columbia Books’ “National Trade & Professional Associations of the U.S.”

B. Definitions

1. Directed: Terms such as “directed,” “requested,” “authorized,” “selected,” “approved,” “required,” and “permitted” mean directed by Contracting Officer, requested by Contracting Officer, and similar phrases.

2. Indicated: The term “indicated” refers to graphic representations, notes, or schedules on drawings or to other paragraphs or schedules in specifications and similar requirements in the Contract Documents. Terms such as “shown,” “noted,” “scheduled,” and “specified” are used to help the user locate the reference.

3. Furnish: The term “furnish” means to supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar operations.

4. Install: The term “install” describes operations at project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

5. Provide: The terms “provide” or “provides” means to furnish and install, complete and ready for the intended use.

6. Installer: An installer is the contractor or another entity engaged by contractor as an employee, subcontractor, or sub-

subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

7. Submit: Terms such as “submit,” “furnish,” “provide,” and “prepare” and similar phrases in the context of a submittal, means to submit to the Contracting Officer.

C. Industry Standards

1. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

2. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.

3. Conflicting Requirements: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Contracting Officer for a decision before proceeding.

1.03 WORK SEQUENCE

A. The Work will be conducted in a single construction phase.

1.04 USE OF PREMISES AND WORK RESTRICTIONS

A. General: Contractor shall have full use of construction zone for construction operations, including restricted use of project site, during construction period. Contractor’s use of premises is limited only by State’s right to perform work or to retain other contractors on portions of the project site.

B. Contractor’s use of premises is restricted as follows:

1. Construction Times and Schedule:

a. The Contractor shall coordinate the work schedule with the OWNER REP and/or HHSC Representative. An advanced notice of 15 calendar days shall be provided prior to the start of work. Work can be scheduled for weekdays (8:00 AM to 4:30 PM) with advanced notice by the Contractor.

b. The normal operational hours are 8:00 AM to 4:30 PM, Monday through Friday.

c. Unless restricted elsewhere in these specifications, the Contractor may not perform work outside of normal daily operation hours. Weekend or holiday work may be permitted with the approval of the OWNER REP and/or HHSC Representative. Any weekend or holiday work shall require a 15 calendar day advanced notice.

d. Work performed during normal operating hours shall not impede public traffic or office personnel. An alternate route around the work areas may be required.

2. Site Access and Parking:

a. Arrange all on-site parking and access with the OWNER REP and/or HHSC Representative.

b. Permanent use of the loading area is prohibited.

c. Subject to availability, the OWNER REP and/or HHSC Representative will designate other on-site areas that may be used by the Contractor other than assigned stalls. Restore any property damaged by construction activities at the completion of the project.

3. Sanitation and Utilities:

a. Contractor may use designated restrooms, however, shall maintain the facilities in clean condition at all times. Coordinate with the HHSC Representative.

b. Arrange all temporary electricity and water service with the HHSC Representative. There will be no charges for reasonable electricity and water service.

c. Should interruption of any utility services be required, outages shall be coordinated with the HHSC Representative. A minimum five (5) working days notice shall be provided. Contractor is forewarned that the HHSC Representative may require outages to be done at specific times to minimize disruptions to the facility operations.

4. Other Conditions:

a. Noise and other disrupting activities normally resulting from construction operations are detrimental to the conduct of normal activities in adjacent locations surrounding the project area. Accordingly, exercise every precaution to keep noise levels to a minimum. Internal combustion engines and compressors shall be equipped with mufflers to reduce noise to a minimum.

b. Use or application of materials with offensive odors should be avoided and may be restricted from use on this project.

1.05 WORK UNDER OTHER CONTRACTS

A. Separate Contract: The HHSC may execute a separate contract for certain construction at the facility that was not known at the time Offers were submitted.

B. Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01140 – WORK RESTRICTIONS

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes work restrictions on the Contractor's operations, and construction as required to maintain the facility's operation during the construction period.

B. CONSTRUCTION PROVISIONS

1. Rules and Regulations: Consult with the OWNER REP and HHSC Representative at the pre-construction conference and become familiar with the rules and regulations of the facility.

2. Contractor's Operations: Confine all construction operations to the immediate vicinity of the construction activity. Store building materials, equipment, tools and incidentals in an enclosed area as directed by the HHSC Representative. Take precautions and prevent access to power equipment, tools, etc., by other than authorized construction personnel. Perform operations to ensure the safety of the occupants of the buildings at all times.

3. Perform operations to minimize inconvenience or disturbance upon the personnel and residents.

4. Protection of occupants: Special consideration must be made by the Contractor at all times to safely protect the occupants and facility personnel from any and all injuries that may be caused as a result of the work performed under this contract.

5. Caution: The Contractor shall caution his personnel on the job that any association with the occupants be avoided as much as possible, that when spoken to by occupants, normal courtesy shall be maintained at all times.

6. None of the foregoing regulations shall be construed as a restriction on the legal prosecution of the work.

1.02 SEQUENCING OF WORK

A. The Contractor shall schedule his work in general consideration for the on-going operation of the hospital. All work shall be coordinated with the HHSC Representative. Contractor shall consider in his proposal interruptions or delays to his schedule of work due to special requirements of the hospital or HHSC Representative.

END OF SECTION

SECTION 01300 - SUBMITTALS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

Where indicated in these specifications, provide submittals to the OWNER REP for review.

1.02 PROCEDURES

A. Unless otherwise specified, deliver submittals to the OWNER REP with copy of transmittal to the Contracts Manager.

B. Transmit all items using form which identifies Project, Contractor, Subcontractor, and major supplier. Identify pertinent drawing sheet, detail number, and specification section number, as appropriate. Identify deviations from Contract Documents. Provide space for the OWNER REP or his Consultant's review stamp.

C. Upon completion of review by the OWNER REP, the OWNER REP will return submittals to the Contractor with copy to the Contracts Manager and HHSC Representative.

1.03 SCHEDULE OF WORK

A. Coordinate Schedule with Work Sequence specified in Section 01140.

1.04 SHOP DRAWINGS AND SAMPLE SUBMITTALS

A. All submittals shall be made in accordance with the following unless otherwise specified. Minimum sheet size is 8-1/2" x 11". Maximum sheet size is same size as the Contract Drawings. Drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to sheet, schedule, and detail shown on Contract Drawings.

B. Mark each copy to identify applicable products, and other data. Supplement manufacturer's standard data to provide information unique to the work. Include manufacturer's installation instructions when required by the specification.

1. The Contractor shall review, stamp with his approval and submit with reasonable promptness and in orderly sequence so as to cause no delay in work of any other Subcontractor, all shop drawings, and product data required by these specifications.

2. Properly identify shop drawings and samples as specified. At the time of submission, the Contractor shall inform the HHSC Technical Representative in writing of any deviation in the shop drawings or submittals from requirements of the Contract Documents.

3. By approving and submitting the shop drawings and submittals the Contractor thereby represents that he has determined and verified all field measurements, field criteria, materials, catalog numbers and similar data, or will do so, and that he has checked and coordinated each shop drawing and sample with the requirements of these specifications.

4. Six (6) copies of the Shop Drawings and submittals shall be submitted for review. Upon review, the OWNER REP will retain three (3) copies and return the balance to the Contractor.

5. The OWNER REP will review the shop drawings and submittals with reasonable promptness so as to cause no delay but only for conformance with the design concept of the Project and with the information given in the Contract Documents. The OWNER REP's review of a separate item shall not indicate approval of an assembly in which the item functions.

6. The Contractor shall make any corrections required by the OWNER REP and shall resubmit the required number of corrected copies of shop drawings or submittals for review. The Contractor shall direct specific attention in writing or on resubmitted shop drawings to revisions other than the corrections requested by the OWNER REP on previous submissions.

7. The OWNER REP's review of shop drawings or submittals shall not relieve the Contractor of responsibilities for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Hospital in writing of such deviation, at time of submission, and the HHSC Representative has given written approval to the specific deviation; nor shall the OWNER REP's review relieve the Contractor from responsibility for errors or omissions in the shop drawings or samples.

8. No portion of the work requiring a shop drawing or sample submission shall be commenced until the submission has been reviewed by the OWNER REP. All such portions of the work shall be in accordance with reviewed shop drawings and samples.

C. Samples: Submit full range of manufacturer's standard textures, colors, and patterns for the Hospital's selection. Submit samples as specified in the respective Specification sections and as noted above. Samples shall illustrate functional characteristics of the Product, with integral parts and attachment devices. Coordinate submittal of different categories for interfacing work. Include identification on each sample, giving full information.

1.05 BIDDER'S SPECIAL RESPONSIBILITY FOR COORDINATING CONTRACTURAL WORK AND SUBMITTALS:

A. The General Contractor shall be responsible for the coordination of all contractual work and submittals.

B. The General Contractor shall have a rubber stamp made up in the following format:

Contractor's Name

PROJECT: _____

_____

PROJECT NO.: _____

THIS SUBMITTAL HAS BEEN CHECKED BY THIS GENERAL CONTRACTOR. IT IS CERTIFIED CORRECT, COMPLETE, AND IN COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. ALL AFFECTED CONTRACTORS AND SUPPLIERS ARE AWARE OF, AND WILL INTEGRATE THIS SUBMITTAL INTO THEIR OWN WORK.

DATE RECEIVED _____
SPECIFICATION SECTION # _____
SPECIFICATION PARAGRAPH # _____
DRAWING _____
SUBCONTRACTOR _____
SUPPLIER _____
MANUFACTURER _____

CERTIFIED BY: _____

C. This stamp, "filled-in", should appear on the title sheet of each shop drawing, on a cover sheet of submittals in an 8-1/2" x 11" format, or on one face of a cardstock tag (min. 3" x 6") tied to each sample. The tag on the samples should state what the sample is, so that if the tag is accidentally separated from the sample, they can be matched up again. The back of this tag will be used by the OWNER REP for his receipt, review, and log stamp and for any comments that relate to the sample.

D. All submittals for material and shop drawings listed in the contract documents, shall be required and shall be first reviewed and certified by the General Contractor, then reviewed and approved by the OWNER REP, prior to any ordering of materials and equipment. Submittals that have not been reviewed by the General Contractor shall be returned for review.

1.06 MANUFACTURER'S CERTIFICATES

Submit certificates, warranties, operating and maintenance instructions in accordance with requirements of each specification section. Submit in triplicate.

1.07 MSDS

MSDS shall be submitted prior to the pre-construction meeting. The Contractor shall submit MSDS log and reference each MSDS to its specification Section number and product system.

PART 2 – PRODUCTS

(Not used.)

PART 3 – EXECUTION

(Not used.)

END OF SECTION

SECTION 01577 - POLLUTION CONTROL

PART 1 - GENERAL

1.01 SUMMARY

A. Includes site and environmental control requirements.

1.02 TRASH, REFUSE DISPOSAL

A. Assume all ballast or lamps from removed light fixtures contain mercury and are PCB contaminated. Dispose fixtures properly in accordance with federal, state, and local requirements

B. Burning of debris and/or waste materials on the project site is prohibited.

C. Do not bury debris and/or waste material on the project site, unless specifically allowed elsewhere in these specifications as backfill material.

D. Haul unusable debris and waste material to an appropriate off-site dump area. During loading operations, water down or provide other measures to prevent dust or other airborne contaminants.

E. Vacuum, wet mop, or damp sweep when cleaning rubbish and fines which can become airborne from floors or other paved areas. Do not dry sweep.

F. Use enclosed chutes and/or containers to conveying debris from above the ground floor level.

G. Clean-up shall include the collection of all waste paper and wrapping materials, cans, bottles, construction waste materials and other objectionable materials, and removal as required. Frequency of clean-up shall coincide with rubbish producing events. The Contractor shall be responsible for all clean-up cost.

1.03 DUST

A. Prevent dust from becoming airborne at all times including non-working hours, weekends and holidays in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 60 - Air Pollution Control.

B. Contractor is responsible for and shall determine the method of dust control. Subject to the Contractor's choice, the use of water or "environmentally friendly chemicals" may be used over surfaces which create airborne dust.

C. Construct or erect dust control barriers as required to retain dust within the project site area.

D. Contractor is responsible for all damage claims resulting from failure to control airborne dust during all times that the site is under the Contractor's control.

1.04 NOISE

A. Keep noise within acceptable levels at all times in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 46 - Community Noise Control. Contractor shall obtain and pay for the Community Noise Permit from the State Department of Health when the construction equipment or other devices emit noise at levels exceeding the allowable limits.

B. To reduce loud disruptive noise levels, ensure mufflers and other devises are provided on equipment, internal combustion engines and compressors. Maintain equipment to reduce noise to acceptable levels.

C. Starting-up of construction equipment meeting allowable noise limits shall not be done prior to 8:00 a.m. without prior approval of the HHSC Representative. Equipment exceeding allowable noise levels shall not be started-up prior to 8:00 a.m.

1.05 SUSPENSION OF WORK

A. Violations of any of the above requirements or any other pollution control requirements which may be specified in the Specifications shall be cause for suspension of the work creating such violation.

B. Reference the General Conditions Construction, dated 3/17/06 for the suspension procedures.

C. The OWNER REP and/or HHSC Representative may also suspend any operations which creates a pollution problems even if the problem does not violate the provisions of this Section. In this instance, the work is considered a Change and subject to the provisions of the contract.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION (Not used)

END OF SECTION

SECTION 01715 - EXISTING CONDITIONS - ASBESTOS / LEAD / HAZARDOUS MATERIAL SURVEY

PART 1 - GENERAL

1.01 SUMMARY

A. This section includes the results of the Contracting Officer's survey for Asbestos, Lead, and Polychlorinated Biphenyls is provided for the Contractor's information.

1.02 ASBESTOS

A. The structure to be renovated or modified under this contract were surveyed for the presence of asbestos containing materials (ACM). A copy of the initial survey report, as well as any subsequent supplemental survey report if performed, is included in this Section.

1. The report is included, even when no ACM was found, for the Contractor's information. Review the attached report for the basis on which the negative ACM finding was made. The Contractor may perform further surveys at its own expense, if ACM not shown in the report is suspected in the areas of the building in which work will be performed. If ACM is found, notify the Contracting Officer and/ or General Contractor immediately. The Contracting Officer will reimburse the Contractor for reasonable costs for the testing cost if ACM is found.

2. If there is ACM outside of the areas in which work will be performed, this ACM shall not be disturbed in any way.

B. If applicable, notify employees, subcontractors, and all other persons engaged on the project of the presence of asbestos in the existing buildings in accordance with the State of Hawaii: Occupational Safety and Health Administration and 29 CFR 1926.1101, Asbestos.

C. In the event that work is required in any building or buildings on the site other than the one designated within this project scope, request copies of the asbestos survey report for such building from the Contracting Officer. Based on the information contained in the additional survey, notify affected personnel.

1.03 LEAD-IN PAINT

A. The structure or structures to be renovated or modified under this contract were surveyed for the presence of lead-based paint (LBP). A copy of the survey report is included in this Section.

B. Lead-based paint (LBP) is not present in the existing building at the job site. However, inform employees, Subcontractors, and all other persons engaged in the project that paints with lead (PWL), having lead

concentration below the EPA guidelines are present in the existing building. Conduct work in accordance with the requirements of Occupational Safety and Health Administration 29 CFR 1926.62 Lead.

C. Review the attached lead testing data which identify locations PWL was found. Lead testing was for design purposes only and the results do not satisfy any of the requirements of OSHA 29 CFR 1926.62 Lead.

D. The Contractor shall follow all applicable rules and regulations pertaining to the handling, removal and disposal of materials painted with lead.

1.04 PCB BALLASTS AND MERCURY CONTAINING LAMPS

A. Fluorescent light ballasts were examined for the manufactures label for PCB's. Fluorescent light ballasts containing PCBs were not identified.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION

3.01 SURVEY (Attached)

A. Limited Inspection Report for Asbestos, Lead-Based Paint, and Polychlorinated Biphenyls, Leahi Hospital - Adult Day Health Center, 46 pages, dated April 2024, prepared by EnviroQuest, Inc.

END OF SECTION

EnviroQuest

SERVICES

HAZMAT Inspections

Remediation Design

Asbestos Management

Lead Management

Lead Risk Assessment

Industrial Hygiene

Indoor Air Quality

Mold Assessment

Environmental Site Assessments

Subsurface Investigation

Water Sampling

Asbestos Training

Lead Training

OSHA Training

OSHA Compliance

LIMITED INSPECTION REPORT FOR ASBESTOS, LEAD-BASED PAINT, AND PCBS

LEAHI HOSPITAL – ADULT DAY HEALTH CENTER
3675 KILAUEA AVENUE, HONOLULU, HAWAII 96816

EnviroQuest Project: 303546

April 2024

Prepared for:

INK ARCH LLC
650 Iweilei Road #288
Honolulu, Hawaii 96817

Prepared by:

EnviroQuest, Inc.
98-029 Hekaha Street, Suite 21
Aiea, Hawaii 96701
808.486.5881

Landon Awada
HIASB-5045
PB-1198

Jessie Sacramento
Industrial Hygienist
HIASB-0173/ PB-0070

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APPENDICES

1 INTRODUCTION

A limited hazardous building material survey (HBMS) was conducted on February 29 and April 02, 2024, at the Adult Day Health Center, Leahi Hospital located at 3675 Kilauea Avenue, Honolulu, Hawaii.

The purpose of the activities under this project was to perform an inspection of the project areas prior to its renovation and to identify asbestos-containing materials (ACMs), lead-based paints (LBPs), and fluorescent light ballasts containing polychlorinated biphenyls (PCBs) that may be encountered and that would require special demolition, handling, safety, or other disposal requirements.

1.1 SITE LOCATION

The listed areas were included in our inspection.

- 1st floor
  - Men's and women's restroom
  - Corridor
  - University Clinical, Education and Research Associates (UCERA) office room 100
  - UCERA office room 101
  - UCERA exam room 102
  - UCERA exam room 103
  - UCERA nurse's station and toilet

2 ASBESTOS

Thirty-nine samples were collected from suspect asbestos-containing materials.

2.1 METHODOLOGY

A visual inspection for suspect ACM and homogeneous areas (areas that have uniform color, texture, and appearance) was conducted. Suspect materials were divided into three Environmental Protection Agency (EPA) categories:

- Surfacing Materials (sprayed or troweled-on materials)
- Thermal Systems Insulations (materials generally applied to various mechanical systems)
- Miscellaneous Materials (any materials which do not fit in the above categories)

Sampling methodology generally followed the procedures presented in EPA 40 CFR 763 Subpart E, *Asbestos Containing Materials in School* and Hawaii Department of Health (HDOH), Hawaii Administrative Rules (HAR) Titles 11-501 *Asbestos Requirements* and 11-502 *Asbestos Containing Materials in Schools*.

2.2 RESULTS

Samples were submitted to Hawaii Analytical Laboratory, LLC., a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory. The samples were analyzed by polarized-light microscopy (PLM), following EPA Method 40 CFR 763, Appendix E to Subpart E *Interim Method of the Determination of Asbestos in Bulk Insulation Samples and EPA 600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials.*

Based on the laboratory analytical results, asbestos was not identified in the samples. The National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 61 Part M, defines ACM as those which contain greater than 1% asbestos. In accordance with NESHAP requirements, samples consisting of distinct layers of materials were analyzed and reported separately by the laboratory.

Refer to the accompanying appendices for sample reference photographs, laboratory analytical reports and reference drawings.

3 LEAD

Seven paint film samples were collected from painted or coated materials.

3.1 METHODOLOGY

A visual inspection for painted or coated building surfaces was conducted. Sampling methodology generally followed the procedures presented in the U.S. Department of Housing and Urban Development's document *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* and EPA 40 CFR 745 *Lead-Based Paint Poisoning Prevention in Certain Residential Structures.*

Samples were submitted to Hawaii Analytical Laboratory, LLC., an American Industrial Hygiene Association (AIHA) accredited laboratory with a specific accreditation for lead analysis under AIHA Environmental Lead Laboratory Accreditation Program. The samples were analyzed by NIOSH Method 7082m *Lead by Flame AAS* and the ceramic tiles were digested using EPA Method 3051m *Microwave Assisted Acid Digestion of Sediments, Sludge, Soils, and Oils* and then analyzed by EPA 7000Bm *Flame Atomic Absorption Spectrophotometry.*

3.2 RESULTS

Based on the laboratory analytical results, lead in paint concentrations did not exceed EPA guidelines for lead in paint. The EPA defines lead-based paint as paint or other coatings containing lead equal to, or in excess of 0.5% lead by weight. However, lead at concentrations below the EPA guidelines were detected (see Table 2). For the purpose of this report, these paints are identified as paint with lead (PWL), having lead concentrations greater than the laboratory analytical detection limit but less than 0.5% lead by weight.

Refer to the accompanying appendices for sample reference photographs, laboratory analytical reports and reference drawings.

4 POLYCHLORINATED BIPHENYLS

A visual survey of the project area was conducted to identify fluorescent light fixtures.

4.1 Methodology

Light fixtures were selected as randomly feasible to be a representative cross section of the project area. The light fixtures were dismantled to expose the ballasts for inspection. If a ballast was marked with a manufacturer's label stating, "NO PCB", the ballast was presumed to be PCB free. Ballasts missing the label were presumed to contain PCBs.

4.2 Results

Twenty-one light fixtures were identified in the project area. Two light fixtures, approximately 10%, were examined. PCB ballasts were not identified in the fluorescent light fixtures examined.

5 SUMMARY

5.1 ASBESTOS

Asbestos-containing material was not identified in this inspection.

5.2 LEAD

Lead-based paint was not identified in this inspection. However, lead at concentrations below the EPA guidelines were detected (see Table 2). For the purpose of this report, these paints are identified as paint with lead (PWL), having lead concentration greater than the laboratory analytical detection limit but less than 0.5% lead by weight.

Prior to the disturbance of any paint with lead, the contractor's employees disturbing the painted material must be informed that it contains lead and must have received training under Occupational Safety and Health Administration 29 CFR 1926.62 *Lead*. If any untested paints are disturbed, they should be assumed to contain lead.

If lead paint debris is generated during the demolition activity, a composite sample should be collected for *Toxicity Characteristic Leaching Procedure* (TCLP) lead analysis for waste disposal characterization. HDOH 11-261, *Hazardous Waste Management,* allows a maximum lead concentration of 5.0 mg/L. TCLP results exceeding this threshold requires disposal as hazardous waste. Note that painted metal components are exempt from TCLP testing if recycled.

5.3 POLYCHLORINATED BIPHENYLS

Although no PCBs were identified in the ballasts examined, it was not part of this work scope to examine all light fixtures. If light ballasts are missing a manufacturer's label or the if the label does not contain the "NO PCB" statement, the ballast should be assumed to contain PCBs, removed from the light fixtures, and disposed of at an EPA approved waste disposal facility.

The fluorescent light tubes are known to contain measurable amounts of mercury and should also be collected and recycled.

6 LIMITATIONS

The information set forth is based solely on the agreed upon scope of services, on personal observation, laboratory data, and information provided by INK ARCH LLC.

Although this inspection provides information on the relative presence or absence of asbestos-containing materials, lead-based paint, and polychlorinated biphenyls, it should not be construed as a final statement that all hazardous materials have been identified.

Given the often obscure and elusive nature of hazardous materials, it is never possible to absolutely dismiss the possibility of additional hazardous materials. EnviroQuest, Inc. expressly disclaims any and all liability, representations, expressed or implied, contained in, or for omission from this report, or any other written or oral communication which might be interpreted as establishing the total extent of all liability present at the subject property.

Our services have been performed with usual thoroughness and competence of the consulting profession, in accordance with the standard of professional services at this time. No other warranty or representation, either expressed or implied is included or intended.

Any question regarding our work and this report, the presentation of the information, and the interpretation of the data are welcome and should be referred to the undersigned. EQI greatly appreciates this opportunity to assist you with your industrial hygiene needs. We look forward to working with you again in the future.

TABLE 1: ASBESTOS SAMPLING SUMMARY
LEAHI HOSPITAL – ADULT DAY HEALTH CENTER

Homogenous Material	ACM[1] (Y/N)	Sampling Location	Sample ID	Friable (Y/N)	Est Qty (ACM)	Condition[2]	Photo No.
Date Collected: February 29, 2024							
12”x12” tan vinyl floor tile with black mastic and concrete	N	1st floor; hallway to women’s restroom	303546-01A 303546-02A 303546-03A	N	-	G	2
4” brown vinyl cove base with brown mastic	N	1st floor; hallway to women’s restroom	303546-04A 303546-05A 303546-06A	N	-	G	3
Wallpaper with adhesive over drywall and joint compound	N	1st floor; corridor and hallway to women’s restroom	303546-07A 303546-08A 303546-09A	N	-	G	4
Plaster wall/lath	N	1st floor; hallway to women’s restroom and women’s restroom	303546-10A 303546-11A 303546-12A	N	-	G	5
2’x4’ fissured design ceiling tile	N	1st floor; hallway to women’s restroom, men’s and women’s restroom	303546-13A 303546-14A 303546-15A	Y	-	G	6
4”x4” beige ceramic wall tile with beige grout and tan mastic	N	1st floor; men’s and women’s restroom wall	303546-16A 303546-17A 303546-18A	N	-	G	7
4”x4” tan ceramic floor tile with brown grout and gray mortar	N	1st floor; men’s and women’s restroom floor	303546-19A 303546-20A 303546-21A	N	-	G	8
Date Collected: April 02, 2024							
Beige painted white drywall and joint compound	N	1st floor; UCERA nurse’s station, office room 101 and exam room 102 wall partitions	303546-01 303546-02 303546-03	N	-	G	9
Beige painted brown drywall and joint compound	N	1st floor; UCERA office room 100	303546-04 303546-05 303546-06	N	-	G	10
Brown wood design with tan mastic over vinyl floor tile and black mastic/ concrete coating	N	1st floor; UCERA exam room 103, nurse’s station and office room 100	303546-07 303546-08 303546-09	N	-	G	11
Beige sink undercoat	N	1st floor; UCERA exam room 103 and nurse’s station sink undercoat	303546-10 303546-11 303546-12	N	-	G	12

1. ACM=>1% asbestos content
2. Good (G); Damaged (D) <10% distributed or 25% localized; Significant Damage (SD), >10% distributed or 25% localized

TABLE 1 (CONTINUED): ASBESTOS SAMPLING SUMMARY
LEAHI HOSPITAL – ADULT DAY HEALTH CENTER

Homogenous Material	ACM[1] (Y/N)	Sample Location	Sample ID	Friable (Y/N)	Est Qty (ACM)	Condition[2]	Photo No.
White door caulking	N	1st floor; UCERA exam rooms 102 and 103	303546-13 303546-14 303546-15	N	-	G	13
Gray window caulking	N	1st floor; UCERA nurse's station	303546-16 303546-17 303546-18	N	-	G	14

1. ACM=>1% asbestos content
2. Good (G); Damaged (D) <10% distributed or 25% localized; Significant Damage (SD), >10% distributed or 25% localized

TABLE 2: PAINT SAMPLING SUMMARY
LEAHI HOSPITAL – ADULT DAY HEALTH CENTER

Paint Color	Int/Ext	LBP[1] (Y/N)	PWL[2] (Y/N)	Paint Sampling Location	Sample ID	Results (% Wt)	Condition[3,4]	Photo No.
Date Collected: February 29, 2024								
Glazed beige	Int	N	N	1st floor; women's restroom ceramic wall tile	303546-01P	<0.004	Intact	1P
Glazed tan	Int	N	N	1st floor; men's restroom ceramic floor tile	303546-02P	<0.004	Intact	2P
Beige	Int	N	Y	1st floor; men's restroom drywall (upper portion)	303546-03P	0.0048	Intact	3P
	Int	N	Y	1st floor; women's restroom plaster wall (upper portion)	303546-04P	0.012	Intact	4P
	Int	N	Y	1st floor; women's restroom concrete wall	303546-05P	0.078	Intact	5P
Tan	Int	N	Y	1st floor; men's restroom metal doorframe	303546-06P	0.0097	Intact	6P
Date Collected: April 02, 2024								
Tan	Int	N	Y	1st floor; UCERA nurse's station toilet drywall	303546-01L	0.0052	Intact	7P

1. LBP = >0.5% lead by weight
2. PWL = >laboratory analytical detection limit but <0.5%
3. Exterior: Intact – Entire surface is intact; Fair - ≤ 10ft^2; Poor - >10 ft^2
4. Interior: Intact – Entire surface is intact; Fair - ≤ 2ft^2 or ≤ 10%; Poor - >2 ft^2 or >10%

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APPENDIX A

REFERENCE PHOTOGRAPHS

REFERENCE PHOTOGRAPHS
LEAHI HOSPITAL – ADULT DAY HEALTH CENTER

EnviroQuest

Photo 1: Leahi Hospital; Adult Day Health Center.

Photo 2: 12”x12” tan vinyl floor tile with black mastic and concrete. Non-ACM.

Photo 3: 4” brown vinyl cove base with brown mastic. Non-ACM.

Photo 4: Wallpaper with adhesive over drywall and joint compound. Non-ACM.

Photo 5: Plaster wall/lath. Non-ACM.

Photo 6: 2’x4’ fissured design ceiling tile. Non-ACM.

Photo 7: 4”x4” beige ceramic wall tile with beige grout and tan mastic. Non-ACM.

Photo 8: 4”x4” tan ceramic floor tile with brown grout and gray mortar. Non-ACM.

Photo 9: Beige painted white drywall and joint compound. Non-ACM.

Photo 10: Beige painted brown drywall and joint compound. Non-ACM.

Photo 11: Brown wood design with tan mastic over vinyl floor tile and black mastic/concrete coating. Non-ACM.

Photo 12: Beige sink undercoat. Non-ACM.

Photo 13: White door caulking.
Non-ACM.

Photo 14: Gray window caulking.
Non-ACM.

REFERENCE PHOTOGRAPHS
LEAHI HOSPITAL – ADULT HEALTH CENTER

EnviroQuest

Photo 1P: Ceramic wall tile. Glazed beige coating.
Non-LBP, below the laboratory reporting limit.

Photo 2P: Ceramic floor tile. Glazed tan coating.
Non-LBP, below the laboratory reporting limit.

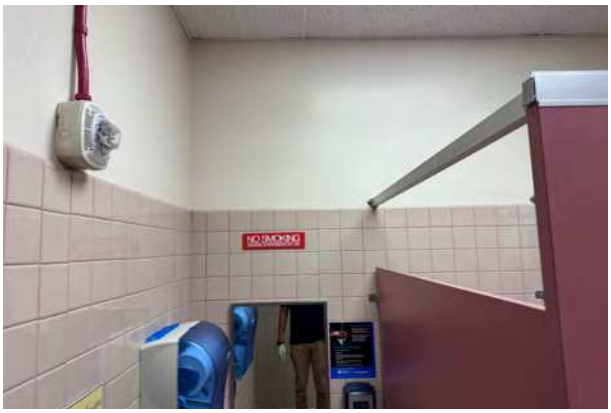

Photo 3P: Drywall partition (upper portion).
Beige paint with lead.

Photo 4P: Plaster wall (upper portion).
Beige paint with lead.

Photo 5P: Concrete wall (upper portion).
Beige paint with lead.

Photo 6P: Metal doorframe.
Tan paint with lead.

Photo 7P: UCERA's toilet drywall partitions.
Tan paint with lead.

EnviroQuest

APPENDIX B

LABORATORY ANALYTICAL REPORTS

Hawaii Analytical Laboratory
ANALYTICAL REPORT

Wednesday, March 6, 2024

EnviroQuest, Inc.
98-029 Hekaha Street, Suite 21
Aiea HI 96701

Phone Number: (808)486-5881
Facsimile: (808) 486-5889
Email: eqi@enviroquestinc.com

Lab Job No: 202402413
Date Submitted: 3/1/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 2/29/24

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202417070	**303546-01A**		NONE DETECTED		None detected		Tar + calcite	3/6/2024
Layer	Black mstic							
Comments								
202417070	**303546-01A**		NONE DETECTED		None detected		Calcite + vinyl	3/6/2024
Layer	Tan vinyl floor tile							
Comments								
202417071	**303546-02A**		NONE DETECTED		None detected		Calcite + vinyl	3/6/2024
Layer	A Tan vinyl floor tile							
Comments								
202417071	**303546-02A**		NONE DETECTED		None detected		Tar + calcite	3/6/2024
Layer	B Black mstic							
Comments								
202417071	**303546-02A**		NONE DETECTED		None detected		Calcite + quartz	3/6/2024
Layer	C Gray concrete							
Comments								
202417072	**303546-03A**		NONE DETECTED		None detected		Calcite + vinyl	3/6/2024
Layer	A Tan vinyl floor tile							
Comments								

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98-029 Hekaha Street, Suite 21
Aiea HI 96701

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Lab Job No: 202402413
Date Submitted: 3/1/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 2/29/24

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202417072	**303546-03A**		NONE DETECTED		None detected		Tar + calcite	3/6/2024
Layer	B Black mstic							
Comments								
202417072	**303546-03A**		NONE DETECTED		None detected		Calcite + quartz	3/6/2024
Layer	C Gray concrete							
Comments								
202417073	**303546-04A**		NONE DETECTED		None detected		Binder + other	3/6/2024
Layer	Brown mastic							
Comments								
202417073	**303546-04A**		NONE DETECTED		None detected		Calcite + vinyl	3/6/2024
Layer	Brown vinyl covebase							
Comments								
202417074	**303546-05A**		NONE DETECTED		None detected		Binder + other	3/6/2024
Layer	Brown mastic							
Comments								
202417074	**303546-05A**		NONE DETECTED		None detected		Calcite + vinyl	3/6/2024
Layer	Brown vinyl covebase							
Comments								
202417075	**303546-06A**		NONE DETECTED		None detected		Binder + other	3/6/2024
Layer	Brown mastic							
Comments								
202417075	**303546-06A**		NONE DETECTED		None detected		Calcite + vinyl	3/6/2024
Layer	Brown vinyl covebase							
Comments								

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Date Submitted: 3/1/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 2/29/24

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202417076	**303546-07A**		NONE DETECTED		None detected		Other	3/6/2024
Layer	A Tan wallpaper							
Comments								
202417076	**303546-07A**		NONE DETECTED		None detected		Binder + other	3/6/2024
Layer	B Green adhesive							
Comments								
202417076	**303546-07A**		NONE DETECTED		Cellulose (undulose) + fibrous glass (amorphous)	**15**	Gypsum	3/6/2024
Layer	C White drywall							
Comments								
202417077	**303546-08A**		NONE DETECTED		Cellulose (undulose)	**15**	Other	3/6/2024
Layer	A Tan wallpaper							
Comments								
202417077	**303546-08A**		NONE DETECTED		None detected		Binder + other	3/6/2024
Layer	B Off-white adhesive							
Comments								
202417077	**303546-08A**		NONE DETECTED		Cellulose (undulose) + fibrous glass (amorphous)	**15**	Gypsum	3/6/2024
Layer	C White drywall							
Comments								
202417078	**303546-09A**		NONE DETECTED		None detected		Other	3/6/2024
Layer	A Tan wallpaper							
Comments								
202417078	**303546-09A**		NONE DETECTED		None detected		Binder + other	3/6/2024
Layer	B Green adhesive							
Comments								

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Your Project: 303546, Leahi Hospital Adult Health Center, 2/29/24

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202417078	**303546-09A**		NONE DETECTED		None detected		Clcite + quartz	3/6/2024
Layer	C White joint compound							
Comments								
202417078	**303546-09A**		NONE DETECTED		Cellulose (undulose) + fibrous glass (amorphous)	**15**	Gypsum	3/6/2024
Layer	D White drywall							
Comments								
202417079	**303546-10A**		NONE DETECTED		None detected		Gypsum + aggregate + other	3/6/2024
Layer	Off-white plaster							
Comments								
202417080	**303546-11A**		NONE DETECTED		None detected		Gypsum + aggregate + other	3/6/2024
Layer	Off-white plaster							
Comments								
202417081	**303546-12A**		NONE DETECTED		None detected		Gypsum + aggregate + other	3/6/2024
Layer	Off-white plaster							
Comments								
202417082	**303546-13A**		NONE DETECTED		Fibrous glass (amorphous) + cellulose (undulose)	**50**	Perlite + calcite + other	3/6/2024
Layer	White/gray ceiling tile							
Comments								
202417083	**303546-14A**		NONE DETECTED		Fibrous glass (amorphous) + cellulose (undulose)	**50**	Perlite + calcite + other	3/6/2024
Layer	White/gray ceiling tile							
Comments								
202417084	**303546-15A**		NONE DETECTED		Fibrous glass (amorphous) + cellulose (undulose)	**50**	Perlite + calcite + other	3/6/2024
Layer	White/gray ceiling tile							
Comments								

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Date Submitted: 3/1/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 2/29/24

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202417085	**303546-16A**		NONE DETECTED		None detected		Ceramic + quartz	3/6/2024
Layer	A Beige ceramic tile							
Comments								
202417085	**303546-16A**		NONE DETECTED		None detected		Calcite	3/6/2024
Layer	B Pinkish grout							
Comments								
202417085	**303546-16A**		NONE DETECTED		None detected		Binder + other	3/6/2024
Layer	C Tan mastic							
Comments								
202417086	**303546-17A**		NONE DETECTED		None detected		Ceramic + quartz	3/6/2024
Layer	A Beige ceramic tile							
Comments								
202417086	**303546-17A**		NONE DETECTED		None detected		Calcite	3/6/2024
Layer	B Pinkish grout							
Comments								
202417086	**303546-17A**		NONE DETECTED		None detected		Binder + other	3/6/2024
Layer	C Tan mastic							
Comments								
202417087	**303546-18A**		NONE DETECTED		None detected		Ceramic + quartz	3/6/2024
Layer	A Beige ceramic tile							
Comments								
202417087	**303546-18A**		NONE DETECTED		None detected		Calcite	3/6/2024
Layer	B Pinkish grout							
Comments								

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Aiea HI 96701

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Lab Job No: 202402413
Date Submitted: 3/1/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 2/29/24

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202417087	**303546-18A**		NONE DETECTED		None detected		Binder + other	3/6/2024
Layer	C Tan mastic							
Comments								
202417088	**303546-19A**		NONE DETECTED		None detected		Ceramic + quartz	3/6/2024
Layer	A Brown ceramic tile							
Comments								
202417088	**303546-19A**		NONE DETECTED		None detected		Quartz + calcite	3/6/2024
Layer	B Brown grout							
Comments								
202417088	**303546-19A**		NONE DETECTED		None detected		Calcite + quartz	3/6/2024
Layer	C Gray mortar							
Comments								
202417089	**303546-20A**		NONE DETECTED		None detected		Ceramic + quartz	3/6/2024
Layer	A Brown ceramic tile							
Comments								
202417089	**303546-20A**		NONE DETECTED		None detected		Quartz + calcite	3/6/2024
Layer	B Brown grout							
Comments								
202417089	**303546-20A**		NONE DETECTED		None detected		Calcite + quartz	3/6/2024
Layer	C Gray mortar							
Comments								
202417090	**303546-21A**		NONE DETECTED		None detected		Ceramic + quartz	3/6/2024
Layer	A Brown ceramic tile							
Comments								

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Aiea HI 96701

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Lab Job No: 202402413
Date Submitted: 3/1/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 2/29/24

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202417090	**303546-21A**		NONE DETECTED		None detected		Quartz + calcite	3/6/2024
Layer	B Brown grout							
Comments								
202417090	**303546-21A**		NONE DETECTED		None detected		Calcite + quartz	3/6/2024
Layer	C Gray mortar							
Comments								

General Comments
The bulk sample[s] analysis subject of this analytical report were conducted in general accordance with the procedures outlined in the United States Environmental Protection Agency's "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (EPA-600/M4-82-020, Dec. 1982) and / or "Method for Determination of Asbestos in bulk Building Materials" (EPA-600/R-93-116, July 1993). The analysis of each bulk sample relates only to the material examined, and may or may not represent the overall composition of its original source. Floor tile and other resinously bound materials, when analyzed by the EPA methods referenced above may yield false negative results because of limitations in separating closely bound fibers and in detecting fibers of small length and diameter. Alternative methods of identification, including Transmission Electron Microscopy (TEM) may or may not be applicable. We utilize calibrated visual area estimation on a routine basis and do not conduct point counting unless specifically requested to do so. Estimated error for the visual determinations presented are 75% relative (1 to 2%), 50% relative (3 to 5%); 25% relative (6 to 25%) and 20% (>26% v/v). We will not separate layers which in our opinion are not readily discernable. This report is not to be duplicated except in full without the expressed written permission of Hawaii Analytical Laboratory. This report must not be used by the client to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Governement. Unless otherwise indicated, the sample condition at the time of receipt was acceptable.

Results and Symbols Definitions
> This testing result is greater than the numerical value listed.
< This testing result is less than the numerical value listed.
None Detected = asbestos was not observed in the sample. If trace amount of asbestos was detected below our quantifiable limits of 1.0%, <1% (trace) would be indicated and the asbestos type listed. Point counting, where applicable, are recommended to improve accuracy.

Jennifer Hsu Liao
Laboratory Manager

EnviroQuest

202402413

PLM DATA SHEET

PROJECT NAME: LEAHI HOSPITAL ADULT HEALTH CENTER

PAGE: 1 of 3

DATE: ~~3/1/2024~~ 2/29/24

LOCATION:

PROJECT NO.: 303546

Material Description: 12"x12" tan vinyl floor tile with black mastic and concrete — Friable / Non-friable

Sample No.	Location	
303546-01A	Hallway to women's restroom	202417070
303546-02A		202417071
303546-03A		202417072

CONDITION: % Damaged: % Localized: % Distributed: Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☒ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☒ Moderate	☐ Low
Vibration Potential	☐ High	☐ Moderate	☒ Low
Air Erosion	☐ High	☐ Moderate	☒ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☒ Minimal Damage

Material Description: 4" brown vinyl cove base with brown mastic — Friable / Non-friable

Sample No.	Location	
303546-04A	Hallway to women's restroom	202417073
303546-05A		202417074
303546-06A		202417075

CONDITION: % Damaged: % Localized: % Distributed: Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☒ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☒ Low
Vibration Potential	☐ High	☐ Moderate	☒ Low
Air Erosion	☐ High	☐ Moderate	☒ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☒ Minimal Damage

Sampled By: Landon Awada

DOH Cert No: 5045

Relinquished By/Date/Time:

Landon Awada 3/1/24 Haley Leavitt

Received By/Date/Time: Haley Leavitt

Relinquished By/Date/Time:

Received By/Date/Time: 03-01-24P01:57 RCVD

Samples picked up at EQI office by Hawaii Analytical Laboratory

TURNAROUND TIME: ☐ < 12 Hours ☐ 24 Hours ☒ 3 Days ☐ 5 Days ☐ _____

Surfacing	<1,000 ft² = 3 Samples	1,000 – 5,000 ft² = 5 Samples	>5,000 ft² = 7 Samples
TSI	Minimum of 3 Samples UNLESS....	<6 In. or ft² = 1 Sample	Minimum of 2 Samples *(Cement/plaster valves, elbows & 'T')*
Misc. Non-Friable	Minimum of 2 Samples (*AHERA*)	Minimum of 3 Samples (*Hawaii*)	
Misc. Friable	Minimum of 2 Samples		

Surfacing	Sig. Damage = > *10% Dist. or 25% Local*	Damaged = < *10% Dist. or 25% Local*	*Good = Very Limited Damage*
TSI	Sig. Damage = *>10% Missing Jacket OR >10% Dist. or 25% Local*	Damaged = *< 10% Missing Jacket OR < 10% Dist. or 25% Local*	Good = *Very Limited Damage*
Misc	Sig. Damage = > *10% Dist. or 25% Local*	Damaged = < *10% Dist. or 25% Local*	*Good = Very Limited Damage*

Samples picked up at EQI office by Hawaii Analytical Laboratory

98-029 HEKAHA STREET, SUITE 21 AIEA, HAWAII 96701 PHONE: (808) 486-5881
5-1511 KAMITSURUMA, MINAMI-KU, SAGAMIHARA-SHI, KANAGAWA-KEN 252-0302 PHONE: (042) 851-5675

EnviroQuest

202402413

PLM DATA SHEET

PROJECT NAME: LEAHI HOSPITAL ADULT HEALTH CENTER

PAGE: 2 of 3

DATE: ~~2/19/2024~~ 2/29/24

Material Description: Wallpaper with adhesive over drywall and joint compound — Friable / Non-friable (Non-friable)

Sample No.	Location	
303546-07A	Hallway to women's restroom	202417076
303546-08A		202417077
303546-09A		202417078

CONDITION:	% Damaged:	% Localized:	% Distributed:	Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☒ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☒ Low
Vibration Potential	☐ High	☐ Moderate	☒ Low
Air Erosion	☐ High	☐ Moderate	☒ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☒ Minimal Damage

Material Description: Plaster lathe — Friable / Non-friable (Non-friable)

Sample No.	Location	
303546-10A	Wall, hallway to women's restroom	202417079
303546-11A		202417080
303546-12A	Wall, women's restroom	202417081

CONDITION:	% Damaged:	% Localized:	% Distributed:	Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☒ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☒ Low
Vibration Potential	☐ High	☐ Moderate	☒ Low
Air Erosion	☐ High	☐ Moderate	☒ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☒ Minimal Damage

Material Description: 2'x4' fissured design ceiling tile — Friable / Non-friable (Non-friable)

Sample No.	Location	
303546-13A	Hallway to women's restroom	202417082
303546-14A	Women's restroom	202417083
303546-15A	Men's restroom	202417084

CONDITION:	% Damaged:	% Localized:	% Distributed:	Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☒ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☒ Low
Vibration Potential	☐ High	☐ Moderate	☒ Low
Air Erosion	☐ High	☐ Moderate	☒ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☒ Minimal Damage

Samples picked up at EQI office
by Hawaii Analytical Laboratory

98-029 HEKAHA STREET, SUITE 21 AIEA, HAWAII 96701 PHONE: (808) 486-5881
6-15-17 KAMITSURUMA, MINAMI-KU, SAGAMIHARA-SHI, KANAGAWA-KEN 252-0302 PHONE: (042) 851-5675

EnviroQuest

202402413

PLM DATA SHEET

PROJECT NAME: LEAHI HOSPITAL ADULT HEALTH CENTER

DATE: [redacted] 2/29/24

Material Description: 4"x4" beige ceramic tile with beige grout and tan mastic — Friable / Non-friable

Sample No.	Location	
303546-16A	Wall, men's restroom	202417085
303546-17A	Wall, women's restroom	202417086
303546-18A	Wall, women's restroom	202417087

CONDITION:	% Damaged:	% Localized:	% Distributed:	Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☒ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☒ Moderate	☐ Low
Vibration Potential	☐ High	☐ Moderate	☒ Low
Air Erosion	☐ High	☐ Moderate	☒ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☒ Minimal Damage

Material Description: 4"x4" tan ceramic tile with brown grout and gray mortar — Friable / Non-friable

Sample No.	Location	
303546-19A	Floor, men's restroom	202417088
303546-20A	Floor, women's restroom	202417089
303546-21A	Floor, women's restroom	202417090

CONDITION:	% Damaged:	% Localized:	% Distributed:	Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☒ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☒ Moderate	☐ Low
Vibration Potential	☐ High	☐ Moderate	☒ Low
Air Erosion	☐ High	☐ Moderate	☒ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☒ Minimal Damage

Material Description: — Friable / Non-friable

Sample No.	Location

CONDITION:	% Damaged:	% Localized:	% Distributed:	Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☐ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☐ Low
Vibration Potential	☐ High	☐ Moderate	☐ Low
Air Erosion	☐ High	☐ Moderate	☐ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☐ Minimal Damage

Samples picked up at EQI office
by Hawaii Analytical Laboratory

98-029 HEKAHA STREET, SUITE 21 AIEA, HAWAII 96701 PHONE: (808) 486-5881
6-15-17 KAMITSURUMA, MINAMI-KU, SAGAMIHARA-SHI, KANAGAWA-KEN 252-0302 PHONE: (042) 851-5675

Hawaii Analytical Laboratory
ANALYTICAL REPORT

Friday, April 5, 2024

EnviroQuest, Inc.
98-029 Hekaha Street, Suite 21
Aiea HI 96701

Phone Number: (808)486-5881
Facsimile: (808) 486-5889
Email: eqi@enviroquestinc.com

Lab Job No: 202403607
Date Submitted: 4/3/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 4/2/24

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202425523	**303546-01**		NONE DETECTED		Fibrous glass (amorphous) + cellulose (undulose)	**15**	Gypsum	4/4/2024
Layer	White drywall							
Comments								
202425523	**303546-01**		NONE DETECTED		None detected		Calcite + binder + paint	4/4/2024
Layer	White joint compound / off-white paint							
Comments								
202425524	**303546-02**		NONE DETECTED		Fibrous glass (amorphous) + cellulose (undulose)	**15**	Gypsum + paint	4/4/2024
Layer	White drywall / off-white paint							
Comments								
202425525	**303546-03**		NONE DETECTED		Fibrous glass (amorphous) + cellulose (undulose)	**15**	Gypsum	4/4/2024
Layer	White drywall							
Comments								
202425525	**303546-03**		NONE DETECTED		None detected		Calcite + binder + paint	4/4/2024
Layer	White joint compound (limited) / off-white paint							
Comments								

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Lab Job No: 202403607
Date Submitted: 4/3/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 4/2/24

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202425526	**303546-04**		NONE DETECTED		Fibrous glass (amorphous) + cellulose (undulose)	**15**	Gypsum	4/4/2024
Layer	Tan drywall							
Comments								
202425526	**303546-04**		NONE DETECTED		None detected		Calcite + binder + paint	4/4/2024
Layer	White joint compound / off-white paint							
Comments								
202425527	**303546-05**		NONE DETECTED		Fibrous glass (amorphous) + cellulose (undulose)	**15**	Gypsum + paint	4/4/2024
Layer	Tan drywall / off-white paint							
Comments								
202425528	**303546-06**		NONE DETECTED		Fibrous glass (amorphous) + cellulose (undulose)	**15**	Gypsum + paint	4/4/2024
Layer	Tan drywall / off-white paint							
Comments								
202425529	**303546-07**		NONE DETECTED		None detected		Tar	4/4/2024
Layer	Black mastic							
Comments								
202425529	**303546-07**		NONE DETECTED		None detected		Vinyl	4/4/2024
Layer	Brown vinyl floor tile							
Comments								
202425529	**303546-07**		NONE DETECTED		None detected		Cementitious + other	4/4/2024
Layer	Gray cementitious material							
Comments								
202425529	**303546-07**		NONE DETECTED		None detected		Binder	4/4/2024
Layer	Off-white mastic							
Comments								

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Aiea HI 96701

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Lab Job No: 202403607
Date Submitted: 4/3/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 4/2/24

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202425529	**303546-07**		NONE DETECTED		None detected		Vinyl	4/4/2024
Layer	Tan vinyl floor tile							
Comments								
202425530	**303546-08**		NONE DETECTED		None detected		Tar	4/4/2024
Layer	Black mastic							
Comments								
202425530	**303546-08**		NONE DETECTED		None detected		Vinyl	4/4/2024
Layer	Brown vinyl floor tile							
Comments								
202425530	**303546-08**		NONE DETECTED		None detected		Cementitious + other	4/4/2024
Layer	Gray cementitious material							
Comments								
202425530	**303546-08**		NONE DETECTED		None detected		Binder	4/4/2024
Layer	Off-white mastic							
Comments								
202425530	**303546-08**		NONE DETECTED		None detected		Vinyl	4/4/2024
Layer	Tan vinyl floor tile							
Comments								
202425531	**303546-09**		NONE DETECTED		None detected		Tar	4/4/2024
Layer	Black mastic							
Comments								
202425531	**303546-09**		NONE DETECTED		None detected		Vinyl	4/4/2024
Layer	Brown vinyl floor tile							
Comments								

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Aiea HI 96701

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Date Submitted: 4/3/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 4/2/24

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202425531	**303546-09**		NONE DETECTED		None detected		Cementitious + other	4/4/2024
Layer	Gray cementitious material							
Comments								
202425531	**303546-09**		NONE DETECTED		None detected		Binder	4/4/2024
Layer	Off-white mastic							
Comments								
202425531	**303546-09**		NONE DETECTED		None detected		Vinyl	4/4/2024
Layer	Tan vinyl floor tile							
Comments								
202425531	**303546-09**		NONE DETECTED		None detected		Calcite + binder	4/4/2024
Layer	White compound material							
Comments								
202425532	**303546-10**		NONE DETECTED		Cellulose (undulose)	**10**	Binder + other	4/4/2024
Layer	Beige sink undercoating							
Comments								
202425533	**303546-11**		NONE DETECTED		Cellulose (undulose)	**10**	Binder + other	4/4/2024
Layer	Beige sink undercoating							
Comments								
202425534	**303546-12**		NONE DETECTED		Cellulose (undulose)	**10**	Binder + other	4/4/2024
Layer	Beige sink undercoating							
Comments								
202425535	**303546-13**		NONE DETECTED		None detected		Binder + paint	4/4/2024
Layer	White caulking / tan paint							
Comments								

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98-029 Hekaha Street, Suite 21
Aiea HI 96701

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Lab Job No: 202403607
Date Submitted: 4/3/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 4/2/24

Bulk Asbestos Determination

Sample No.	Your Sample ID / Description	Asbestos Present?	Type	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202425536	**303546-14**		NONE DETECTED		None detected		Binder + paint	4/4/2024
Layer	White caulking / tan paint							
Comments								
202425537	**303546-15**		NONE DETECTED		None detected		Binder + paint	4/4/2024
Layer	White caulking / tan paint							
Comments								
202425538	**303546-16**		NONE DETECTED		None detected		Binder + paint	4/4/2024
Layer	Beige caulking / tan paint							
Comments								
202425539	**303546-17**		NONE DETECTED		None detected		Binder + paint	4/4/2024
Layer	Beige caulking / tan paint							
Comments								
202425540	**303546-18**		NONE DETECTED		None detected		Binder + paint	4/4/2024
Layer	Beige caulking / tan paint							
Comments								

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98-029 Hekaha Street, Suite 21
Aiea HI 96701

Phone Number: (808)486-5881
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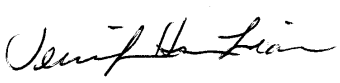
Lab Job No: 202403607
Date Submitted: 4/3/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 4/2/24

General Comments
The bulk sample[s] analysis subject of this analytical report were conducted in general accordance with the procedures outlined in the United States Environmental Protection Agency's "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (EPA-600/M4-82-020, Dec. 1982) and / or "Method for Determination of Asbestos in bulk Building Materials" (EPA-600/R-93-116, July 1993). The analysis of each bulk sample relates only to the material examined, and may or may not represent the overall composition of its original source. Floor tile and other resinously bound materials, when analyzed by the EPA methods referenced above may yield false negative results because of limitations in separating closely bound fibers and in detecting fibers of small length and diameter. Gravimetric treatment, which HAL does not offer, may also be appropriate for certain NOB (non-friable organically bound) materials. Unless specifically requested by clients, NOB samples can be subcontracted to a NVLAP accredited lab, or else, they will be analyzed by HAL using regular PLM technique. In addition, alternative methods of identification, including Transmission Electron Microscopy (TEM) may or may not be applicable. We utilize calibrated visual area estimation on a routine basis and do not conduct point counting unless specifically requested to do so. Estimated error for the visual determinations presented are 75% relative (1 to 2%), 50% relative (3 to 5%); 25% relative (6 to 25%) and 20% (>26% v/v). We will not separate layers which in our opinion are not readily discernable. This report is not to be duplicated except in full without the expressed written permission of Hawaii Analytical Laboratory. This report must not be used by the client to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Governement. Unless otherwise indicated, the sample condition at the time of receipt was acceptable.

Results and Symbols Definitions
> This testing result is greater than the numerical value listed.
< This testing result is less than the numerical value listed.
None Detected = asbestos was not observed in the sample. If trace amount of asbestos was detected below our quantifiable limits of 1.0%, <1% (trace) would be indicated and the asbestos type listed. Point counting, where applicable, are recommended to improve accuracy.



Jennifer Hsu Liao
Laboratory Manager

EnviroQuest

202403607

PLM DATA SHEET

PROJECT NAME: LEAHI HOSPITAL ADULT HEALTH CENTER

PAGE: 1 OF 3

DATE: 4/02/24

LOCATION:

PROJECT NO.: 303546

Material Description: Beige painted white drywall & joint compound — Friable / Non-friable

Sample No.	Location	
303546-01	1ST FLOOR / UCERA NURSES STATION	202425523
-02	/ UCERA OFFICE	202425524
-03	/ UCERA EXAM ROOM	202425525

CONDITION:	% Damaged:	% Localized:	% Distributed:	Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☑ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☑ Low
Vibration Potential	☐ High	☐ Moderate	☑ Low
Air Erosion	☐ High	☐ Moderate	☑ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☑ Minimal Damage

Material Description: Beige painted brown drywall & joint compound — Friable / Non-friable

Sample No.	Location	
303546-04	1ST FLOOR / UCERA OFFICE adj. to corridor	202425526
-05	/ (wall partition between the	202425527
-06	UCERA OFFICES	202425528

CONDITION:	% Damaged:	% Localized:	% Distributed:	Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☑ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☑ Low
Vibration Potential	☐ High	☐ Moderate	☑ Low
Air Erosion	☐ High	☐ Moderate	☑ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☑ Minimal Damage

Sampled By:
Daniel Lewis Jr.
J. Sacramento

Delivered to Lab By:
Samples picked up at EQI office
by Hawaii Analytical Laboratory

Relinquished By/Date/Time: 4/03/24

Received By/Date/Time: 04-03-24 A09:56 RCVD

Relinquished By/Date/Time:

Received By/Date/Time: Savannah Newman Savannah Newman

TURNAROUND TIME: ☐ < 12 Hours ☐ 24 Hours ☑ 3 Days ☐ 5 Days ☐ _____

Surfacing	<1,000 ft² = 3 Samples	1,000 – 5,000 ft² = 5 Samples	>5,000 ft² = 7 Samples
TSI	Minimum of 3 Samples UNLESS....	<6 In. or ft² = 1 Sample	Minimum of 2 Samples *(Cement/plaster valves, elbows & 'T')*
Misc. Non-Friable	Minimum of 2 Samples (*AHERA*)	Minimum of 3 Samples (*Hawaii*)	
Misc. Friable	Minimum of 2 Samples		

Surfacing	Sig. Damage = *> 10% Dist. or 25% Local*	Damaged = *< 10% Dist. or 25% Local*	*Good = Very Limited Damage*
TSI	Sig. Damage = *>10% Missing Jacket OR >10% Dist. or 25% Local*	Damaged = *< 10% Missing Jacket OR < 10% Dist. or 25% Local*	Good = *Very Limited Damage*
Misc	Sig. Damage = *> 10% Dist. or 25% Local*	Damaged = *< 10% Dist. or 25% Local*	*Good = Very Limited Damage*

98-029 HEKAHA STREET, SUITE 21 AIEA, HAWAII 96701 PHONE: (808) 486-5881
6-15-17 KAMITSURUMA, MINAMI-KU, SAGAMIHARA-SHI, KANAGAWA-KEN 252-0302 PHONE: (042) 851-5675

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202403607

PLM DATA SHEET

PROJECT NAME: LAEHI HOSPITAL ADULT HEALTH CENTER

PAGE: 2 of 3

DATE: 4/02/24

Material Description: Brown wood design vinyl floor over tan floor tile/ black mastic/ concrete coating — Friable / Non-friable

Sample No.	Location	
303546-07	1ST FLOOR / UCERA EXAM ROOM	202425529
-08	1ST FLOOR / UCERA NURSES STATION	202425530
-09	1ST FLOOR / UCERA OFFICE	202425531

note: entire floor of UCERA AREA

CONDITION:	% Damaged:	% Localized:	% Distributed:	Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☐ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☐ Low
Vibration Potential	☐ High	☐ Moderate	☐ Low
Air Erosion	☐ High	☐ Moderate	☐ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☐ Minimal Damage

Material Description: Beige Sink undercoat — Friable / Non-friable

Sample No.	Location	
303546-10	1ST FLOOR / SINK - UCERA EXAM RM	202425532
-11	1ST FLOOR / SINK - UCERA station	202425533
-12	1ST FLOOR / SINK	202425534

CONDITION:	% Damaged:	% Localized:	% Distributed:	Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☐ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☐ Low
Vibration Potential	☐ High	☐ Moderate	☐ Low
Air Erosion	☐ High	☐ Moderate	☐ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☐ Minimal Damage

Material Description: White door caulking — Friable / Non-friable

Sample No.	Location	
303546-13	1ST FLOOR - UCERA EXAM RM	202425535
-14	1ST FLOOR - Hall	202425536
-15	1ST FLOOR	202425537

CONDITION:	% Damaged:	% Localized:	% Distributed:	Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☐ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☐ Low
Vibration Potential	☐ High	☐ Moderate	☐ Low
Air Erosion	☐ High	☐ Moderate	☐ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☐ Minimal Damage

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6-15-17 KAMITSURUMA, MINAMI-KU, SAGAMIHARA-SHI, KANAGAWA-KEN 252-0302 PHONE: (042) 851-5675

EnviroQuest

202403607

PLM DATA SHEET

PROJECT NAME: LAEHI HOSPITAL ADULT HEALTH CENTER

PAGE: 3 OF 3

DATE: 4/02/24

Material Description: Gray window caulking

Friable / Non-friable (circled: Non-friable)

Sample No.	Location
303546-16	1ST FLOOR / HCERA NURSES STATION
-17	
-18	

202425538
202425539
202425540

CONDITION: % Damaged: % Localized: % Distributed: Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☑ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☑ Low
Vibration Potential	☐ High	☐ Moderate	☐ Low
Air Erosion	☐ High	☐ Moderate	☐ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☐ Minimal Damage

Material Description:

Friable / Non-friable

Sample No.	Location

CONDITION: % Damaged: % Localized: % Distributed: Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☐ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☐ Low
Vibration Potential	☐ High	☐ Moderate	☐ Low
Air Erosion	☐ High	☐ Moderate	☐ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☐ Minimal Damage

Material Description:

Friable / Non-friable

Sample No.	Location

CONDITION: % Damaged: % Localized: % Distributed: Total Material Quantity:

Surfacing Material		TSI		Misc.	
☐ Sig. Damage	% Crumbling -	☐ Sig. Damage	% Gouge/Punct -	☐ Sig. Damage	% Crumbling -
☐ Damaged	% Delaminating -	☐ Damaged	% Crushed -	☐ Damaged	% Delaminating -
☐ Good Cond.	% H_2O/Gouges -	☐ Good Cond.	% H_2O Stains -	☐ Good Cond.	% H_2O/Gouges-

Contact Potential	☐ High	☐ Moderate	☐ Low
Vibration Potential	☐ High	☐ Moderate	☐ Low
Air Erosion	☐ High	☐ Moderate	☐ Low
OVERALL POTENTIAL RATING	☐ Significant Damage	☐ Damage	☐ Minimal Damage

98-029 HEKAHA STREET, SUITE 21 AIEA, HAWAII 96701 PHONE: (808) 486-5881
6-15-17 KAMITSURUMA, MINAMI-KU, SAGAMIHARA-SHI, KANAGAWA-KEN 252-0302 PHONE: (042) 851-5675

Hawaii Analytical Laboratory
ANALYTICAL REPORT

Wednesday, March 6, 2024

EnviroQuest, Inc.
98-029 Hekaha Street, Suite 21
Aiea HI 96701

Phone Number: (808)486-5881
Facsimile: (808) 486-5889
Email: eqi@enviroquestinc.com

Lab Job No: 202402423
Date Submitted: 3/1/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 2/29/24

Total Lead (paint chips)

NIOSH Method: 7082m LEAD by FAAS

Sample No.	Your Sample ID / Description	Results	Units	Date Analyzed
202417159	**303546-03P**	0.0048	wt %	3/6/2024
Comments				
202417160	**303546-04P**	0.012	wt %	3/6/2024
Comments				
202417161	**303546-05P**	0.078	wt %	3/6/2024
Comments				
202417162	**303546-06P**	0.0097	wt %	3/6/2024
Comments				

Total Recoverable Lead

EPA Method: 3051m / 7000Bm

Sample No.	Your Sample ID / Description	Results	Units	Date Analyzed
202417157	**303546-01P**	< 0.004	wt %	3/6/2024
Comments				
202417158	**303546-02P**	< 0.004	wt %	3/6/2024
Comments				

EnviroQuest, Inc.
98-029 Hekaha Street, Suite 21
Aiea HI 96701

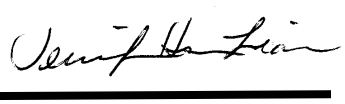
Phone Number: (808)486-5881
Facsimile: (808) 486-5889
Email: eqi@enviroquestinc.com

Lab Job No: 202402423
Date Submitted: 3/1/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 2/29/24

All Quality Control data are acceptable unless otherwise noted.
MRL for lead air is 5ug.
MRL for lead wipe is 10ug.
MRL for lead paint or soil is 40 mg/kg for a 0.25g sample.

General Comments
The sample[s] analysis subject of this analytical report were conducted in general accordance with the procedures associated with the "analytical method" referenced above. Modifications to this methodology may have been made based upon the analyst's professional judgment and / or sample matrix effects encountered. The analysis of sample relates only to the sample analyzed, and may or may not be representative of the original source of the material submitted for our analysis. All analysts participate in interlaboratory quality control testing to continuously document profiency. This report is not to be duplicated except in full without the expressed written permission of Hawaii Analytical Laboratory. This report should not be construed as an endorsement for a product or a service by the AIHA LAP, LLC or any affiliated organizations. Sample and associated sampling / collection data is reported as provided by client. TWA values have been calculated based on information supplied by the client that the laboratory has not independently verified. Results have not been corrected for blank determinations unless noted in remarks. Unless otherwise indicated the sample condition at the time of receipt was acceptable.

Results and Symbols Definitions
> This testing result is greater than the numerical value listed.
< This testing result is less than the numerical value listed.
# = Analytical methods marked with an "#" are not within our AIHA LAP, LLC Scope of Accreditation.
MRL = Method Reporting Limit.



Jennifer Hsu Liao
Laboratory Manager

EnviroQuest

202402423

Pb SAMPLE FORM

PROJECT NAME: LEAHI HOSPITAL ADULT HEALTH CENTER

PAGE: 1 of 1

DATE: ~~3/1/24~~ 2/29/24

LOCATION:

PROJECT NO.: 303546

TURNAROUND TIME		MEDIA		COMMENTS
☐ <12 HRS	☒ 3 DAYS	☒ BULK	☐ WIPE	
☐ 24 HRS	☐ OTHER	☐ SOIL	☐ OTHER	

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION
303546-01P	X		1	Women's restroom	Wall	Ceramic	Beige	Intact
	Same in men's						202417157	

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION
303546-02P	X		1	Men's restroom	Floor	Ceramic	Tan	Intact
	Same in women's						202417158	

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION
303546-03P	X		1	Men's restroom	Wall	Drywall	Beige	Intact
	Both walls in men's restroom and left side wall of women's restroom						202417159	

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION
303546-04P	X		1	Women's restroom	Wall	Plaster	Beige	Intact
	Only on right side of women's restroom						202417160	

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION
303546-05P	X		1	Women's restroom	Wall	Concrete	Beige	Intact
	Back wall in men's and women's restrooms						202417161	

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION
303546-06P	X		1	Men's restroom	Door frame	Metal	Tan	Intact
							202417162	

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION

SAMPLED BY	RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
Landon Awada	Landon Awada	3/1/24	Haley Leavitt	03-01-24 P01:58 RCVD
			Haley Leavitt	

SUBSTRATE: B = BRICK; C = CONCRETE; D = DRYWALL; M = METAL; P = PLASTER; W = WOOD
CONDITION: INTACT; PEELING, CHIPPING, CHALKING, FLAKING, OR DETERIORATED PAINT

98-029 HEKAHA STREET, SUITE 21 AIEA, HAWAII 96701 PHONE: (808) 486-5881
[illegible] SAGAMIHARA-SHI, KANAGAWA-KEN 252-0302 PHONE: (042) 851-5675

Samples picked up at EQI office
by Hawaii Analytical Laboratory

Hawaii Analytical Laboratory
ANALYTICAL REPORT

Friday, April 5, 2024

EnviroQuest, Inc.
98-029 Hekaha Street, Suite 21
Aiea HI 96701

Phone Number: (808)486-5881
Facsimile: (808) 486-5889
Email: eqi@enviroquestinc.com

Lab Job No: 202403610
Date Submitted: 4/3/2024
Your Project: 303546, Leahi Hospital Adult Health Center, 4/2/24

Total Lead (paint chips)

NIOSH Method: 7082m LEAD by FAAS

Sample No.	Your Sample ID / Description	Results	Units	Date Analyzed
202425546	**303546-01L**	0.0052	wt %	4/5/2024
Comments				

All Quality Control data are acceptable unless otherwise noted.
MRL for lead air is 5ug.
MRL for lead wipe is 10ug.
MRL for lead paint or soil is 40 mg/kg for a 0.25g sample.

General Comments
The sample[s] analysis subject of this analytical report were conducted in general accordance with the procedures associated with the "analytical method" referenced above. Modifications to this methodology may have been made based upon the analyst's professional judgment and / or sample matrix effects encountered. The analysis of sample relates only to the sample analyzed, and may or may not be representative of the original source of the material submitted for our analysis. All analysts participate in interlaboratory quality control testing to continuously document profiency. This report is not to be duplicated except in full without the expressed written permission of Hawaii Analytical Laboratory. This report should not be construed as an endorsement for a product or a service by the AIHA LAP, LLC or any affiliated organizations. Sample and associated sampling / collection data is reported as provided by client. TWA values have been calculated based on information supplied by the client that the laboratory has not independently verified. Results have not been corrected for blank determinations unless noted in remarks. Unless otherwise indicated the sample condition at the time of receipt was acceptable.

Results and Symbols Definitions
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< This testing result is less than the numerical value listed.
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MRL = Method Reporting Limit.

Jennifer Hsu Liao
Laboratory Manager

EnviroQuest

202403610

Pb SAMPLE FORM

PROJECT NAME: LEAHI HOSPITAL ADULT HEALTH CENTER

PAGE: 1 OF 1

DATE: 4/02/24

LOCATION:

PROJECT NO.: 303546

TURNAROUND TIME		MEDIA		COMMENTS
☐ <12 HRS ☐ 24 HRS	☒ 3 DAYS ☐ OTHER	☒ BULK ☐ SOIL	☐ WIPE ☐ OTHER	

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION
303546 – 01L	✓			TOILET	wall	drywall	tan	intact
	MCERA NURSES STATION						202425546	

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION

SAMPLE NO	INT	EXT	FLR	ROOM	COMPONENT	SUBSTRATE	COLOR	CONDITION

SAMPLED BY	RELINQUISHED BY	DATE & TIME	RECEIVED BY	DATE & TIME
Daniel Lewis JR		4/03/24	Savannah Newman Savannah Newman	04-03-24A09:57 RCVD

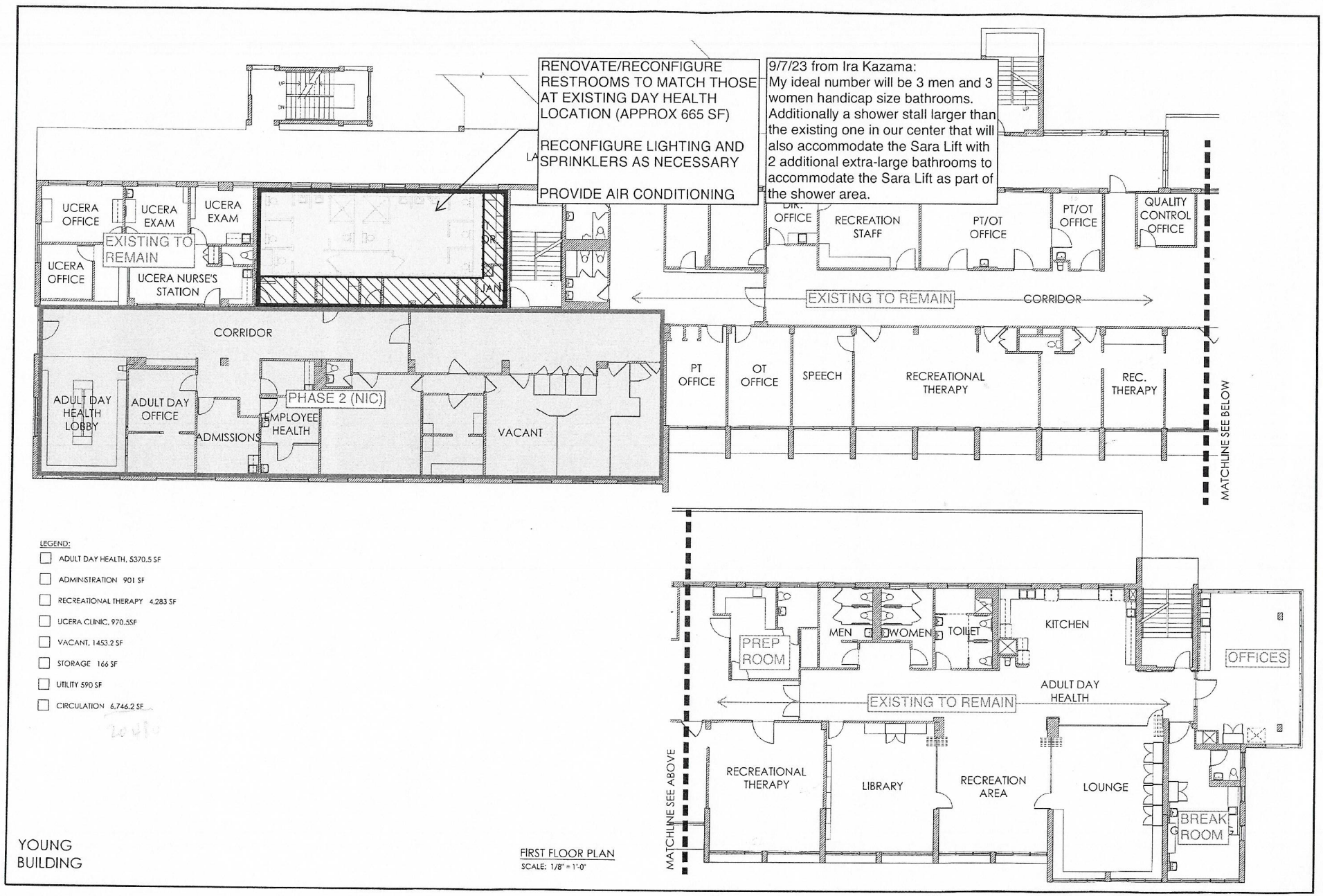
Samples picked up at EQI office by Hawaii Analytical Laboratory

2800 HEALANI STREET, SUITE 21 AIEA, HAWAII 96701 PHONE: (808) 486-5881
6-15-17 KAMITSURUMA, MINAMI-KU, SAGAMIHARA-SHI, KANAGAWA-KEN 252-0302 PHONE: (042) 851-5675

EnviroQuest

APPENDIX C

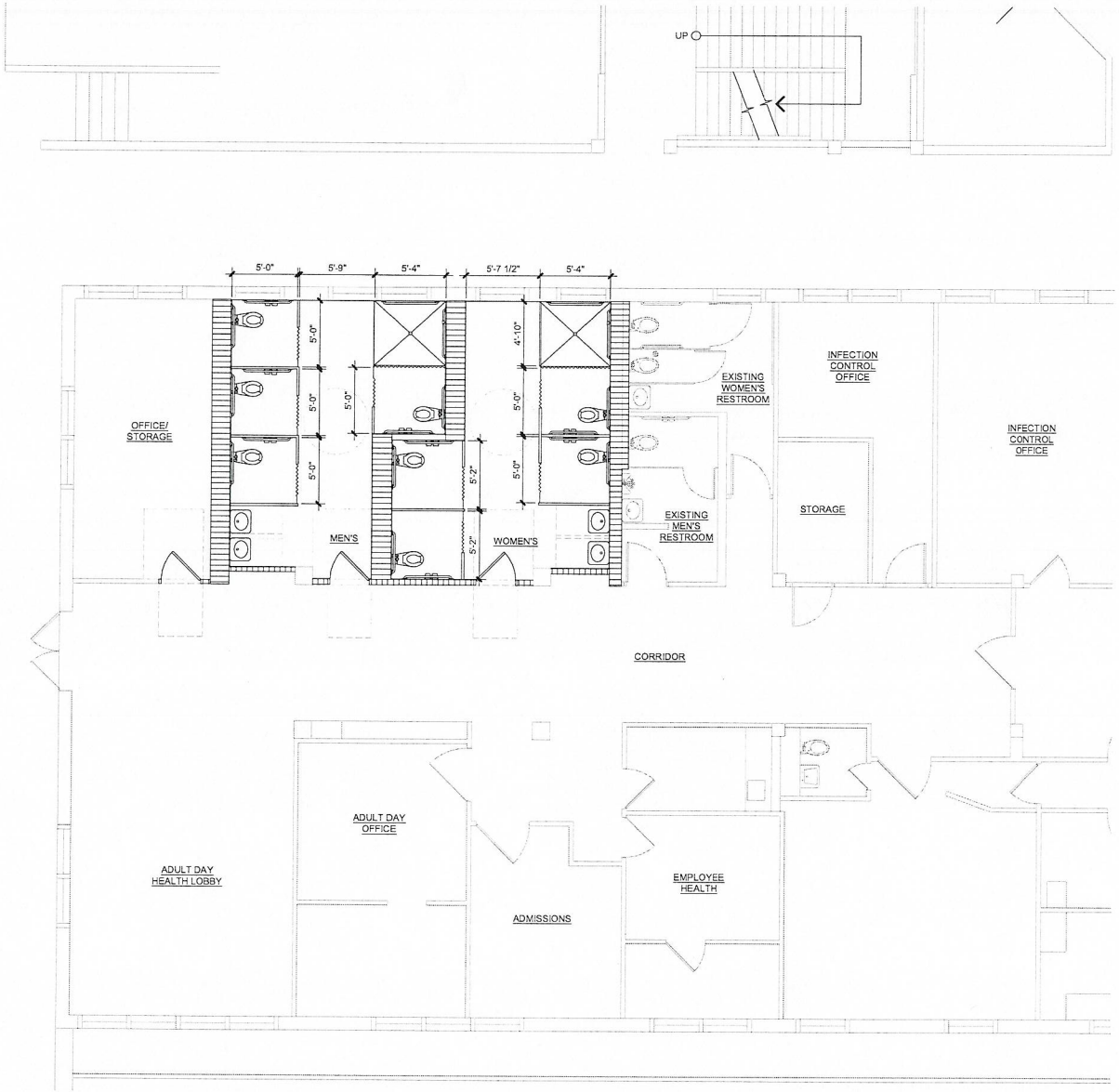
REFERENCE DRAWINGS



YOUNG BUILDING

FIRST FLOOR PLAN

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



1 BATHROOM FLOOR PLAN
A-101 SCALE: 1/4" = 1'-0"

PLAN NORTH

0 4' 8' 12'
SCALE: 1/4"=1'-0"

If this sheet is less than 22" x 34" then this print has been reduced from its original size.

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

Revisions:

No.	Description	Date

Project Title:

LEAHI HOSPITAL - ADULT HEALTH CENTER

BATHROOM RENOVATIONS

3675 KILAUEA AVENUE
HONOLULU, HI 96816

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE
EXP. DATE: 04/30/24

Sheet Title:

BATHROOM FLOOR PLAN

Project Phase:

-

Date:

-

Sheet No.:

A-101

1 EXISTING FLOOR PLAN
AXFP01 SCALE: 1/4" = 1'-0"

PLAN NORTH

0 4' 8' 12'
SCALE: 1/4"=1'-0"

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

Revisions:

No.	Description	Date

Project Title:

CASTLE & COOKE

DOLE SHOPPING CENTER

650 IWILEI ROAD
HONOLULU, HI 96817

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE
EXP. DATE: 04/30/24

Sheet Title:

EXISTING FLOOR PLAN

Project Phase:

-

Date:

-

Sheet No.:

AXFP01

SECTION 02055 - SELECTIVE DEMOLITION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.

B. Related Requirements:

1. Section 00800 – Special Provisions: For restrictions on use of the premises and Owner-occupancy requirements.

2. Section 01577 - Pollution Control: For construction waste disposal.

1.02 REFERENCE STANDARDS

A. American National Standards Institute (ANSI) A10.6: Safety Requirements for Demolition Operations.

B. National Fire Protection Agency (NFPA) 241: Standard for Safeguarding Construction, Alteration, and Demolition Operations.

C. Resilient Floor Covering Institute (RFCI): Recommended Work Practices for Removal of Resilient Floor Coverings.

1.03 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

B. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.04 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.05 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at Project site.

1. Inspect and discuss condition of construction to be selectively demolished.

2. Review structural load limitations of existing structure.

3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.

4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

5. Review areas where existing construction is to remain and requires protection.

1.06 INFORMATIONAL SUBMITTALS

A. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.

2. Interruption of utility services. Indicate how long utility services will be interrupted.

3. Coordination for shutoff, capping, and continuation of utility services.

4. Use of elevator and stairs.

5. Locations of proposed dust- and noise-control temporary partitions and means of egress.

6. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

7. Means of protection for items to remain and items in path of waste removal from building.

B. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Submit before Work begins.

1.07 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Pre-Demolition Conference: Conduct conference at Project site to review methods and procedures related to selective demolition including, but not limited to, the following:

1. Inspect and discuss condition of construction to be selectively demolished.

2. Review structural load limitations of existing structure.

3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.

4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

5. Review areas where existing construction is to remain and requires protection.

1.08 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner.

E. Utility Service:

1. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

2. Maintain fire-protection facilities in service during selective demolition operations.

1.09 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties.

1.10 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selec-tive demolition required.

C. When unanticipated mechanical, electrical, or structural elements that conflict with intended func-tion or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

D. Perform surveys as the Work progresses to detect hazards resulting from selective demolition ac-tivities.

3.02 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Owner will arrange to shut off indicated services/systems when requested by Contractor.

2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.

a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.

b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.

c. Equipment to Be Removed: Disconnect and cap services and remove equipment.

d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.

e. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.

f. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.03 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.

3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.

4. Cover and protect furniture, furnishings, and equipment that have not been removed.

5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 01 56 00 "Temporary Barriers and Enclosures."

B. Remove temporary barricades and protections where hazards no longer exist.

3.04 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.

2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.

4. Maintain adequate ventilation when using cutting torches.

5. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.

6. Dispose of demolished items and materials promptly. Comply with requirements in Section 01 74 19 "Construction Waste Management and Disposal."]]

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.

2. Pack or crate items after cleaning and repairing. Identify contents of containers.

3. Protect items from damage during transport and storage.

4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition.

3.05 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.

B. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings."

3.06 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction and recycle or dispose of them according to Section 01567 - Pollution Control.

1. Do not allow demolished materials to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials.

3.07 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

SECTION 03540 - CAST UNDERLAYMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Liquid-applied self-leveling floor underlayment.

1. Cementitious type.

1.02 REFERENCE STANDARDS

A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens); 2021.

B. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2018.

C. ASTM C348 - Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars; 2021.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023b.

1.03 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Manufacturer's Instructions.

1.04 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the work of this section, and approved by manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Keep dry and protect from direct sun exposure, freezing, and ambient temperature greater than 105 degrees F (41 degrees C).

1.06 FIELD CONDITIONS

A. Do not install underlayment until floor penetrations and peripheral work are complete.

B. Maintain minimum ambient temperatures of 50 degrees F (10 degrees C) 24 hours before, during and 72 hours after installation of underlayment.

C. During the curing process, ventilate spaces to remove excess moisture.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Cementitious Underlayment:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Uzin PE 260 primer and Uzin NC 170 LevelStar Premium Self Leveling Compound or a comparable product.

2. Substitutions: See Section 00800 - Special Provisions.

2.02 MATERIALS

A. Cast Underlayments, General:

1. Comply with applicable code for combustibility or flame spread requirements.

2. Provide certificate of compliance from authority having jurisdiction indicating approval of underlayment materials in the required fire rated assembly.

B. Cementitious Underlayment: Blended cement mix, that when mixed with water in accordance with manufacturer's directions will produce self-leveling underlayment with the following properties:

1. Compressive Strength: Minimum 6000 pounds per square inch (41.3 MPa) after 28 days, tested per ASTM C109/C109M.

2. Flexural Strength: Minimum 1000 psi (6.9 MPa) after 28 days, tested per ASTM C348.

3. Density: 125 pounds per cubic foot (2002 kg/cu m), nominal.

4. Final Set Time: 1-1/2 to 2 hours, maximum.

5. Thickness: Capable of thicknesses from feather edge to maximum 3-1/2 inch (89 mm).

6. Surface Burning Characteristics: Flame spread/Smoke developed index of 0/0 in accordance with ASTM E84.

C. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to underlayment mix materials.

D. Primer: Manufacturer's recommended type.

E. Joint and Crack Filler: Latex-based filler, as recommended by manufacturer.

2.03 MIXING

A. Site mix materials in accordance with manufacturer's instructions.

B. Mix to self-leveling consistency without over-watering.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are clean, dry, unfrozen, do not contain petroleum byproducts, or other compounds detrimental to underlayment material bond to substrate.

3.02 PREPARATION

A. Remove substrate surface irregularities. Fill voids and deck joints with filler. Finish smooth.

B. Vacuum clean surfaces.

C. Prime substrate in accordance with manufacturer's instructions. Allow to dry.

D. Close floor openings.

3.03 APPLICATION

A. Install underlayment in accordance with manufacturer's instructions.

B. Place to indicated thickness, with top surface level to 1/8 inch in 10 ft (1:1000).

3.04 CURING

A. Once underlayment starts to set, prohibit foot traffic until final set has been reached.

B. Air cure in accordance with manufacturer's instructions.

3.05 PROTECTION

A. Protect against direct sunlight, heat, and wind; prevent rapid drying to avoid shrinkage and cracking.

B. Do not permit traffic over unprotected floor underlayment surfaces.

END OF SECTION

SECTION 07210 - THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Unfaced glass fiber batt insulation.

1.02 DEFINITIONS

A. Mineral Fiber Material Composition: Insulation referred to as mineral fiber block, board, and blanket insulation is composed of fibers from mineral based substances such as rock, slag, or glass and processed from the molten state into fibrous form.

1. Based on type of insulation substance, the material will be referred to as a mineral fiber when having a rock or slag base, and glass fiber with a glass or silica sand base, also considered a mineral.

2. Insulation blankets are flexible units consisting of felted, bonded, or unbonded fibers formed into rolls or flat cut pieces referred to as batts; rolls are simply longer versions of batts.

3. For additional information about mineral fiber and the various classification types, refer to the following reference standards; ASTM C553, ASTM C612, ASTM C665, and ASTM C726.

1.03 REFERENCE STANDARDS

A. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications; 2013 (Reapproved 2019).

B. ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation; 2014 (Reapproved 2019).

C. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.

D. ASTM C726 - Standard Specification for Mineral Wool Roof Insulation Board; 2017.

E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023b.

F. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C; 2024.

1.04 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

C. ABAA Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.

1.05 QUALITY ASSURANCE

A. Air Barrier Association of America (ABAA) Evaluated Materials Program (EAP); www.airbarrier.org/#sle: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture. Use secondary materials approved in writing by primary material manufacturer.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Insulation in Metal Framed Walls: Batt insulation with no vapor retarder.

2.02 INSULATION MATERIALS

A. Flexible Glass Fiber Blanket Thermal /Acoustic Insulation: Preformed insulation, complying with ASTM C665; friction fit.

1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.

2. Smoke Developed Index: 50 or less, when tested in accordance with ASTM E84.

3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.

4. Formaldehyde Content: Zero.

5. Thickness: Same as stud depth or as indicated.

6. Manufacturer:

a. CertainTeed Corporation: www.certainteed.com/#sle.

b. Johns Manville: www.jm.com/#sle.

c. Owens Corning Corporation: www.ocbuildingspec.com/#sle.

d. Substitutions: Section 08800 - Special Provisions.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BATT INSTALLATION

A. Install insulation in accordance with manufacturer's instructions.

B. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

C. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.03 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07920 - JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonsag gunnable joint sealants.

B. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

A. Section 09260 - Gypsum Board Assemblies: Sealing acoustical and sound-rated walls and ceilings.

1.03 REFERENCE STANDARDS

A. ASTM C794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants; 2018 (Reapproved 2022).

B. ASTM C834 - Standard Specification for Latex Sealants; 2017 (Reapproved 2023).

C. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2022.

D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

E. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems; 2023.

F. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).

G. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2022).

1.04 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:

1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.

2. List of backing materials approved for use with the specific product.

3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.

4. Substrates the product should not be used on.

5. Substrates for which use of primer is required.

6. Sample product warranty.

7. Certification by manufacturer indicating that product complies with specification requirements.

C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.

D. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.

E. Field Quality Control Plan: Submit at least two weeks prior to start of installation.

F. Field Quality Control Log: Submit filled-out log for each length or instance of sealant installed, within 10 days after completion of inspections/tests; include bagged test samples and photographic records, if any.

G. Installer's qualification statement.

H. Executed warranty.

1.05 QUALITY ASSURANCE

A. Maintain one copy of each referenced document covering installation requirements on site.

B. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

D. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.

1. Adhesion Testing: In accordance with ASTM C794.

2. Compatibility Testing: In accordance with ASTM C1087.

3. Allow sufficient time for testing to avoid delaying the work.

4. Deliver sufficient samples to manufacturer for testing.

5. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.

6. Testing is not required if sealant manufacturer provides data showing previous testing, not older than 24 months, that shows satisfactory adhesion, lack of staining, and compatibility.

E. Field Quality Control Plan:

1. Field testing agency's qualifications.

2. Field Quality Control Log Form: Show same data fields as on Preinstallation Field Adhesion Test Log, with known information filled out and lines for multiple tests per sealant/substrate combinations; include visual inspection and specified field testing; allow for possibility that more tests than minimum specified may be necessary.

1.06 WARRANTY

A. Manufacturer Warranty: Provide 2-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Nonsag Sealants:

1. Dow: www.dow.com/#sle.

2. Pecora Corporation: www.pecora.com/#sle.

3. Sika Corporation: www.usa.sika.com/#sle.

4. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.

2.02 JOINT SEALANT APPLICATIONS

A. Scope:

1. Do Not Seal:

a. Intentional weep holes in masonry.

b. Joints indicated to be covered with expansion joint cover assemblies.

c. Joints where sealant is specified to be furnished and installed by manufacturer of product to be sealed.

d. Joints where sealant installation is specified in other sections.

e. Joints between suspended ceilings and walls.

2. Wall and Ceiling Joints in Nonwet Areas: Acrylic emulsion latex sealant.

3. Wall and Ceiling Joints in Wet Areas: Nonsag polyurethane sealant for continuous liquid immersion.

B. Interior Wet Areas: Restrooms; fixtures in wet areas include plumbing fixtures, countertops, cabinets, and other similar items.

2.03 JOINT SEALANTS - GENERAL

A. Sealants and Primers: Provide products having lower volatile organic compound (VOC) content than indicated in SCAQMD 1168.

B. Colors: As indicated on drawings or match adjacent surface.

C. Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.

1. Movement Capability: Plus and minus 25 percent, minimum.

2. Color: Match adjacent finished surfaces.

3. Products:

a. Dow; DOWSIL 999-A Building and Glazing Sealant: www.dow.com/#sle.

b. Pecora Corporation; Pecora 860: www.pecora.com/#sle.

c. Sika Corporation; Sikasil GP: www.usa.sika.com/#sle.

D. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.

1. Color: White.

2. Products:

a. Pecora Corporation; Pecora 898 NST (Non-Staining Technology): www.pecora.com/#sle.

b. Sika Corporation; Sikasil GP: www.usa.sika.com/#sle.

E. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, nonstaining, nonbleeding, nonsagging; not intended for exterior use.

1. Color: Standard colors matching finished surfaces, Type OP (opaque).

2. Products:

a. Pecora Corporation; AC-20 +Silicone: www.pecora.com/#sle.

b. Tremco Commercial Sealants & Waterproofing; Tremflex 834: www.tremcosealants.com/#sle.

2.04 ACCESSORIES

A. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

B. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

C. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.

D. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Provide joint sealant installations complying with ASTM C1193.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.

D. Install bond breaker backing tape where backer rod cannot be used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 FIELD QUALITY CONTROL

A. See Section 01019 – General Project Requirements.

B. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.

C. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

END OF SECTION

SECTION 08110 - HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-rated hollow metal frames for wood doors.

1.02 RELATED REQUIREMENTS

A. Section 08710 - Door Hardware.

B. Section 08210 - Flush Wood Doors.

C. Section 09912 - Interior Painting: Field painting.

1.03 ABBREVIATIONS AND ACRONYMS

A. ANSI: American National Standards Institute.

B. HMMA: Hollow Metal Manufacturers Association.

C. NAAMM: National Association of Architectural Metal Manufacturers.

D. NFPA: National Fire Protection Association.

E. SDI: Steel Door Institute.

F. UL: Underwriters Laboratories.

1.04 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames; 2020.

C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2023.

D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

E. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2023, with Editorial Revision.

F. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2023.

G. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.

H. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

I. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.

J. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.

K. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames; 2017.

L. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2014.

M. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2023.

1.05 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.

C. Shop Drawings: Details of each opening, showing elevations, frame profiles, and any indicated finish requirements.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.

B. Manufacturer Qualifications: Provide hollow metal doors and frames from SDI Certified manufacturer: https://steeldoor.org/sdi-certified/#sle.

C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

D. Maintain at project site copies of reference standards relating to installation of products specified.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Hollow Metal Frames:

1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com/#sle.

2. Curries, an Assa Abloy Group company; Masonry / Flush Frames : www.assaabloydss.com/#sle.

3. Mesker, dormakaba Group: www.meskeropeningsgroup.com/#sle.

4. Republic Doors, an Allegion brand: www.republicdoor.com/#sle.

5. Steelcraft, an Allegion brand: www.allegion.com/#sle.

6. Substitutions: See Section 00800 - Special Provisions.

2.02 PERFORMANCE REQUIREMENTS

A. Requirements for Hollow Metal Frames:

1. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.

2. Accessibility: Comply with ICC A117.1 and ADA Standards.

3. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.

B. Frame Finish: Factory primed and field finished.

C. Interior Door Frames, Non-Fire Rated: Knock-down type.

1. Frame Metal Thickness: 18 gauge, 0.042 inch (1.0 mm), minimum.

D. Frames for Wood Doors: Comply with frame requirements in accordance with corresponding door.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 INSTALLATION

A. Install frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.

B. Coordinate frame anchor placement with wall construction.

C. Install door hardware as specified in Section 087100.

1. Comply with recommended practice for hardware placement of doors and frames in accordance with ANSI/SDI A250.6 or NAAMM HMMA 861.

3.03 TOLERANCES

A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.

B. Maximum Diagonal Distortion: 1/16 inch (1.6 mm) measured with straight edge, corner to corner.

3.04 ADJUSTING

A. Adjust for smooth and balanced door movement.

3.05 SCHEDULE

A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION

SECTION 08210 - FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; non-rated.

1.02 RELATED REQUIREMENTS

A. Section 08110 - Hollow Metal Doors and Frames.

B. Section 08710 - Door Hardware.

1.03 REFERENCE STANDARDS

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).

B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021, with Errata.

C. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

D. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2022.

1.04 SUBMITTALS

A. See Section 01300 - Submittals.

B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.

C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.

D. Samples: Submit two samples of door facing illustrating color and texture.

E. Warranty, executed in Owner's name.

1.05 WARRANTY

A. Manufacturer Warranty: Provide manufacturer's warranty on interior doors for the life of the installation. Complete forms in Owner's name and register with manufacturer.

1. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. High Pressure Decorative Laminate (HPDL) Faced Doors:

1. Basis of Design: Lynden Door.

2. Substitutions: See Section 00800 - Special Provisions.

2.02 DOORS

A. Doors: See drawings for locations and additional requirements.

1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

B. Interior Doors: 1-3/8 inches (35 mm) thick unless otherwise indicated; flush construction.

1. Provide solid core doors at each location.

2.03 DOOR CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type structural composite lumber core (SCLC), plies and faces as indicated.

2.04 DOOR FACINGS

A. High Pressure Decorative Laminate (HPDL) Facing for Non-Fire-Rated Doors: NEMA LD 3, HGS; color(s) as indicated; textured, low gloss finish.

2.05 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with stiles and rails:

1. Provide solid blocks at lock edge for hardware reinforcement.

2. Provide solid blocking for other throughbolted hardware.

C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

E. Provide edge clearances in accordance with the quality standard specified.

2.06 ACCESSORIES

A. Hollow Metal Door Frames: See Section 08110.

B. Door Hardware: See Section 08710.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.

1. Install fire-rated doors in accordance with NFPA 80 requirements.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

C. Use machine tools to cut or drill for hardware.

D. Coordinate installation of doors with installation of frames and hardware.

E. Install door louvers plumb and level.

3.03 TOLERANCES

A. Comply with specified quality standard for fit and clearance tolerances.

B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

END OF SECTION

SECTION 08305 - ACCESS DOORS AND PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wall- and ceiling-mounted access units.

1.02 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2023.

C. UL (FRD) - Fire Resistance Directory; Current Edition.

1.03 SUBMITTALS

A. See Section 01300 - Submittals.

B. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.

C. Shop Drawings: Indicate exact position of each access door and/or panel unit.

D. Installer's qualification statement.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

PART 2 PRODUCTS

2.01 ACCESS DOORS AND PANELS ASSEMBLIES

A. Wall- and Ceiling-Mounted Units:

1. Location: As indicated on drawings.

2. Panel Material: Steel.

3. Size: 12 by 12 inches (305 by 305 mm) & 24 by 24 (610 by 610 mm).

4. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.

2.02 WALL- AND CEILING-MOUNTED ACCESS UNITS

A. Manufacturers:

1. Basis of Design: Subject to requirements, provide Babcock-Davis Architectural Access Door: www.babcockdavis.com/#sle, or a comparable product by one of the other listed manufacturers.

    a. Non-rated: BNWC.

2. Activar Construction Products Group, Inc. - JL Industries : www.activarcpg.com/#sle.

3. Bilco: www.bilco.com.

4. Milcor Inc.: www.milcorinc.com/access-doors.

5. Nystrom, Inc: www.nystrom.com/#sle.

6. Substitutions: See Section 00800 - Special Provisions.

B. Wall- and Ceiling-Mounted Units: Factory-fabricated door and frame, fully assembled units with corner joints welded, filled and ground flush; square and without rack or warp; coordinate requirements with type of installation assembly being used for each unit.

1. Style: Exposed frame with door surface flush with frame surface.

    a. Gypsum Board Mounting Criteria: Use drywall bead type frame.

2. Frames: 16-gauge, 0.0598-inch (1.52 mm) minimum thickness.

3. Single Steel Sheet Door Panels: 16-gauge, 0,0625-inch (1.6 mm) minimum thickness.

4. Steel Finish: White powdercoat.

5. Hardware:

    a. Hinges for Non-Fire-Rated Units: Concealed spring button.

    b. Latch/Lock: Screw driver slot for quarter turn cam latch.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that rough openings are correctly sized and located.

B. Begin installation only after substrates have been properly prepared, and if the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to proceeding with this work.

B. Prepare surfaces using methods recommended by manufacturer for applicable substrates in accordance with project conditions.

3.03 INSTALLATION

A. Install units in accordance with manufacturer's instructions.

B. Install frames plumb and level in openings, and secure units rigidly in place.

C. Position units to provide convenient access to concealed equipment when necessary.

END OF SECTION

SECTION 08710 - FINISH HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Provide all finishing hardware required for all doors, complete as specified.

B. It is the intent of this Specification to cover in general the class and character of all finish hardware required.

C. The hardware list specified has been made for the convenience of the Contractor and covers in general the necessary hardware for doors, casework, etc., but all other doors, etc., shown on the Drawings and not covered by the general characterization shall be fitted with appropriate hardware of the same standards as the hardware described throughout these specifications. Contractor shall furnish hardware schedule as specified.

D. Suppliers proposing substitutes of equivalent products of other than the manufacturers named shall submit schedules listing the product and manufacturer specified and the product and manufacturer of proposed substitute. This schedule shall be submitted in accordance with the GENERAL CONDITIONS.

E. Related Work Described Elsewhere:

1. Door silencers are provided under Section 08110 – HOLLOW METAL DOORS AND FRAMES.

2. Coordinate the work with other directly affected sections involving manufacturer or fabrication of internal reinforcement for door hardware.

1.02 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTAL PROCEDURES.

B. Door Hardware Schedule: Furnish copies of the schedule of hardware in compliance with specifications and Drawings. Schedule format shall be vertical type as listed in DHI document “Sequence and Format for the Hardware Schedule”. List each opening using same door numbers as shown and hardware to be applied. State materials finish, and manufacturer’s number for each item. Required types are listed. Double space entries and number and date each page. Include the following information:

1. Identification number, location, hand, fire rating and material of each door and frame.

2. Type, style, function, size, quantity and finish of each door hardware item.

3. Complete designations of every item required for each door opening including name and manufacturer.

4. Fastenings and other pertinent information.

5. Location of each door hardware set, cross referenced to the Drawings, both on floor plans and in door schedules.

6. Explanation of abbreviations, symbols, and codes contained in the schedule.

7. Mounting locations for door hardware.

8. Door and frame sizes and materials

9. List of related door devices specified in other Sections for each door and frame.

C. Manufacturer's Data: Submit manufacturer's descriptive literature along with schedule.

D. Keying Schedule: Submit a keying schedule prepared by or under the supervision of the Architectural Hardware Consultant detailing State's final keying instructions for locks for approval by the Contracting Officer; using keying nomenclature as listed in DHI document "Keying Terminology". Door designation listed in the Keying Schedule shall be same as those used on Drawings and Hardware Schedule. Include schematic keying diagram. Keying of locks shall be as directed by the Contracting Officer.

E. Tools and Maintenance Instructions: Furnish a complete set of special wrenches, tools, maintenance instructions applicable to each different or special hardware component, but not less than the number supplied with the finish hardware materials.

F. Warranty: Submit written warranty as specified in paragraph entitled "WARRANTY" herein below.

1.03 QUALITY ASSURANCE

A. Codes and Reference: Comply with the version year adopted by the Authority Having Jurisdiction. Perform work in accordance with ANSI A117.1 – Accessible and Usable Buildings and Facilities, ICC/IBC – International Building Code, NFPA 80 – Fire Doors and Windows, NFPA 101 – Life Safety Code, State Building Codes, Local Amendments.

B. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

D. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

F. Existing Openings:

1. Where patching of existing doors and frames is necessary, patching shall be done as directed by the Contracting Officer.

2. Where new hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide for proper operation.

D. Manufacturer's Warranty Response Time: Complete repair or replacement within 36 hours after being notified by the user. If repair at the site is not possible because the exact make and model replacement is not available within the specified response time, a temporary substitute of equal quality shall be provided within the specified response time. If a temporary replacement is provided, the permanent repair/replacement response time will be extended to 7 calendar days.

1.04 REGULATORY REQUIREMENTS

A. Conform to applicable code for accessibility and requirements applicable to fire rated doors and frames.

B. Definition: "Door Hardware" includes items known commercially as finish hardware which are required for swing and sliding doors, except special types of unique and non-matching hardware specified in same Section as door and door frame.

1.05 DELIVERY, STORAGE AND HANDLING

A. Delivery, store, protect and handle products to prevent damage of any kind and to maintain security to site.

B. Inventory hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.

C. Deliver individually packaged hardware items at proper times to proper locations (shop or project site) for installation.

D. Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

E. Deliver permanent keys as directed by Contracting Officer.

F. Provide secure lock-up for hardware delivered to project but not yet installed. Control handling and installation of hardware items which are not immediately replaceable, so that completion of the Work will not be delayed by hardware losses, both before and after installation.

1.06 WARRANTY

A. Locks shall have a minimum 5-year manufacturer's warranty.

B. Door closers shall have a minimum 10-year manufacturer's warranty.

C. The Surety shall not be liable for manufacturer's warranty beyond 1 year of the project acceptance date.

D. Procedure for providing manufacturer warranty is described in General Conditions, article 7.35.3. Contractor shall complete the manufacturer's forms in the name of the Department and submit such forms to the manufacturer within such time as required to validate the warranty/guaranty and submit the forms to the Contracting Officer.

1.07 PROJECT RECORD DOCUMENTS

A. Record actual locations of installed cylinders and their master key code.

1.08 OPERATION AND MAINTENANCE DATA

A. Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

B. The manufacturer's representative shall instruct the User's staff on the hardware's maintenance procedures (type of lubricant needed and frequency of maintenance).

PART 2 - PRODUCTS

2.01 SCHEDULED HARDWARE

A. Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in HARDWARE GROUPS

at end of this Section. Products are identified by using proprietary catalog numbers and are used to establish quality and function of products desired.

B. Product numbers indicated in the HARDWARE GROUPS are those of the manufacturers listed and are used to establish the quality of products intended.

C. Products listed hereinafter are pre-approved as equals to those products listed in the HARDWARE GROUPS.

2.02 MATERIALS AND FABRICATION

A. Hand of Door: Drawings show direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of indicated door.

B. Base Metals: Produce hardware units of basic metal and forming method specified, using manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units by applicable ANSI A156 series standard for each type hardware item and with ANSI A156.18 for finish designations indicated.

C. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws, except as specifically indicated. Fasteners exposed to the weather shall be non-ferrous metal or stainless steel.

D. Furnish appropriate screws for installation, with each hardware item. Provide Phillips flat head screws except as otherwise indicated. Finish exposed screws to match hardware finish. If exposed in surfaces of other work, to match finish of such other work as closely as possible, including prepared-for-paint finish in surfaces to receive painted finish.

E. Provide concealed fasteners for hardware units which are exposed when door is closed, except to the extent no standard units of the type specified are available with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed in other work, except where it is not feasible to adequately reinforce the Work. In such cases, provide sleeves for each through bolt or use sex screw fasteners.

F. Expansion shields in concrete or masonry shall fill the depth and diameter of drilled holes.

G. Bring to the attention of the Contracting Officer any discrepancy between the Hardware Groups and door schedule prior to ordering.

2.03 HINGES

A. General: Hinges shall conform to ANSI/BHMA A156.1, Grade 1 as a certified product by BHMA and the requirements of this specification.

1. The following hinges will be considered equal subject to project conditions:
   a. Hager:
      Type 1: BB1279
      Type 2: BB1191
      Type 3: BB1168
      Type 4: BB1199

   b. McKinney:
      Type 1: TA2714
      Type 2: TA2314
      Type 3: T4A3786
      Type 4: T4A3386

   c. Stanley:
      Type 1: FBB179
      Type 2: FBB191
      Type 3: FBB168
      Type 4: FBB199

2. Hinge Application Requirements:
   a. Exterior Outswing Doors: Type 2 or 4 x NRP as specified.
   b. Exterior Inswing Doors and Vestibule Doors: Type 2 or 4 as specified.
   c. Interior Doors With Closers: Type 1, 2, 3 or 4 as specified.
   d. Interior Doors Over 36 Inches Wide. Type 3 or 4 as specified.

B. Templates: Except for hinges to be installed entirely (both leaves) into wood doors and frames, provide only template producing units.

C. Screws: Furnish Phillips flat head or wood screws for installation of units into wood. Finish screw heads to match surface of hinges.

D. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
1. Nonferrous Hinges: Stainless steel pins.

2. Exterior, Out-swing Doors: Non-removable pins (NRP).

3. Interior Doors: Nonrising pins.

4. Tips: Flat button and matching plug, finished to match leaves.

5. Oil impregnated or ball bearing hinges are acceptable products.

E. Number of Hinges: Provide number of hinges indicated but not less than 3 hinges for door leaf for doors 90-inches or less in height and one additional hinge for each 30-inches of additional height.

F. Size of hinges shall be as follows:

Door Thickness/Width	Hinge Height	Hinge Width
1-3/4 inches to 36-inches	4-1/2 inches	4-1/2” or as specified
1-3/4 inches over 36-inches	5-inches	4-1/2” or as specified
1-3/4 inches over 48-inches	6-inches	4-1/2” or as specified

Note: Hinge width shall be of sufficient size to clear frame and trim when door swings 180 degrees.

2.04 LOCK CYLINDERS AND KEYING

A. Verify existing building key system. All locks shall be an extension of this system. All work, whether new or modification to existing to remain, shall be in compliance with requirements of this Section. Cylinders and cores shall have 6 pin tumblers unless scheduled otherwise. The contractor has the option of replacing the existing lock cylinders, at no additional cost to the State, if needed to create a new master keying system.

B. Provide the number of individual keys equal to not less than 4 times the number of cylinders provided. The number of keys cut to each key cut shall be as directed by the Contracting Officer. All remaining keys shall be blanks. All locks shall be master keyed and Grandmaster keyed to a single lock system. During period of construction, all locks shall be operated by a special construction master key. Regular day and master keys are to be retained by the Contractor so they cannot be obtained or duplicated by unauthorized persons. All keys shall be stamped “DO NOT DUPLICATE” at the point of manufacture. The special construction master key shall become inoperative when regular keys are turned over to the Contracting Officer. Proper certification of factory assembly of all locks and cylinders and master keying of all locks and cylinders shall be furnished by the Contractor prior to final acceptance of this portion of the work. Certificate shall then be given to the Contracting Officer. Provide 10 construction master keys and 5 master keys.

C. Upon acceptance of the project, the Contractor shall arrange for temporary keys, obtained from custodian if further access is required.

2.05 LOCKS, LATCHES AND BOLTS

A. General: Mortise locks and latches shall conform to ANSI/BHMA A156.13, Series 1000, Grade 1 unless Grade 2 is listed; bored locks and latches shall conform to ANSI/BHMA A156.2, Series 4000, Grade 1 unless Grade 2 is listed; auxiliary locks shall conform to ANSI/BHMA A156.5, Grade 1; bolts shall conform to ANSI/BHMA A156.16, Grade 1; ADAAG and the requirements of this specification.

1. The following mortise locksets and deadbolts will be considered equal:
   a. Best 38H series, 40H Series.

b. Sargent 4870 series, 8200 series.
c. Schlage L460 series, L9000 series.

2. The following cylindrical locksets and deadbolts will be considered equal:
   a. Best 93K series, 83T Series.
   b. Sargent 10/10X series, 480 series.
   c. Sargent 11 series, 480 series.
   d. Schlage “ND” series, B600 series.

B. Mortise locksets shall be manufactured in a single sized case formed from 12 gauge minimum steel. The case shall be closed on all sides and back. The lockset shall have a field-adjustable, beveled armored front, with a 0.125-inch minimum thickness.

C. Mortise locksets shall have freewheeling or breakaway vandal resistant design outside levers on all exterior doors. The freewheeling lever design shall allow the lever to swing freely up to 70 degrees, when the door is locked.

D. Strikes: Provide manufacturer’s standard wrought box strike for each latch of lock bolt, with lip extended to protect frame, finish matching hardware set. Provide dustproof recessed floor strikes for foot bolts, except where special threshold construction provides non-recessed strike for bolts.

D. Lock Throw:

1. Provide 3/4-inch minimum throw of latch and one-inch minimum for deadbolt.

2. Flush Bolt Heads: Minimum of 1/2-inch diameter rods of brass, bronze or stainless steel, with minimum 12-inches long rod for doors up to 7-feet in height; minimum 42-inches long rod for doors up to 9-feet 6-inches in height.

F. Provide locksets, latches, and cylinders equal in all respects to those specified in the Hardware Groups.

2.06 CLOSERS AND DOOR CONTROL DEVICES

A. General: Closers shall conform to ANSI/BHMA A156.4, Series C02000, Grade 1, with features necessary for the particular application, UL10C listed for fire rated doors, ADAAG, and the requirements of this specification.

1. The following closers will be considered equal for medium use on interior doors:

   a. Corbin Russwin DC3000 series.
   b. LCN 1461 series.
   c. Norton 8501 series.
   d. Sargent 1431 series.

B. Size of Units: Provide non-sized closers, adjustable to meet maximum opening force requirements of ADA. Comply with manufacturer’s recommendations for

size of door control unit, depending upon size of door, exposure to weather, and anticipated frequency of use. Where parallel arm closers are installed, provide closer unit one size larger than recommended for use with standard arms.

C. Closers shall have adjustment operating valves for closing speed, latching speed, and backcheck control as a standard feature.

D. Provide parallel arm or regular arm closer as required to mount closer on door face least exposed to public traffic.

E. Provide drop plates, brackets, or adapters for arms as required to suit details or conditions.

F. Closer covers shall be rectangular, full cover type, high impact non-corrosive, and flame retardant.

G. Closer shall not require removal for adjustments to be made.

H. Provide hold-open arms where indicated.

2.07 FLAT GOODS

A. General: Flat goods shall conform to ANSI/BHMA A156.6 and the types listed in the HARDWARE GROUPS.

1. The products of the following manufacturers will be considered equal subject to project conditions:
   a. Baldwin Hardware Corporation
   b. Burns Manufacturing Incorporated
   c. Hager Companies
   d. Ives Hardware
   e. Rockwood Manufacturing Company
   f. Trimco

B. Door plates for single doors shall be 2-inches less than door width. Door plates for double doors shall be 1-inch less than door width. Height of plate shall be as listed but 1-inch less than bottom rail for panel doors.

2.08 STOPS AND HOLDERS

A. General: Stops and holders shall conform to ANSI/BHMA A156.16 and the types listed in the HARDWARE GROUPS.

1. The products of the following manufacturers will be considered equal subject to project conditions:
   a. Architectural Builders Hardware MFG., Inc.
   b. Baldwin Hardware Corporation
   c. Burns Manufacturing Incorporated
   d. Hager Companies
   e. Ives Hardware

f. Rockwood Manufacturing Company
g. Trimco
h. Sargent

2.09 FINISHES

A. Finishes: Identified in schedule at end of Section.

1. Designations used are those listed in ANSI/BHMA A156.18 “Materials and Finishes”, including coordination with traditional U.S. finishes shown by certain manufacturers for their products.

2. If no BHMA finish is established, match specified product.

B. Provide matching finishes for hardware units at each door or opening to greatest extent possible, except as otherwise indicated. Reduce differences in color and textures as much as commercially possible where base metal or metal forming process is different for individual units of hardware exposed at same door or opening.

C. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness and other qualities complying with manufacturer’s standards, but in no case less than specified for applicable units of hardware by referenced standards.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Pre-Installation Meeting: Before start of work under this contract, the Contractor, hardware installer, hardware manufacturer’s representative or supplier, the Contracting Officer, and a user representative shall meet to review the keying system, hardware installation instructions, and installation conditions.

B. Verify that doors and frames are ready to receive Work and dimensions are as indicated.

3.02 INSTALLATION

A. Install each hardware item in compliance with manufacturer’s instructions and recommendations.

B. Mount hardware units at height indicated in the Door and Hardware Institute’s Recommended Locations for Builders Hardware for Standard Steel Doors and Frames, except:

1. As otherwise indicated or as required to comply with governing regulations.

2. Mount deadbolt (if any) centerline not more than 5-inches above latchset handle centerline.

C. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, coordinate removal, storage and reinstallation or application of surface protection with finishing work. Do not install surface mounted items until finishes have been completed on the substrate.

D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

F. Set metal thresholds for exterior doors in full bed of butyl rubber, polyisobutylene mastic sealant, or preformed butyl-polyisobutylene sealant tape as specified under SECTION 07920 - SEALANTS.

G. Fit face of all mortise parts snug and flush.

H. Operating parts shall move freely and smoothly without binding, sticking or excessive clearance.

I. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

J. Install with manufacturer's fasteners conforming to requirements of this section or those required for substrate. Expansion shields securing hardware such as door stops/holders to concrete or solid grouted masonry substrates shall completely fill the depth and diameter of the drilled holes. Shimming of the shields or using of plastic shields is not acceptable.

K. Protect hardware from damage or marring of finish during construction. Use strippable coatings, removable tapes or other approved means.

L. Ensure that hardware displays no evidence of finish paint after building cleanup with exception of prime coated hardware installed for finish painting. The Contractor may achieve this by sequencing installation, removing after fittings and reinstalling after painting is completed, providing protection, cleaning original hardware finish, or other approved means.

M. Latch and Bolt: Install latch and bolt to automatically engage in keeper, whether activated by closer or manual push. In no case shall additional manual pressure be required to engage latch or bolt in keeper.

N. Closers:
1. Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

2. Carefully adjust closers to operate noiselessly and evenly.

3. Have manufacturer's representative regulate closers prior to Contracting Officer's acceptance of building.

3.03 ADJUST AND CLEAN

A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace items which cannot be adjusted to operate freely and smoothly as intended for application made.

B. Clean adjacent surface soiled by hardware installation.

C. Final Adjustment:

1. Clean operating items as necessary to restore proper function and finish of hardware and doors.

2. Adjust door control devices to compensate for final operation of ventilating equipment.

3. Lubricate bearings surface of moving parts and adjust latching and holding devices for proper function.

4. Test keys in every lock for proper operation and conformance with keying system.

3.04 HARDWARE GROUPS

A. Door Hardware:

MANUFACTURER LIST

CATEGORY	VENDOR NAME	MFG
HINGE	BY McKINNEY PRODUCTS COMPANY	MCK
KICKPLATE BOTH SIDES	BY ROCKWOOD MANUFACTURING CO.	ROC
PULL PLATE	BY ROCKWOOD MANUFACTURING CO.	ROC
PUSH PLATE	BY ROCKWOOD MANUFACTURING CO.	ROC
WALL OR FLOOR STOP	BY ROCKWOOD MANUFACTURING CO.	ROC
WALL STOP (CONVEX)	BY ROCKWOOD MANUFACTURING CO.	ROC
CONCEALED O.H.STOP	BY SARGENT MANUFACTURING COMPANY	SAR
DOOR CLOSER	BY SARGENT MANUFACTURING COMPANY	SAR
ENTRY LOCK	BY SARGENT MANUFACTURING COMPANY	SAR
MORTISE DEADLOCK	BY SARGENT MANUFACTURING COMPANY	SAR

HW GROUP - 001

DOOR 101:

3.0 EA	HINGE	TA2314 4.5 X 4.5 US26D	MCK
1.0 EA	ENTRY LOCK	10XG24 LL US26D WBS	SAR
		KEY TO EXISTING MASTER KEY SYSTEM.	
1.0 EA	DOOR CLOSER	1431 O EN	SAR
1.0 EA	WALL OR FLOOR STOP	409/441 626 AS REQUIRED	ROC

HW GROUP - 002

DOOR 102:

3.0 EA	HINGE	TA2314 4.5 X 4.5 US26D	MCK
1.0 EA	MORTISE DEADLOCK	4878 US26D	SAR
		KEY TO EXISTING MASTER KEY SYSTEM.	
1.0 EA	PULL PLATE	110 X 70C 630	ROC
1.0 EA	PUSH PLATE	70C 630	ROC
1.0 EA	DOOR CLOSER	1431 H EN	SAR
2.0 EA	KICKPLATE BOTH SIDES	K1050 10" X 2" LDW 630 B4E CSK	ROC
1.0 EA	WALL STOP (CONVEX)	406 626	ROC
		MARBLE THRESHOLD BY OTHER SECTION.	

HW GROUP - 003

DOOR 103:

3.0 EA	HINGE	TA2314 4.5 X 4.5 US26D	MCK
1.0 EA	MORTISE DEADLOCK	4878 US26D	SAR
		KEY TO EXISTING MASTER KEY SYSTEM.	
1.0 EA	PULL PLATE	110 X 70C 630	ROC
1.0 EA	PUSH PLATE	70C 630	ROC
1.0 EA	DOOR CLOSER	1431 H EN	SAR
2.0 EA	KICKPLATE BOTH SIDES	K1050 10" X 2" LDW 630 B4E CSK	ROC
1.0 EA	CONCEALED O.H.STOP	1538 S US26D (32-5/8" - 40")	SAR
		MARBLE THRESHOLD BY OTHER SECTION.	

END OF SECTION

SECTION 08810 - GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Plastic films.

1.02 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Product Data on Plastic Film Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

1.03 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Plastic Films.

1. Product:

a. Basis of Design: Eastman LLumar; Glacier NRM55 PS4, matte frost decorative window film.

b. Substitutions: Section 08800 - Special Provisions.

2. Characteristics:

a. Percent Visible Light Transmittance: 62.

b. Percent Diffuse Visible Light Reflectance (exterior): 36.

c. Privacy Film Rating: 9.

d. Film Thickness (inches): .004.

e. Film Construction: Polyester.

PART 3 EXECUTION

3.01 INSTALLATION - PLASTIC FILM

A. Install plastic film with adhesive, applied in accordance with film manufacturer's instructions.

B. Place without air bubbles, creases or visible distortion.

C. Install film tight to perimeter of glass and carefully trim film with razor sharp knife. Provide 1/16 inch (1.6 mm) to 1/8 inch (3.2 mm) gap at perimeter of glazed panel unless otherwise required. Do not score the glass.

3.02 CLEANING

A. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with film manufacturer's written recommendations.

END OF SECTION

SECTION 09110- NON-STRUCTURAL METAL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal partition framing.

B. Framing accessories.

1.02 RELATED REQUIREMENTS

A. Section 07210 - Thermal Insulation: Acoustic insulation.

B. Section 07920 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

C. Section 09260 - Gypsum Board Assemblies: Execution requirements for anchors for attaching work of this section.

1.03 REFERENCE STANDARDS

A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members; 2016, with Supplement (2020).

B. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing; 2020.

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

D. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2022.

1.04 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience and approved by manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Framing, Connectors, and Accessories:

1. CEMCO: www.cemcosteel.com/#sle.
2. ClarkDietrich: www.clarkdietrich.com/#sle.
3. MarinoWARE: www.marinoware.com/#sle.
4. SCAFCO Corporation: www.scafco.com/#sle.
5. The Steel Network, Inc: www.SteelNetwork.com/#sle.

2.02 FRAMING MATERIALS

A. Non-Loadbearing Framing System Components: AISI S220; sheet steel, of size and properties necessary for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf (L/240 at 240 Pa).

1. Studs: C-shaped with flat faces.
2. Runners: U-shaped, sized to match studs.
3. Ceiling Channels: C-shaped.
4. Furring: Hat-shaped sections, minimum depth of 7/8 inch (22 mm).

B. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws, and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.

1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code when evaluated in accordance with AISI S100.
2. Material: ASTM A653/A653M steel sheet, SS Grade 50.
3. Provide components UL-listed for use in UL-listed fire-resistance-rated head of partition joint systems indicated on drawings.

C. Non-Loadbearing Framing Accessories:

1. Fasteners: ASTM C1002 self-piercing self-tapping screws.
2. Anchorage Devices: Powder actuated.

2.03 FABRICATION

A. Fabricate assemblies of framed sections to sizes and profiles required as shown on the Drawings.

B. Fit, reinforce, and brace framing members to suit design requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that rough-in utilities are in proper location.

3.02 INSTALLATION OF STUD FRAMING

A. Extend partition framing to structure..

B. Align and secure top and bottom runners at 24 inches (600 mm) on center UON.

C. Install studs vertically at spacing indicated on drawings.

D. Align stud web openings horizontally.

E. Secure studs to tracks using fastener method. Do not weld.

F. Install double studs at wall openings, door and window jambs, not more than 2 inches (50 mm) from each side of openings.

G. Coordinate erection of studs with requirements of door frames; install supports and attachments.

H. Coordinate installation of bucks, anchors, and blocking with electrical, mechanical, and other work to be placed within or behind stud framing.

I. Furring: Install at spacing and locations shown on drawings. Lap splices a minimum of 6 inches (150 mm).

3.03 TOLERANCES

A. Maximum Variation From True Position: 1/8 inch in 10 feet (3 mm in 3 m).

B. Maximum Variation From Plumb: 1/8 inch in 10 feet (3 mm in 3 m).

END OF SECTION

SECTION 09260 - GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.

B. Cementitious backing board.

C. Gypsum wallboard.

D. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

A. Section 07920 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

B. Section 09110 - Non-Structural Metal Framing.

1.03 REFERENCE STANDARDS

A. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2018.

B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2019.

C. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017 (Reapproved 2022).

D. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2023.

E. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2019.

F. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units; 2022, with Editorial Revision (2023).

G. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.

H. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.

I. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.

J. ASTM E413 - Classification for Rating Sound Insulation; 2022.

K. GA-216 - Application and Finishing of Gypsum Panel Products; 2021.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the installation of gypsum board assemblies with size, location, and installation of service utilities.

1.05 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Product Data:

1. Provide data on gypsum board, accessories, joint finishing system, and cementitious backing board.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on nonwicking supports, in accordance with manufacturer's recommendations.

B. Store metal products to prevent corrosion.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

1. See PART 3 for finishing requirements.

B. Interior Partitions: Provide completed assemblies as indicated on the drawings.

2.02 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:

1. CertainTeed Corporation: www.certainteed.com/#sle.

2. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.

3. Gold Bond Building Products, LLC provided by National Gypsum Company : www.goldbondbuilding.com/#sle.

4. USG Corporation: www.usg.com/#sle.

B. Gypsum Wallboard: Type X paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut; tapered long edges.

1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.

2. Thickness:

   a. Vertical Surfaces: 5/8 inch (16 mm).

   b. Ceilings: 5/8 inch (16 mm).

3. Mold-Resistant, Paper-Faced Products:

   a. CertainTeed Corporation; M2Tech 5/8" Type X Moisture & Mold Resistant Drywall: www.certainteed.com/#sle.

   b. Georgia-Pacific Gypsum; ToughRock Fireguard X Mold-Guard: www.gpgypsum.com/#sle.

   c. Gold Bond Building Products, LLC provided by National Gypsum Company; Gold Bond XP Fire-Shield Gypsum Board: www.goldbondbuilding.com/#sle.

   d. USG Corporation; Sheetrock Brand Mold Tough Firecode SCX Panels 5/8 in. (15.9 mm): www.usg.com/#sle.

C. Backing Board for Wet Areas: One of the following products:

1. Application: Surfaces behind tile in wet areas as indicated on the drawings.

2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.

3. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.

   a. Thickness: 5/8 inch (16 mm).

   b. Products:

      1) Custom Building Products; Wonderboard: www.custombuildingproducts.com/#sle.

      2) PermaBASE Building Products, LLC provided by National Gypsum Company; PermaBase Cement Board: www.goldbondbuilding.com/#sle.

      3) USG Corporation; Durock: www.usg.com/#sle.

2.03 GYPSUM BOARD ACCESSORIES

A. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant; see Section 07920.

B. Finishing Accessories: ASTM C1047, extruded aluminum alloy (6063 T5) or galvanized steel sheet ASTM A924/A924M G90, unless noted otherwise.

1. Types: As detailed or required for finished appearance.

2. Products:

a. Phillips Manufacturing Co; Zinc Control Joint No. 093: www.phillipsmfg.com/#sle.

b. Trim-tex, Inc; Tear Away L-bead: www.trim-tex.com/#sle.

c. USG: Beadex Paper faced Trim B1XW corner reinforcement.

C. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Cementitious Backing Board: Install over steel framing members where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

3.03 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as follows:

1. Not more than 30 feet (10 meters) apart on walls and ceilings over 50 feet (16 meters) long.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.04 JOINT TREATMENT

A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.

B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:

1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.

2. Level 3: Walls to receive textured wall finish.

3. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.

4. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.

C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.

1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).

3.05 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet (3 mm in 3 m) in any direction.

3.06 PROTECTION

A. Protect installed gypsum board assemblies from subsequent construction operations.

END OF SECTION

SECTION 09300 - TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for floor applications.

B. Tile for wall applications.

C. Cementitious backer board as tile substrate.

D. Stone thresholds.

E. Tile trim.

F. Setting, grout, and accessory materials.

1.02 RELATED REQUIREMENTS

A. Section 07920 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

1.03 REFERENCE STANDARDS

A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2017 (Reaffirmed 2022).

B. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar; 2017.

C. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar; 1999 (Reaffirmed 2021).

D. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship; 2019.

E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive; 2019.

F. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 2021.

G. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy; 1999 (Reaffirmed 2019).

H. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (Reaffirmed 2019).

I. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 1999 (Reaffirmed 2019).

J. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 2017 (Reaffirmed 2022).

K. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2018.

L. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar; 1999 (Reaffirmed 2019).

M. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2005 (Reaffirmed 2021).

N. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar; 2020.

O. ANSI A108.20 - American National Standard Specifications for Exterior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs; 2020.

P. ANSI A118.1 - American National Standard Specifications for Dry-Set Cement Mortar; 2019.

Q. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive; 2021.

R. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2019.

S. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation; 2014 (Reaffirmed 2019).

T. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2022.

U. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products; 2018 (Reapproved 2023).

V. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2024.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by affected installers.

1.05 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Shop Drawings: Indicate tile layout, perimeter conditions, junctions with dissimilar materials, control and expansion joints, ceramic accessories, and setting details.

D. Samples: Mount tile and apply grout on two plywood panels, minimum 18 by 18 inches (457 by 457 mm) in size illustrating pattern, color variations, and grout joint size variations.

E. Installer's Qualification Statement.

1.06 QUALITY ASSURANCE

A. Installer Qualifications:

1. Company specializing in performing tile installation, with minimum of five years of documented experience.

PART 2 PRODUCTS

2.01 TILE

A. Ceramic Wall Tile: ANSI A137.1 standard grade.

1. Size: 6 inches by 6 inches.

2. Color(s) / Surface Finish(es): To be selected by Architect from manufacturer's standard range.

3. Trim Units: Matching bullnose, cove, and base shapes in sizes coordinated with field tile.

4. Product:

a. Dal-Tile Corporation; Classic Colorwheel Collection: www.daltile.com/#sle.

b. Substitutions: Section 08800 - Special Provisions.

B. Porcelain Mosaic Tile: ANSI A137.1 standard grade.

1. Moisture Absorption: 0 to 0.5 percent as tested in accordance with ASTM C373.

2. Size: 2 inches by 2 inches.

3. Thickness: 1/4 inch (51 mm).

4. Color(s): To be selected by Architect from manufacturer's standard range.

5. Products:

   a. Dal-Tile Corporation; Keystones Colorbody Porcelain: www.daltile.com/#sle.

   b. Substitutions: Section 08800 - Special Provisions.

2.02 TRIM AND ACCESSORIES

A. Ceramic Trim: Matching bullnose and cove base shapes in sizes coordinated with field tile.

1. Applications:

   a. Open Edges: Bullnose.

   b. Floor to Wall Joints: Cove base.

2. Manufacturers: Same as for tile.

B. Thresholds: 2 inches (51 mm) wide by full width of wall or frame opening; beveled edge on both long edges; without holes, cracks, or open seams.

1. Thickness: 1/2 inch (12.7 mm).

2. Material: Marble, honed finish.

3. Color and Pattern: As selected by Architect..

2.03 SETTING MATERIALS

A. Provide setting, grout materials, and accessory materials from same manufacturer.

B. Manufacturers:

1. ARDEX Engineered Cements: www.ardexamericas.com/#sle.

2. Custom Building Products: www.custombuildingproducts.com/#sle.

3. LATICRETE International, Inc: www.laticrete.com/#sle.

4. Mapei Corporation..

5. Substitutions: Section 08800 - Special Provisions.

C. Dry-Set Portland Cement Mortar Bond Coat: ANSI A118.1.

2.04 GROUTS

A. Provide setting and grout materials from same manufacturer.

B. Epoxy Grout: ANSI A118.3 chemical resistant and water-cleanable epoxy grout.

1. Applications: Floor and wall tile.

2. Color(s): As selected by Architect from manufacturer's full line.

2.05 ACCESSORY MATERIALS

A. Waterproofing and Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.10 and ANSI A118.12.

1. Crack Resistance: No failure at 1/8 inch (3.2 mm) gap, minimum.

2. Fluid or Trowel Applied Type:

a. Material: Synthetic rubber or Acrylic.

b. Thickness: 20 mils (0.5 mm), maximum.

c. Products:

1) Ardex 8 + 9 Rapid Waterproofing and Crack Isolation Compound.

2) RedGard Waterproofing and Crack Prevention Membrane by Custom Building Products.

3) Hydro Ban by Laticrete International, Inc.

4) Mapelastic AquaDefense by Mapei Corporation.

5) Substitutions: Section 08800 - Special Provisions.

B. Backer Board: Cementitious type complying with ANSI A118.9; refert to Section 09 21 16.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

3.03 INSTALLATION - GENERAL

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.20, manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square and external angles bullnosed.

F. Install thresholds where indicated.

G. Sound tile after setting. Replace hollow sounding units.

H. Keep control and expansion joints free of mortar, grout, and adhesive.

I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

J. Grout tile joints unless otherwise indicated.

K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.

3.05 INSTALLATION - WALL TILE

A. Over cementitious backer units on studs, install in accordance with TCNA (HB) Method W244, using membrane at toilet rooms.

3.06 CLEANING

A. Clean tile and grout surfaces.

3.07 PROTECTION

A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

SECTION 09510 - ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

1.02 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

B. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.

C. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023b.

E. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2023.

F. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth; 2024.

G. UL 723 - Surface Burning Characteristic of Building Materials.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.

B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Shop Drawings: Indicate grid layout and related dimensioning, method of attaching hangers to structure and items penetrating finished ceiling.

1. Minimum Drawing Scale: 1/8 inch = 1 foot.

C. Product Data: Provide data on suspension system components and acoustical units.

1.05 QUALITY ASSURANCE

A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.06 FIELD CONDITIONS

A. Maintain temperature and humidity ranges that meet product warranty requirements prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Source Limitations: Obtain each type of acoustical ceiling system from from single manufacturer.

B. Acoustic Tiles/Panels:

1. Basis of Design: Armstrong World Industries, Inc.; Ultima: www.armstrongceilings.com/#sle.

2. Substitutions: Section 08800 - Special Provisions.

C. Suspension Systems:

1. Same as for acoustical units.

2.02 PERFORMANCE REQUIREMENTS

A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Smoke-Developed Index: 50 or less.

2. Flame-Spread Index: Class A according to ASTM E 1264.

B. Seismic Performance: Ceiling systems designed to withstand the effects of earthquake motions determined according to ASCE 7 for Seismic Design Category E (Honolulu).

2.03 ACOUSTICAL UNITS

A. Acoustical Panels: Painted mineral fiber, with the following characteristics:

1. Classification: ASTM E1264 Type III.

2. Size: 24 by 48 inches (610 mm by 1220 mm).

3. Thickness: 3/4 inch (19 mm).

4. Panel Edge: Beveled Tegular.

5. Suspension System: Exposed grid.

2.04 SUSPENSION SYSTEM(S)

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.

B. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.

1. Materials:

a. Steel Grid: ASTM A653/A653M, G60 coating hot-dipped galvanized, unless otherwise indicated.

C. Exposed Suspension System: Hot-dipped galvanized steel grid with cap.

1. Application(s): Seismic.

2. Structural Classification: Heavy-duty, when tested in accordance with ASTM C635/C635M.

3. Profile: Tee; 15/16 inch (24 mm) face width.

4. Finish: Baked enamel.

5. Color: White.

6. Basis-of-Design Product: Armstrong Prelude.

2.05 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gauge, 0.08 inch (2 mm) galvanized steel wire.

C. Hold-Down Clips: Manufacturer's standard clips to suit application.

D. Seismic Clips: Manufacturer's standard clips for seismic conditions and to suit application.

E. Perimeter Moldings: Same metal and finish as grid.

1. Angle Molding: L-shaped, for mounting at same elevation as face of grid.

2. Acoustical Sealant for Perimeter Moldings: Non-hardening, non-skinning, for use in conjunction with suspended ceiling system.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 PREPARATION

A. Install after major above-ceiling work is complete.

B. Coordinate the location of hangers with other work.

3.03 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

C. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.

1. Use longest practical lengths.

D. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

G. Support fixture loads using supplementary hangers located within 6 inches (152 mm) of each corner, or support components independently.

H. Do not eccentrically load system or induce rotation of runners.

3.04 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Lay directional patterned units as indicated on Drawings.

D. Fit border trim neatly against abutting surfaces.

E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

F. Cutting Acoustical Units:

1. Make field cut edges of same profile as factory edges.

G. Where round obstructions occur, provide preformed closures to match perimeter molding.

H. Install hold-down clips on panels within 20 ft (6 m) of an exterior door.

3.05 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet (3 mm in 3 m).

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

3.06 CLEANING

A. Clean surfaces.

B. Replace damaged or abraded components.

END OF SECTION

SECTION 09650 - RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient tile flooring.

B. Resilient base.

C. Installation accessories.

1.02 RELATED REQUIREMENTS

A. Section 03540 - Cast Underlayment.

1.03 REFERENCE STANDARDS

A. ASTM F1861 - Standard Specification for Resilient Wall Base; 2021.

1.04 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.

D. Verification Samples: Submit two samples, 6 by 6 inch (152 by 152 mm) in size illustrating color and pattern for each resilient flooring product specified.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store all materials off of the floor in an acclimatized, weather-tight space.

PART 2 PRODUCTS

2.01 TILE FLOORING

A. Stone Polymer Composite Tile: Luxury vinyl flooring with core consisting of limestone, polyvinyl chloride, and plasticizers, with transparent or translucent wear layer; acoustic interlayer, or backing.

1. Manufacturers:

a. Basis of Design: Metroflor; Inception.

b. Substitutions: Section 08800 - Special Provisions.

2. Tile Size: 8.66 x 59.45 in. (220 x 1,510 mm)

3. Wear Layer Thickness: 0.020 inch (0.50 mm).

4. Total Thickness: 0.205 inch (5.2 mm) nominal.

5. Color: As indicated on drawings or as selected by Architect.

2.02 RESILIENT BASE

A. Resilient Base: ASTM F1861, Type TS, rubber, vulcanized thermoset.

1. Manufacturers:

a. Basis of Design: Flexco Corporation; Wallflowers: www.flexcofloors.com/#sle.

b. Substitutions: Section 08800 - Special Provisions.

2. Height: 4 inches (100 mm).

3. Thickness: 0.125 inch (3.2 mm).

4. Finish: Satin.

5. Length: Roll.

6. Color: As indicated on drawings or as selected by Architect.

7. Style:

a. For Use with Resilient Floor Coverings: Cove (with top-set toe).

2.03 ACCESSORIES

A. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.

B. Adhesive for Base: Excelsior WB-600 Acrylic Wall Base Adhesive.

C. Moldings, Transition and Edge Strips: Same material as flooring or as shown on the drawings.

1. Manufacturers:

a. Mannington Commercial: www.manningtoncommercial.com#sle.

b. Johnsonite / Tarkett: https://commercial.tarkett.com/en_US/brand/johnsonite.

c. Substitutions: Section 08800 - Special Provisions.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

B. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.

C. Prohibit traffic until filler is fully cured.

D. Clean substrate.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install in accordance with manufacturer's written instructions.

3.04 INSTALLATION - TILE FLOORING

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

3.05 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches (45 mm) between joints.

B. Install base on solid backing. Bond tightly to wall and floor surfaces.

3.06 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 09911 - EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:

D. Do Not Paint or Finish the Following Items:

1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.

2. Items indicated to receive other finishes.

3. Items indicated to remain unfinished.

4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.

5. Floors, unless specifically indicated.

6. Glass.

7. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 09912 - Interior Painting.

1.03 REFERENCE STANDARDS

A. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

B. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

C. SSPC-SP 2 - Hand Tool Cleaning; 2018.

D. SSPC-SP 13 - Surface Preparation of Concrete; 2018.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:

1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").

2. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.

1. Where sheen is specified, submit samples in only that sheen.

1.05 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes from the same manufacturer to the greatest extent possible.

B. Paints:

1. Sherwin-Williams Company: www.sherwin-williams.com/#sle.

C. Primer Sealers: Same manufacturer as top coats.

D. Substitutions: See Section 016000 - Product Requirements.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.

1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.

2. Supply each paint material in quantity required to complete entire project's work from a single production run.

3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.

B. Colors: As indicated on drawings or as selected by Architect.

2.03 PAINT SYSTEMS - EXTERIOR

A. Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including existing concrete.

1. Two top coats and one coat primer.

2. Top Coat(s): Exterior Latex.

a. Products:

1) Sherwin-Williams Duration Exterior Satin, K33 Series.

3. Top Coat(s) for New Galvanized Metal: Exterior Alkyd Enamel.

a. Products:

1) Sherwin-Williams Pro Industrial Waterbased Alkyd Urethane Enamel, B53-1050 Series (Gloss or Semi-Gloss).

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.

1. Exterior Latex for existing painted surfaces.

a. Products:

1) Exterior Latex Primer, B42W8041.

2. Primer for new galvanized metal:

a. Product:

1) Sherwin-Williams ProCryl B66-300 Series.

PART 3 EXECUTION

3.01 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

F. Concrete:

1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

2. Clean surfaces with pressurized water. Use pressure range of 1,500 to 4,000 psi (10,350 to 27,580 kPa) at 6 to 12 inches (150 to 300 mm). Allow to dry.

3. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.

G. Galvanized Surfaces:

1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

2. Prepare surface according to SSPC-SP 2.

H. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.02 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance.

D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

E. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

END OF SECTION

SECTION 09912 - INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.

D. Do Not Paint or Finish the Following Items:

1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.

2. Items indicated to receive other finishes.

3. Items indicated to remain unfinished.

4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.

5. Floors, unless specifically indicated.

6. Glass.

7. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 09911 - Exterior Painting.

1.03 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; Current Edition.

B. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2020.

C. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

D. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

E. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

F. SSPC-SP 13 - Surface Preparation of Concrete; 2018.

1.04 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:

1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").

2. Cross-reference to specified paint system products to be used in project; include description of each system.

C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.

1. Where sheen is specified, submit samples in only that sheen.

D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. Extra Paint and Finish Materials: 1 gal (4 L) of each color; from the same product run, store where directed.

2. Label each container with color in addition to the manufacturer's label.

1.05 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Provide lighting level of 80 fc (860 lux) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis-of-Design Manufacturer: In compliance with requirements, provide Sherwin-Wiliams.

B. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.

C. Primer Sealers: Same manufacturer as top coats.

D. Substitutions: Section 08800 - Special Provisions.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.

1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.

2. Supply each paint material in quantity required to complete entire project's work from a single production run.

3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content:

1. Provide paints and finishes that comply with the most stringent requirements specified in the following:

a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.

b. Architectural coatings VOC limits of the State in which the Project is located.

2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

C. Flammability: Comply with applicable code for surface burning characteristics.

D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

E. Colors: As indicated on drawings or as selected by Architect.

2.03 PAINT SYSTEMS - INTERIOR

A. Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, wood, plaster, and metal.

1. Two top coats and one coat primer.

2. Top Coat(s): Institutional Low Odor/VOC Interior Latex.

a. Products:

1) Sherwin-Williams ProMar 200 Zero VOC Interior Latex Flat, B30W2651.

2) Sherwin-Williams ProMar 200 Zero VOC Interior Latex Eg-Shel, B20-2600 Series.

3) Sherwin-Williams ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31-2600 Series.

B. Interior Surfaces to be Painted: Shop primed steel.

1. Top Coat(s): Urethane.

a. Products:

1) Sherwin-Williams Pro Industrial B53 1150, Semi-Gloss.

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.

1. Interior Latex Primer for New Gypsum Board:

a. Products:

1) Sherwin-Williams PVA Interior Latex Primer, B28w8030.

2. Interior Latex Primer for Existing Wood, Concrete, Plaster, and Metal:

a. Products:

1) Sherwin-Williams PrepRite ProBlock Latex Primer.

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been adequately prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. Test shop-applied primer for compatibility with subsequent cover materials.

E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:

1. Gypsum Wallboard: 12 percent.

2. Plaster and Stucco: 12 percent.

3. Masonry, Concrete, and Concrete Masonry Units: 12 percent.

4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Concrete:

1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

2. Clean surfaces with pressurized water. Use pressure range of 1,500 to 4,000 psi (10,350 to 27,580 kPa) at 6 to 12 inches (150 to 300 mm). Allow to dry.

3. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.

F. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

G. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high-alkali surfaces.

H. Ferrous Metal:

1. Solvent clean according to SSPC-SP 1.

2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 Commercial Blast Cleaning. Protect from corrosion until coated.

I. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

E. Sand wood and metal surfaces lightly between coats to achieve required finish.

F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

END OF SECTION

SECTION 10170 - PLASTIC TOILET COMPARTMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Solid plastic toilet compartments.

1.02 REFERENCE STANDARDS

A. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth; 2024.

1.03 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Product Data: Provide data on panel construction, hardware, and accessories.

C. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall supports, door swings.

D. Samples: Submit two samples of partition panels, 2 by 3 inch (50.8 by 76.2 mm) in size for each panel finish, color, and sheen.

1.04 QUALITY ASSURANCE

A. Toilet Compartment Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.

B. Toilet Compartment Installer Qualifications: Company specializing in performing the type of work specified with minimum five years experience and approved by manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Solid Plastic Toilet Compartments:

1. Scranton Products; Hiny Hiders Partitions, shower and dressing compartments: www.scrantonproducts.com/#sle.

2. Substitutions: Section 08800 - Special Provisions.

2.02 PLASTIC TOILET COMPARTMENTS

A. Solid Plastic Toilet Compartments: Factory fabricated doors, pilasters, and divider panels made of solid molded high density polyethylene (HDPE), tested in accordance with NFPA 286; floor-mounted headrail-braced.

1. Color: As indicated on Drawings or as selected by Architect.

2. Panels:

    a. Thickness: 1 inch (25 mm).

    b. Height: 76 inch (1930 mm).

    c. Mounted to pilasters with continuous brackets.

3. Pilasters:

    a. Thickness: 1 inch (25 mm).

    b. Width: As required to fit space; minimum 3 inch (76 mm).

    c. Height: 82 inch (2083 mm).

    d. Fastened to panels with continuous brackets.

2.03 ACCESSORIES

A. Pilaster Shoes: Stainless steel, satin finish, 3 inches (76 mm) high; concealing floor fastenings.

B. Headrails: Heavy-duty extruded aluminum; accommodates curtain hooks; anti-grip design, clear anodized finish, fastened to headrail brackets and top of pilaster using stainless steel tamper-resistant Torx head screws.

C. Wall and Pilaster Brackets: Anodized aluminum; manufacturer's standard type for conditions indicated on drawings.

D. Headrail Brackets: 20 gage stainless steel.

E. Attachments, Screws, and Bolts: Stainless steel, tamper proof type.

F. Curtains: White, non-PVC; 42 inches wide by 72 inches high, hung with aluminum curtain hooks with self-lubricating Delrin slides.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.

B. Maintain 3/8 inch to 1/2 inch (9 mm to 13 mm) space between wall and panels and between wall and end pilasters.

C. Attach panel brackets securely to walls using anchor devices.

D. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.

END OF SECTION

SECTION 10440 - PANEL SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Panel signage.

1.02 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.03 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Product Data: Manufacturer's product literature for each type of panel sign, indicating styles, font, foreground and background colors, locations, and overall dimensions of each sign.

C. Shop Drawings:

1. Include dimensions, locations, elevations, materials, text and graphic layout, attachment details, and schedules.

D. Samples: Submit two samples of each type of sign, of size similar to that required for project, indicating sign style, font, and method of attachment.

E. Manufacturer's qualification statement.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Package signs as required to prevent damage before installation.

B. Store tape adhesive at normal room temperature.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Panel Signage: To match existing in facility.

1. Best Sign Systems, Inc: www.bestsigns.com/#sle.

2. Mohawk Sign Systems, Inc: www.mohawksign.com/#sle.

3. Vista System LLC: www.vistasystem.com/#sle.

4. Substitutions: Section 08800 - Special Provisions.

2.02 REGULATORY REQUIREMENTS

A. Accessibility Requirements: Comply with ADA Standards and ICC A117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most restrictive requirements.

2.03 PANEL SIGNAGE

A. Panel Signage:

1. Application: Interior directional and information signs.

2. Description: Flat signs with engraved panel media, tactile characters.

3. Total Thickness: 1/8 inch (3 mm).

4. Color and Font, unless otherwise indicated:

a. Character Font: Helvetica, Arial, or other sans serif font.

b. Character Case: Upper and lower case (title case).

c. Background Color: As scheduled.

d. Character Color: Contrasting color.

5. Material: Laminated colored plastic engraved through face to expose core as background color.

6. Tactile Letters: Raised 1/32 inch minimum.

2.04 ACCESSORIES

A. Tape Adhesive: Double-sided tape, permanent adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

B. Notify Architect if conditions are not suitable for installation of signs; do not proceed until conditions are satisfactory.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install with horizontal edges level.

C. Locate panel signs and mount at heights indicated on drawings and in accordance with ADA Standards and ICC A117.1.

D. Protect from damage until Substantial Completion; repair or replace damaged items.

END OF SECTION

SECTION 10810 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Commercial toilet accessories.

1.02 REFERENCE STANDARDS

A. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2022.

B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.

C. ASTM C1036 - Standard Specification for Flat Glass; 2021.

D. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2024.

E. ASTM D4802 - Standard Specification for Poly(Methyl Methacrylate) Acrylic Plastic Sheet; 2016.

1.03 SUBMITTALS

A. See Section 01300 for submittal procedures.

B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Commercial Toilet Accessories:

1. Georgia-Pacific Professional: www.gppro.com/#sle.

2. Bobrick: www.bobrick.com.

3. Substitutions: Section 08800 - Special Provisions.

2.02 MATERIALS

A. Accessories - General: Factory assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.

B. Stainless Steel Sheet: ASTM A666, Type 304.

C. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.

D. Acrylic Plastic Sheet: ASTM D4802.

E. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

F. Fasteners, Screws, and Bolts: Hot dip galvanized; security type.

2.03 FINISHES

A. Stainless Steel: Satin finish, unless otherwise noted.

2.04 COMMERCIAL TOILET ACCESSORIES

A. Paper Towel Dispenser: Electric, roll paper type.

1. Cover: Plastic.

2. Paper Discharge: Touchless automatic.

3. Capacity: 8 inch diameter roll.

4. Mounting: Surface mounted.

5. Power: AC power adapter.

6. Refill Indicator: Translucent sides.

7. Basis of Design Product:

a. Georgia Pacific Professional; enMotion Impulse, 59437A: www.gppro.com/#sle..

B. Waste Receptacle: Recessed, stainless steel, seamless lower door for access to container, with tumbler lock, reinforced panel full height of door, continuously welded bottom pan and seamless exposed flanges.

1. Liner: Removable, heavy-duty vinyl liner, attached at a minimum of four points with stainless steel grommets and hooks.

2. Minimum capacity: 12 gallons (45 liters).

3. Basis of Design Product:

a. Bobrick; B-3644.

C. Automated Soap Dispenser: Liquid soap dispenser, wall-mounted, with plastic cover and window to gauge soap level.

1. Minimum Capacity: 1000 mL.

2. Overall Dimensions: 6.45 inches wide x 11.74 inches high x 3.95 inches deep.

3. Power: Battery operated.

4. Basis of Design Product:

    a. Georgia Pacific Professional; enMotion 52058: www.gppro.com/#sle. .

D. Mirrors: Stainless steel welded frame glass mirror.

1. Size: 18 inches by 30 inches minimum, as selected by Architect.

2. Frame: 0.05 inch (1.3 mm)angle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.

3. Fixed Tilt Mirrors: Minimum 3 inches (75 mm) tilt from top to bottom.

4. Basis of Design Product:

    a. Bobrick; Tilt Mirror with Stainless Steel Frame, B-293.

E. Seat Cover Dispenser: Stainless steel, surface-mounted, reloading by concealed opening at base, tumbler lock.

1. Minimum capacity: 250 seat covers.

2. Basis of Design Product:

    a. Bobrick; Classic Series, B-221 .

F. Grab Bars: Stainless steel, smooth surface.

1. Standard Duty Grab Bars:

    a. Push/Pull Point Load: 250 pound-force (1112 N), minimum.

    b. Dimensions: 1-1/4 inch (32 mm) outside diameter, 18 gauge, concealed flange mounting.

    c. Finish: Satin.

    d. Length and Configuration: As indicated on drawings.

    e. Basis of Desgn Product:

        1) Bobrick; B-5806 Series..

G. Sanitary Napkin Disposal Unit: Stainless steel, surface-mounted, self-closing door, locking bottom panel with full-length stainless steel piano-type hinge, removable receptacle.

1. Basis of Design Product:

    a. Bobrick; Contura Series, B-270..

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

C. For electrically-operated accessories, verify that electrical power connections are ready and in the correct locations.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.

B. Install plumb and level, securely and rigidly anchored to substrate.

C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

3.04 PROTECTION

A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

DIVISION 15 - MECHANICAL

SECTION 15000 - MECHANICAL GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. This Section shall apply to all phases of work indicated in contract drawings, or required to provide for a complete installation of mechanical systems included in this project.

1.02 GENERAL DESCRIPTION

A. This section applies to all Sections of Division 15 - Mechanical, of this project specification, unless specified otherwise in the individual sections.

B. Electrical Requirements: Provide electrical components of mechanical equipment and systems such as motors, controllers, contactors, starters, and disconnects under Division 15 - Mechanical, as specified herein, and as necessary for complete and operable systems. Provide interconnecting wiring for components of packaged equipment as an integral part of the equipment. Interconnecting power wiring and conduit for field erected equipment shall be as specified in DIVISION 16 - Electrical. Control wiring rated at 120 volts or less and conduit shall be as specified in Division 15 - Mechanical. Extended voltage range motors will not be permitted. Motor control equipment forming part of motor control centers, assemblies, or other power sources to mechanical equipment shall conform to Division 16 - Electrical.

1.03 GENERAL REQUIREMENTS

A. Provide all work described by the drawings and specifications, including work specified and not indicated, and work indicated and not specified.

B. Completely examine the drawings and specifications and report to the Contracting Officer any error, inconsistency, omission, or error in the work of others affecting the mechanical work. If the Contractor proceeds with the work affected without instructions from the Contracting Officer, he shall correct or pay for any resultant damage or defect.

C. Provide all supplementary or miscellaneous items, details, appurtenances and devices incidental to or necessary for a complete operating system where work required is not specifically indicated or specified.

D. Maintain at the job site one copy of all drawings, specifications, addenda, approved shop drawings, change orders, and other modification, in good order and marked to record all changes made during construction. These documents shall be made available to the Contracting Officer.

E. The Contractor shall schedule a date and time with the Contracting

Officer, a minimum of 7 days in advance, for all testing.

F. Reference to standards and publications are intended to be the latest revision of the standard or publication. In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, “shall” had been substituted for “should” wherever it appears. Interpret references in these publications to the “authority having jurisdiction” or words of similar meaning, to mean the Contracting Officer.

G. The words “or approved equal”, or other words of similar intent or meaning, means that the equipment or material to be substituted is subject to review by the Contracting Officer and must be acceptable to the Contracting Officer.

1.04 QUALITY ASSURANCE

A. County, City, State, Federal and Industry Regulations: Comply with the City & County of Honolulu building, fire and plumbing codes; State of Hawaii Department of Health and Department of Labor and Industrial Relations Regulations; U.S. Occupational Safety and Health Act; U.S. Environmental Protections Agency Regulations; National Fire Protection Association Codes; and other laws, codes and regulations, and ordinances and manufacturer’s recommendations and requirements, when applicable and as referenced in these specifications. The Contractor shall schedule and pay for all inspections required by any government agency.

B. Permits: Obtain all permits and pay all fees required by the applicable government agencies.

C. Warranty: Warrant all equipment and material furnished, and workmanship of the mechanical systems for a period of one year starting only after 30 consecutive days of trouble free operation after system acceptance. Submit the manufacturer’s warranty documents for all equipment furnished to the State. The warranty shall cover all labor and material required to correct, replace, or repair any defective item at no cost to the State.

D. Material and Equipment Qualifications: Provide materials and equipment that are standard products of manufacturers regularly engaged in the manufacture of such products, which are of a similar material, design and workmanship. Standard products shall have been in satisfactory commercial or industrial use for 2 years prior to award of this contract. The 2-year use shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been for sale on the commercial market through advertisements, manufacturer’s catalogs, or brochures during the 2-year period. Air conditioning equipment to be considered for bid purposes must be a manufacturer that has locally stocked spare parts, representative, and support of a service organization reasonably convenient to the site of installation which has serviced manufacturer’s unit of comparable type,

size and capacity installed and operating satisfactorily in the State of Hawaii for a minimum of two years prior to bid opening. The Contractor shall provide a list of locations in Hawaii with addresses and telephone number when requested by the Contracting Officer. All equipment with local manufacturer's representation shall be purchased thru the local factory authorized distributor. Preference should be given to products made or manufactured in the United States of America.

E. Alternative Qualifications: Products having less than a two-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturer's factory or laboratory tests, can be shown.

F. Service Support: The equipment items shall be supported by service organizations. Submit a certified list of qualified permanent service organizations for support of the equipment which includes their addresses and qualifications. These service organizations shall be reasonably convenient to the equipment installation and able to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

G. Manufacturer's Nameplate: Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of distributing agent will not be acceptable.

1.05 SUBMITTALS

A. Submit in accordance with Section 01330 – Submittal Procedures.

1. Submit 6 copies of each required submittal to the Contracting Officer. Submittals shall include the manufacturer's name, trade name, place of manufacture, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification and paragraph reference, applicable industry, and technical society reference standards, years of satisfactory service, and other information necessary to establish contract compliance of each item the Contractor proposes to be provided. Photographs of existing installations and date submitted in lieu of catalog data are not acceptable and will be returned without review. Partial submittals are not acceptable and will be returned without review.

2. At the time the submittals are submitted, the Contractor shall inform the Contracting Officer, in writing, of any deviation in the shop drawings and other submittals from the requirements of the contract documents.

3. Manufacturer's Catalog Data: Submittals for each manufactured item shall be current manufacturer's descriptive literature of cataloged products, equipment drawings, diagrams, performance and characteristic curves and catalog cuts.

4. Shop Drawings:

   a. Submit drawings a minimum 24 by 36 inches in size, using a minimum scale of 1/8 inch per foot. Include floor plans, section views, wiring diagrams, and installation details of equipment; and equipment spaces identifying and indicating proposed location, layout and arrangement of items of equipment, control panels, accessories, piping, ductwork, and other items that must be shown to ensure a coordinated installation. Indicate locations of items requiring maintenance or inspection. Wiring diagrams shall identify circuit terminals, and indicate the internal wiring for each item of equipment and the interconnection between each item of equipment. Drawings shall indicate adequate clearance for operation, maintenance, and replacement of equipment devices.

   b. Provide a written certification with the shop drawing submittal stating that the Contractor has determined and verified all field measurements, sizes and obstructions, and that he has coordinated the shop drawings with the field conditions and the work of other trades.

5. Manufacturer's Instructions: Where installation procedures or part of installation procedures are required to be in accordance with the manufacturer's instructions, submit printed copies of those instructions prior to installation. Installation of the item shall not proceed until the manufacturer's instructions are received. Failure to submit can be cause for rejection of the equipment or material.

6. Certificates of Compliance: Submit a certificate of compliance from the manufacturer for approval for products, finishes, and equipment as specified in the technical sections whose compliance with organizational standards or specifications is not regulated by an organization using its own listing or label as proof of compliance. The certificate shall identify the manufacturer, the products, equipment, or materials and the referenced standard and shall simply state that the manufacturer certifies that the product conforms to the requirements specified.

7. Reference Standards Compliance: Where equipment or materials are specified to conform to industry and technical society reference standards of organizations such as the American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), National Electrical Manufacturers Association (NEMA), American Society of Mechanical Engineers (ASME), American Gas Association (AGA), American Refrigeration Institute (ARI), and Underwriters Laboratories (UL), submit proof of such conformance. If an organization uses a label or listing to indicate compliance with a particular reference

standard, the label or listing will be acceptable evidence, unless otherwise specified in the individual sections.

8. Independent Testing Organization Certificate: In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing and approved by the Contracting Officer. The certificate shall state that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

9. Operation and Maintenance Manuals: Submit operation and maintenance manuals (5 sets) for each system and principal item of equipment.

10. Operating Instructions: Submit text of posted operating instructions for each system and principal item of equipment as specified in the technical sections.

11. Submit as-built drawings to the Contracting Officer prior to final inspection.

1.06 DELIVERY, STORAGE AND HANDLING

A. Handle, store, and protect equipment and materials to prevent damage before and during installation in accordance with the manufacturer's recommendations, and as approved by the Contracting Officer. Replace damaged or defective items.

1.07 POSTED OPERATING INSTRUCTIONS

A. Provide for each system and principal item of equipment as specified in the technical sections for the use of the operation and maintenance personnel. Include the following in the operating instructions.

B. System Descriptive Information: Wiring diagrams, control diagrams, piping diagrams, control sequence and operating points for each principal system and item of equipment. Post instructions where indicated.

C. Equipment Instructions: Attach to or post adjacent to each principal item of equipment and include directions under glass.

D. Start up, proper adjustment, operating, lubrication and shutdown procedures.

E. Safety precautions, procedure in the event of equipment failure.

F. Other areas as recommended by the manufacturer of each system of item of equipment.

G. Print or engrave, and frame under glass or in an approved laminated plastic. Operating instructions exposed to weather shall be made of

weatherproof materials or provided with a weatherproof enclosure. Operating instructions shall not fade when exposed to sunlight and shall be secured to prevent easy removal.

1.08 SAFETY REQUIREMENTS

A. Equipment Safety: Fully enclose or properly guard, in accordance with DOSH regulations, belts, pulleys, chains, gears, couplings, projecting setscrews, keys, rotating parts, and other power transmission apparatus, located where persons can come in close proximity thereto. Points of operation, in going nip points, and machinery producing flying chips and sparks shall be guarded in accordance with the applicable portions of DOSH regulations. Provide positive means of locking out equipment so that the equipment cannot be accidentally started during maintenance procedures. High-temperature equipment and piping so located as to endanger personnel or create a fire hazard shall be properly guarded or covered with insulation of the type specified. Ensure that access openings leading to equipment are large enough to carry through routine maintenance items such as filters and tools.

B. Warning Sign: Provide a permanent placard or sign at the entrance to confined spaces contained in the equipment. The sign shall warn personnel not to enter the space until the atmosphere inside has been tested and systems have been de-energized.

1.08 INSTRUCTIONS TO PERSONNEL

A. Furnish the services of competent instructors to give full instruction to the designated personnel in the adjustment, operation, and maintenance, including pertinent safety requirements, of each specified equipment or system. Instructors shall be thoroughly familiar with all parts of the installation and shall be trained in operating theory as well as practical operation and maintenance work. Instruction shall be given during the first regular work week after the equipment or system has been accepted and turned over to the State for regular operation. The number of man days (8 hours per day) of instruction furnished shall be as specified in the individual sections. When more than 4 man days of instruction are specified, use approximately half of the time for classroom instruction. Use other time for instruction with the equipment or system. When significant changes or modifications in the equipment or system are made under the terms of the contract, provide additional instruction to acquaint the operating personnel with the changes or modifications.

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. All materials and equipment shall be new and free from defects. Unless otherwise specified, each equipment or material of its kind shall be the standard product of a single manufacturer. All mechanical equipment, fans, pumps and compressor motors shall be sized to not overload

anywhere on the operating curve. Safety factor shall be a minimum of 1.15.

B. All materials and equipment shall be selected and installed so that adequate clearance for maintenance and servicing is provided. Installation and clearance requirements shall meet manufacturer's recommendations.

PART 3 - EXECUTION

3.01 FACTORY PAINTING OF EQUIPMENT

A. Factory applied painting of equipment shall be as specified herein, and provided under each section. Manufacturer’s standard factory painted systems may be provided subject to certification that the factory painting system applied will withstand 125 hours in a salt spray fog test, except that equipment located outdoors shall withstand 500 hours in a salt spray fog test. Salt spray fog test shall be in accordance with ASTM B117. Immediately after completion of the test, the paint shall show no signs of blistering, wrinkling or cracking; no loss of adhesion; and the specimen shall show no signs of rust creepage beyond 0.125 inch on either side of the scratch mark. The film thickness of the factory painted system applied to the equipment shall be not less than the film thickness used on the test specimen. If manufacturer’s standard factory painting system is being proposed for use in lieu of the shop painting systems, submit certifications that the manufacturer’s standard factory painting system conforms to the heat resistance requirement in addition to other certifications.

3.02 FIELD PAINTING

A. Conform to Section 09913 - Exterior Painting and Section 09923 - Interior Painting. Provide labels/signs for all piping including refrigerant piping, chilled water, condenser water, condensate drain lines.

B. The following items furnished under this section are to be painted and identified under Section 09913 - Exterior Painting and Section 09923 - Interior Painting. Do not paint over name plates or other identifying labels.

1. Paint exposed black iron work including pipe, fittings, iron body valves, pipe hangers, etc., with two coats of zinc rich paint.

2. Stencil all exposed piping with painted black letters indicating the service and with an arrow indicating the direction of flow. Stencil where pipes enter and leave each area and at not over 30 ft. intervals within an area. Paint color band at stencils; yellow for fuel and green for water systems. Width of color band, size of legend letters, and position of legend shall conform to the requirements of ANSI A13.1, Scheme for the Identification of Piping Systems.

3.03 MANUFACTURER’S RECOMMENDATIONS

A. Equipment installed under this Division of the Specifications shall be installed according to the manufacturer's recommendations, unless otherwise indicated or specified otherwise.

3.04 OPENINGS, CUTTING AND PATCHING

A. The Contractor shall be responsible for the cutting, drilling and patching of walls, partitions, floors, roofs, ceilings and other building structures, required for the installation of piping, ductwork, conduits and other material equipment. This work may be subcontracted to other Contractors, or arranged to be performed by the General Contractor.

B. Holes through existing concrete and existing masonry shall be sawcut or core drilled. Holes through new concrete and masonry shall be provided with sleeves. Holes through other building materials shall be sawcut or core drilled and provided with sleeves.

3.05 PIPING INSTALLATION

A. Conform to the requirements of the Uniform Plumbing Code and all manufacturer's recommendations. Inspect all pipes inside and outside. Remove interior obstructions and ream out pipe ends. Tool markings on polished fittings are not acceptable. Cut pipe accurately so that it can be worked into place without springing or forcing. Install pipes parallel to the wall of the structure and plumb. Make changes in direction with fittings. Bushings are not permitted. Pull-tees are not permitted. Install valves with stems above horizontal. Provide proper support and adequate provisions for expansion, contraction, slope and anchorage. Provide dielectric unions or separation at all dissimilar metals. Wrap pipe or tubing with 1/4-inch thick felt, secured with tape, where they contact other materials. Have piping treated, inspected and approved before it is furred in, buried or otherwise hidden. Provide standard weight galvanized steel pipe sleeves for all pipes passing through structure, sufficiently large to provide 1/4-inch clearance around pipe. Caulk watertight around pipes passing through sleeves. Wrap pipe with polyethylene tape where it passes through sleeve and when it contacts concrete or masonry. Grout with fire proof material around all pipe penetrations through slabs and walls full length of penetrations. Provide chrome plated brass escutcheons, set tight on the pipe and to the wall where pipes are exposed in finished areas. Provide clamping collar or membrane flange where pipe or drains penetrate waterproof membrane. Perform all welding using qualified welders in accordance with American National Standards Institutes Code B31.1 and American Welding Society Standard B3.0. Soil for bedding and backfill shall be tested for soil resistivity. If soil resistivity is less than 20,000 ohms-cm, provide cathodic protection of underground steel (including gas) and copper lines. Coordinate all pipe openings in prestressed tri-tee concrete flooring. Trenching/backfilling in accordance with the Plumbing Code. Support underground piping on firm soil along its entire length. Where rocks are encountered, have trench excavated to a minimum overdepth of four inches and backfilled with granular moist earth, thoroughly tamped. Materials used for backfilling over piping shall

be granular earth, free from debris and stones. The Contracting Officer may reject any materials which he considers unsuitable for fill. Clay and adobe type soil is not allowed. Provide a minimum of two feet of cover for all pipes. Where sewer and water lines are laid in the same trench, place water line on solid shelf with bottom of water line twelve inches above top of sewer. Where sewer and water lines cross, encase sewer in four inch thick concrete envelope.

3.06 FIELD TESTS

A. The Contractor shall provide all labor, material, equipment, and instruments needed for the tests. During pressure test, all items in the system to be tested, which are not designed for the test pressure shall be removed or isolated from the system, and shall be reconnected or unblocked after the tests are completed. If operating tests require the supervision of the manufacturer's representative, the Contractor shall assist the representative by providing any labor, material, or equipment needed by the representative.

3.07 CLEANUP AND CLEANING

A. The Contractor shall keep the premises free from accumulation of waste materials or rubbish caused by his operations. At the completion of the work, he shall remove all his waste materials, and rubbish from the project site as well as his tools, construction equipment, and surplus materials. Clean all new equipment and materials prior to final inspection.

END OF MECHANICAL GENERAL REQUIREMENTS

SECTION 15300 - AUTOMATIC FIRE SPRINKLER SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Modify existing wet pipe automatic fire sprinkler for designated areas as shown on plans, as required by code and authority having jurisdiction. Sprinkler system layout, as shown on drawings is intended only to describe general scope of work required and is not to be construed as being complete workable design in accordance with all applicable NFPA Codes and Regulations. Final design and providing of sprinkler system meeting all applicable codes and regulations, shall be sole responsibility of the Contractor. Electrical work, to be included under this Section, is limited to provide all labor and materials required for providing complete working local supervisory system, including circuitry between panels, alarms detectors, etc. Prior to fabrication and installation, obtain approval from the City and County of Honolulu Fire Department, and designated Fire Sprinkler Special Inspector.

1.02 RELATED WORK SPECIFIED IN OTHER SECTIONS

A. All electrical power, wiring, conduit, etc., flow switch and other equipment required under this section shall be provided under Division 16 – Electrical.

1.03 QUALITY ASSURANCE

A. Comply with local ordinances, requirements of local authorities, applicable regulations of National Board of Fire Underwriters, regulations of Building Department, and all other applicable regulatory bodies.

B. Obtain and pay for all fees, permits, licenses, assessments, and inspections required for this work.

C. Unless specified under the General Requirements of the approved Construction contract, substitutions of another manufacturer's product for equipment specified hereinafter and for items with "or equal" or approved substitute.

D. Latest edition of Standards for Installation of the Fire Protection System shall be as followed. Where these specifications vary from said standards, more rigid requirements shall apply.

1. National Fire Protection Association (NFPA) Standards: NFPA13 - Standard for the Installation of Sprinkler Systems

1.04 SUBMITTALS

A. Unless specified under General Requirements, submit eight (8) sets of shop drawings and eight (8) copies of each submittal required hereinafter. Consolidate all shop drawings into one complete submittal if at all possible. Provide complete submittals wherever possible. Consolidate all equipment

into one submittal where possible. Consolidate all fixtures and trim into one submittal.

1. Equipment Submittal: Before beginning work, submit for review manufacturer's certified literature showing ratings and dimensions of equipment and of a list indicating all materials and items that are of a different manufacturer or model than those specified. Include equipment wiring diagrams.

2. Shop Drawings: After review of equipment, submit for review dimensioned installation shop drawings to scale showing details where space requirement presents problems; proposed departures from the Contract Documents due to field conditions, requirements for concrete work, access panels, inserts in slabs, and openings in structure.

3. As-Built Drawings: Record changes from the contract drawings of all concealed piping, ductwork and equipment. Indicate location of isolating valves, dampers, and items requiring maintenance or inspection. Submit as-built drawings for review prior to final inspection.

4. Certificates: The Officer in Charge will have the right to require a written certificate, dated and signed by a responsible employee of the Contractor, evidencing the performance of any portion of the work, or any testing; as a condition precedent to the acceptance of any work or the result of any test. Whenever a regulatory agency performs in sections or tests of any portion of the work, a certificate shall be furnished by the Contractor that the inspection or test was satisfactorily passed.

1.05 COORDINATION

A. Coordinate with various trades. Where items must fit spaces previously constructed, verify measurements at site. Coordinate with other work to ensure that all required inserts, sleeves, and attachments are properly set and that adequate provision is made for installing this work.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Furnish new equipment, material, and accessories bearing the manufacturer's identification. Coordinate deliveries to avoid interferences or construction delays. Protect products during delivery, storage, installation and the remainder of the construction period after installation.

1.07 WARRANTY

A. Contractor shall warrant all work. Should any equipment or material fail within this period, replace or repair at no cost to the Client for material and/or services, if due to faulty workmanship or quality of material furnished.

B. Defective or Improper Work: Remove any work or materials not acceptable to the Officer in Charge and replace by approved materials or work, without additional cost to the Client.

C. Be responsible for all damage caused by leaks in piping or equipment for guarantee period. Any leaks or piping system failure due to any cause of location, workmanship, or quality of material that cause damage will be responsibility of Contractor.

1.08 DESIGN

A. Design of wet pipe sprinkler system shall be by hydraulic calculation and shall conform to NFPA 13 and to requirements as specified hereinafter.

1.09 WORKMANSHIP

A. All materials and equipment shall be installed in accordance with NFPA 13 to conform to contract documents. System shall be installed by an experienced individual or installer that regularly engages in installation of fire protection sprinkler systems in accordance with NFPA Standards. Officer in Charge may reject any proposed installer who cannot show evidence of such qualifications. Officer in Charge's approval will not relieve Contractor from his responsibilities to perform all work in accordance with specifications and contract terms.

1.10 INSTRUCTIONS

A. Contractor shall provide necessary (as required by NFPA Standard No. 13) information concerning care, operation, and maintenance of system.

PART 2 - PRODUCTS

2.01 MATERIALS

A. All fire suppression equipment shall be selected from "List of Inspected Fire Protection Equipment and Material", published annually by UL and shall bear UL approved stamp or label. All materials shall be new and of the best quality available in their respective kinds, free from all defects and shall be of the make and types specified or approved substitute.

B. Pipe and Fittings:

1. Sprinkler system below ground shall be ductile iron pipe, above ground shall be black steel pipe, Schedule 40, ASTM A795. All exposed aboveground piping shall be galvanized steel pipe and fitting, ASTM A795.

2. Fittings for ductile iron pipe, of same class and coating as pipe; mechanical joint cast iron fittings, or approved. Fittings for steel pipe shall be black cast-iron, screwed, suitable for 175 psi wwp – Grinnell Co., Crane Co., Stockham Pipe Fittings Co., or approved equal. At the Contractor's option, fittings shall be grooved-pipe fittings, with grooved pipe couplings, Vitaulic or approved equal.

Fittings for copper tubing shall either be wrought copper, ANSI B31.1 with 95-5 solder, or “T-drill fittings” with B-Cup 3 brazing.

C. Sprinkler Heads: Sprinkler heads shall be 1/2 inch, automatic, closed type, of temperature rating as indicated or as required in NFPA Standard No. 13. Temperature rating of heads shall be selected such that the temperature rating is at least 50 degrees Fahrenheit above the highest ambient temperature to be encountered. Sprinkler heads in unfinished areas shall be upright or inverted type, as appropriate to the location of installation, with standard factory finish. Sprinkler heads in spaces with finished ceilings shall be concealed type heads with factory painted covers selected to match the ceiling, refer to architect drawings for color scheme. Provide UL and FM approved sprinkler heads for the application described.

1. Standard Pendent: Heads shall be 1/2" orifice, automatic, upright type to match existing in exposed ceiling and rated for applicable temp rating.

2. Furnish 10 extra sprinklers of each type packed in suitable containers; and two special sprinkler wrenches and four proper types of sprinkler stoppers. Provide where directed two approved metal cabinets with hinged door, lock and two keys for storing extra sprinkler and wrenches.

D. Water-Flow Alarm: Provide water-flow alarm valve, complete with electric alarm switch, alarm retarding device; local, water motor alarm gong weatherproof type; valves, pressure gauges, fittings; install complete as per manufacturer’s printed installation directions.

E. Support: Support sprinkler system piping form building structure by means of hangers, inserts, other supports, as per requirements in NFPA Standard No. 13 and as indicated on drawings. Provide earthquake bracing in accordance with IBC 1613.1 and NFPA Standard No. 13, sec. 9.3.

F. Pipe Sleeves: Furnish and set cast iron (below grade) or Schedule 40 steel pipe sleeves to accommodate pipes passing through foundations, walls, floors, partitions. Extend sleeves above finished floor and pack space between pipe and sleeve as recommended by NFPA Standard No. 13.

G. Escutcheon Plates: Sprinkler piping passing through floors, walls, and ceilings shall be provided with approved type, one piece or split-type plates. Plates where pipe passes through finished ceiling shall be chromium plated. Other plates shall be of steel or cast iron, with aluminum finish. Plates shall be securely anchored in place with set screws or other approved positive means.

H. Gauges: Gauges shall be 3-1/2” dial type.

I. Valves: Flanged gate valves shall be O.S.&Y. type, iron body, brass trim, 250 lbs. working pressure. Flanged check valves shall be iron body, brass seat and disc, clearway swinging type, with drip connections, 250 lbs. working pressure. Valves used in conjunction with valve supervisory devices shall have items notched or otherwise modified to suit supervisory

device. Valve located in pit shall be equipped with indicator post with valve position locking device.

J. Pressure Switch: Switch with circuit opener or closer for automatic transmittal of alarm over facility fire alarm system shall be provided and shall be connected into fire alarm system. Alarm actuation device shall be of mechanical diaphragm controlled water flow type without retard feature, which instantly recycles when pressure is released on diaphragm.

K. Sprinkler Water Flow Detector: Vane-type water flow detector shall be installed in main to each sprinkler zone as indicated on drawings. Detector shall have minimum of 2 contacts. Detector shall incorporate retard element to prevent false signals and be installed in accordance with manufacturer's recommendations. Local electric audible alarm, activated by detector circuit, shall also be provided by Sprinkler Contractor.

L. Tamper Switches: Furnish and install 2-pole tamper switches on each floor at control valves and where required by NFPA Standard No. 13. All wiring, conduits, and related items, from tamper switches to fire alarm system to be provided.

PART 3 - EXECUTION

3.01 GENERAL

A. Do not scale plans. Check all measurements at building and adjust work to fit space allotted. Close cooperation between all trades will be required. Any work done without regard for work of other trades shall be moved, if necessary, at option of the Officer in Charge, without cost to the Client, to permit proper installation of other work.

B. When work is not in progress, open ends of pipe and fittings shall be securely closed so that no trench water, earth, or other substances can enter pipe or fittings.

C. Responsibility for care and protection of equipment and work rests with Contractor until it has been tested and accepted by the Officer in Charge.

3.02 CUTTING AND PATCHING

A. Place sleeves for piping penetrating through poured concrete or masonry construction prior to pouring of concrete or construction of masonry. Fill void between pipe and floor or wall with grout.

B. Do not cut any openings in any structural member until location has been approved by the Officer in Charge.

C. Cutting of holes in hardened concrete is not permitted except by special permission of the Officer in Charge, which will be on an individual basis and shall require use of small hand tools, diamond drills, or other controlled means of the Officer in Charge's discretion.

D. Cutting of reinforcing bars is not permitted.

E. If necessary to cut holes in slabs or concrete walls, first relocate holes to clear beams, joists, columns, etc. Cut holes neat and clean using diamond core drill or small chipping gun. Leave all reinforcing bars intact; enlarge holes if necessary.

F. If necessary to cut holes in masonry walls, carefully remove minimum amount of masonry.

G. Install sheet metal or black iron pipe sleeves through holes cut in slabs, concrete walls or masonry walls. In concrete slab walls, install sleeves to clear reinforcing bars and tightly pack concrete around sleeve for full thickness of walls. In masonry walls, rest or re-grout all loose masonry units; pack cement grout tight and solid around sleeves for full thickness of wall.

H. Annular space between pipe and sleeve shall be completely sealed with grout.

3.03 FITTINGS

A. Fittings for aboveground piping shall be of type specifically approved for use in sprinkler system. Bushings shall be used only where standard fittings of required size are not available. Use of bushings is further restricted to requirements of NFPA Standard No. 13.

3.04 REDUCERS

A. Reduction in pipe sizes shall be made with one-piece reducing fittings. Bushings will not be acceptable, except that when standard fittings of proper size are not available. Where used, face bushings shall be installed with outer face flush with face of fitting opening being reduced. Bushings shall not be used in elbow fittings in more than one outlet of a tee, in more than two outlets of a cross, or where reduction in size is less than 1/2”.

3.05 PIPE SUPPORTS AND HANGERS

A. Recommend methods and requirements for supporting of hanging pipe, as set forth in NFPA Standard No. 13 shall be mandatory.

B. Install hangers and supports for all pipe work to provide for expansion and contraction, to prevent vibration, and maintain required grading by proper adjustment.

C. Refer to structural drawings for type of construction from which piping and/or equipment is to be suspended. Drilling from bottom or pre-stressed tee is not permitted. Drill one side of T-stem or bottom of T-flanges.

D. Drilled-in-Threaded Inserts: Where support in beams and joists are required after concrete has been poured, Phillips “Redhead” Drilled-in-Threaded Inserts shall be provided and installed in accordance with recommendation of manufacturer.

E. Install concrete reaction blocks for underground pipe and angle/plate reaction supports for aboveground piping at main and cross main tees and elbows.

3.06 CORROSION PROTECTION

A. Provide dielectric unions and dielectric flanges between dissimilar metals. Provide neoprene pads between pipe and pipe hangers of dissimilar metals.

3.07 SPRINKLER HEADS

A. Sprinkler heads shall be spaced so as to provide the required discharge density and coverage, and in no case shall the spacing exceed the NFPA requirements for proper hazard occupancy. Pendant heads, where required, shall be installed as shown in NFPA Standard No. 13.

3.08 DRAIN AND TEST CONNECTIONS

A. Install horizontal piping graded to low points in manner to make it possible to test and empty entire system. Provide valves and piping of sizes and in locations as indicated or as required by NFPA Standard No. 13.

B. Extend drain valve discharge pipes to points indicated or the nearest drain line. Terminate pipes so that discharge will be visible.

C. Provide flushing connections at end of cross mains, consisting of capped nipple same diameter as pipe but not larger than 2 inches.

3.09 WATER SUPPLY

A. Static pressure and availability shall be verified with Board of Water Supply.

3.10 DISTRIBUTION OF WATER

A. Distribution shall be essentially uniform throughout area in which it is assumed sprinkler heads will open.

3.11 PIPE SLEEVES AND ESCUTCHEONS

A. Furnish and set sleeves to accommodate pipes passing thru foundations, walls, floors, partitions. Provide escutcheons at exposed finished surfaces pierced by pipes.

B. Extend sleeves above finished floor and pack space between pipe and sleeve as recommended in NFPA Standard No. 13.

C. Firestops shall be installed as recommended by the manufacturer.

3.12 INSPECTIONS AND TESTS

A. Furnish Officer in Charge with results of all tests conducted under this section.

B. Water System: When the roughing-in is completed and/or the system completed, the entire fire protection water piping system shall be tested at a hydrostatic pressure of not less than 200 pounds per square inch gauge, and proved tight at this pressure for not less than two (2) hours in order to permit inspection of all joints. Where a portion of the water piping system is to be concealed before completion, this portion shall be tested separately as specified for the entire system.

C. Air Test: In buildings that are occupied or the interior areas have been completed, the Contractor shall conduct a test with air pressure of at least 40 psi allowed to stand for at least 24 hours. The standard water test shall be conducted after the Contractor is satisfied that the air test shows no leaks in the system.

D. Alarm Test: Simulate alarm conditions to verify proper operation of all alarms and trouble signals. Reset alarms and signals as required.

E. Defective Work: If inspection or test shows defects, such defective work or material shall be replaced or repaired as necessary and inspection and test repeated. Repairs to piping shall be made with new materials. No caulking of screwed joints or holes will be acceptable.

F. Cleaning and Adjusting: Equipment, pipes, valves, and fittings, shall be cleaned of grease, metal cuttings, and sludge that may have accumulated from operation of the system during the test. Any stoppage, discoloration, or other damage to the finish, furnishings, or parts of the building, due to the Contractor's failure to properly clean the piping system, shall be repaired by the Contractor without additional cost to the Client. The system shall be flushed as required by the NFPA.

G. Disinfection: The complete system shall be disinfected as set forth in the AWWA Standard C601 for "Underground Water Systems". A certificate shall be furnished to the Officer in Charge evidencing proper performance of water line disinfection.

3.13 SPECIAL CONDITIONS

A. Conformance with provisions of the enforcing edition of the International Building Code, as amended, is hereby made a part of this Section of specifications.

3.14 CLEAN UP

A. Debris shall not be allowed as a result of this work. Upon completion of this work, remove all debris and excess materials, tools, etc., resulting from this work from the job site and leave the location of this work broom-cleaned in an acceptable manner as approved by the Officer in Charge.

3.15 MEASUREMENT AND PAYMENT

A. Payment for work required under this section shall be included with the related lump sum bid item and inclusive of furnishing materials, labor, tools, equipment and other services and testing to complete the work-in-place.

END OF AUTOMATIC FIRE SPRINKLER SYSTEM

SECTION 15400 - PLUMBING

PART 1 - GENERAL

1.01 SUMMARY

A. Plumbing work to include installation of new plumbing fixtures and equipment (including associated plumbing line, supports, accessories, etc.) as indicated in plans and specifications.

1.02 SUBMITTALS

A. Submit in accordance with Section 01330 - Submittal Procedures.

B. Equipment Submittal: Before beginning work, submit for review certified literature showing dimensions of equipment, a list indicating manufacturer and model of fixtures and trim, and a list indicating all materials and items that are of a different manufacturer or model than those specified.

C. Shop Drawings: After review of equipment, submit for review dimensioned installation shop drawings to scale showing details where space requirements present problems, proposed departures from the Contract Documents due to field conditions, and requirements for the concrete work, access panels, inserts in slabs, and openings in structure.

D. As-Built Drawings: Record changes from the contract drawings of all concealed piping. Indicate location of isolating valves and items requiring maintenance or inspection. Dimension underground piping from a visible point on structure. Indicate invert and slope of drainage piping at sufficient location so that the invert can be calculated for any point in the system. Submit field posted as-built drawings for review as required by Section 01770 - Closeout Procedures.

E. Certificates: The Contracting Officer shall have the right to require a written certificate, dated and signed by a responsible employee of this Contractor, evidencing the performance of any portion of the work, or any testing; as a condition precedent to the acceptance of any work or the result of any test. Whenever a regulatory agency performs inspections or tests of any portion of the work, a certificate shall be furnished by the Contractor that the inspection or test was satisfactorily passed.

F. Warranty: Submit warranty as noted under item entitled “WARRANTY” below.

1.03 QUALITY ASSURANCE

A. Comply with all the requirements of the City and County of Honolulu, State of Hawaii.

B. Obtain and pay for all fees, permits, licenses, assessments, connection charges and inspections required for this work.

C. Products of the following manufacturers are acceptable.

D. Comply with the recommendations and requirements of the Codes and Standards listed hereinafter in addition to detailed requirements of this specification. In the event of conflicting requirements, this specification shall prevail.

1. American Society for Testing and Materials (ASTM) Publications:

A74	Cast Iron Soil Pipe and Fittings
B53	Pipe, Steel, Black and Hot-Dipped Zinc Coated Welded and Seamless
B88	Seamless Copper Water Tube
B306	Copper Drainage Tube (DWV)
C564	Rubber Gaskets for Cast Iron Soil Pipe and Fittings

2. American National Standards Institute Publications (ANSI):

B16.18	Cast Copper Alloy Solder-Joint Pressure Fittings
B16.22	Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
B16.23	Cast Copper Alloy Solder Joint Drainage Fittings-DWV
B16.26	Cast Copper Alloy Fittings for Flared Copper Tubes
C1	National Electrical Code
C2	National Electrical Safety Code

3. Cast-Iron Soil Pipe Institute Publication (CISPI):

Standard No. 301	Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications
Standard No. 310	Couplings Joint for Use in Connection with Hubless Cast Iron Soil Pipe and Fitting
Pamphlet	Installation Suggestions for “No Hub” Pipe 100

Fittings

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Furnish new equipment, fixtures, materials and accessories bearing the manufacturer's identification. Coordinate deliveries to avoid interference or construction delays. Protect products during delivery, storage, installation, and the remainder of the construction period after installation.

1.05 WARRANTY

A. All work in this Section shall be guaranteed by the Contractor for a period of one year from the date of project acceptance as a whole. Should any fixture or material fail within this period, this Contractor shall be responsible for all damage to any part of the premises caused by the failure and shall repair or replace the defects at no cost to the School.

PART 2 - PRODUCTS

2.01 PLUMBING FIXTURES

A. Provide chrome plated all brass faucets, flush valves, angle stops, tube risers, chrome plated P-traps, escutcheons and cover plates. Provide connecting fittings, china bolt caps, wall support brackets as required. Furnish masonry and concrete contractor with wall sleeves and inserts required for fixture installation. All valves bronze and brass with chrome plating. All sinks and lavatories shall have 1.5 gpm cold water flow restrictors. All water closets shall be maximum 1.28 gallons per flush. All urinals shall be maximum 1.0 gallons per flush. Provide access panels as required for servicing of flush valves, valves, etc. Mount accessible flush valve on wider side of stall. Provide brass closet bolts, nuts, washer, plastic bolt caps, escutcheon plates and water closet flange/seal for all water closets. Toilet seats shall be white, open front, elongated type. P-trap guard, offset drain guard and angle stop covers shall be white in color. P-trap guard shall be Tru-bro E-Z fit or equal. All sinks shall have cleanouts on traps.

1. Accessible Lavatory (ALAV): Kohler K-2007 Kingston lavatory, 21-1/4" by 18-1/8", white vitreous china, wall mount, one 1-1/4" diameter holes, 4-inch centers, front overflow and backsplash. Provide Smith 0700E concealed arm carrier with wall bracket and floor support. Kohler K-7131-A-CP offset drain with perforated grate and 1-1/4-inch tailpiece. Provide concealed arm floor mounted support. Provide with Elkay Single Hole Concealed Deck Metered Lavatory Faucet with Cast Fixed Spout Push Button Handle Chrome, model LK654. Faucet is made of Chrome-plated Brass material, with a Ceramic Disc valve. Faucet requires 1 faucet holes. Faucet requires 1 faucet hole. Install in accordance with ADAAG 2010 section 606 requirements.

2. Accessible Roll-in Shower (ASH): Ceramic tile shower floor and walls, laticrete hydroban waterproofing system. Provide Laticrete Hydroban drain with drain grate, 2" I.P.S. drain outlet, 5" x 5" stainless steel grate/strainer. Provide Kohler K-TS15601-4 "Coralais" shower mixing valve faucet, assembly less (without) tub spout, ADA-compliant single lever handle, Kohler K-8304-KS concealed type pressure balancing valve with screwdriver stops, anti-scalding mixing valve, with all metal construction & polished chrome finish. Shower spray shall deliver water that is 120 F maximum. Provide with Kohler K-22178-G "Purist" ADA hand-held shower with with a non-positive shut-off, 1.75-gpm multifunction handshower, 60" metal hose, vacuum breaker, wall elbow, and 30" slide bar with adjustable height hand shower mount. Slide bar shall be installed so as not to obstruct use of shower stall grab bars. Install in accordance with ADAAG 2010 section 608 requirements.

3. Accessible Water Closet (AWC): Kohler model K-84325-0 Kingston Ultra, vitreous china, 13-1/4" height bowl, 1.28 gallon per flush, wall mounted rear spud with excellent bowl rinse, 10" x 7" water surface, 1-7/8" fully glazed trapway, elongated bowl, floor mounted support model Smith 0410 or approved equal, white vitreous China. Provide Kohler K-4670-SA commercial elongated toilet seat and open-front toilet set with antimicrobial agent inhibits growth of odor-causing bacteria, mold, and mildew. Provide Sloan model Royal 111-1.28 or approved equal with royal exposed manual water closet flushometer, single flush, 1.28 gallon per flush, polished chrome finish, and fixture connection top spud. Valve operating pressure shall between 15 to 80 psi. Mounted height not more than 12". Install in accordance with ADAAG 2010 section 604 requirements.

B. Maintenance Tools: Provide 2 sets of maintenance tools per building, including range adjustment tool, strap wrench, and hex wrench provided by the factory.

2.02 EQUIPMENT

A. Requirements of the manufacturer's equipment that is a component of a system provided under this work is included with the system's specification hereinafter. Capacities and characteristics of the equipment are indicated on the drawings. See electrical drawings for voltage and phase requirements of all equipment furnished under this work.

2.03 PIPE AND FITTINGS

A. Sanitary Waste and Vent Pipes, Below Grade: Service weight cast-iron soil pipe, ASTM A74, with dual tight gaskets, or no-hub cast-iron soil pipe conforming to CISPI 301 with MG couplings.

B. Below grade piping within building in sizes 6-inches and smaller may be hubless cast iron sanitary system with MG mechanical cast iron couplings or accepted equivalent, conforming to Cast Iron Soil Pipe Institute's Standard 301-72. Stainless steel couplings are unacceptable. Each assembled coupling shall bear the following clearly identifiable markings: the manufacturer, the size, and the letters UPC, indicating conformance with the Uniform Plumbing Code. Install couplings per manufacturer's written instructions and tighten nuts or bolts heads alternately and gradually to manufacturer's specifications using an accurate torque wrench.

C. Sanitary Waste and Vent Pipes, Above Grade: Above grade cast iron soil, waste and vent piping in enclosed pipe shafts, concealed ceiling spaces, or enclosed under floor spaces may be No-Hub systems, Tyler No-Hub pipe and fittings or equal, conform to Cast Iron Soil Pipe Institute Standard 301-82 with Cast Iron Soil Pipe Institute Standard 310 coupling joint.

D. Water Pipes, Below Grade: Type "K" seamless rigid copper tubing conforming to ASTM B88 with wrought copper solder type fittings conforming to ANSI B16.22 or ANSI B16.18. Joints shall be brazed with a silver alloy filler metal. Submit 5 copies of certificates stating that solder and fluxes used are lead-free.

E. Water Pipes, Above Grade: Above ground piping shall be Type “L” seamless rigid copper tubing conforming to ASTM B88 with wrought copper or cast copper alloy solder type fittings conforming to ANSI B16.22 or ANSI B16.18. Solder shall be 95-5 tin-antimony. Submit 5 copies of certificates stating that solder and fluxes used are lead-free.

2.04 VALVES

A. Ball Valves, 1/2-inch to 2-inch: Bronze construction, 2-piece body, 600-psi WOG, full-port, insulated quarter-turn handle, double O-ring stem seals, blowout-proof stem, PTFE seats.

B. Check Valves: bronze body, swing type, renewable disc, screwed cap and ends, 125 psi SWP.

C. Strainer: Y-strainers for lines 2-inches and smaller, bronze body, 20 mesh stainless steel screen, screwed ends, hose end valve, 300 psi WOG.

D. Unions: Provide unions at all equipment and accessory locations and at screwed valves. Provide dielectric unions at lines of dissimilar metals. EPCO Model FX or accepted equivalent.

2.05 PLUMBING SYSTEM SPECIALTIES

A. All drains and floor cleanouts with flashing flange and strainers maximum 1/4" openings, tops shall be matching nickel/bronze cleanout covers.

B. Cleanout: Josam 58480 series, coated cast iron, spigot connection, bronze threaded plug.

C. P-traps installed below floor: Deep-seal P-trap.

2.04 PIPING INSULATION

A. All insulation material applied to the exterior surface of metal pipes shall have flame spread of not more than 25 and a smoke development rating of not more than 50 when tested as a composite installation, including insulation, facing material, tapes, and adhesives as normally applied.

B. Hot water pipe insulation shall AP Armaflex insulation, Armacell or substitute. Closed cell structure, built-in vapor retarder. Provide air drying contact adhesive for joining seams and butt joints of the Armaflex insulation. Insulation thickness: 1-inch minimum. Installation in accordance with manufacturer's latest recommendations. Seal all joints with insulation manufacturer's approved adhesive.

C. On pipe insulation exposed to weather or subject to damage, apply 1 mil embossed aluminum jacket with 2-inch overlap at longitudinal and circumferential joints, secured in place with 3/4 inch x 0.015 gauge aluminum on 18 inch centers. Apply humped aluminum ells or fabricated 16 mil aluminum to fittings and band in place.

PART 3 - EXECUTION

3.01 PREPARATION

A. Visit the worksite and become fully aware of all existing conditions. Investigate the Contract Documents and make proper provisions to avoid interference or construction delays. Determine the exact route of each pipe. Make offsets and changes in direction required to maintain proper head room and pitch or to accommodate the structure and the work of other trades. Furnish other trades with information to properly locate and size openings in the structure required for this work. Furnish anchor bolts, sleeves, inserts, and supports required for this work.

3.02 INSTALLATION AND REQUIREMENTS

A. Perform work using personnel skilled in the trade involved. Provide competent supervision. Furnish new equipment, fixtures, materials, and accessories bearing the manufacturer’s identification and conforming to recognized commercial standards. Provide all extra materials and labor for a complete operable system at no extra cost to the School. Installation shall be in accordance with manufacturer's recommendations.

3.03 FIXTURE INSTALLATION

A. Set fixtures in an approved workmanlike manner. Point up all edges against building structure with white grout. Provide adequate supports for wall-mounted fixtures. Provide supplies for all waterlines to fixtures, except those using flush valves; Brass-Craft or equivalent, compression joint type with chromium plated brass escutcheon and cover tube, loose-key angle stop valve, and drawn copper tube riser. Provide chromium plated brass P-trap, waste fittings, escutcheon and cover tube, loose key angle stop valve, and drawn copper tube riser. Provide chromium plated brass P-trap, waste fittings, and escutcheon as required for fixture. Exposed metal including pipe shall be polished chromium plated.

3.04 PIPING INSTALLATION

A. Conform to the requirements of the Uniform Plumbing code. Inspect all piping inside and outside. Remove interior obstructions and ream out pipe ends. Tool markings on polished fittings are not acceptable. Cut pipe accurately so that it can be worked into place without springing or forcing. Install pipes parallel to the wall of the structure and plumb. Make changes in direction with fittings. Bushings are not permitted. Install valves with stems above horizontal. Provide proper support and adequate provisions for expansion, contraction, slope, and anchorage. Provide dielectric unions where copper tubing connects to steel pipe. Wrap pipe or tubing with 1/4-inch thick felt and secure with tape where it contacts other materials. Have piping tested, inspected, and approved before it is furred in, buried, or otherwise hidden. Provide standard weight galvanized steel pipe sleeves where water pipes pass through structure, sufficiently large to provide 1/4-inch clearance around pipe. Caulk watertight around pipes passing through sleeves. Wrap pipe with polyethylene tape where it passes through sleeve and where it contacts concrete or masonry. Grout with fireproof material around all pipe penetrations through slabs and walls for full length of penetrations. Provide chrome-plate brass escutcheons, set tight on the pipe and to the wall where pipes are exposed in finished areas. Provide clamping collar to membrane flange where pipe or drains penetrate waterproof membrane. Perform all welding using qualified welders in accordance with American National Standards Institute’s Code B31.1 and American Welding Society Standard B3.0.

3.05 PIPING SYSTEM SUPPORTS

A. Pipe Supports: Support underground piping on firm soil along its entire length. Where rocks are encountered, have trench excavated to minimum overdepth of 4-inches and backfilled with granular moist earth, thoroughly tamped. Materials used for backfilling over piping shall be granular earth, free from debris and stones. The Contracting Officer’s representative may reject any materials which he considers unsuitable for fill. Provide a minimum of one foot of cover for all pipes. Support steel and copper pipe at maximum spacing of 6-feet for pipes 1-1/2-inches and smaller, 10-feet for pipes 2-inches through 4-inches.

B. Pipe Hangers: Steel clevis hanger with adjustable hanger rod; 3/8" for pipe 2" and smaller, 1/2" for pipe 2-1/2" through 3-1/2" and 5/8" for pipe 4" and larger. Groups of lines may be supported from steel channel pipe clamp.

3.06 DRAINAGE, WASTE AND PIPE SYSTEMS

A. Slope drain lines at 1/4-inches per foot unless otherwise indicated. On roof vents and where other drains occur above the ground floor, provide clamping device with drain. Provide a 4-pound lead flashing sheet extending 8-inches out around drain body and secure with clamp device. On vents through roof, extend vent flashing 8-inches out all around base of vent, extend collar up vent and turn in at top. Install hubless cast-iron and neoprene gasketed no-hub coupling below grade. MG stainless steel clamps and cast-iron no-hub couplings shall be installed in accordance with manufacturer's written instructions. Cleanout to grade shall be encased in concrete, flush with finished grade.

3.07 WATER PIPING SYSTEM

A. Secure each water line where it penetrates partitions to serve fixtures, hose bibs, and similar items. Wrap all lines passing through concrete with polyethylene tape. Install unions or flanges at all valves, equipment, and system specialties. Set hose bibs 18-inches above finished grade unless otherwise indicated. Install dielectric unions at connections of copper and ferrous pipes.

B. Provide water hammer arrester on all cold water lines serving fixtures using flush valves sized in accordance with the PDI Standards WH201 for the total number of fixture units connected to the branch line. Install arrester between last 2 fixtures served or as shown. Provide access panel for concealed arresters.

C. Provide all hose bibbs with non-adjustable vacuum breakers and square head cock.

3.08 STANDARDIZED PIPE IDENTIFICATION SYSTEM

A. Use an arrow marker with each pipe content marker, the arrow shall always point away from the pipe marker and in the direction of the flow.

B. If flow can be in both directions, use a double headed arrow marker.

C. Apply pipe marker and arrow marker at every point of pipe entry or exit where line goes through wall.

D. Apply pipe marker and arrow marker on each riser and "T" joint.

E. Apply pipe marker and arrow marker every 20-feet on long continuous lines.

F. Apply markers on the 2 lower quarters of the pipe and where view is unobstructed.

G. Arrow markers shall be 4-inches long minimum, and pipe content marker lettering shall be block-style lettering, all caps, with size minimum 1-1/2-inches in height. All identifications shall be contrasting color against the background, i.e. black lettering against white pipe insulation.

3.09 TESTING AND ADJUSTING

A. All work shall be completely installed and tested as required by this Section and the applicable plumbing ordinances, and proven leak tight before inspection is required. Providing all required equipment and labor to make the test and repeating the tests to the satisfaction of those making the inspection is within the scope of this Section of the specifications. Any work concealed without the required test and approval shall be uncovered and tested at the Contractor's expense.

B. Procedure:

1. Soil, Waste and Vent Piping: Filled with water to the highest point in each system, and left filled for 8 hours with no noticeable change in water level; after approval, remove the test plugs and flush the line.

2. Water Piping: At 150 psi and left for an 8 hour period without loss of pressure; and left under line pressure for the balance of the construction period.

3. Plumbing Fixtures: Filled with water and checked for leaks and/or retarded flow.

4. All Valves: Adjusted and balanced to provide for the proper operation of the various systems. After disinfecting, strainer screens shall be removed, cleaned, and reinstalled.

3.10 DISINFECTING

A. All domestic cold and hot water lines shall be thoroughly flushed and drained after installation. Sterilization shall be accomplished by opening taps at the end of all branches and slowly filling the system adding liquid chlorine, or hypochlorite solution, to the water until water flowing from all branches indicates not less than 50 P.P.M. residual chlorine; the system shall be allowed to stand for not less than 8 hours, with all valves opened and closed several times during this period; then drained and thoroughly flushed until all traces of chlorine are eliminated (less than 0.2 P.P.M.). Certificate shall be submitted to the Contracting Officer. The Contractor shall be responsible for the proper disposal of chlorinated water to

safeguard public health and environment in accordance with applicable Department of Health requirements.

3.11 FIELD QUALITY CONTROL

A. Test plumbing systems in accordance with the Uniform Plumbing Code. Perform tests in the presence of, and to the satisfaction of inspectors having jurisdiction over the work. Ask for final inspection by the Engineer after tests, adjustments and balancing has been performed.

1. Test drainage systems in accordance with Section 318 of the Plumbing Code.

2. Hydrostatically test the domestic water piping system at 100 psi for 2 hours. Inspect the entire system while under pressure and correct all deficiencies.

3. Test equipment to demonstrate its operation and compliance with the specification.

3.12 SPARE-PARTS

A. After approval of materials and equipment and 2 months prior to the project acceptance date, the Contractor shall furnish a complete list of parts and supplies with current source of supply.

3.13 TESTING AND INSPECTION

A. Contractor shall furnish all equipment for tests and any required retests and pay for all cost of repairing any damage resulting from such tests. Contractor shall adjust systems until they are approved. Tests shall be performed in the presence of, and to the satisfaction of, an inspector of the official agency involved.

B. Sanitary and water piping shall be tested in accordance with the Plumbing Code. Sanitary drains shall be tested with a minimum of 10 feet of water for 15 minutes. Water piping shall be tested. Valves shall be rated for at least 200 psi working pressure.

C. Defective Work: If inspection of tests show defects, such defective work or material shall be replaced and inspection and tests repeated. Repairs to piping shall be made with new material. No caulking of screwed joints or holes will be accepted. Installation shall be repaired by skilled mechanics of the trade involved at no extra expense to the State.

D. Protection to Fixtures, Materials and Equipment: Pipe openings shall be closed with caps or plugs during installation. Fixtures and equipment shall be tightly covered and protected against dirt, water and chemical or mechanical injury. Upon completion of all work, the fixtures, materials and equipment shall be thoroughly cleaned, repainted, adjusted and operated.

E. Chlorination: Domestic water lines shall be sterilized with chlorine before acceptance of work. Sterilize water system for 24 hours with 100 ppm chlorine introduced into the lines in an approved manner. Dosage of chlorine shall not be less than 50 ppm. After a contact period of not less than eight (8) hours, the system shall be flushed with clean water until the residual chlorine content is not greater than 0.2 ppm. All valves in the lines being sterilized shall be opened and closed several times during the contact period. A certificate shall be furnished to the Engineer evidencing proper performance of sterilizations.

3.14 PIPE PENETRATION

A. Where pipes penetrate fire rated walls and floors, the space between the pipe and pipe sleeve shall be sealed with fireproof sealant.

B. Installation shall be in accordance with manufacturers' instructions.

3.15 CLEANING AND ADJUSTING

A. At the completion of the work, all parts of the installation shall be thoroughly cleaned. Equipment, fixtures, pipe valves, and fittings shall be cleaned of grease and metal cuttings, and sludge that may have accumulated by operation of the system for testing. Any stoppage or discoloration or other damage to parts of the building, its finish, or furnishing, due to the Contractors failure to properly clean the piping system shall be repaired by the Contractor without cost to the State. Touch up with matching paint all damaged factory finishes.

END OF PLUMBING

SECTION 15800 - AIR CONDITIONING AND VENTILATION

PART 1 - GENERAL

1.01 SUMMARY

A. This section shall apply to all phases of work indicated in contract drawings, or required to provide for a complete installation of mechanical systems included in this project.

1.02 DESCRIPTION OF WORK

A. This section covers the furnishings, fabrication, delivery and installation of the air conditioning system complete, including but not limited to the following:

1. DX Split System Air Conditioning Units.

2. Modulating Dampers.

3. Sheetmetal and flex duct.

4. Air filters.

5. Condensate drain and refrigerant piping.

6. Corrosion Coating.

7. Controls.

8. Adjusting, balancing and testing.

9. Operating and maintenance instructions.

10. Manufacturer’s literature, shop drawings and record drawings.

11. Exhaust fan.

12. Supply fan.

13. Air devices.

14. Insulation.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

A. All power wiring including disconnects and wiring to all motor specified in Division 16 - Electrical.

1.04 QUALITY ASSURANCE

A. Comply with all the requirements of the County of Honolulu and State of

Hawaii.

B. Obtain and pay for all fees, permits, licenses, assessments, and inspections required for this work.

C. Substitutions of another manufacturer's product specified hereinafter and for items with "acceptable equal" after the brand name requires approval. Substitutions are not allowed prior to award.

D. All applicable codes, regulations and ordinances of public bodies having jurisdiction and considered a part of these specifications; all work installed and materials provided must comply with the current edition of such codes, regulations and ordinances.

1.05 SUBMITTALS

A. Submit in accordance with Section 01330 - Submittal Procedures.

B. Equipment Submittals: Before beginning work, submit for review manufacturer's certified literature showing ratings and dimensions of equipment and of a list indicating all materials and items that are of a different manufacturer or model than those specified. Include equipment wiring diagrams.

1. Submittals Shall Include the Following Items:

a. DX split system.

b. Exhaust fans and supply fan with sound data.

c. Insulation.

d. Air devices, flex duct and duct accessories with sound data.

e. Control wiring, devices and diagrams.

f. Corrosion protection.

g. Adjusting, balancing and testing.

h. Operating and maintenance instructions.

i. Manufacturer's literature, shop drawings and record drawings.

2. Submittals Shall Include the Following as a Minimum:

a. System design information sheet.

b. Description of system operation.

c. Electrical power and control wiring diagram.

d. Catalog information on control components.

e. Fan performance

C. Shop Drawings: After review of equipment, submit for review dimensioned installation shop drawings to scale showing details where space requirement prevents problems; proposed departures from the Contract Documents due to field conditions, requirements for concrete work, access panels, inserts in slabs, and openings in structure.

D. As-Built Drawings: Record changes from the contract drawings of all concealed piping, ductwork and equipment. Indicate location of isolating valves, dampers, and items requiring maintenance or inspection. Submit As-Built Drawings for review prior to final inspection.

E. Certificates: The Contracting Officer will have the right to require a written certificate, dated and signed by a responsible employee of the Contractor, evidencing the performance of any portion of the work, or any testing; as a condition precedent to the acceptance of any work or the result of any test. Whenever a regulatory agency performs in sections or tests of any portion of the work, a certificate shall be furnished by the Contractor that the inspection or test was satisfactorily passed.

F. Mechanical Equipment List: Submit the mechanical equipment list for all Contractor furnished pieces of mechanical equipment, using the form found at the end of this section. Contractor to submit the completed form (with all new air conditioning equipment listed) upon completion or final acceptance of the project.

G. Testing and Balancing Report: After installation, the new system shall be tested, balanced and adjusted. Submit 4 copies of the testing and balancing report to the Contracting Officer for review and approval prior to the final acceptance of the project.

H. Guarantee: Submit Guarantee as noted under item entitled “GUARANTEE” hereinbelow.

I. Maintenance Service Contract: Submit Maintenance Service Contract as noted under the item entitled “ONE YEAR MAINTENANCE SERVICE CONTRACT” hereinbelow.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Furnish new equipment, material, and accessories bearing the manufacturer’s identification. Coordinate deliveries to avoid interferences or construction delays. Protect products during delivery, storage, installation and the remainder of the construction period after installation.

1.07 OMISSIONS

A. It is the intent of the plans and specifications to provide a complete

installation. Should there be omissions, the Contractor shall call the attention of the Contracting Officer to such omissions in 14 days advance of the date of bid opening so the necessary corrections can be made.

1.08 GUARANTEE

A. Contractor and installer shall guarantee and certify in writing all work in this section for a period of one year after 30 days of trouble-free operation from the date of project acceptance by the Contracting Officer. Replacement of lost refrigerant and correction of undue noise or vibration is included on the guarantee. Contractor shall be responsible for all damages to any part of the premises during equipment installation work under this section. Normal maintenance requirements are not included in this guarantee. Should any equipment or material fail due to the faulty workmanship or materials within this period replace or repair that item at no cost to the State.

PART 2 - PRODUCTS

2.01 EQUIPMENT

A. Capacities and characteristics of equipment are indicated on the drawings. See electrical drawing for all voltage and phase requirements of all equipment furnished under this work. Provide combination magnetic across-the-line starter, control voltage transformer and circuit breaker for each motor of mechanical equipment unless the equipment is factory-wired to a single power connection or unless otherwise indicated hereinafter. Exterior starters shall be NEMA 4X waterproof type enclosure. Provide disconnect switch for all mechanical equipment. All steel surfaces shall be hot-dipped galvanized. All steel exposed to weather shall be hot-dipped galvanized and shall have an additional two coats of zinc rich rust-proof paint. Provide vibration isolators as indicated hereinafter.

B. Exhaust Fan (EF-1): Fans shall be direct drive for rooftop mounting. Ventilator housings shall be of one piece heavy gauge spun aluminum construction and shall be weatherproof and incorporate an integral weather shield. Fan wheels shall be centrifugal design, statically and dynamically balanced. Tip speed, rpm, and motor horsepower shall not exceed listing in manufacturer's catalog for unit specified. Motor and fan assembly shall be on vibration isolating mounts. Fans shall be mounted on C-channel support and prefabricated curbs of the same manufacturer as the fan. Base of curb shall be hinged to provide access to curb well. The following accessories shall be provided: gravity backdraft dampers, stainless steel bird screen with a minimum of 85% free area, solid state speed controller, hinged sub bases for damper access U.L. approved safety disconnect switch. Greenheck CUE series or approved equal.

C. DX Split System:

1. Four-Way Ceiling Cassette Style Fan Coil Unit (FCU-1, FCU-2, and FCU-3): The ceiling-recessed indoor unit shall be factory assembled, wired and run tested. Contained within the unit shall be all factory wiring, piping, electronic modulating linear expansion

device, control circuit board and fan motor. The unit shall have a self-diagnostic function, 3-minute time delay mechanism, an auto restart function, an emergency operation function, a test run switch, and the ability to adjust airflow patterns for different ceiling heights. Indoor unit and refrigerant pipes shall be charged with dehydrated air before shipment from the factory. The unit shall be suitable for use in plenums in accordance with UL1995 ed 4. Unit shall be Mitsubishi Electric or approved equal.

2. Air Cooled Condensing Unit (ACCU-1, ACCU-2, and ACCU-3): HVAC outdoor unit shall be a variable speed inverter-driven compressor, direct expansion (DX), Heat Pump engineered system. The VRF system shall consist of a single frame outdoor unit, interconnecting piping, multiple indoor units (ducted, non-ducted or mixed combinations), onboard, self-contained, stand-alone communication and controls. The outdoor unit shall be of galvanized steel with a weather and corrosion resistant enamel finish. Direct drive, variable speed, axial flow fan. The motor shall be variable speed, direct current, with permanently lubricated bearings. The coil shall be aluminum fins mechanically bonded to copper tubing. The aluminum fin shall have factory applied corrosion resistant Blue Fin coating and be tested per ASTM B-117 standard. The heat pump system will be available in 208/230V, 60Hz, 1 phase. Provide kWh meter for energy monitoring and connection to pulse input controller. Unit shall be Mitsubishi Electric or approved equal. Provide with mounting stand system manufactured of 11-gauge square steel tubing with thermally fused polyester powder coat finish that meets ASTM D3451-06 standards. Provide in compliance with ASCE 7 overturning safety requirements. Provide complete with galvanized mounting hardware.

3. Controls: Provide Mitsubishi PAR-40MAAU for ceiling cassette fan coil unit.

D. Supply Air Fan (SF-1): Fantech FG series or approved equal. Provide with speed control and mounting clamps. Supply fan shall be of centrifugal, direct driven type. Fan housing shall be constructed of heavy gauge galvanized sheet metal. Motor shall be a permanently sealed self-lubricating ball bearing type. Motor shall be equipped with automatic reset thermal overload protection. Motorized impeller shall be both statically and dynamically balanced as one integral unit to provide for vibration free performance.

2.02 CONTROLS

A. Fan Coil Unit Thermostats: Space thermostats shall have adjustable set points. All thermostats shall have key locking, clear plastic tamperproof covers which do not affect their performance. Setback temperature control will raise the setpoint to 85 F, 10 minutes after the last occupant leaves the room. Manual On/Auto-Off is preferred. Auto-Off is to be programmable. Setback temperature shall be: 75 F Occupied; 85 F Unoccupied; M-F 7:00

AM – 4:00 PM.

B. Time-Clocks: All time clocks shall be 7-day programmable, 24-hour with 10-hour capacitance backup with manual bypass. The time clock/ controls system shall be programmable and operational without an auxiliary computer.

C. Wiring and Accessories: Provide all required interconnecting wiring to complete the system. All control wiring shall be routed in rigid metal conduits. Paint new metal conduits and accessories when installed exposed in occupied rooms. Provide transformers as required. Electrical work shall comply with local codes and the electrical section of this specification.

D. Motor Starters: Horsepower rated manual or magnetic starters shall be provided as indicated. Starters shall conform to NEMA ICS and shall have thermal overload protection and other appurtenances necessary and as indicated. Provide voltage-phase protection and restart relay devices to protect equipment and to restart after power outage problem.

2.03 SPECIAL WIRING

A. All control circuits extending to remote control devices, thermostats, etc., will be 120 volts maximum.

B. Any wiring not shown and required for air conditioning to properly connect equipment, including connections to special safety control or apparatus not shown, shall be included under this section.

2.04 DUCTWORK

A. All ductwork and plenum chambers shall be galvanized metal installed of gauges and with bracing and joints all in accordance with latest edition of ASHRAE Guide and SMACNA Duct Construction Standards.

B. The thickness of the sheetmetal and size and spacing of the stiffeners used shall be in accordance with the requirements for the latest edition of the ASHRAE Guide and Data Book. Connections to plenum shall be airtight.

C. Provide hinged, gasketed, tool-less access panel for filter assembly, fan, and A/C unit mixed air plenum for coil cleaning access.

D. Turning Vanes and Extractors: Factory-fabricated and factory-or-field-assembled units consisting of curved double thickness turning vanes for uniform air distribution and change of direction with minimum turbulence and pressure loss. Fabrication shall be in accordance with applicable SMACNA Publications.

E. Flexible connections: Neoprene coated glass fabric weighing approximately 30 ounces per square yard.

F. Supports: Galvanized steel straps or hanger rods in accordance with

SMACNA Duct Construction Standards.

G. Birdscreens: Two by two mesh, 0.063-inch diameter aluminum wire or .031-inch diameter stainless steel wire, with frame.

H. Flexible Ducts: Polyester core with galvanized wire helix and 1-1/2 inch thick, 3/4 lb. density fiberglass insulation with flame resistant vapor barrier, UL approved. Flexible ducts not to exceed 6 feet in length and must be supported to maintain laminar flow. Flexible ducts tied in with medium pressure system shall be rated and constructed for medium pressure applications.

I. Silicone Sealant: Single component, ready to use, gun grade, silicone elastomer. Sealant shall be listed by independent test agency such as UL, FM or OPL and be tested to and pass the criteria of ASTME814 Through-Penetration Fire Test Standard and ASTME1966 Fire Test Joint Standard, 3M 1000N/S Silicone Sealants.

J. Duct Penetrations through Walls: Pack annular space between duct and wall with a fire seal of asbestos rope, mineral wool, or similar non-combustible material. Seal with silicone sealant or caulking.

K. Air Filters: Disposable type, 2" thick conforming to Underwriter's Laboratories (UL) Publication 900, Class 1 or Class 2, filter efficiency shall be 30% based atmospheric dust spot efficiency based on ASHRAE test method 52-92.

L. Fittings: Vaned elbows, take-offs, branch connections, transitions, volume dampers, and flexible connections shall comply with SMACNA standards. Dampers shall be opposed blade type with locking quadrant. Provide turning vanes in all elbows and where indicated.

2.05 PIPING

A. Refrigerant Piping:

1. Material and dimensional requirements for field assembled ACR refrigerant piping, valves, fittings, and accessories shall conform to ANSI B9.1 and ANSI B31.5, except as hereinafter specified. Refrigerant piping shall be hard drawn seamless copper tubing.

2. Fittings, Copper Tubing: Cast brass or wrought copper, brazed joint type, ANSI B16.18 OR B16.22.

3. Solder shall be silver brazing, BCuP-5 15% silver, above 1100 degrees F melting point.

4. Pipe hangers and supports shall conform to MSS SP-69 and MSS SP-58 except as indicated otherwise.

B. Condensate Drain: Condensate drain piping shall be Schedule 40 PVC pipe and drainage pattern fitting with solvent welded joints. Provide seal

trap at connections to unit. Provide cleanout at every change in direction of the condensate piping.

2.06 INSULATION

A. General: Insulation, adhesives, coatings, and accessories shall have surface burning characteristics as determined by ASTM E84 and UL 723, not to exceed 25 for flame spread and 50 for smoke developed.

B. Refrigerant Piping:

1. Exterior, aboveground: Self-sealing, pre-formed, high density closed cell polyolefin. Thickness to be selected from manufacturer's literature based upon pipe temperature and ambient condition.

2. Interior: Armaflex closed-cell elastomeric insulation. Thickness to be selected from manufacturer's literature based upon pipe temperature and ambient condition. When thickness required exceeds 2", multiple layer insulation shall be furnished.

3. Exterior insulation and interior exposed up to 7 feet above the floor shall be additionally wrapped with sheet aluminum 0.016-inch thick, fabricated neatly and secured to insulation with ½" aluminum bands and wing seals.

C. Condensate Piping: Armaflex closed-cell elastomeric insulation, 1/2" nominal thickness.

2.07 VIBRATION ISOLATION

A. Unless otherwise noted on drawings, all mechanical equipment shall be mounted on vibration isolators to prevent transmission of vibration and mechanically transmitted sound to building structure. Vibration isolator shall be selected in accordance with weight distribution to produce reasonably uniform deflection. Deflection shall be minimum of 1-inch for air handling units and air-cooled condensing units. Isolator frames shall be galvanized with spring neoprene coated.

1. Fan Coil Units shall be isolated with 1" static deflection spring hangers, Mason Industries 30N or similar.

2.08 VOLUME DAMPERS

A. Manual volume dampers shall be installed where shown and as required for air balancing. Dampers shall be opposed blade type, galvanized or aluminum, with flanged frame for duct mounting, two gauges heavier than the duct in which they are installed. Provide hat channel standouts for use with duct wrap insulation and locking quadrants.

B. Backdraft Damper: Provide spring-loaded backdraft damper, galvanized steel.

2.09 PIPE HANGERS AND SUPPORTS

A. All hangers, supports, bolts, nuts, washers, and accessories shall be galvanized unless otherwise specified.

B. Drilled-in Threaded Inserts: Where supports in beams and joists are required after concrete has been poured, Philips “Redhead” Drilled-In Threaded Inserts shall be provided, installed in accordance with manufacturer’s recommendations.

C. Provide adjustable hangers, saddles, inserts, brackets, rolls, clamps, supplementary steel, etc., as required for proper support of all pipe lines. Hangers shall be designed to allow for expansion and contraction of pipe lines and shall be of adequate size to permit covering to run continuously through hangers. Piping at coils shall be supported independently so that no weight will be supported by the equipment. Coordinate location of hangers with light fixtures as shown on electrical drawings. Hangers provided under other sections shall not be used for support of piping or equipment provided under this section unless permission is granted in writing by the Contracting Officer. Hangers shall be of manufacture and type specified, or equivalent products. Manufactured by B-Line, PHD, Superstrut or approved equal.

D. Pipe support spacing and hanger rod size shall conform to the following table:

Pipe Size	Spacing	Pipe Support Pipe Size	Rod Diameter
All size	Not over 6'-0"	Up to 2"	3/8"

E. Supplementary Steel: Provide all necessary supplemental structural steel for proper support or attachment of hangers. Steel shall be hot dipped galvanized.

F. Single Hangers: Support single pipe runs as follows:

1. Pipe 3-1/2” and Smaller: Split ring type hanger; Grinnell Fig. 104.

2. Trapeze type hanger shall be used to provide necessary clearances.

G. Insulation shields shall be Fig. 127 or equivalent field fabricated.

H. Pipes connected to equipment supported with vibration isolator shall be supported with spring isolators having a minimum static deflection equal to vibration isolator supporting the equipment but need not exceed 1-1/2” static deflection.

1. Pipes 1-1/2” and smaller within ten feet run from the equipment connections shall be supported with spring isolators.

2.10 PIPE HANGERS AND SUPPORTS

A. Manufacturer: Barber Colman, Titus, Metal-Aire, Kreuger, Anemostat, Airlume, Carnes or pre-approved equal.

B. Construction: Aluminum construction "off white" color for face plates, frames and grilles; except as noted.

1. Exhaust Register: Fixed blade type, 45-degree angle, 3/4-inch blade spacing with opposed blade volume control damper. OBVDs shall be aluminum.

2. Outside Air Diffuser: Square, louver face diffuser with opposed blade volume damper, 4-way throw unless otherwise indicated, with off-white finish. Provide factory insulation at the backside of the air device.

2.11 CORROSION PROTECTION (ACCUs only)

A. Exterior Finned Tube Heat Exchangers and Condensing Unit Coils:

1. Condenser finned tube coils shall be protected with a protective coating. Surface metal preparation shall include degreasing and etching or phosphatizing by immersion.

2. The coating shall withstand and show no sign of attack after 4,000 hours of salt spray test (ASTM B117) and acidic salt spray test (ASTM G85).

3. The coating shall be Aluminum Polyurethane similar to Blygold "PoluAl XT" and shall be applied by a manufacturer qualified applicator. Applicator shall provide a minimum, limited, 3-year warranty on parts and labor. HVAC equipment manufacturer applied coatings will be considered in lieu of Blygold provided the manufacturer applied coatings meet or exceed the performance specified above.

B. Cabinet and Exterior Surfaces:

1. Unit cabinet shall be coated with epoxy or polysiloxane similar to Ameron PSX 700 Engineered Siloxane. Surface metal preparation shall include degreasing and etching. HVAC equipment manufacturer applied coatings will be considered in lieu of PSX 700 provided the manufacturer applied coatings meet or exceed the PSX 700's performance.

2. The coating shall be applied to all interior and exterior surfaces until a total of 6-8 mils D.F.T. is achieved. Coating shall be applied in strict accordance with the coating manufacturer's recommendations.

3. After the coating has totally cured, the equipment shall be

assembled using care not to damage the coating during assembly. Fasteners shall be stainless steel with bonderized rubber washers attached. Any touch up required shall be performed in accordance with the manufacturer's recommendations.

C. Applicator: The coating shall be performed by a manufacturer qualified and experienced applicator. All damaged coatings shall be repaired by manufacturer qualified and experienced applicators. The name and associated qualifications of individual(s) who will perform coating repairs shall be submitted for all coatings.

2.12 PIPE SLEEVES

A. Provide where pipe passes through walls and partitions. Secure sleeves in proper position and location during construction. Provide sleeves of sufficient length to pass through entire thickness of walls and partitions. Provide not less than 0.25 inch space between exterior of pipe or pipe insulation and interior of sleeve. Firmly pack space with an approved fire stop material in rated walls and partitions, and install in accordance with the manufacturer's recommendations. Space between pipe and sleeves (both ends) shall be sealed in accordance with Section 07920 – Sealants.

B. Sleeves in masonry and concrete walls shall be ASTM A53, Schedule 40 or Standard Weight, hot-dip galvanized steel pipe.

C. Sleeves in partitions and other than masonry and concrete walls shall be hot-dip galvanized steel sheet having a nominal weight of not less than 0.90 ounces per square foot.

D. No cutting or drilling of any structural members will be permitted without the approval of the Design-Build Contractor.

PART 3 - EXECUTION

3.01 CORPERATION WITH OTHER TRADES AND CONFLICT IN WORK

A. Contractor shall examine all drawings of proposed work and coordinate his work with other trades. Work conflicts shall be brought to the attention of the Contracting Officer and work rearranged or modified in accordance with his decision.

B. If changes in indicated locations or arrangements of work are required, they shall be made by Contractor without additional charge to the State.

3.02 EQUIPMENT INSTALLATION

A. All equipment shall be installed as per manufacturer’s recommendations, with adequate clearances provided for servicing and as required by applicable codes.

B. Necessary supports shall be provided for equipment, appurtenances and pipe, as required. These include frames or supports for air conditioners, and

other similar type items requiring supports.

3.03 WORKMANSHIP AND FABRICATION

A. Ductwork:

1. Fabricate all ductwork and related work to highest industry standards and recommendations of ASHRAE. Seal all ductwork airtight.

2. Sides and tops of ductwork shall be cross broken. Long seams shall be Pittsburgh lock groove, hammered flat or double seamed. Ducts shall also have supplemental stiffening as required to prevent drumming and to provide structurally sound assembly. Seal ducts air tight with approved duct sealer.

3. Duct turns in all square elbows shall be accomplished by using pre-fabricated turning vanes such as Tuttle & Bailey “Ducturn.” Double thickness turning vanes in ducts deeper than 16-inches may be used in lieu of “Ducturn” provided prior approval of design is given by the Contracting Officer.

4. Ducts shall be supported at joints every 6-feet or less with steel hanger straps one-inch wide and made of material not lighter than 18 gauge riveted to seams unless indicated otherwise. Bolts or sheet metal screws may be used to fasten straps to ductwork provided prior approval is given by the Contracting Officer.

3.04 VIBRATION ISOLATION

A. Vibration transmission from all reciprocating and/or rotating equipment such as compressor and centrifugal fan shall be effectively isolated, by use of vibration mountings or hangers. Mounting and hanger sizes shall be determined by the manufacturer to assure adequate deflection and vibration isolation, and shall be installed in accordance with manufacturer’s recommendations to provide not less than 90 percent isolation efficiency.

3.05 CLEANING AND ADJUSTING

A. Equipment shall be wiped clean, with all traces of oil, dust, dirt, or paint spots removed. Bearings shall be properly lubricated with oil or grease as recommended by the manufacturer. All control valves and other miscellaneous equipment requiring adjustment shall be adjusted to setting indicated or directed. Fans shall be adjusted to the speed indicated by the manufacturer to meet specified conditions. Temporary filters shall be provided for all fans that are operated during construction, and after all construction dirt has been removed from the building, new filters shall be installed.

B. Condensate drain line shall be leak tested. No leaks are allowed at any joints.

3.06 TESTING AND BALANCING SYSTEMS

A. See Section 15950 - Testing, Adjusting And Balancing for testing and balancing requirements.

3.07 FIELD INSTRUCTIONS

A. Upon completion of the work and at a time designated, the services of one or more qualified personnel shall be provided by the Contractor for a period of not less than two days to instruct the representative of the Contracting Officer and school personnel in the operation of the air conditioning system and the maintenance and troubleshooting training to State Maintenance Personnel. These field instructions shall cover all the items contained in the bound instructions.

3.08 ONE YEAR MAINTENANCE SERVICE CONTRACT

A. In addition to the Guarantee on materials and workmanship, the Contractor shall submit 8 copies of the Maintenance Service Contract, countersigned by the General Contractor that will validate said Guarantee. The Guarantee and maintenance service shall extend for a period of one year commencing after 30 consecutive days of trouble-free operation after the Project Acceptance Date or the air conditioning equipment acceptance date, if earlier than the Project Acceptance Date, and shall include all labor, materials, equipment and parts necessary to service the complete system, in accordance with the attached Schedule of Maintenance Service so as to assure proper operation and function of the system. All costs for the periodic maintenance, including emergency calls, shall be borne by the Contractor. This maintenance period and the Guaranty period shall run concurrently (same start and end dates). The maintenance of the equipment shall start within one month of equipment start-up and continue until the end of the Project Maintenance Service Contact period.

B. However, should the Contractor default on the Maintenance Service Contract and must restart or complete the service, then the warranty period shall also be extended to match the revised maintenance service period.

C. Trouble-free operation is defined as the non-disabling condition or a non-recurring failure or disruption.

1. The system shall be free of all discrepancies, contamination and debris that require correction in excess to those described for the monthly service that is included in the Schedule of Maintenance.

2. The system is maintaining operational conditions and other parameters as measured during acceptance tests.

D. The installer shall include a listing of the following items along with the Maintenance Service Contract:

1. Name of the servicing Contractor.

2. Air conditioning system acceptance date.

3. Service contract expiration date.

4. Monthly inspection schedule for maintenance period.

5. Itemized listing of the equipment covered under the service contract, including a description of the equipment identified, its model and serial number(s), and manufacturer's name(s), and the quantity of each size and type of equipment.

E. The Maintenance Service Contract shall be submitted along with the Operations and Maintenance Manual on/or before the Project Acceptance Date.

F. Maintenance Log: Keep a separate log, recording all maintenance calls to the project, including at least the following information:

Name of person making service call.
Leahi Hospital Air Conditioning and Ventilation
Adult Day Health Renovation Project
Date of call, time in and out from project.
Nature of call; if emergency, who contacted service company.
Equipment gauge and temperature readings, ambient temperature.
Maintenance checklist.

G. In addition, submit written reports of maintenance or trouble calls performed within 7 days to HHSC. Submit reports on the attached form or facsimile.

H. Schedule of Maintenance Services: Periodic maintenance shall conform to the following schedule, with at least the following basic services:

1. Fan Coil Unit

a. Monthly Service

1) Clean and clear all drip pans and flush all related condensate drain lines with nitrogen. (Contractor may be liable for water damage due to clogged drains). Install pan tablets if necessary to control algae.

2) Change all disposable air filters at least once a mount; use Farr 30/30 or equal.

3) Wash permanent type filters with an approved detergent and spray coat with an approved filter treatment solution. Replace deteriorated permanent type filters which cannot be cleaned.

4) Lubricate and oil all fan and motor bearings and connections of dampers and vanes.

5) Operate equipment to check for proper operation, unusual noise and vibration; adjust or repair all equipment and controls as required; clean-up all equipment.

6) Check time clock for proper operation and time settings.

7) Certify performance of monthly service and that all discrepancies are reported and corrected.

b. Annual Service

1) Adjust alignment of bearings and sheaves; lubricate fan and motor bearings. Replace worn or noisy bearings or sheaves.

2) Clean all cooling coils of dirt accumulation using nitrogen, high pressure air/water, steam, or chemical coil cleaner solution.

3) Check pressure and temperature differential across cooling coils and log readings. Clean strainers, check vents and drain lines on cooling coils.

4) Clean fresh air intake grilles and dampers and repair or replace deteriorated bird screens.

5) Clean all fan wheels and interior and exterior of equipment housings.

6) Secure all loose housing, seal leaks and touch-up paint after cleaning all rust.

7) Check and calibrate all pneumatic and/or electric temperature controls.

8) Certify performance of annual service and correct and report all discrepancies.

2. Air Cooled Condensing Unit

a. Monthly Service

1) Perform tasks of Fan Coil Unit.

2) Check compressor oil level and refrigerant sight glass; add oil as needed and change filter/drier if moisture indicated.

3) Check refrigerant system for leads, unusual noise

and vibration and record suction, discharge and oil pressures in maintenance log book and correct all deficiencies.

b. Annual Service

1) Perform tasks of Fan Coil Unit.

2) Check compressor coupling alignment; lubricate or replace noisy bearings.

3) Clean condenser coils with compressed air, nitrogen, water, steam or chemical coil cleaning solution.

4) Test compressor crankcase oil and replace if contaminated or submit oil test results. Clean or replace strainer and oil filter (open compressor).

5) Test and check system response at various cooling load conditions for proper operation, record settings, adjust as required. Re-calibrate all safeties, capacity and temperature controls to proper settings.

6) Check and clean all unit housings (inside and outside and components), seal leaks and remove rust from exterior components and touch-up paint.

7) Megger compressor motor and submit report and recommendation; check starter, relays, and control contacts and electrical connections for tightness and clean as required.

3. Centrifugal Inline Fan

a. Monthly Service

1) Check motor controlled and backdraft dampers for proper operation; lubricate linkage for free movement.

2) Lubricate fan motors and bearings.

3) Check belt wear and tension; adjust or replace as needed.

4) Check sheaves for wear, replace as needed.

5) Check fan collar, bearings and shaft for wear, repair or replace as needed.

6) Replace air filters where installed.

7) Certify performance of quarterly fan maintenance service and correct and report all discrepancies.

b. Annual Service

1) Check and clean all fan wheels and housings of dust, dirt, and grease.

2) Remove and wash all dampers and repair or replace deteriorated bird screens.

3) Certify performance of semi-annual fan maintenance service and correct and report all discrepancies.

3.09 WORK SCHEDULE

A. All maintenance work shall be performed between the hours of 7:30 a.m. and 4:00 p.m., on normal working days, Monday through Friday.

3.10 TROUBLE CALLS

A. Emergency service and repairs required between regular service calls shall be rendered within 24 hours, including holidays in the event of equipment becoming inoperative resulting in the loss of cooling. Respond to emergency calls within 4 hours of notification.

3.11 CLEANUP AND WORK PRACTICES

A. The Contractor shall keep the job site free of debris, litter, discarded parts, etc. and shall clean all oil drippings during the daily progress of work. The Contractor shall remove all tools, parts, and equipment from the service areas upon completion of the work.

B. The Contractor shall exercise caution during the progress of his maintenance and repair work to prevent damage to the ceilings, roofing, and other building structure. The Contractor shall restore all damages caused by his negligence to its original condition at his own expense.

END OF AIR CONDITIONING AND VENTILATION

SECTION 15950 - TESTING, ADJUSTING AND BALANCING

PART 1 - GENERAL

1.01 SUMMARY

A. The work includes testing, adjusting, and balancing (TAB) of new air conditioning and ventilating systems including equipment, ducts.

1.02 RELATED WORK SPECIFIED IN OTHER SECTIONS

A. Mechanical work as specified in Section 15000 - General Mechanical Requirements unless specified otherwise in other sections of Division 15.

B. Air conditioning and ventilation equipment specified in Section 15800 - Air Condition And Ventilation.

1.03 SUBMITTALS

A. Submit in accordance with Section 01330 - Submittal Procedures. Also refer to Section 15000 - General Mechanical Requirements.

B. Statements: Submit the following in accordance with Section 15000 - General Mechanical Requirements.

1. Independent TAB agency personnel qualifications

2. Design review report

3. Pre-field TAB engineering report

4. Advanced notice TAB field work

5. Check out list

C. Independent TAB Agency Personnel Qualifications: For agency proposed for approval, submit information certifying that: the TAB agency is a first-tier subcontractor who is not affiliated with any other company participating in work on this contract; the work to be performed by the TAB agency shall be limited to testing, adjusting, and balancing of HVAC air and water systems to satisfy the requirements of this specification section. Submit the following, for the agency, to the Contracting Officer for approval in compliance with paragraph entitled “TAB Personnel Qualification Requirements.”

1. Independent AABC of/or NEBB certified TAB agency:

a. TAB agency: AABC registration number and expiration date of current certification; or NEBB certification number and expiration date of current certification.

b. TAB team supervisor: Name and copy of AABC or NEBB TAB supervisor certificate and expiration date of current certification.

c. TAB team field leader: Name and documented evidence that the team field leader meets the qualification requirements.

d. TAB team field technicians: Names and documented evidence that each field technician meets the qualification requirements.

e. Current certificates: Registrations and certifications shall be current, and valid for the duration of this contract. Certifications which expire prior to completion of the TAB work, shall be renewed in a timely manner so that there is no lapse in registration or certification. TAB agency or TAB team personnel without a current registration or current certification shall not perform TAB work on this contract.

f. Replacement of TAB team members: Replacement of members may occur if each new member complies with the applicable personnel qualifications and each is approved by the Contracting Officer.

D. Design Review Report: Submit typed report describing omissions and deficiencies in the HVAC and industrial ventilation system's design that would preclude the TAB team from accomplishing the TAB work requirements of this section. Provide a complete explanation including supporting documentation detailing the design deficiency. State that no deficiencies are evident if that is the case.

E. Pre-Field TAB Engineering Report: Submit report containing the following information:

1. Step-by-step TAB procedure:

a. Strategy: Describe the method of approach to the TAB fieldwork from start to finish. Include in this description a complete methodology for accomplishing each TAB fieldwork session.

b. Procedural steps: Delineate fully the intended procedural steps to be taken by the TAB field team to accomplish the required TAB work of each air distribution system and each water distribution system. Include intended procedural steps for TAB work for subsystems and system components.

2. Pre-field data: Submit AABC or NEBB or SMACNA HVACTAB data report forms with the following pre-field information filled in:

a. Design data obtained from system drawings, specifications, and approved submittals.

b. Notations detailing additional data to be obtained from the contract site by the TAB field team.

c. Designate the actual data to be measured in the TAB fieldwork.

d. Provide a list of the types of instruments, and the measuring range of each, which are anticipated to be used for measuring in the TAB fieldwork. By means of a keying scheme, specify on each TAB data report form submitted, which instruments will be used for measuring each item of TAB data. If the selection of which instrument to used, is to be made in the field, specify from which instruments the choice will be made. The instrument key number shall be placed in the blank space where the measured data would be entered.

3. Prerequisite HVAC and industrial ventilation system work checkout list: A list of inspections and work items which are to be completed by the Contractor, and submitted and approved by the Contracting Officer prior to the TAB team coming to the contract site. At a minimum, a list of the applicable inspections and work items listed in the NEBB TABES, Section III, "Preliminary TAB Procedures" under paragraphs entitled "Air Distribution System Inspection" and "Hydronic Distribution System Inspection." Also, list as prerequisite work items, the deficiencies pointed out by the TAB engineer in his design review report.

F. Advanced Notices: Submit "Advanced Notice for TAB Field Work" in writing.

G. Completed Check Out Lists: Submit "Prerequisite HVAC and Industrial Ventilation Work Checkout List" and certify in writing that each item has been checked and is operating as designed.

H. Field Test Reports: Certified TAB report.

I. Submit certified reports in the specified format including the above data. Submit Certified TAB Report in the following manner:

1. Report format: Submit the complete pre-field data forms approved in the pre-field TAB Engineering Report completed by TAB field team, reviewed and certified by the TAB supervisor. Bind the report with a waterproof front and back cover. Include a table of contents identifying by page number the location of each report. Report forms and report data shall be typewritten. Handwritten report forms or report data are not acceptable.

2. Design review report Temperatures: On each TAB report form reporting TAB work accomplished on HVAC thermal energy

transfer equipment, include the indoor and outdoor dry bulb temperature range and indoor and outdoor wet bulb temperature range within which the TAB data was recorded.

3. Instruments: List the types of instruments actually used to measure the tab data. Include in the listing each instrument's unique identification number, calibration date, and calibration expiration date.

4. Certification: Include the typed name of the TAB supervisor and the dated signature of the TAB supervisor.

J. TAB submittal and Work Schedule: Compliance with the following schedule is the Contractor's responsibility.

1. TAB Field Work: At a minimum of 30 calendar days prior to start of field check, accomplish TAB fieldwork; submit certified TAB report; and conduct field check.

1.04 REFERENCES

A. Comply with the recommendations and requirements of the codes and Standards listed hereinafter in addition to detailed requirements of this specification. In the event of conflicting requirements, this specification shall prevail.

ASSOCIATED AIR BALANCE COUNCIL (AABC)

AABC MN-1	National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems.

AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR CONDITIONING ENGINEERS, INC. (ASHRAE)

ASHRAE HA	Handbook, HVAC Applications

NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)

NEBB S&V	Procedure Standard for Measurement of Sound and Vibration.
NEBB TABLES	Testing, Adjusting, Balancing of Environmental Systems

SHEET METAL & AIR CONDITONING CONTRACTORS' NATIONAL ASSOCIATION, INC. (SMACNA)

SMACNA	HVAC Air Duct Leakage Test Manual
SMACNA	HVAC Systems Testing, Adjusting & Balancing

1.05 QUALITY ASSURANCE

A. Modifications of References: Accomplish work in accordance with referenced publications of AABC or NEBB except as modified by this section. In the references referred to herein, consider the advisory or recommended provisions to be mandatory, as though the word “shall” had been substituted for the words “should” or “could” or “may” wherever they appear. Interpret reference to the “authority having jurisdiction,” the “Administrative Authority,” or the “Design Engineer” to mean the “Contracting Officer.”

B. TAB Personnel Qualification Requirements:

1. Independent AABC or NEBB Certified TAB Agency: Provide services of a TAB agency certified by AABC or NEBB to perform and manage TAB work on HVAC air and water systems. This TAB agency shall not be affiliated with any company participating in any other phase of this contract, including design, furnishing equipment or construction.

2. TAB Team Personnel: TAB team approved to accomplish work on this contract shall be full-time employees of the TAB agency. No other personnel shall do TAB work on this contract.

a. TAB Team Supervisor: Supervisor shall be qualified by AABC or NEBB as a TAB supervisor or a TAB engineer.

b. TAB Team Field Leader: Leader shall have satisfactorily performed full-time supervision of TAB work in the field for not less than 3 years immediately preceding this contract’s bid opening date.

c. TAB Team Field Technician: Technician shall have satisfactorily assisted a TAB team field leader in performance of TAB work in the field for not less than one year immediately preceding this contract’s bid opening date.

3. Responsibilities: The Contractor shall be responsible for ensuring compliance with the requirements of this section. The following delineation of specific work responsibilities is specified to facilitate execution of the various work efforts by personnel from separate organizations. This breakdown of specific duties is specified to facilitate adherence to the schedule.

a. Contractor:

1) TAB personnel: Ensure that the TAB work is accomplished by a group meeting the requirements specified in paragraph entitled “TAB Personnel Qualification Requirements.”

2) Pre-TAB meeting: Attend the meeting with the TAB Supervisor, and ensure that a representative is

present for the sheetmetal contractor, mechanical contractor, electrical contractor, and automatic temperature controls contractor.

3) HVAC and industrial ventilation system documentation: Furnish one complete set of the following HVAC and industrial ventilation system-related documentation to the TAB Agency:

   a) Contract drawings and specifications

   b) Approved submittal data for equipment

   c) Construction work schedule

   d) Up-to-date revisions and change orders for the previously listed items

4) Submittal and work schedules: Ensure that the schedule for submittals and work required by this section are met.

5) Coordination of supporting personnel: Provide the technical personnel, such as factory representatives or HVAC controls installer required by the TAB field team to support the TAB field measurement work. Provide equipment mechanics to operate HVAC and industrial ventilation equipment to enable TAB field team to accomplish the TAB field measurement work. Ensure these support personnel are present at the times required by the TAB team, and cause no delay in the TAB fieldwork. Conversely, ensure that the HVAC controls installer has required support form the TAB team field leader to complete the controls check out.

6) Deficiencies: Ensure that equipment defects, installation deficiencies, and design deficiencies reported by the TAB team field leader are brought to the attention of the Contracting Officer. Ensure that design deficiencies reported by the TAB field leader, or the TAB team supervisor, are transmitted to the Contracting Officer within 7 calendar days from date of receipt from the TAB agency.

7) Prerequisite HVAC and industrial ventilation work: Complete check out and debugging of HVAC and industrial ventilation equipment, ducts, and controls prior to the TAB engineer arriving at the project site to begin the TAB work. Debugging includes searching for and eliminating malfunctioning elements in the HVAC and industrial ventilation

system installations, and verifying all adjustable devices are functioning as designed. Prior to the TAB field team's arrival, ensure completion of the applicable inspections and work items listed in the TAB team supervisor's pre-field engineering report. List as prerequisite work items, the deficiencies, pointed out by the TAB team supervisor in the design review report. Ensure that the TAB Agency gets a copy of the prerequisite HVAC and industrial ventilation work checklist specified in the paragraph entitled "Submittals." Do not allow the TAB team to commence TAB fieldwork until all of the following are completed:

a) HVAC system installations are fully complete.

b) HVAC prerequisite checkout work lists have been completed, submitted, and approved.

c) HVAC system filters are clean for TAB fieldwork.

d) Industrial ventilation system installations are fully complete.

e) Control systems installations are fully complete.

8) Advance notice: Furnish to the Contracting Officer with advance written notice for each event, the commencement of the fieldwork and for the commencement of the TAB fieldwork.

b. TAB Agency: Provide the services of a TAB team which complies with the requirements of paragraph entitled "TAB Personnel Qualification Requirements."

1) TAB Team Supervisor:

a) Overall management: Supervise and manage the overall TAB team work effort, including preliminary and technical TAB procedures and TAB team fieldwork.

b) Pre-TAB meeting: Attend meeting with Contractor. Design review report: Review project specifications and accompanying drawings to verify that the air systems are designed in such a way that the TAB Team Field Leader can accomplish the work in compliance with the requirements of this

section. Verify the presence and location of permanently installed test devices needed, including manual volume dampers.

c) Support required: Specify the technical support personnel required from the Contractor rather than the TAB agency; such as factory representatives for temperature controls or for complex equipment. Inform the Contractor in writing of the support personnel needed and when they are needed. Furnish the notice as soon as the need is anticipated, either with the design review report, or the pre-field engineering report or during the TAB fieldwork.

d) Pre-field engineering report: Utilizing the following HVAC and industrial ventilation-related documentation; contract drawings and specifications, approved submittal data for equipment, up-to-date revisions and change orders; prepare this report.

e) Prerequisite HVAC and industrial ventilation work checklist: Ensure the Contractor gets a copy of this checklist at the same time as the pre-field engineering report is submitted.

f) Technical assistance for TAB work: Provide immediate technical assistant to the TAB field team for the TAB work.

g) Certified TAB report: Certify the TAB report. This certification includes the following work:

(1) Review: Review the TAB field data report. From this field report, prepare the certified TAB report.

(2) Verification: Verify adherence, by the TAB field team, to the TAB plan prescribed by the pre-field engineering report and verify adherence to the procedures specified in this section.

h) Design deficiencies: Submit in writing as soon as possible, to the Contractor and the Contracting Officer, each design deficiency reported by the TAB field team. Provide, in this submittal, a complete explanation

including supporting documentation detailing the deficiency.

i) TAB field check: The TAB team supervisor shall attend and supervise TAB field check.

2) TAB Team Field Leader:

a) Field manager: Manage, in the field, the accomplishment of the work specified in PART 3 - EXECUTION.

b) Full time: Be present at the contract site when TAB field work is being performed by the TAB team; ensure day-to-day TAB team work accomplishments are in compliance with this section.

c) Prerequisite HVAC and industrial ventilation work: Do not bring the TAB team to the contract site until a copy of the prerequisite HVAC and Industrial Ventilation Checklist, with all work items certified by the Contractor to be working as designed, reaches the office of the TAB Agency.

C. Re-TAB Meeting: Meet with the State's TAB representative and the designing engineer of the HVAC and industrial ventilation systems to develop a mutual understanding relative to the details of the TAB work requirements. Ensure that the TAB supervisor is present at this meeting. Requirements to be discussed include required submittals, work schedule, and field quality control.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 TAB PROCEDURES

A. TAB Field Work: Test, adjust, and balance the listed HVAC systems to the state of operation indicated on and specified in the contract design documents. Air systems and water systems shall be proportionately balanced and reported in the certified TAB report. Provide instruments and consumables required to accomplish the TAB work. Conduct TAB work on the listed HVAC and industrial ventilation systems in conformance with the AABC MN-1, or NEBB except as modified by this section:

1. Maintenance and calibration of instruments.

2. Accuracy of measurements.

3. Preliminary procedures: Use the approved pre-field engineering report as instructions and procedures for accomplishing TAB field work. Test ports required for testing by the TAB engineer shall be located in the field by the TAB engineer during TAB fieldwork. It shall be the responsibility of the sheetmetal contractor to provide and install test ports as required by the TAB supervisor.

4. Air distribution systems TAB work: Ventilating systems including fans, ducts, and registers.

B. Data From TAB Field Work: After completion of the TAB work, prepare a pre-final TAB report using the reporting forms approved in the pre-field engineering report. Data required by those approved data report forms shall be furnished by the TAB team. Except as approved otherwise in writing by the Contracting Officer, the TAB work and the TAB report shall be considered incomplete until the TAB work is accomplished to within the accuracy range specified in the paragraph entitled “Workmanship” of this section. Prepare the report neatly and legibly; the pre-final TAB report shall be the final TAB report minus the TAB supervisor’s review and certification. Obtain, at the contract site, the TAB supervisor’s review and certification of the TAB report. Verbally notify the Contracting Officer’s TAB representative that the field check of the certified TAB Report data can commence; give this verbal notice 48 hours in advance of when the field checking shall commence. Do not schedule field check of the certified TAB report until the specified workmanship requirements have been met or written approval of the deviations from the requirements have been received from the Contracting Officer.

C. Quality Assurance For TAB Field Work:

1. Field Check: Test shall be made to demonstrate that capacities and general performance of air and water systems comply with the contract requirements.

a. Recheck: During field check, the Contractor shall recheck, in the presence of the Contracting Officer, random selections of data (air quantities, air motion, sound level readings) recorded in the certified report.

b. Areas of Recheck: Points and areas of recheck shall be selected by the Contracting Officer.

c. Procedures: Measurement and test procedures shall be the same as approved for work for forming basis of the certified report.

d. Recheck Selections: Selections for recheck will not exceed 25 percent of the total number of reported data entries tabulated in the report.

e. Re-Tests: If random tests reveal a measured quantity which is out-of-tolerance, the report is subject to disapproval at the

Contracting Officers discretion. In the event the report is disapproved, all systems shall be readjusted and tested, new data recorded, new certified reports submitted, and a new field check conducted at no additional cost to the State.

2. Approval Prerequisite: Compliance with the field checking requirements of this section is a prerequisite to the final approval of the certified TAB report submitted.

D. Marking of Settings: Permanently mark the settings of HVAC adjustment devices including valves, splitters, and dampers so that adjustment can be restored if disturbed at any time. The permanent markings shall indicate the settings on the adjustment devices which result in the data reported on the submitted certified TAB report.

E. Marking of Test Ports: The TAB team shall permanently and legibly mark and identify the location points of the duct test ports. If the ducts have exterior insulation, these markings shall be made on the exterior side of the duct insulation. The location of test ports shall be shown on the as-built mechanical drawings with dimensions given where the test port is covered by exterior insulation.

END OF TESTING, ADJUSTING AND BALANCING

DIVISION 16 – ELECTRICAL

SECTION 16010 - BASIC ELECTRICAL REQUIREMENTS

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes: Electrical power and lighting, telecommunications, and fire alarm system drawings are schematic and indicate general layout and approximate locations of outlets, switches, luminaires, feeder runs, devices, and other electrical equipment.

1. Make minor adjustments in layouts to ensure coordination.

2. Coordinate electrical devices' terminal locations with architectural drawings and interior drawings.

B. Review Contract Drawings and Specifications and verify locations of structural members, equipment, apparatus, and other conditions which may affect work of this Division. Provide conduit transitions and offsets, junction boxes, and similar fittings as necessary to install complete electrical systems. Accomplish and pay for modifications to indicated locations and arrangement to suit jobsite conditions.

C. Record Drawings: Maintain in accordance with DIVISION 1 Sections.

D. Coordinate work with wiring and equipment included in other Sections of the specifications.

E. Design and location indicated on Drawings are based on specified products and equipment. Provide modifications to materials, components and equipment required to accommodate products and equipment other than specified. Any equipment used in place of specified equipment must meet the standards and certifications of the specified equipment. Perform modifications, and additional testing and certification to substantiate compliance, at own expense.

F. Obtain Architect's review of significant deviations from drawing layouts before performing the Work.

G. Architect reserves the right to relocate any device within 10 feet of its indicated location up to the time of its installation without any change in Contract Sum.

1.02 SUBMITTALS

A. Submit under provisions of SECTION 01330 - SUBMITTAL PROCEDURES.

B. Proposed Products List: Include list of products and items proposed to be provided.

C. Submit shop drawings and product data grouped to include complete submittals of related systems, products and accessories in a single submittal.

D. Mark dimensions and values in units to match those specified.

E. Record Documents: Provide in accordance with DIVISION 1 Specification Sections.

F. Instruction of Owner's Personnel: Comply with procedures and requirements specified in DIVISION 1 Specification Sections and in applicable Sections of this Division.

G. Substitutions: Comply with SECTION 01330 - SUBMITTAL PROCEDURES.

H. Warranty: Submit warranty as noted under item entitled "WARRANTY" hereinbelow.

1.03 QUALITY ASSURANCE

A. Regulatory Requirements:

1. Building Code: International Building Code, Latest Edition.

2. Electrical: NFPA 70 National Electrical Code (NEC), 2017 Edition, ANSI C1 National Electrical Safety Code, and applicable NFPA regulations.

3. International Energy Conservation Code (IECC), 2015 Edition.

4. Lateral Forces: International Building Code, Latest Edition, Seismic Risk Zone 2.

5. Make arrangements and coordinate with Utility Companies requirements concerning their work.

6. Obtain permits and request inspections from authority having jurisdiction.

1.04 PROJECT CONDITIONS

A. Install work in locations shown on Drawings, unless prevented by project conditions.

B. Prepare clarification drawings and showing proposed rearrangement of work to meet project conditions, including changes to work specified in other Sections. Submit to Architect for review before proceeding.

C. Coordinate work with the various trades. Where items must fit spaces previously constructed, verify measurements at the site. Insure that all required inserts and attachments are properly set and that adequate provision is made for installing this work.

D. Defective or Improper Work: Remove work or materials not acceptable, and replace with approved materials or work at own expense.

1.05 ELECTRICAL SYSTEM SUPPORT DEVICES

A. General:

1. Electrical equipment and materials shall not be suspended or supported from pipe, electrical conduit, ceiling systems or any nonstructural member.

2. Electrical equipment and systems shall be installed and enclosed to resist seismic forces in accordance with Lateral Forces requirements specified above.

3. Electrical systems and conduit shall not penetrate ductwork.

B. Concrete Anchoring: Use cast inserts in new construction; stamped metal inserts will not be acceptable. Expansion shells may be used in existing construction; powder actuated inserts will not be acceptable.

1.06 SEQUENCING AND SCHEDULING

A. Construct Work in sequence under provisions of DIVISION 1 Sections.

1.07 WARRANTY

A. Special Warranty: Provide special warranties specified in applicable section of DIVISION 16 - ELECTRICAL.

B. Warrant lamp sources for 50 percent of rated life.

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION

SECTION 16100 - BASIC MATERIALS AND METHODS

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Materials, equipment fabrication, installation and tests in conformity with applicable codes and authorities having jurisdiction.

2. Raceways.

3. Wire and cable.

4. Boxes.

5. Low voltage distribution equipment.

6. Motor controllers.

7. Wiring devices.

8. Supporting devices.

9. Telecommunication (voice and data) raceway system.

10. Grounding.

B. Related Sections:

1. DIVISION 9 - FINISHES.

2. Furnishing and setting of motors under the sections corresponding to equipment that have motors.

1.02 DEFINITIONS

A. Specifications are of a simplified form and include incomplete sentences. Words such as, “shall be”, “furnish”, “a”, “an”, “the”, etc., have been omitted for brevity.

1. “Furnish” or “provide”: To supply, install and connect up complete and ready for safe and regular operation of particular work referred to unless specifically otherwise noted.

2. “Install”: To erect, mount and connect complete with related accessories.

3. “Supply”: To purchase, procure, acquire and deliver complete with related accessories.

4. "Work": Labor, materials, equipment, apparatus, controls, accessories, and other items required for proper and complete installation.

5. "Wiring": Raceway, fittings, wire, boxes and related items.

6. "Concealed": Embedded in masonry or other construction, installed in furred spaces, within double partitions or hung ceilings, in trenches, in crawl spaces, or in enclosures.

7. "Exposed": Not installed under ground or "concealed" as defined above.

8. "Indicated", "Shown" or "Noted": As indicated, shown or noted on Drawings or Specifications.

9. "Similar" or "Equal": Of base bid manufacture, equal in materials, weight, size, design, and efficiency of specified product, conforming with "Base Bid Manufacturers".

10. "Reviewed", "Satisfactory", "Accepted" or "Directed": As reviewed, satisfactory, accepted, or directed by or to Architect.

1.03 SUBMITTALS

A. Submit under provisions of SECTION 01330 - SUBMITTAL PROCEDURES.

B. Submittals shall be complete, bound under cover and indicating project title. Contractor shall review submittals for conformance with Contract Documents, make necessary revisions and submit to Architect, indicating the following:

1. Manufacturer's name, brand name and catalog reference of equipment supplied.

2. Drawings pertinent to deviations from the Contract. Comply with all applicable references mentioned in this Section. Coordinate with other trades and field conditions and show dimensions and details including building construction and access for servicing.

a. Record Documents (as-built drawings): During progress of the work, maintain an accurate record of changes made in the work of this Section from the layout shown on the Drawings and the materials and methods described in this Section. Changes shall be recorded daily to assure completeness and accuracy.

b. Upon the completion of the work, submit to the Architect for approval a reproducible set of the contract drawings modified to reflect all changes accrued during the work progress.

3. Detailed description of items supplied, including specifications, performance characteristics, materials, wiring diagrams and schedules.

4. Operation and maintenance instructions for circuit breakers and motor starters.

5. Installation, testing instructions and field test procedures for circuit breakers and motor starters.

6. List of manufacturer's recommended spare parts and address of nearest representative.

1.04 QUALITY ASSURANCE

A. All equipment and accessories to be the product of a manufacturer regularly engaged in its manufacture.

B. Supply all equipment and accessories new, free from defects and listed by Underwriters' Laboratories, Inc., or bearing its label.

C. Supply all equipment and accessories in compliance with the applicable standards listed in this Section and with all applicable United States and local codes.

D. All items of a given type shall be the products of the same manufacturer.

1.05 DELIVERY, STORAGE AND HANDLING

A. Equipment shall be shipped in its original packages, to prevent damaging or entrance of foreign matter. All handling and shipping shall be performed in accordance with manufacturer's recommendations. Provide protective coverings during construction.

B. Replace at no expense to Owner, equipment or material damaged during storage or handling, as directed by the Architect.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Raceways:

1. Complete with boxes, fittings and accessories.

2. Rigid Steel Conduit: Full weight pipe, galvanized, threaded, minimum diameter 3/4 inch. Use for all exposed feeders, submains, branch circuits above finish slab to a height of eight feet.

3. Electrical Metallic Tubing (EMT): Thin wall pipe, galvanized, threadless, minimum diameter 3/4 inch.

4. Flexible Steel Conduit: Continuous single strip, 5 feet maximum per NEC, galvanized, 3/4 inch minimum diameter or larger as required for wiring. PVC covered for liquid tight. Provide ground wire in all flexible conduits.

5. Wireways: Complete with all fittings and accessories. Size as noted, baked enamel finish inside and outside, approved for support at minimum 10 feet on centers.

   a. Interior Use: Hinged cover and base, minimum thickness 16 gauge galvanized steel.

   b. Acceptable Manufacturer: Similar to Circle AW, Hoffman Engineering Co., Square D. Co., Universal Mfg. Co., or accepted equivalent.

6. Polyvinyl Chloride Covered Rigid Steel Conduit: Full weight pipe, galvanized, threaded, polyvinyl chloride covered on exterior, minimum diameter 3/4 inch. Use for underground locations.

B. Fittings and Accessories:

1. Raceway Fittings:

   a. Rigid Conduit: Steel or malleable iron, galvanized. Zinc die cast fittings; not permitted.

   b. EMT: Set screw type.

   c. Flexible Metallic Conduit: Angle wedge type with insulated throat.

   d. Bushings: Metallic insulated type. Weatherproof or dustight installations; liquid-tight with sealing ring and insulated throat.

   e. Expansion and Deflection Fittings: O.Z./Gedney Type "DX" or accepted equivalent.

2.02 600 VOLT WIRE AND CABLE

A. Complete with accessories; sizes AWG, except as noted.

B. Conductors:

1. Solid copper for sizes No. 10 and smaller and stranded copper for sizes No. 8 and larger.

2. General Uses: Minimum size No. 12. At 120 volts and over 100 feet circuit length, minimum size No. 10. At 277 volts and over 220 feet circuit length, minimum size No. 10.

3. Control and Alarm Wires: Minimum size No. 14. At 120 volts and over 200 feet circuit length, minimum size No. 12.

4. Increase raceway sizes as required for larger wires, as indicated, or in accordance with NEC Table 3A based on RHW wires.

5. Aluminum cables will not be permitted.

C. Insulation: 600 volt insulation types.

1. Branch Circuits: Type XHHW, THHN, or THWN.

2. Type MC: Branch circuits not including circuit home run. Public and back-of-house areas not including circuit home runs.

3. Color Coding: As per code. Where color coded insulation is unavailable, overlap color taping conductors (minimum length, six inches) in accessible and visible locations.

D. Accessories:

1. Tags:

a. Flameproof linen or fiber in accessible locations.

b. Feeders: Control or alarm: Indicate type of controls or alarm and points of origin and terminations with Brady wire markers in all junction boxes, cabinets, and equipment.

2. Terminations, Splices and Tapes:

a. Copper Conductors No. 10 and Smaller: Compression type connectors and clear nylon insulated covering.

b. Copper Conductors No. 8 and Larger: Hydraulic compression type using manufacturers recommended tooling.

c. Cable Lugs and Connectors: Compression type of same metal as conductor to match cables with marking indicating size and type.

d. For copper lug connections to bus bars provide anti-seize compound.

E. Manufacturer: Similar to General Cable, Anaconda, Anixter, or accepted equivalent.

2.03 BOXES

A. Outlet and small junction boxes shall be zinc-coated pressed steel of ample size. Light outlets shall be fitted with no-bolt type fixture studs as necessary for fixture support. Minimum size of outlet boxes, 4 inch square or octagon.

B. Extension or raised rings for pressed boxes pressed from NEC gauge steel and galvanized.

C. Provide all boxes in finished walls with plaster rings. Provide plaster ring and finish blank device plates for all small flush junction boxes.

D. Telecommunication outlets shall be as indicated and 4-11/16 inch square by 2 inch deep minimum junction boxes unless noted otherwise.

2.04 LOW VOLTAGE DISTRIBUTION EQUIPMENT

A. Disconnect Switches:

1. Non-fused or fused as indicated.

2. Voltage: 250 volts rated on 120/208 volt circuits and 600 volts rated on 277/480 volt circuits.

3. Heavy-duty, quick-make quick-break.

4. Horsepower rated for motor loads.

5. NEMA 1 indoors and NEMA 4X stainless steel in exterior locations.

6. Knife Blade Type Switches:

a. Load break type with arc quenchers.

b. Manufacturer: Similar to Westinghouse, Square D, ITE, General Electric, or accepted equivalent.

2.05 WIRING DEVICES

A. Local Wall Switches:

1. Heavy duty, toggle, quiet type, specification grade.

2. 20 amp, 120/277 volt, AC.

3. Similar to Hubbell Catalog Numbers as Follows:

a. Single pole, No. 1221-I/W/B.

4. Motion Sensor Light Switches:

a. Appropriate for use size and geometry of the room.

b. Infrared, ultrasonic or dual technology type as appropriate for the use, size and geometry of the room.

c. Cooper controls or accepted equivalent.

B. Insertion Receptacles:

1. Grounded, except as noted.

2. Similar to Harvey Hubbell Catalog Numbers as Follows:

a. Duplex Convenience - Specification Grade.

1) 125 volts, 2 pole, 3 wire, U-ground slot.

2) 15 amp, similar to 5262-I.

3) 20 amp, similar to 5362-I.

b. Special Receptacles: Specification grade, rating and type as indicated or to suit equipment served by the receptacle.

NOTE: Contractor responsible to verify exact configuration of special receptacles against plug types on equipment or provide matching plug and connection of plug to equipment.

3. Ground Fault Interrupter Receptacles: Self-protecting type, similar to Leviton Catalog No. 6598-I. Leviton Decora series in public areas.

C. Device Plates:

1. One piece solid.

2. For receptacles with other than 120 volt, inscribe voltage available.

3. Offices: Smooth plastic to match surface or as selected by the Architect. Contractor shall coordinate with the Architect or interior finish.

4. Securing screws shall match color of faceplate.

D. Acceptable Manufacturers: Similar to local wall switches, receptacles, device plate and pilot lights.

1. Arrow-Hart Inc.

2. Bryant Electric.

3. Harvey Hubbell Inc.

4. Leviton.

5. Cooper Wiring Devices.

6. Or accepted equivalent

2.06 INSERTS AND SUPPORTS

A. Maximum Loading: 75 percent of rating.

B. Inserts:

1. Expansion Cases and Concrete Fasteners: Grinnel Figure 117 and Series R or accepted equivalent.

2. Concrete drilled to receive required expansion cases of concrete fasteners.

3. All inserts shall be approved by the Structural Engineer.

C. Supports from Building Construction: Beam clamps, cantilever brackets, or other acceptable means after review.

D. Grouped Lines and Services: Supported by trapeze hangers of bolted angle or channels.

E. Where building construction is inadequate, provide additional acceptable framing after review.

F. All electrical equipment shall be installed as indicated and per Island of Oahu earthquake zone requirements.

2.07 TELECOMMUNICATION (VOICE AND DATA) AND TELEVISION SYSTEM

A. Empty conduit raceway system following BICSI EIA/TIA standards as indicated on the drawings.

B. Components:

1. Wall Outlets: 4-11/16 inch square with plastic ring and bushed coverplate.

2. Device plates for telecommunication outlets shall be single gang provided by telecommunication contractor. Coordinate with telecommunication contractor

3. Grounding per BICSI EIA/TIA 606 Standard.

2.08 NAMEPLATES

A. Nameplates Provided For:

1. Disconnect switches.

2. Circuit breakers.

3. Motor controllers.

PART 3 - EXECUTION

3.01 GENERAL

A. Drawings are diagrammatic and indicate general arrangement of systems and work included. Follow Drawings in laying out work and check Drawings of other trades relating to work to verify spaces in which work will be installed. Maintain headroom and space condition to all points.

B. Set and layout work on premises. Base all measurements from approved bench marks and correct setting or work to agree with established lines and levels. Should discrepancy exist between actual measurements and those indicated, notify Architect in writing and do not proceed with work affected until written instructions are received from Architect.

C. All minor appurtenances not specifically mentioned herein that are necessary to make a complete working installation, are included in the work with any necessary field engineering or detail drawings required. Submit Drawings as specified in item entitled “SUBMITTALS” hereinabove.

D. Install equipment, rigid and secure, plumb and level, and in true alignment with related and adjoining work. No welding of electrical materials for attachment or support is permitted.

E. Provide supporting members as required to set and connect rigidly the work.

F. Correct noise and vibration exceeding specified limits or due to faulty equipment at no expense to Owner.

G. Cutting: Cutting shall conform with requirements as approved by Architect.

H. Patching: Patching shall conform with requirements as approved by Architect.

3.02 INSTALLATION OF RACEWAYS

A. Run raceways concealed, except as noted.

B. Supports: Supports shall have adequate strength to support equipment wiring and enclosures against earthquake forces.

1. Ceiling trapeze, strap hangers, or wall brackets.

2. U-bolt or pipe straps at each floor level of riser raceways.

3. Secure raceways to supports with pipe straps or U-bolts.,

4. Maximum Spacing: 7 feet on centers for metallic conduit and wireways.

5. Mount Support to Structure With:

a. Toggle bolts on hollow masonry.

b. Expansion shields or insets on concrete.

c. Machine screws on metal.

d. Wood screws on wood.

e. Nails, Rawl plugs or wood plugs; not permitted.

C. Run exposed raceways parallel with or at right angles to walls.

D. Clearance from Water, Steam or Other Piping: Minimum three inches separation from hot water pipes, except four inches from pipe cover at crossings.

E. Keep raceways clear of motor foundations and underside of boilers.

F. Raceways for outlets in hung ceiling shall be run in hung ceilings. Provide supports to structure. Do not support to ceiling systems.

G. Run raceways in walls vertically.

H. Maintain grounding continuity of interrupted metallic raceways with minimum No. 2 AWG insulated, copper ground conductor and ground bushings at conduit terminations.

I. For empty raceways over 10 feet long, provide with pull wire or 200 pound strength nylon pull line.

J. Seal around raceway penetrations through walls and floors and provide fire rated, approved compound consistent with penetrated fire rated walls and floors.

K. Raceways for telecommunication system shall comply with requirements for premise wiring/Category 5e type cabling as required by BICSI EIA/TIA standards.

L. Steel Conduit:

1. Paint threads of field threaded conduit with graphite base pipe compound.

2. Install in exposed locations subject to physical damage, such as from floor to 8 feet above floor.

3. Direct Buried Conduit: Provide continuously with waterproofing tape, half lapped, or two coats of asphaltum paint, dried thoroughly between paintings and before backfilling.

4. Not permitted in terrazzo floor finish and in concrete.

5. Minimum one inch cover in concrete fill.

M. EMT: Install generally for interior dry locations; above dry ceilings, in dry walls and in concrete above ground floor.

N. Flexible Steel Conduit:

1. For short connections where rigid conduit is impracticable. Maximum length limited to five feet.

2. From Outlet Box to Recessed Lighting Fixture: Minimum four feet, maximum six feet length.

3. For final connection to motor terminal box and transformers with polyvinyl sheathing. Minimum Length: 18 inches with minimum 50 percent slack.

4. Not permitted except as stated above.

O. Outlet Boxes:

1. Set square and true with building finish and secure to building structure by adjustable strap irons.

2. Verify outlet locations in finished spaces with Drawings of interior details and finishes.

3. Provide barriers between switches connected to different phase for voltages exceeding 150 volts to ground.

P. Junction Boxes:

1. Location: Clear of other work. Conceal junction boxes in finished spaces and maintain accessibility.

2. Support from building structure, independent of conduit. Do not support to ceiling systems.

3. Outlet boxes for fixtures recessed in hung ceiling; accessible through opening created by removal of fixture.

4. Motor Terminal Boxes: Coordinate with motor branch circuit conduit and wiring.

3.03 INSTALLATION OF WIRE AND CABLE

A. 600 Volt Cable: Separate raceways for conductors of 120/208, 277/480 volt and emergency systems, except 480 volt motor branch circuit wiring and related 120 volt control wiring.

B. Low voltage cable shall be installed in separate raceways.

C. MC Cable:

1. Use for time share branch circuit wiring only not including home runs.

2. Use for branch circuit wiring luminaire to luminaire and wiring device to wiring device on the same circuit.

3. Support and secure per code.

3.04 INSTALLATION OF POWER, CONTROL AND ALARM WIRING SYSTEMS

A. General: Complete wiring from service to distribution and utilization equipment and as described below.

B. Motor Wiring:

1. Under Electrical Work, Unless Otherwise Noted:

a. Disconnect switches.

b. Motor controllers unless furnished by other trades or equipment supplier.

c. Wiring From Power Source To: Motors, disconnect switches and control devices, motor controller and motor control centers.

2. Motor Terminal Boxes: Provide motor suppliers with minimum requirements to receive indicated wiring.

3. Raceways:

a. Rigid conduit or electric metallic tubing except flexible (with slack) for final motor connection.

b. Install clear of motor foundations.

c. Allow clearance for motor removal and maintenance.

C. HVAC Temperature Control and Motor Interlock Wiring: Under HVAC Work:

1. Temperature control wiring and devices.

2. Motor interlock wiring in accordance with sequence of operation and/or wiring diagrams provided under DIVISION 15 - MECHANICAL.

D. Fire Smoke Dampers: Coordinate location of all fire smoke dampers. Provide 120V emergency power and interface with fire alarm system.

E. Mechanical System Control Panels: Provide power to all mechanical systems control panels and energy management system controllers. Coordinate with Mechanical Contractor.

F. Wiring Diagrams: Obtain required wiring diagrams for respective work of other trades and provide wiring as indicated by these diagrams and in accordance with applicable Specifications.

3.05 GROUNDING

A. Motors, metallic enclosures, raceways and electrical equipment grounded according to requirements of National Electrical Code, Article 250. Ground connection to equipment, raceways, motors, grounding type receptacles and other metallic parts directly exposed to ungrounded electric conductors by continuous metal raceways, or No. 14 AWG minimum, AWG copper, NEC type TW, green insulated. At water meter and “Di-electric” union joints, install pipe clamps, Thomas & Betts Co. No. 3900 series, on both sides of meter on metallic pipes and connect together with No. 1/0 bare copper. Connection shall not interfere with installation or removal of water meter. Install ground wire, size in accordance with NEC.

B. All grounding wire runs within buildings shall be in rigid steel conduits. Where practicable, all ground wires shall be run together with circuit conductors.

3.06 FINISHING

A. Patch, repair and restore all structural and architectural elements cut or drilled for installation of electrical system. Drilling, cutting, patching, repairing and restoring shall be subject to approval of Architect.

B. Attach electrical equipment to wood by wood screws, and attach to concrete by embedded or expansion inserts and bolts. Use power-driven charge with approval only. Close unused knock-outs on boxes or enclosures with metal cap. Powder actuated fasteners shall not be used

on precast concrete. Do not use powder activated fasteners to attach enclosures and boxes to the building.

C. Wipe clean all exposed raceways and enclosures with rag and solvent. Prime painting and finishing of unfinished raceways and enclosures shall conform to DIVISION 9 - FINISHES. Factory finished enclosures shall not be painted except in finished spaces, such as public rooms, offices, etc. Panelboards, switches, circuit breakers, junction boxes, and equipment shall be identified by stenciling with engraved plastic nameplates on cover or door. Voltage and phase shall be indicated on nameplates for panelboards, switches and circuit breakers.

D. Connect circuits to circuit assignments shown on drawings. Provide neatly typewritten circuit directory for all panelboards. Circuit directory shall indicate location of loads served by each circuit.

E. Label all panels and service equipment with neatly printed or lettered labels. Securely attach labels to equipment.

3.07 CLEANING

A. Brush and clean work prior to concealing, painting and acceptance. Performed in stages if directed.

B. Clean and repair soiled or damaged painted exposed work and match adjoining work before final acceptance.

C. Remove debris from inside and outside of material, equipment and structures.

3.08 FIELD TESTS

A. General: Perform field tests in the presence of the Architect except as otherwise specified. Provide required labor, materials equipment and connections to perform tests, document results and submit them to Architect for approval and repair or replace all defective work.

B. Test on 600 Volt Wire and Cable: Perform the following test prior to connecting the equipment:

1. All wiring shall be tested to ensure proper operation according to functions specified.

C. Tests on Low Voltage Distribution Equipment: Open and close switching devices under load.

D. Tests on Motor Controllers: Verify operation of controllers and open and close controllers and load break switches under load.

END OF SECTION

SECTION 16500 - LIGHTING

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Materials, equipment, fabrication, installation and tests in conformity with applicable codes and authorities having jurisdiction.

2. Lighting fixtures (luminaires).

3. Components.

4. Contractor shall take delivery, store, assemble, install and connect fixtures furnished by the Owner.

5. Provide all 0-10V wiring for all 0-10V dimmable drivers.

1.02 SUBMITTALS

A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.

B. Submittals shall be complete, bound under cover and indicating project title. Contractor shall review submittals for conformance with Contract Documents, make necessary revisions and submit to Architect, indicating the following:

1. Manufacturer's name, brand name, and catalog reference of equipment supplied.

2. Details of construction and finishes of fixtures.

3. Drawings: To scale (indicate scale).

4. Photometric data, including optical performance rendered by independent testing laboratory developed according to IES Methods as follows:

a. For Down and Semi-Down Lights Used For General Illumination:

1) Coefficients of utilization.

2) Candlepower data, presented graphically and numerically, in 10 degree increments (5 degree, 15 degree, etc.). Data developed for up and down quadrants normal, parallel, and at 45 degree to lamps if light output is asymmetric.

3) Zonal lumens stated numerically in 10 degree increments (5 degree, 15 degree, etc.) as above.

b. For Other Fixtures: Candlepower curves, presented graphically and numerically, in 10 degree increments (5 degree, 15 degree, etc.), or smaller increments for narrow-beam fixtures.

5. Luminaire and Lamp Lists: Submit list of luminaires and lamp types of quantities.

6. Warranty: Submit warranty as stipulated in item entitled "WARRANTY" hereinbelow.

1.03 QUALITY ASSURANCE

A. All equipment and accessories to be the product of a manufacturer regularly engaged in its manufacture.

B. Supply all equipment and accessories new, free from defects and listed by Underwriters' Laboratories, Inc., or bearing its label.

C. Supply all equipment and accessories in compliance with the applicable standards listed in this Section and with all applicable United States and local codes.

D. All items of a given type shall be the products of the same manufacturer.

1.04 DELIVERY, STORAGE AND HANDLING

A. Ship equipment in its original packages to prevent damaging or entrance of foreign matter. All handling performed in accordance with manufacturer's recommendations. Provide protective coverings during construction.

B. Replace at no expense to Owner, equipment or materials damaged during storage or installation as directed by the Architect.

1.05 OPERATION AND MAINTENANCE DATA

A. Maintenance Data: Include replacement parts list.

1.06 WARRANTY

A. Warranty of equipment and labor by manufacturer for one year from written notification of acceptance by the Owner.

PART 2 - PRODUCTS

2.01 GENERAL

A. Type of fixtures indicated by letters or letters followed by numbers. See drawings for tabulation of fixture types.

B. Light Emitting Diodes (LED): Minimum CRI 80, 3000K or 3500K color temperature as specified, minimum 50,000 rated life.

C. Sheet Metal Fixture Housings: Welded construction, with exceptions noted under fixture types.

D. Fixtures with baffles riveted or welded to housing; not acceptable.

E. Fixture catalog numbers used to illustrate equipment type do not necessarily denote required mounting equipment or accessories. Provide accessories to suit.

F. Removable From Fixture Housings: Chains, springs, hinges or other fastening devices required on apertures, reflectors and baffles.

2.02 FIXTURE CONSTRUCTION

A. Free of light leaks.

B. Weatherproof and Vaportight Fixture Finishes: Weatherproof enamel, galvanized or epoxy, including hangers.

2.03 DRIVERS

A. General:

1. High power factor, except as noted.

2. Of required voltage and frequency.

3. Dimmable where specified.

2.04 CONTACT SURFACES

A. Aluminum to Bronze: Coating equal to Minnesota Mining and Manufacturing Co., No. 1706, “Coro-Guard,” applied to both surfaces.

B. Aluminum to Concrete: Coating of polyurethane base paint, similar to Lehman Bros. “Ox-O-Deck”; or asphaltum.

2.05 WIRING

A. 120/208 Volt Luminaire Wiring: 300 volt, 302 degree F (150 degree C), Type AP or SFF, beginning at separately mounted outlet box.

B. 277/480 Volt Luminaire Wiring: 600 volt, 220 degree F (105 degree C). Appliance-type AWM or THHN, beginning at separately mounted outlet box.

C. Splices: Mechanical spring pressure connector or crimp connector.

D. Minimum 3/8 inch (9.5 mm) flexible conduit connections for recessed fixtures except as indicated. Maximum length: 6 feet, 0 inches (1.85 M).

2.06 SUPPORTS

A. All fixture supports shall be suitable for earthquake Zone 3.

B. All Ceiling Mounted Fixtures: Carry weight of fixture to building structure, clear of ducts or pipes. Do not support to ceiling systems or supports for mechanical systems. For fluorescent troffers, provide a minimum of three suspensions and for incandescent small luminaires. Provide minimum of one suspension support to concrete ceiling or roof structure.

C. Pendant Mounted Fixtures: With conduit stems supported to building structure. Self-leveling fittings.

D. Wall Mounted Fixtures: Support fixture directly to structure of wall (i.e., studs).

2.07 FINISHES

A. Painted Surfaces, Except as Noted:

1. Synthetic enamel, with acrylic, aklyd, epoxy, polyester, or polyurethane base, light stabilized, baked on at 350 degrees F (177 degrees C) minimum, catalytically or photochemically polymerized after application.

2. White Finishes: Minimum of 85 percent reflectance.

3. Metal Parts: Cleaned and treated with phosphate or chromate bonding process after fabrication for maximum paint adhesion.

B. Unpainted Aluminum Surfaces:

1. Satin anodized, except as noted.

C. Plastic Lenses and Diffusers: Destaticize, clear acrylic unless otherwise noted. Polycarbonate plastic shall be U.V. stabilized.

D. Reflectors and Baffles: Free of marks, labels or blemishes.

2.08 BASE BID MANUFACTURERS

A. Base bid for lighting fixtures on manufacturers indicated.

PART 3 - EXECUTION

3.01 INSTALLATION OF LIGHTING FIXTURES

A. Locations:

1. On Drawings: Dimensioned and Diagrammatical.

2. Coordinate with Architectural Reflected Ceiling Drawings, Interior Design Drawings and Mechanical Drawings.

3. Coordinated space conditions with other trades.

4. Fixture Rows: In straight lines except as noted.

5. Pendant or Surface Mounting: As noted.

B. Mounting:

1. Ceiling Construction:

a. Refer to Architectural Drawings for finish schedules.

b. Refer to manufacturer's installation details and applicable codes for required fixture mounting accessories.

c. Provide proper type of trim and accessories to match suspended ceilings.

2. Recessed in Plaster Ceilings - Provide Plaster Frames:

a. For setting, under General Construction Work.

b. With bottom of frames flush with finished ceiling and forming screed edge.

c. Individually Pendant Mounted Units: With canopies for pendants and junction box at the ceiling line for each fixture.

d. Continuously Pendant Mounted Units: With canopies and swivel ball aligners for pendants and junction box for each continuous run except as noted.

C. Reflector Cones, Baffles, Aperture Plates, and Decorative Elements: Install after completion of ceiling tiles, painting and general cleanup. Wipe clean of dust and fingerprints.

D. Replace blemished, damaged, or unsatisfactory fixtures and ballasts as directed.

E. Relamp all non-operating fixtures immediately prior to Owner's acceptance of building.

END OF SECTION

SECTION 16721 - FIRE ALARM SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. The work covered by this specification section includes the furnishing of labor, equipment, materials and a complete operational performance required for installation of additional and relocated devices to an existing Fire Alarm System as shown on the contract drawings, as here specified, and as directed by the Architect/Engineer.

2. Furnish and install all network fire alarm system equipment as defined by these specifications, wired, connected, tested, and certified in a first class operating condition.

3. The work covered by this section of the specification is to be coordinated with the related work as specified elsewhere under the project specification.

4. The system shall be fully compatible with the existing property's systems.

B. Related Sections:

1. DIVISION 15 - MECHANICAL.

2. SECTION 16100 - BASIC MATERIALS AND METHODS.

1.02 SUBMITTALS

A. Submit under provisions of SECTION 01330 - SUBMITTAL PROCEDURES.

B. Shop Drawings: Submit shop drawings or catalog cuts of following equipment for approval and resubmit until approval is received before placing order:

1. Fire alarm equipment.

2. Point-to-point wiring diagram.

3. Equipment wiring diagram.

4. Wiring color code.

5. Wire identification scheme.

C. Clearly specify compliance's with and/or deviation from specified materials in shop drawings and catalog cuts for substitute materials. Approval of shop drawings and catalog cuts does not release Contractor from complying with intent of Specifications and Drawings. Obtain prior approval from the Architect for any deviations from approved shop drawing.

D. Warranty: Submit warranty as noted under item entitled "WARRANTY" hereinbelow.

1.03 QUALITY ASSURANCE

A. Regulations and Codes: Perform the entire installation in strict accordance with the applicable provisions of the latest edition of the National Electrical Code, Local Ordinances, and rules and regulations even though the work is not mentioned in these particular Specifications or Drawings.

B. Each and all items of the Fire Alarm System shall be listed as a product of a single manufacturer under the appropriate category be Underwriters' Laboratories, Inc. (UL), and shall bear the "U.L." label. All control equipment (NDU/VCC and UTS) shall be listed under UL category UOJZ as a single control unit. Systems configured with partial listings, under UL category UOXX, are not acceptable.

C. Examination of Drawings: Carefully study Drawings and Specifications pertaining to the work. If any of the work laid out, indicated or otherwise specified, is contrary to or conflicts with any local, United States ordinances or regulations, report the same to the Architect before a bid is submitted. The Architect will then issue instructions as to procedure. By the act of submitting a bid, the Contractor is deemed to have made such examinations and to have accepted such conditions, and to have made allowances, therefore, in preparing his figure.

D. Allowable Tolerances: Specifications are accompanied by Architectural Drawings of building, site plans, and diagrammatic electrical Drawings showing locations of outlets, fixtures, switches, circuit runs, devices, and other equipment. Locations are approximate and before installing, study adjacent construction details and make installation in most logical manner. Any devices may be relocated within 10'-0" before installation at direction of Architect without additional charge to the Owner. Before installing, verify dimensions and sizes of equipment at job site. Circuit and conduit routing is typical and may be altered in any logical manner, however, obtain Architect's approval of changes and show same on record drawings.

E. General: Use standard products of a single manufacturer for equipment and accessories specified herein. Provide UL label on each major component. Provide a Fire Alarm System that is UL listed, labeled and installed per NFPA 72 (Local Protective Signaling Systems). Fire alarm equipment offered by Suppliers purported to comply with Specifications will be considered only when the following requirements have been met:

1. Supplier must have technical and servicing staff or have contractual arrangement with servicing organization, available in Honolulu upon whom Owner may call for service. Submit proof of this requirement on demand.

2. Ensure that repair parts, particularly line balancing resistors and relays, alarm stations, detectors, and speakers are available in Honolulu.

1.04 PERMITS, TESTS AND INSPECTIONS

A. Permits, Fees and Licenses: Apply, secure, and pay for required permits, fees, licenses, and royalties to accomplish the work.

B. Tests and Inspections: Apply, secure, and pay for required tests and inspections to accomplish the work in conformance with these Drawings and Specifications.

1.05 WARRANTY

Complete installation in every detail and ready for use. Replace items supplied, which develop defects, within one year of final acceptance by the Architect. Replace with materials, apparatus or parts including installation labor to make such defective portion of complete system conform to true intent and meaning of Drawings and Specifications at no additional charge to the Owner.

1.06 PROJECT RECORD DOCUMENTS

A. Submit under provisions of SECTION 16100 - BASIC MATERIALS AND METHODS.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site under provisions of SECTION 16100 - BASIC MATERIALS AND METHODS.

B. Store and protect products under provisions of SECTION 16100 - BASIC MATERIALS AND METHODS.

PART 2 - PRODUCTS

2.01 NEW COMPONENTS

A. Shall Include the Following:

1. Audible/Visible Signal.

2. Visible (only) Signal.

3. Automatic Detector.

B. Audible/Visible (A/V) Signaling Appliance:

1. The A/V signals shall be audible signaling devices with an integral visible signal UL listed to standard 1971 and ADA compatible. The audible component shall be a voice/tone 25VRMS multi-tap watt speaker, UL listed to standard 1480.

2. The A/V units shall be suitable for horizontal wall mounting at 8-inches maximum from the finished floor (or 6-inches from the finished floor, whichever is lower), and shall be off-white with red lettering. A/V units with horns shall mount on a 4-inch square box, and the A/V units with speakers shall mount on a 4" square box with a 1 1/2 inch extension ring.

3. The system A/V units shall be Visible Strobes with Voice/tone Speakers, and shall be a 15 candela (75 on-axis) Visible with a multi-tap (1/4W, 1/2W, 1W, 2W) Speaker.

C. Visible (only) Signaling Appliance:

1. Visible signaling appliances shall be UL listed to standard 1971, and shall meet the guidelines of the Americans with Disabilities Act (ADA) both in design and installation.

2. All visible signals shall be 1 HZ strobes that provide 75 candela on-axis minimum visible output. The exclusive reflective design shall provide for light output in key axis directions that allow for vertical or horizontal mounting at 80 inches maximum from the finished floor or 6 inches from the ceiling, whichever is lower.

Exception: Handicap guest rooms shall be provided with visible signals having 1 HZ strobes that provide 110 candela visible output.

PART 3 - EXECUTION

3.01 RULES AND REGULATIONS

A. Comply with local ordinances and regulations of the County and the State of Hawaii. Workmanship is subject to the approval of the Architect who will afford every opportunity to determine skill and competency. Reopen concealed work at random during inspection without additional charge to the Owner.

3.02 RACEWAYS

A. Steel, installed as specified in SECTION 16100 - BASIC MATERIALS AND METHODS. Conceal raceways unless otherwise noted on the Drawings.

3.03 CONDUCTORS

A. Not less than sizes indicated or as specified by the equipment manufacturer. Use color coded conductors. Tag conductors at terminal points and splice boxes with wire markers. Furnish a schedule showing color coding and wire marking to be used prior to installation of conductors. Solder or crimp connect splices. Wirenuts are not permitted.

3.04 EQUIPMENT INSTALLATION

A. Install speakers and detectors to height indicated on the Drawings. Should any defects be discovered in the system in the course of the final test, correct same.

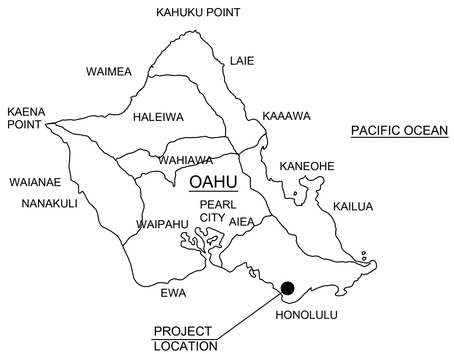
END OF SECTION

LEAHI HOSPITAL - RENOVATION OF ADULT DAY HEALTH

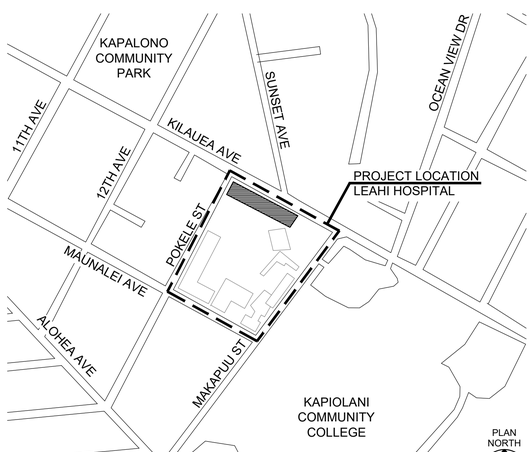
3675 KILAUEA AVENUE, HONOLULU, HI 96816

T.M.K.: 3-2-031:001

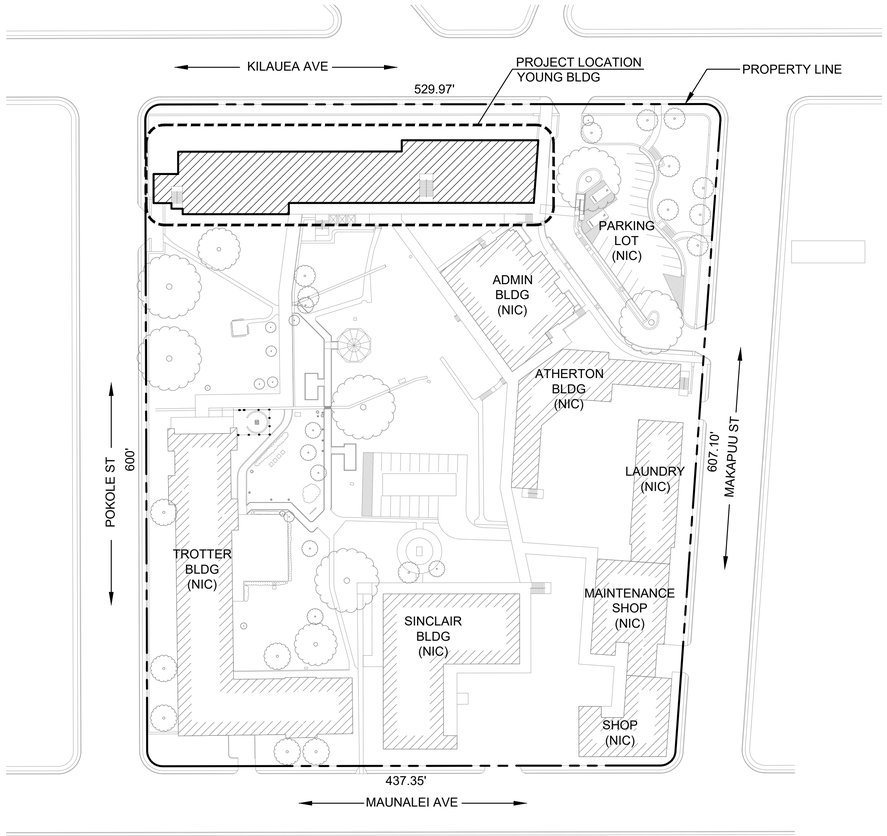
ISLAND MAP (NTS)



LOCATION MAP (NTS)



VICINITY MAP (NTS)



DESIGN TEAM

ARCHITECT:
INK ARCH, LLC
650 Iwilei Road #288
Honolulu HI 96817

MECHANICAL/PLUMBING:
MECHANICAL ENTERPRISES, INC
501 Sumner St #503
Honolulu, HI 96817

ELECTRICAL:
Albert Chong Assoc
1117 Kapahulu Ave
Honolulu, HI 96816

PROJECT DESCRIPTION

THE WORK SHALL GENERALLY CONSIST OF DEMOLITION OF EXISTING OFFICES AND THE ADDITION OF TWO NEW BATHROOMS AND A CONFERENCE ROOM.

DEMOLITION WORK SHALL INCLUDE BUT IS NOT LIMITED TO: DEMOLITION OF EXISTING STUD WALLS, CEILINGS, DOORS, MILLWORK, FLOORING, PLUMBING FIXTURES, AND ELECTRICAL DEVICES.

NEW WORK SHALL INCLUDE, BUT NOT LIMITED TO: INSTALLATION OF NEW GYP BOARD WALLS, CEILINGS, DOORS, RESILIENT FLOORING, CERAMIC TILING, PAINTING, TOILET PARTITIONS AND ACCESSORIES, PLUMBING FIXTURES, ELECTRICAL DEVICES AND MISCELLANEOUS RELATED WORK.

PROJECT SUBMITTAL

BID SET

APRIL 2024

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

Revisions:

No.	Description	Date

Project Title:

LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816
T.M.K.: 3-2-031:001

SCOTT R.J. HARADA
LICENSED PROFESSIONAL ARCHITECT
No. 14637
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE
EXP. DATE: 04/30/26

Sheet Title:

TITLE SHEET

Project Phase:

-

Date:

-

Sheet No.:

001

INDEX TO DRAWINGS

COUNT	SHEET	DESCRIPTION
		TITLE
1	001	PROJECT TITLE, VICINITY MAP, LOCATION MAP, APPROVALS
2	G-001	INDEX OF DRAWINGS
3	G-002	ARCHITECTURAL GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS
		ARCHITECTURAL
4	A-001	OVERALL BUILDING FLOOR PLAN
5	AD101	DEMOLITION FLOOR PLAN, DEMOLITION REFLECTED CEILING PLAN
6	A-101	BATHROOM FLOOR PLAN
7	A-102	BATHROOM REFLECTED CEILING PLAN
8	A-201	TYPICAL ACCESSORY MOUNTING INFORMATION, INTERIOR ELEVATIONS
9	A-202	INTERIOR ELEVATIONS
10	A-510	PARTITION TYPES
11	A-511	PARTITION TYPES AND DETAILS
12	A-512	PARTITION DETAILS
13	A-601	DOOR SCHEDULE AND TYPES, MATERIAL INDEX, ROOM FINISH AND SIGNAGE TYPES AND SCHEDULE, DOOR DETAILS
14	AF101	FINISH FLOOR PLAN
		MECHANICAL
15	M000	GENERAL NOTES
16	MD101	DEMOLITION PLUMBING AND MECHANICAL PLAN
17	M-101	NEW PLUMBING PLAN
18	M-102	NEW MECHANICAL PLAN
19	M-103	NEW FIRE SPRINKLER PLAN
20	M-109	MECHANICAL SCHEDULE

		ELECTRICAL
21	E000	ELECTRICAL SYMBOLS LIST AND FIRE ALARM NOTES
22	E001	OVERALL ELECTRICAL PLAN
23	ED01	LIGHTING DEMOLITION PLAN
24	ED02	POWER AND SIGNAL DEMOLITION PLAN
25	E101	NEW LIGHTING PLAN
26	E102	NEW POWER AND SIGNAL PLAN
27	E103	PARTIAL NEW BASEMENT POWER PLAN

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

Revisions:

No. Description Date

Project Title:

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SIGNATURE
EXP. DATE: 04/30/26

Sheet Title:

INDEX TO DRAWINGS

Project Phase:

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Date:

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Sheet No.:

G-001

ARCHITECTURAL GENERAL NOTES

THE FOLLOWING UNDERLINED TERMS AS USED HEREIN SHALL BE DEFINED AS:

- THE OWNER: HAWAII HEALTH SYSTEMS CORPORATION (HHSC)
- THE OWNER'S REPRESENTATIVE: HHSC REPRESENTATIVE
- THE ARCHITECT: INK ARCH, LLC

1. LAWS AND ORDINANCES: AS USED HEREIN SHALL MEAN ALL COUNTY, STATE, AND NATIONAL CODES, ORDINANCES, STANDARDS, RULES, AND REGULATIONS OF ANY NATURE WHICH ARE PERTINENT TO, OR REGULATORY OVER, THE WORK COVERED BY THE CONTRACT DOCUMENTS OF THIS PROJECT. ALL CONTRACTORS SHALL COMPLY FULLY WITH ALL APPLICABLE LAWS AND ORDINANCES. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT BUILDING CODE AND THE LATEST STATE OF HAWAII AMENDMENTS OR THE RESPECTIVE CITY AND/OR COUNTY AMENDMENTS BY EACH AGENCY HAVING JURISDICTION OF THE PROJECT.

2. CONFLICT: IN THE CASE OF ANY CONFLICT WHEREIN THE METHODS, OR STANDARDS OF INSTALLATION, OR THE SPECIFIED MATERIALS ARE NOT IN COMPLIANCE WITH THE REQUIREMENTS OF THE LAWS OR ORDINANCES, THE LAWS OR ORDINANCES SHALL GOVERN. IN THE CASE OF A DISCREPANCY IN THE DRAWINGS OR SPECIFICATIONS, BUT NOT DIRECTLY RELATED TO THE PROVISIONS, CODES, OR ORDINANCES, THE CONTRACTOR SHALL 1) PROVIDE THE BETTER QUALITY, OR GREATER QUANTITY OF WORK, OR 2) COMPLY WITH THE MORE STRINGENT REQUIREMENT IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION, OR 3) REQUEST IN WRITING ADDITIONAL CLARIFICATION OR INFORMATION. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ALL CONFLICTS IN WRITING.

3. CONDITIONS OF THE WORK: THE INFORMATION INDICATED ON THE DRAWINGS IS BASED ON LIMITED FIELD INVESTIGATION AND ON THE AVAILABLE RESOURCES AT THE TIME OF DOCUMENT PREPARATION. AS A RESULT, THE ACCURACY AND COMPLETENESS OF THE INFORMATION IS NOT GUARANTEED ON DATE OF COMMENCEMENT OF CONSTRUCTION. THEREFORE, THE CONTRACTOR SHALL VERIFY THE DIMENSIONS SHOWN ON THE DRAWINGS WITH ACTUAL FIELD MEASUREMENTS, EXAMINE THE JOB SITE, VERIFY ALL FIELD CONDITIONS AND PERTINENT DIMENSIONS PRIOR TO PREPARING LAYOUTS, SUBMITTALS, SHOP DRAWINGS, AND/OR ORDERING ANY MATERIAL, AND PROVIDE THE LABOR AND MATERIALS REQUIRED TO COMPLETE THE REQUIRED WORK.

4. WORKMANSHIP: ALL WORK SHALL BE PERFORMED IN A PROFESSIONAL MANNER. WORKMANSHIP SHALL BE REPRESENTATIVE OF THE BEST HAWAII INDUSTRY STANDARD OF THE RESPECTIVE TRADES. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING PRIOR TO THE COMMENCEMENT OF WORK, IF THERE ARE ANY DIMENSIONAL DISCREPANCIES, OR IF THERE ARE ANY CONDITIONS THAT EXIST WHICH MAY PREVENT THE CONTRACTOR'S WORKMANSHIP AND PERFORMANCE OF WORK PER CONTRACT DOCUMENTS, AND/OR OF ANY AND ALL ADDITIONAL WORK THAT MAY BE REQUIRED AS A RESULT OF THE OBSERVED CONDITIONS.

5. OMISSIONS: OMISSIONS OF DRAWINGS, OR SPECIFICATIONS, OR THE OMISSIONS OF DETAILS OF WORK WHICH ARE MANIFESTLY NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, AND/OR WHICH ARE PER HAWAII INDUSTRY STANDARD CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMITTED, OR INCORRECTLY DESCRIBED DETAILS OF THE WORK, BUT SHALL BE PERFORMED AS IF FULLY AND CORRECTLY SET FORTH AND DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR UPON DISCOVERY OF OMISSION SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE VERBALLY OF SUCH OMISSIONS AND PROVIDE A WRITTEN STATEMENT OF THE OMISSIONS WITHIN (2) WORKING DAYS OF VERBAL NOTIFICATION.

6. INTENT OF THE DRAWINGS: THE DRAWINGS ARE INTENDED TO DEFINE AND ESTABLISH THE PHYSICAL REQUIREMENTS OF THE PROJECT, I.E., THE DESIGN, LOCATIONS AND DIMENSIONS OF THE WORK, BASED ON RECOGNIZED STANDARDS EVEN IF NOT ACTUALLY SHOWN, BUT REASONABLY INFERRED. THE CONTRACTOR SHALL REVIEW AND VERIFY THE INFORMATION ON ALL DRAWINGS WITHIN A REASONABLE TIME BEFORE PERFORMING ANY WORK AND UPON DISCOVERY OF ANY OMISSION AND/OR CONFLICT IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING OF ANY OMISSIONS, CONFLICTS AND DISCREPANCIES. THE CONTRACTOR SHALL COORDINATE THE WORK OF ALL SUBCONTRACTORS/TRADES TO ACHIEVE THE DESIGN INTENT AND SPECIFIED REQUIREMENTS AND IS RESPONSIBLE TO COMPLETE ANY AND ALL WORK ASSOCIATED WITH SUCH COORDINATION.

7. TEMPORARY PROTECTION: THE CONTRACTOR SHALL ERECT AND MAINTAIN A TEMPORARY SAFETY BARRICADE A MINIMUM OF 5'-0" OUTSIDE THE PROJECT AREA AS APPLICABLE TO COMPLETELY ENCOMPASS THE PROJECT AREA TO PROTECT THE OCCUPANTS AND THE PUBLIC. THE BARRICADE SHALL REMAIN DURING THE DURATION OF THE PROJECT OR UNTIL APPROVAL IS GIVEN BY THE OWNER'S REPRESENTATIVE FOR ITS REMOVAL. A DESIGNATED STAGING AREA WILL BE ALLOWED AT THE PROJECT SITE AS INDICATED ON THE DRAWINGS. STAGING AREA SHALL BE USED FOR MATERIALS, DUMPSTER, HEAVY EQUIPMENT, LIFT, ETC. THE CONTRACTOR SHALL ERECT CONSTRUCTION FENCING AROUND THEIR DESIGNATED STAGING AREA TO PREVENT UNAUTHORIZED PERSONS FROM ENTERING. ANY EXTERIOR BARRICADES AND FENCING SHALL BE LOCATED AS REQUIRED AND IN SUCH A MANNER AS TO MAINTAIN AT ALL TIMES ALL REQUIRED FIRE LANES AND FIRE EXITS FROM THE PROJECT BUILDING/SITE AS WELL AS ADJACENT OCCUPIED BUILDINGS DURING THE CONSTRUCTION CONTRACT PERIOD.

8. COMPLETION OF THE WORK: THE CONTRACTOR SHALL IN THE EXECUTION OF WORK BY ALL TRADES, PERFORM ANY AND ALL CUTTING, PATCHING, REPAIRING, RESTORING AND THE LIKE NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR SHALL RESTORE ANY DAMAGED OR AFFECTED SURFACES RESULTING FROM THE WORK OF THIS CONTRACT TO THEIR ORIGINAL CONDITION AND FINISH TO THE SATISFACTION OF THE OWNER. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO SAFETY PRECAUTIONS, FASTENERS, ANCHORAGES, ETC. UNLESS NOTED OTHERWISE.

9. PERMITS: THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS REQUIRED.

10. RECORD DRAWINGS: THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A SET OF "AS-BUILT" DRAWINGS OF HIS WORK.

11. DIMENSIONS: UNLESS OTHERWISE NOTED IN THE CONSTRUCTION DOCUMENTS, ALL DIMENSIONS ARE TAKEN TO THE FACE OF FINISH CONSTRUCTION. WRITTEN DIMENSIONS PREVAIL. DO NOT SCALE DRAWINGS UNLESS GRAPHIC SCALE IS PROVIDED ON THE SPECIFIC DRAWING. SHOULD DIMENSIONAL DISCREPANCIES BE FOUND, CONTACT THE OWNER'S REPRESENTATIVE IMMEDIATELY FOR CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK.

12. CLEAN UP: THE CONTRACTOR SHALL CLEAN AND REMOVE ALL TRASH, DIRT, DEBRIS, AND SPILLAGE ARISING FROM THE WORK AREA DAILY TO THE SATISFACTION OF THE OWNER AND THE ARCHITECT, INCLUDING BUT NOT LIMITED TO: CLEANING OF DIRT, PUTTY, PAINT, OVERSPRAY, DUST, ETC. FROM FLOORS, WORK AREAS, COUNTER TOPS, DOOR AND WINDOW FACES AND FRAMES.

13. SAFE OPERATIONS: THE CONTRACTOR SHALL ENSURE THAT ANY AND ALL CONSTRUCTION ACTIVITIES DO NOT IMPACT OR INTERFERE WITH NORMAL OR SAFE OPERATIONS AT THE PROJECT SITE. THE CONTRACTOR SHALL TAKE ALL SAFETY PRECAUTIONS NECESSARY TO PROTECT THE BUILDING OCCUPANTS AND THE PUBLIC THROUGHOUT THE DURATION OF THIS PROJECT.

14. PREVENT DAMAGE: THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO EXISTING AND COMPLETED STRUCTURES/LANDSCAPING/SITE IMPROVEMENTS OF THIS PROJECTS AS WELL AS ON ADJACENT PROPERTY(IES) TO THAT OF THIS CONTRACTED WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR LABOR/MATERIAL COSTS OF ANY DAMAGES TO ANY CONSTRUCTED WORK AND/OR EXISTING STRUCTURES/LANDSCAPING/SITE IMPROVEMENTS CAUSED BY HIS OPERATIONS.

15. DO NOT BLOCK EXITS: THE CONTRACTOR SHALL NOT BLOCK OR OBSTRUCT ANY FIRE LANES AND FIRE EXIT WAYS DURING THE EXECUTION OF WORK THROUGHOUT THIS PROJECT DURING THE CONSTRUCTION CONTRACT PERIOD.

16. SOUND AND NOISE CONTROL: THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE OWNER'S REPRESENTATIVE ALL WORK THAT WILL GENERATE EXCESSIVE NOISE WHICH MAY DISRUPT NORMAL OPERATING ACTIVITIES.

17. MATERIAL DISPOSAL: UNLESS NOTED IN THE DRAWINGS OR SPECIFICATIONS, MATERIALS RESULTING FROM THE DEMOLITION WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS OR AS SPECIFIED.

18. DEFINITIONS:
    a) "FURNISH" MEANS "FURNISH ONLY". MATERIALS OR ITEMS TO BE FURNISHED SHALL BE NEW AND CONSIGNED TO THE CONTRACTOR AND DELIVERED TO THE SITE.
    b) "INSTALL" MEANS "INSTALL ONLY" FURNISHED MATERIALS OR ITEMS. SUCH MATERIALS OR ITEMS SHALL BE RECEIVED AT THE SITE, UNLOADED, STORED, PROTECTED, AND INSTALLED IN PLACE, INCLUDING FINAL CONNECTION, UNLESS SUCH WORK IS SPECIFICALLY EXCLUDED.
    c) "PROVIDE" MEANS "FURNISH AND INSTALL" COMPLETE, IN PLACE AND READY FOR USE, INCLUDING FINAL CONNECTIONS. ALL WORK SHOWN IN THE DRAWINGS SHALL BE UNDERSTOOD AS "PROVIDE" WHETHER NOTES INDICATING "PROVIDE" ARE INDICATED OR NOT.
    d) WORDS "CONTRACTOR SHALL" ARE IMPLIED AND SHALL BE SO UNDERSTOOD WHEREVER A DIRECTION IS STATED IN IMPERATIVE MOOD AND DIRECTION "PROVIDE" IS USED.
    e) UNLESS SPECIFICALLY STATED AS "EXISTING", ALL MATERIALS SHALL BE NEW IN ALL CASES WHEN MATERIAL NOTES ARE ADDED TO DRAWINGS. USES OF "FURNISH" AND "PROVIDE" AUTOMATICALLY MEAN "NEW" UNLESS SPECIFICALLY STATED AS "EXISTING".

19. PRE-CONSTRUCTION ASSESSMENT: BEFORE STARTING ANY WORK ON ANY EXISTING CONSTRUCTION THE CONTRACTOR SHALL MAKE A THOROUGH AND COMPLETE INVESTIGATION OF ANY RECIPIENT SURFACES AND DETERMINE THEIR SUITABILITY TO RECEIVE REQUIRED ADDITIONAL CONSTRUCTION AND FINISHES. THE CONTRACTOR SHALL MAKE WHATEVER REPAIRS AND CONDITIONING REQUIRED TO PROPERLY PREPARE SUCH SURFACES.

20. EXISTING UTILITIES: PRIOR TO COMMENCING ANY CONSTRUCTION THE CONTRACTOR SHALL COORDINATE AND VERIFY THE LOCATIONS OF ALL UNDERGROUND OR OVERHEAD UTILITY LINES WITH THE OWNER'S REPRESENTATIVE TO AVOID CONFLICTS AND/OR SHUT DOWN DURING ALL STAGES OF CONSTRUCTION.

21. SUBCONTRACTORS: THE USE OF UNLICENSED CONTRACTORS IS STRICTLY PROHIBITED. THE CONTRACTOR IS RESPONSIBLE TO THE OWNER FOR ACTIONS OF THE CONTRACTOR'S EMPLOYEES, SUBCONTRACTORS AND THEIR AGENTS AND EMPLOYEES, AND OTHER PERSONS PERFORMING ANY PORTIONS OF WORK UNDER CONTRACT WITH THE CONTRACTOR.

22. HAZARDOUS MATERIALS: HAZARDOUS MATERIAL ABATEMENT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AS INDICATED IN THE DRAWINGS AND/OR SPECIFICATIONS. BURNING OF ANY DEBRIS IS NOT PERMITTED. EXPLOSIVES ARE NOT ALLOWED.

23. WOOD: ALL NEW WOOD SHALL BE TERMITE TREATED. ALL PAINT ON WOOD SURFACES SHALL CONTAIN A MILDEWCIDE ADDITIVE. PROVIDE WRITTEN CERTIFICATION OF TERMITE TREATMENT.

24. DISSIMILAR METAL PROTECTION: THE CONTRACTOR SHALL PROVIDE DISSIMILAR METAL PROTECTION.

25. MECHANICAL AND ELECTRICAL ITEMS: ALL NEW EXPOSED MECHANICAL AND ELECTRICAL PIPING, CONDUITS, DUCTWORK, SUPPORTS AND RELATED FITTINGS, AND FASTENERS ARE TO BE PAINTED THE SAME COLOR/SHEEN AS THE COLOR/SHEEN OF THE SURFACE IT IS ATTACHED TO UNLESS OTHERWISE NOTED.

26. PAINTING: PAINT ALL NEW WORK THAT IS COMPLETED AND LEFT EXPOSED TO VIEW, UNLESS OTHERWISE NOTED. PAINT PRODUCT(S) SHALL BE COMPATIBLE TO THE SUBSTRATE OR SURFACE IT IS APPLIED TO AND SHALL RECEIVE THE PROPER SURFACE PREPARATION AND COATINGS AS RECOMMENDED BY THE PAINT MANUFACTURER. THE CONTRACTOR SHALL CONFIRM WITH THE ARCHITECT ALL FINISH PAINT COLOR AND SHEEN SELECTION(S).

27. SHORING WORK: THE CONTRACTOR SHALL PROPERLY SHORE ANY AND ALL BUILDING WALLS, CEILINGS AND ANY OTHER COMPONENTS AFFECTED BY THE WORK AS REQUIRED TO MAINTAIN A SAFE, STABLE AND STRUCTURALLY SOUND STRUCTURE.

28. PROTECTION OF PROPERTY DURING WORK: THE CONTRACTOR SHALL PROVIDE AND MAINTAIN A WATERPROOF AND SECURE COVERING FOR ANY AND ALL BUILDING COMPONENTS EXPOSED TO WEATHER, THEFT, OR VANDALISM AFTER THE REMOVAL OF ANY EXTERIOR BUILDING COMPONENT INCLUDING BUT NOT LIMITED TO ROOFING, EXTERIOR WALLS, FLOORS, SIDING, WINDOWS, DOORS ETC.

29. BUILDING USER'S STORED ITEMS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE 24-HOUR PROTECTION OF ALL BUILDING USERS' ITEMS LEFT INSIDE THE BUILDING BY THE USER FOR THE DURATION OF THE CONSTRUCTION CONTRACT PERIOD. CONTRACTOR TO REQUEST AN ITEMIZED LIST OF ANY USERS' ITEMS TO BE LEFT WITHIN THE PROJECT BUILDING AND SITE AREAS THAT CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTION FROM THE FOLLOWING BUT NOT LIMITED TO LOSS AND OR DAMAGE RELATED TO THEFT, FIRE, WATER, CLIMATE, FINISH, FORM/FUNCTION ETC.

30. SHEET METAL WORK: FLASHING SHALL BE PROPERLY INSTALLED IN ACCORDANCE WITH THE LATEST SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA) GUIDELINES/MANUAL.

31. TILE WORK: ALL CERAMIC, PORCELAIN, STONE AND GLASS TILE WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST TILE COUNCIL OF NORTH AMERICA (TCNA) HANDBOOK.

32. COMPATIBILITY OF MATERIALS: ENSURE COMPATIBILITY OF MATERIALS AND SYSTEMS UNLESS A SINGLE SOURCE MANUFACTURER OF MULTI COMPONENT SYSTEMS (I.E BUT NOT LIMITED TO WATERPROOFING, ROOFING, ETC.) IS USED.

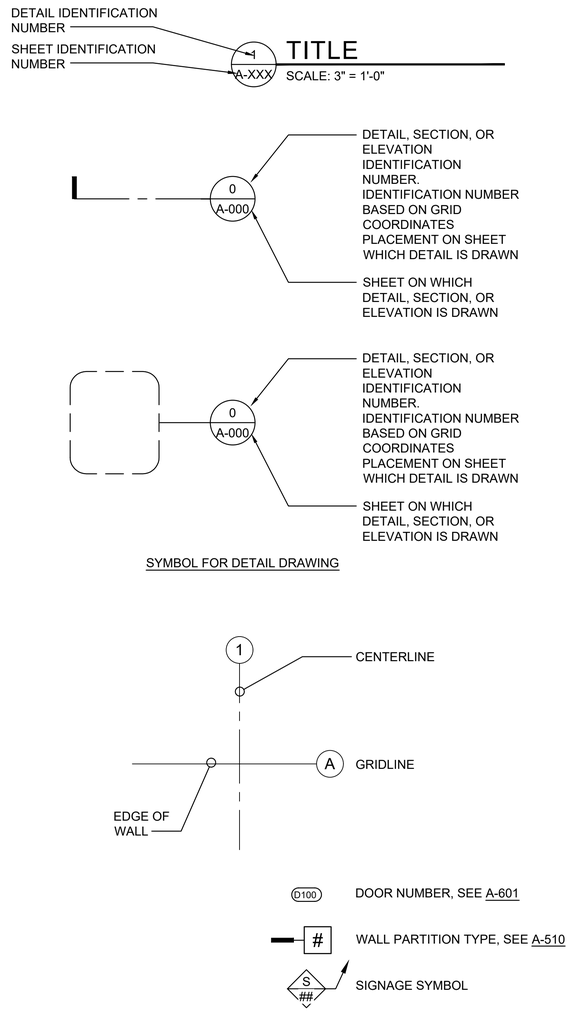
33. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING IN WRITING FROM THE RESPECTIVE MANUFACTURER'S TECHNICAL DIRECTOR ON MANUFACTURER'S LETTERHEAD THAT THEIR RESPECTIVE PRODUCTS ARE COMPATIBLE TO EACH OTHER AND THEIR RESPECTIVE WARRANTIES WILL BE HONORED WHENEVER AND WHEREVER THE CONTRACTOR USES PRODUCTS THAT ARE APPLIED TO ANOTHER MANUFACTURER'S PRODUCT AND/OR BUILT UP ON A SUBSTRATE.

18. "EXISTING" VERSUS "NEW" WORK : ALL BUILDING, AND DETAIL COMPONENTS, SHOWN ON THESE DRAWINGS SHALL BE UNDERSTOOD AS "NEW" UNLESS PREFIXED BY THE WORD "EXISTING". IN THE EVENT THE CONTRACTOR DISCOVERS CONFLICTING INFORMATION, THE CONTRACTOR SHALL IMMEDIATELY SUBMIT IN WRITING, A FORMAL REQUEST FOR INFORMATION ("RFI") TO THE ARCHITECT FOR A RESOLUTION TO THE

ARCHITECTURAL ABBREVIATIONS

ACT	ACOUSTICAL CEILING TILE	LAV	LAVATORY		
ADMIN	ADMINISTRATION	LVT	LUXURY VINYL TILE		
AFF	AWAY FROM FLOOR	MAX	MAXIMUM		
A-LAV	ACCESSIBLE LAVATORY	MECH	MECHANICAL		
AVE	AVENUE	MIN	MINIMUM		
A-WC	ACCESSIBLE WATER CLOSET	MR	MIRROR		
		N	NORTH		
BD	BOARD	NIC	NOT IN CONTRACT		
BLDG	BUILDING	NTS	NOT TO SCALE		
		PLUMB	PLUMBING		
CLR	CLEAR	PT/OT	PHYSICAL THERAPY /OCCUPATIONAL THERAPY	W/	WITH
CONC	CONCRETE	PTD	PAPER TOWEL DISPENSER	WC	WATER CLOSET
DR	DRIVE			WR	WATER RESISTANT
DWG	DRAWING	RB	ROBE HOOK		
ELEC	ELECTRICAL	REC	RECREATIONAL		
EQ	EQUAL	SD	SOAP DISPENSER		
EXT	EXTERIOR	SH	SHOWER HEAD		
FCU	FAN COIL UNIT	SND	SANITARY NAPKIN DISPOSER		
FD	FLOOR DRAIN	ST	STREET		
FIN	FINISH	TSCD	TOILET SEAT COVER DISPENSER		
GB	GRAB BAR	TYP	TYPICAL		
GYP BD	GYPSUM BOARD	UCERA	UNIVERSITY CLINICAL, EDUCATION AND RESEARCH ASSOCIATES		
HW	HARDWARE				
INT	INTERIOR				

ARCHITECTURAL SYMBOLS



INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

Revisions:

No.	Description	Date

Project Title:

LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816
T.M.K.: 3-2-031:001

SCOTT R.J. HARADA
LICENSED PROFESSIONAL ARCHITECT
No. 14637
HAWAII, U.S.A.

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Sheet Title:

ARCHITECTURAL GENERAL NOTES, ARCHITECTURAL ABBREVIATIONS, ARCHITECTURAL SYMBOLS

Project Phase:

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Date:

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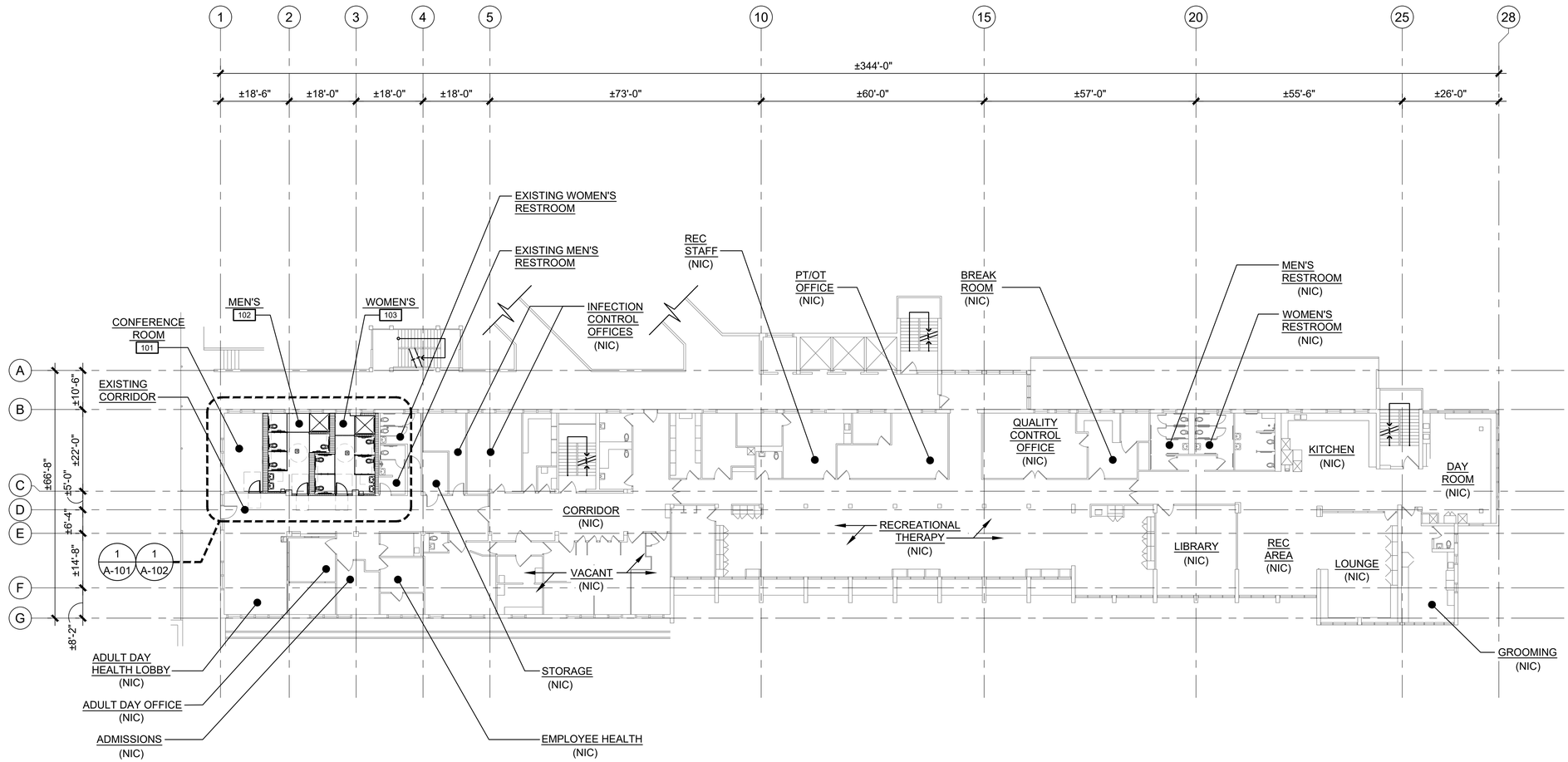
Sheet No.:

G-002



1 A-001 OVERALL BUILDING FLOOR PLAN

SCALE: 1/16" = 1'-0"

PLAN NORTH (TRUE N)

0 8' 16' 24' 32' 40' 48'

SCALE: 1/16" = 1'-0"

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
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OVERALL BUILDING FLOOR PLAN

Project Phase:

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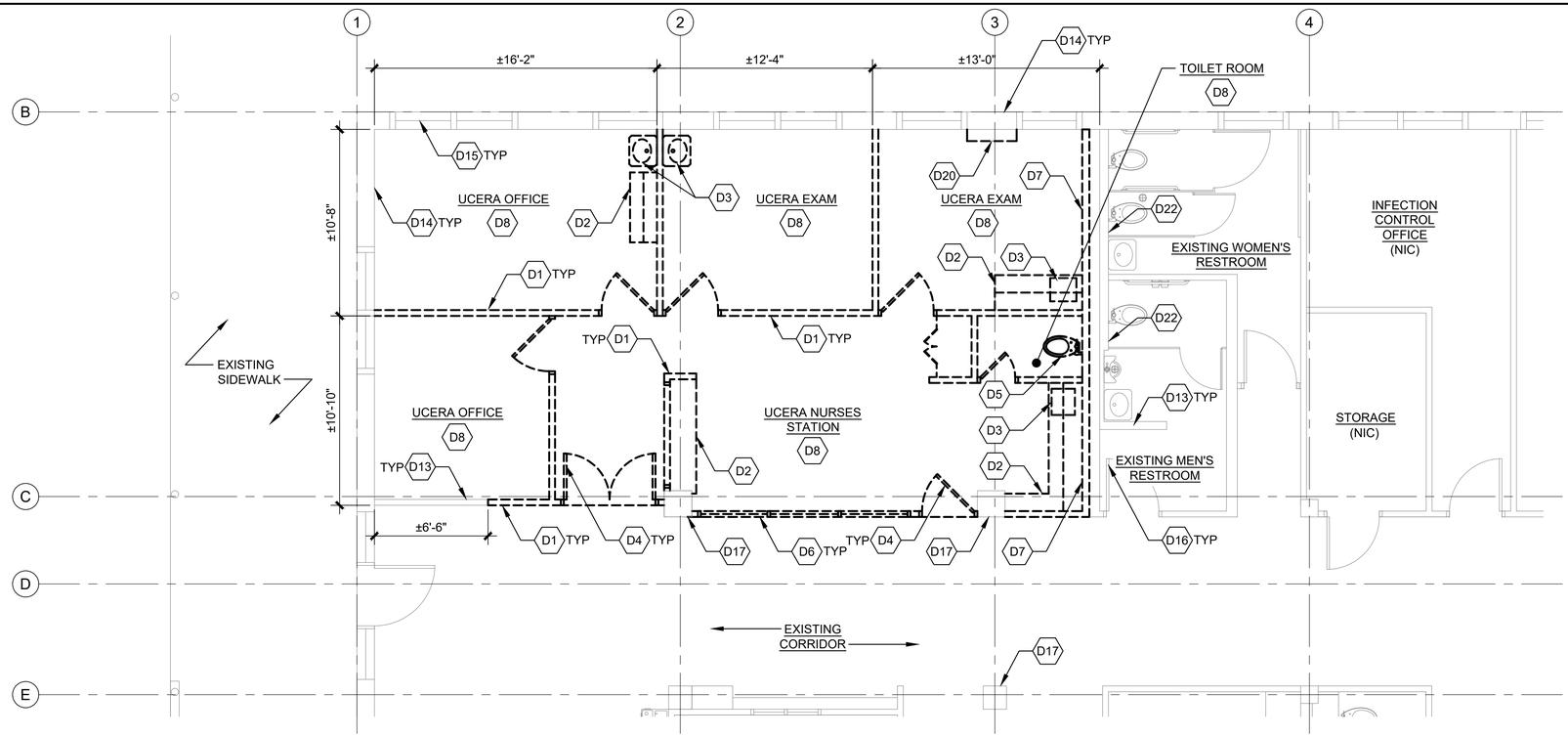
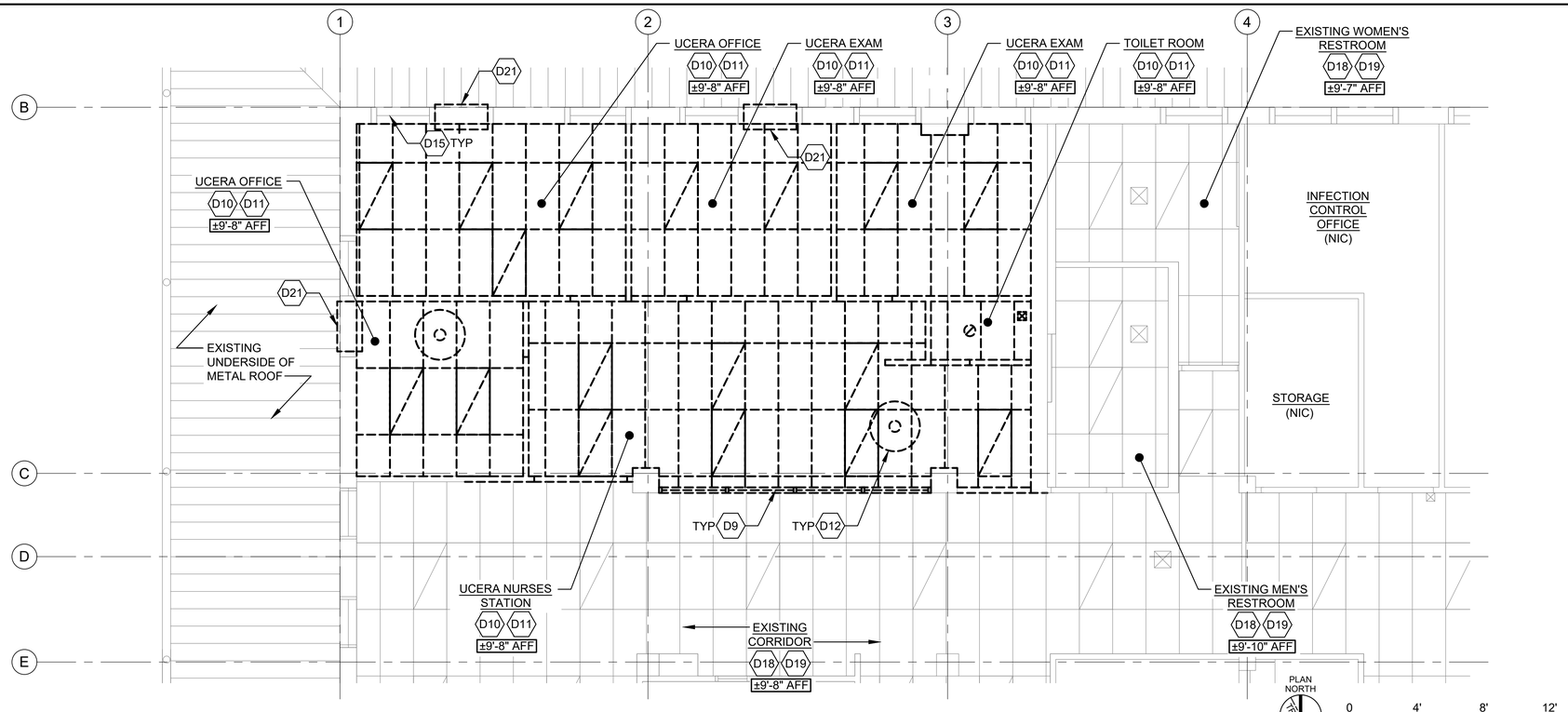
Sheet No.:

A-001



1 AD101 DEMOLITION FLOOR PLAN

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



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

2 AD101 DEMOLITION REFLECTED CEILING PLAN

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

SHEET KEYNOTES

D1. DEMOLISH AND REMOVE EXISTING GYP BOARD WALL AND WALL BASE

D2. DEMOLISH AND REMOVE EXISTING COUNTER AND CABINETS, COMPLETE

D3. DEMOLISH AND REMOVE EXISTING SINK

D4. DEMOLISH AND REMOVE EXISTING WOOD DOOR, FRAME, AND THRESHOLD, COMPLETE

D5. DEMOLISH AND REMOVE EXISTING TOILET

D6. DEMOLISH AND REMOVE EXISTING WOOD WINDOWS, COMPLETE

D7. DEMOLISH AND REMOVE EXISTING GYP BOARD AND METAL STUDS AT EXISTING UCERA EXAM AND NURSES STATION

D8. DEMOLISH AND REMOVE EXISTING WOOD FLOORING DOWN TO EXISTING CONCRETE DECK

D9. DEMOLISH AND REMOVE EXISTING METAL CLERESTORY WINDOWS, COMPLETE

D10. DEMOLISH AND REMOVE EXISTING ACT AND GRID, COMPLETE

D11. DEMOLISH AND REMOVE EXISTING LIGHTS

D12. DEMOLISH AND REMOVE EXISTING CEILING FAN

D13. EXISTING PARTITION TO REMAIN

D14. EXISTING EXTERIOR CONCRETE WALL TO REMAIN

D15. EXISTING WINDOW TO REMAIN

D16. EXISTING DOOR TO REMAIN

D17. EXISTING CONCRETE COLUMN TO REMAIN

D18. EXISTING ACT TO REMAIN

D19. EXISTING LIGHTS TO REMAIN

D20. DEMOLISH AND REMOVE EXISTING GYP BD ONLY. EXISTING METAL STUDS AND PIPING TO REMAIN

D21. DEMOLISH AND REMOVE EXISTING WINDOW AC UNIT, SEE MECH DWGS

D22. EXISTING GYP BD, METAL STUDS, AND PLUMBING TO REMAIN AT EXISTING WOMEN'S AND MEN'S RESTROOM

LEGEND

EXISTING LIGHTS TO BE DEMOLISHED

EXISTING LIGHT TO REMAIN

EXISTING CEILING FAN TO BE DEMOLISHED

EXISTING MECHANICAL REGISTER TO REMAIN

EXISTING MECHANICAL REGISTER TO BE DEMOLISHED

EXISTING ACOUSTICAL TILES TO BE DEMOLISHED

EXISTING ACOUSTICAL TILES TO REMAIN

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

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LICENSED PROFESSIONAL ARCHITECT
No. 14637
HAWAII, U.S.A.

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DEMOLITION FLOOR PLAN, DEMOLITION REFLECTED CEILING PLAN

Project Phase:

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Date:

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Sheet No.:

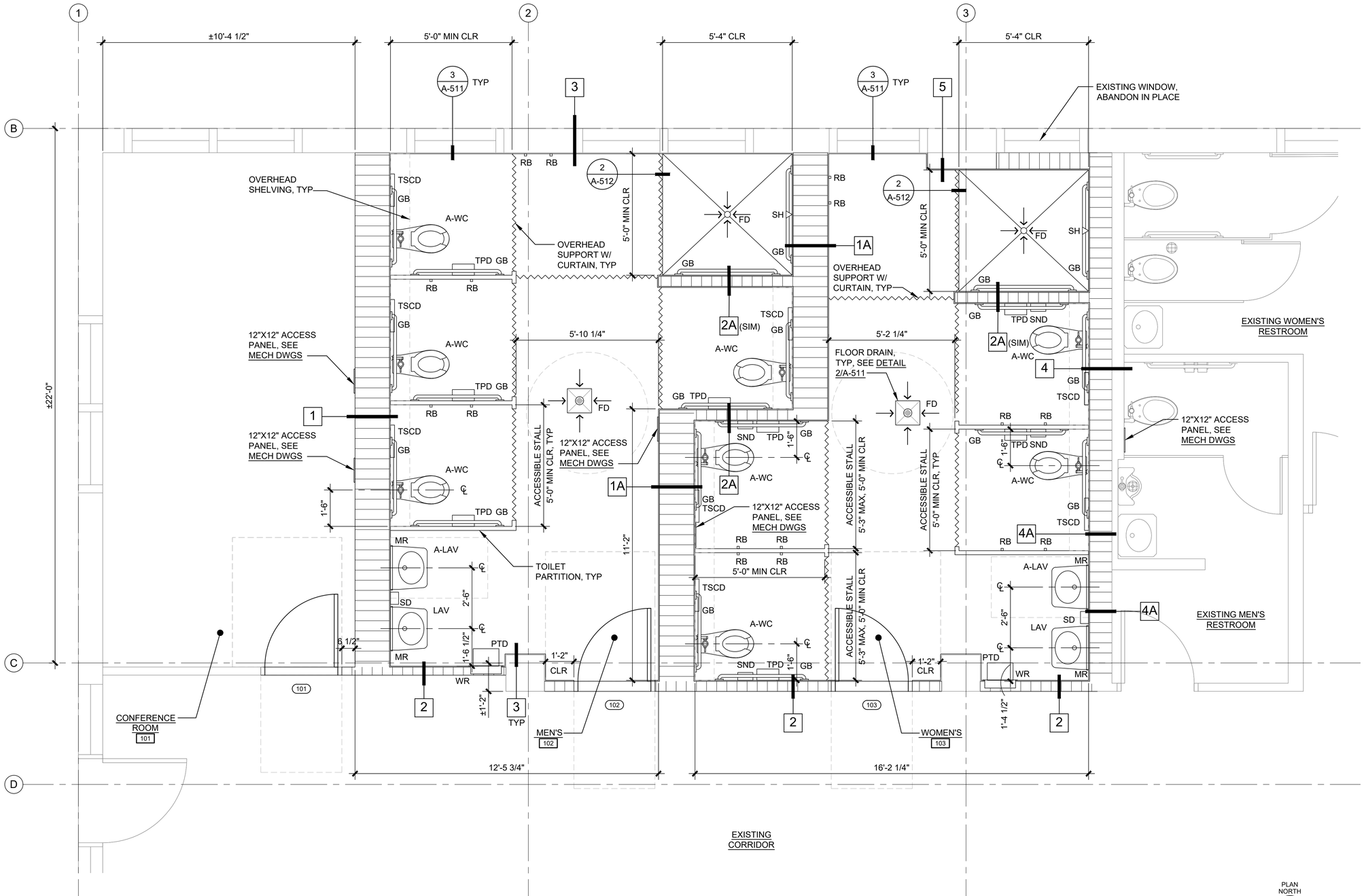
AD101

LEGEND

- GYP BOARD WALL W/ CERAMIC TILE (WHERE OCCURS)
- DOOR AS SCHEDULED
- EXISTING PARTITION WALL
- EXISTING EXTERIOR CONCRETE WALL
- EXISTING CONC COLUMN
- EXISTING WINDOWS
- EXISTING DOOR
- # WALL PARTITION TYPE

GENERAL NOTES

1. ALL DIMENSIONS SHOWN ARE TO FINISHED FACE OF WALL UNLESS OTHERWISE NOTED



1 A-101 BATHROOM FLOOR PLAN
SCALE: 1/2" = 1'-0"

PLAN NORTH

0 1' 2' 3' 4' 5' 6'
SCALE: 1/2"=1'-0"

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

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T.M.K.: 3-2-031:001

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No. 14637
HAWAII, U.S.A.

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BATHROOM FLOOR PLAN

Project Phase:
-

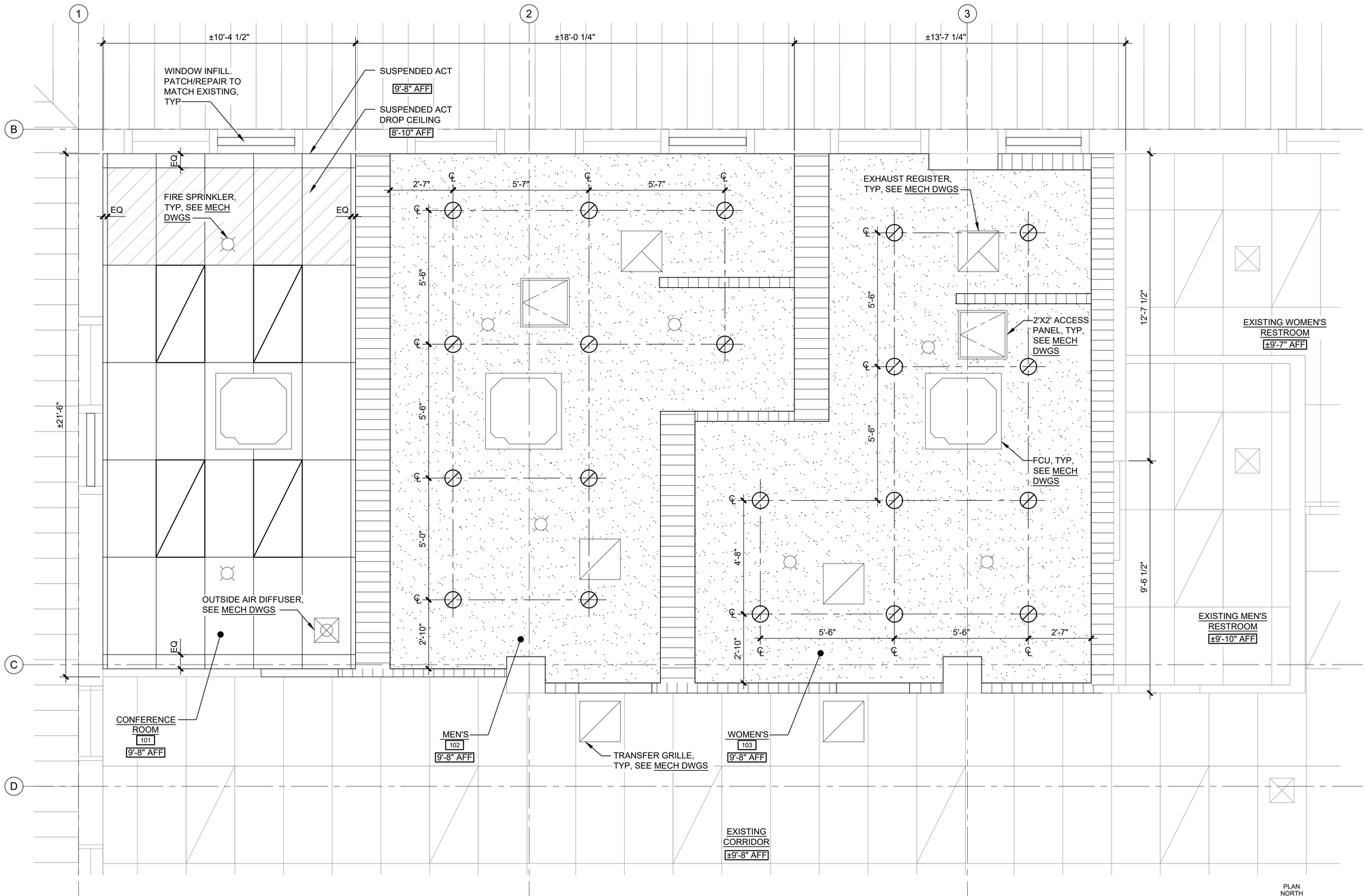
Date:
-

Sheet No.:

A-101

LEGEND

- SUSPENDED ACOUSTICAL CEILING TILE
- SUSPENDED ACOUSTICAL CEILING TILE DROP CEILING
- GYP BOARD CEILING
- LIGHTS, SEE ELEC DWGS
- EXISTING ACOUSTICAL CEILING TILE
- EXISTING LIGHTS
- EXISTING PARTITION WALL
- EXISTING UNDERSIDE OF METAL ROOF
- ACCESS PANEL
- MECHANICAL EQUIPMENT, SEE MECH DWGS
- GYP BOARD WALL
- FIRE SPRINKLER, SEE MECH DWGS



PLAN NORTH (TRUE N)

0 1' 2' 3' 4' 5' 6'

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

1 / A-102 REFLECTED CEILING PLAN

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

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
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No. 14637
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BATHROOM REFLECTED CEILING PLAN

Project Phase:
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Date:
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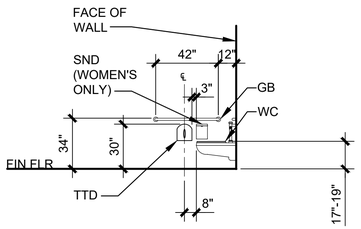
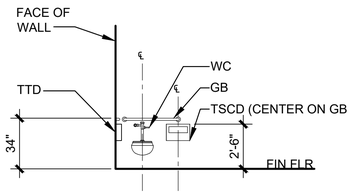
Sheet No.:

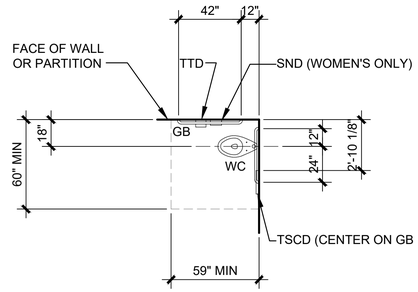
A-102



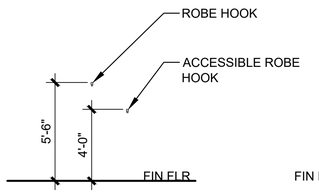
ACCESSIBLE STALL SIDE ELEVATION



ACCESSIBLE STALL FRONT ELEVATION

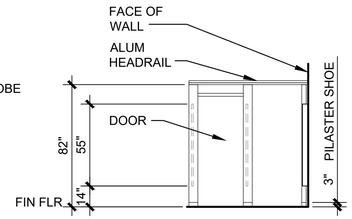


ACCESSIBLE STALL PLAN

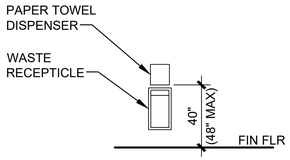


ROBE HOOK ELEVATION

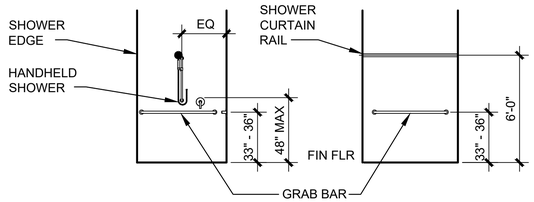
INSTALLATION LOCATION: CENTER ROBE HOOKS HORIZONTALLY ON INTERIOR SIDE OF TOILET PARTITION. FOR SHOWER ROOM INSTALLATION SEE ELEVATIONS



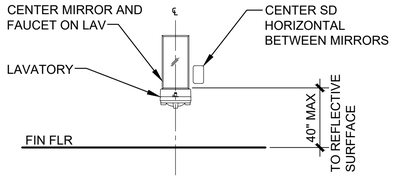
TOILET PARTITION FRONT ELEVATION



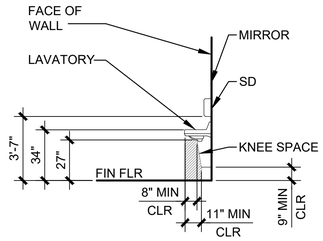
PAPER TOWEL DISPENSER ELEVATION AND PAPER TOWEL DISPENSER / WASTE RECEPTACLE ELEVATION



ACCESSIBLE SHOWER COMPARTMENT ELEVATIONS AND PLAN



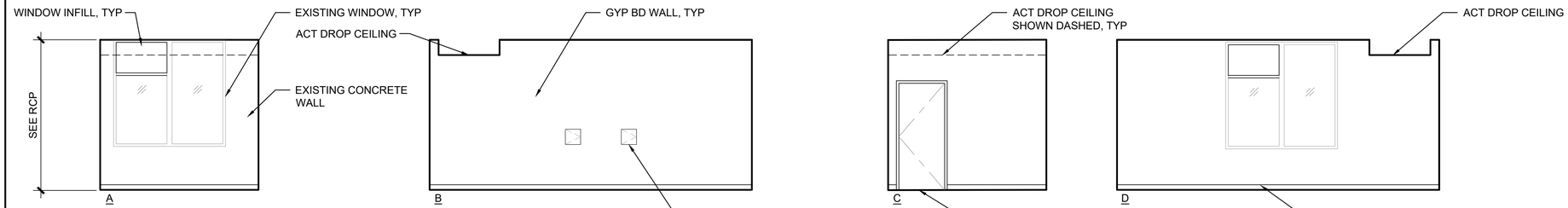
ACCESSIBLE LAVATORY FRONT ELEVATION



ACCESSIBLE LAVATORY SIDE ELEVATION

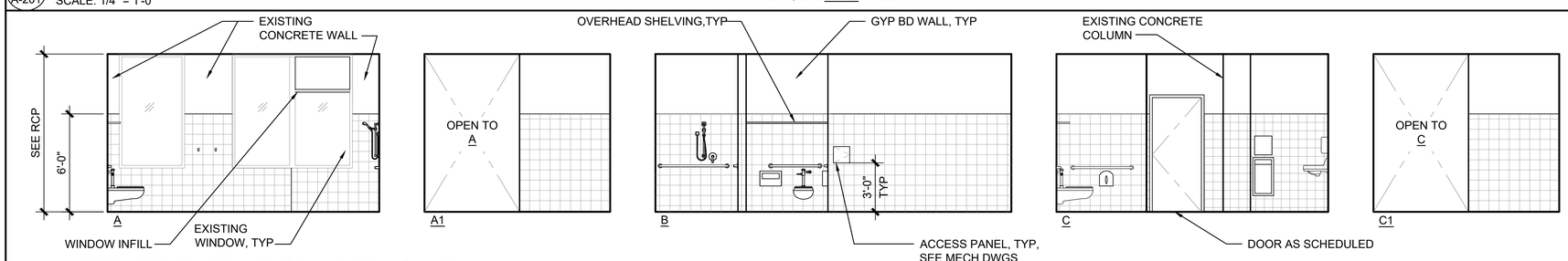
1 A-201 TOILET FIXTURES AND ACCESSORY MOUNTING HEIGHTS

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



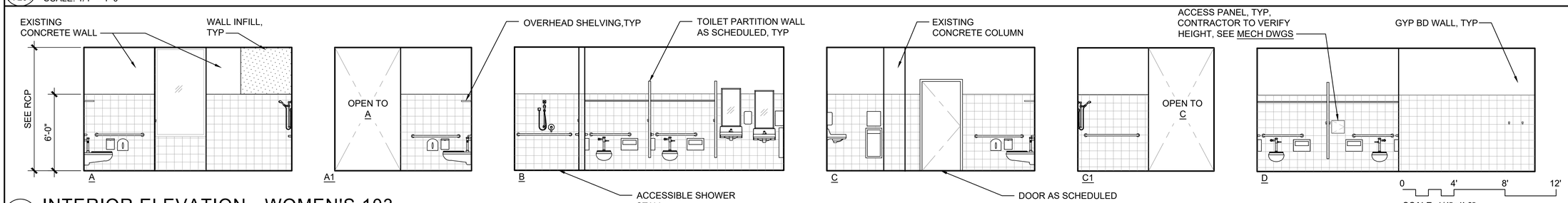
2 A-201 INTERIOR ELEVATION - CONFERENCE ROOM 101

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



3 A-201 INTERIOR ELEVATION - MEN'S 102

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



4 A-201 INTERIOR ELEVATION - WOMEN'S 103

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

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
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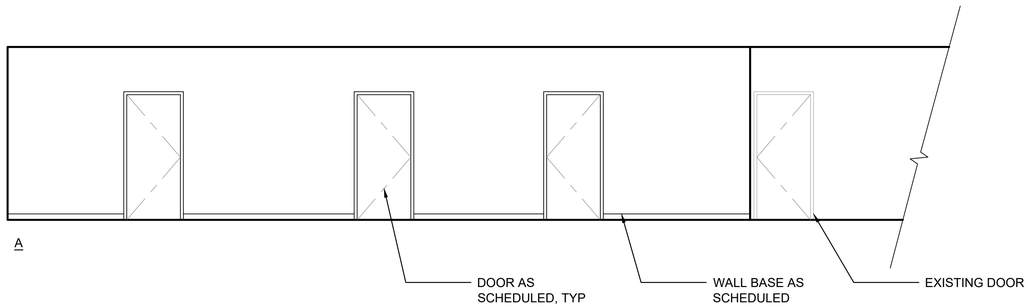
TYPICAL ACCESSORY MOUNTING INFORMATION, INTERIOR ELEVATIONS

Project Phase:
-

Date:
-

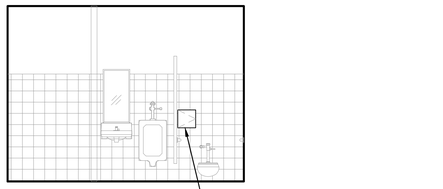
Sheet No.:

A-201



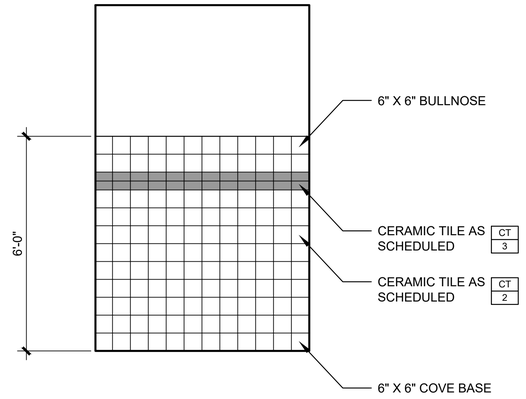
1 A-202 INTERIOR ELEVATION - EXISTING CORRIDOR

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



2 A-202 INTERIOR ELEVATION - EXISTING MEN'S RESTROOM

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



3 A-202 ENLARGED TILE ELEVATION

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

0 1' 2' 3' 4' 5' 6'

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

0 4' 8' 12'

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

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

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No.	Description	Date

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LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816
T.M.K.: 3-2-031:001

SCOTT R.J. HARADA
LICENSED PROFESSIONAL ARCHITECT
No. 14637
HAWAII, U.S.A.

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INTERIOR ELEVATIONS

Project Phase:

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Date:

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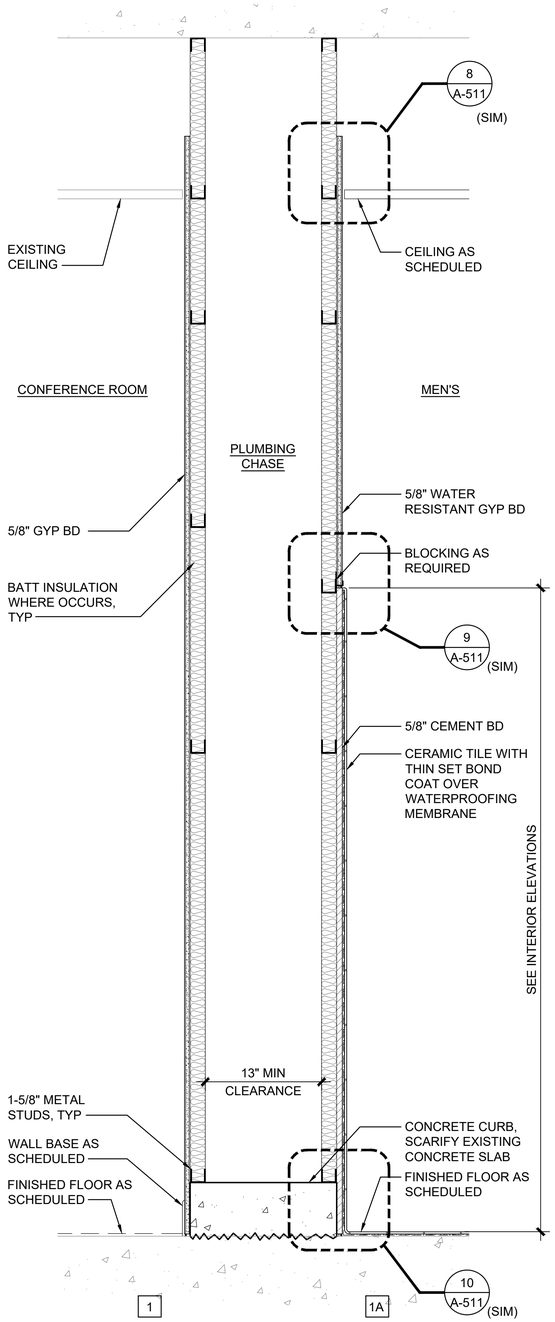
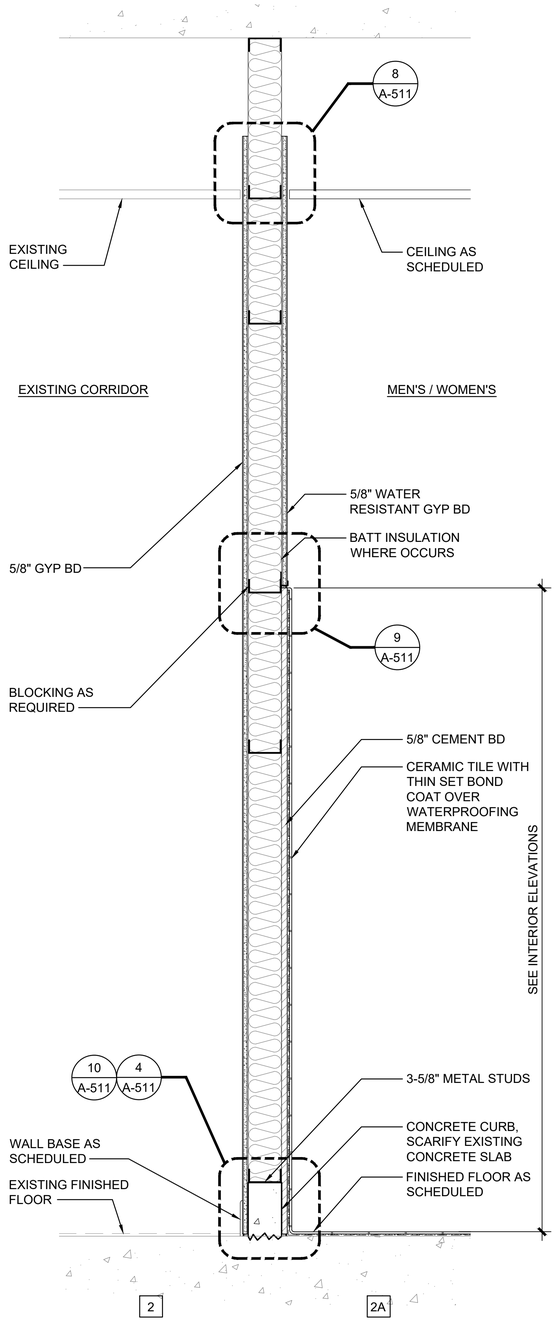
Sheet No.:

A-202



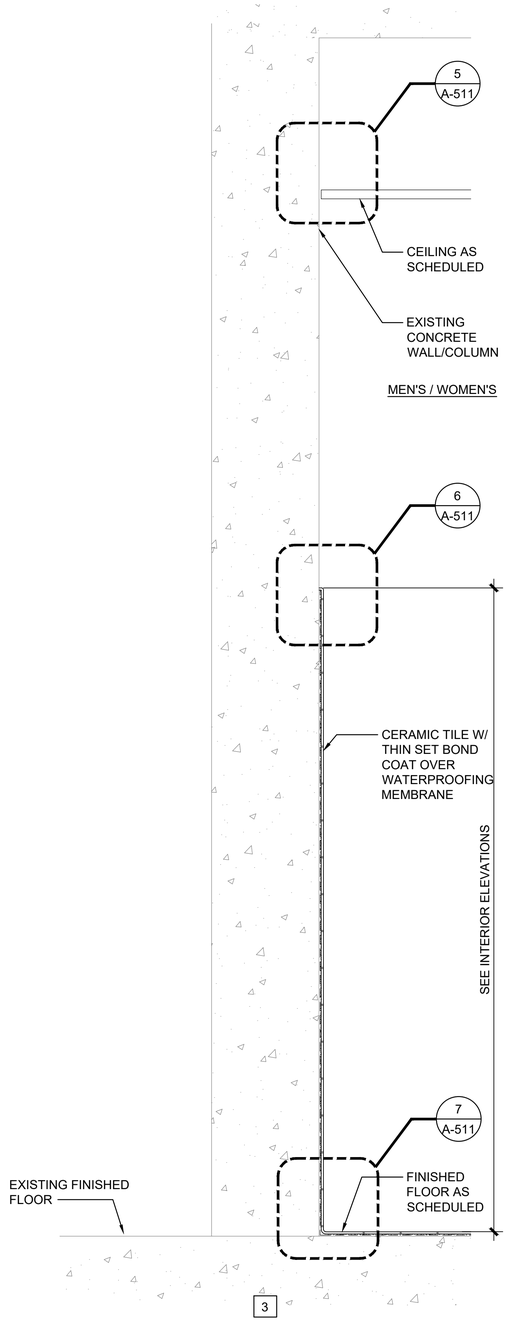
NON RATED FULL HEIGHT CHASE WALL W/ WAINSCOT ON ONE SIDE

NON RATED FULL HEIGHT CHASE WALL W/ WAINSCOT ON BOTH SIDES

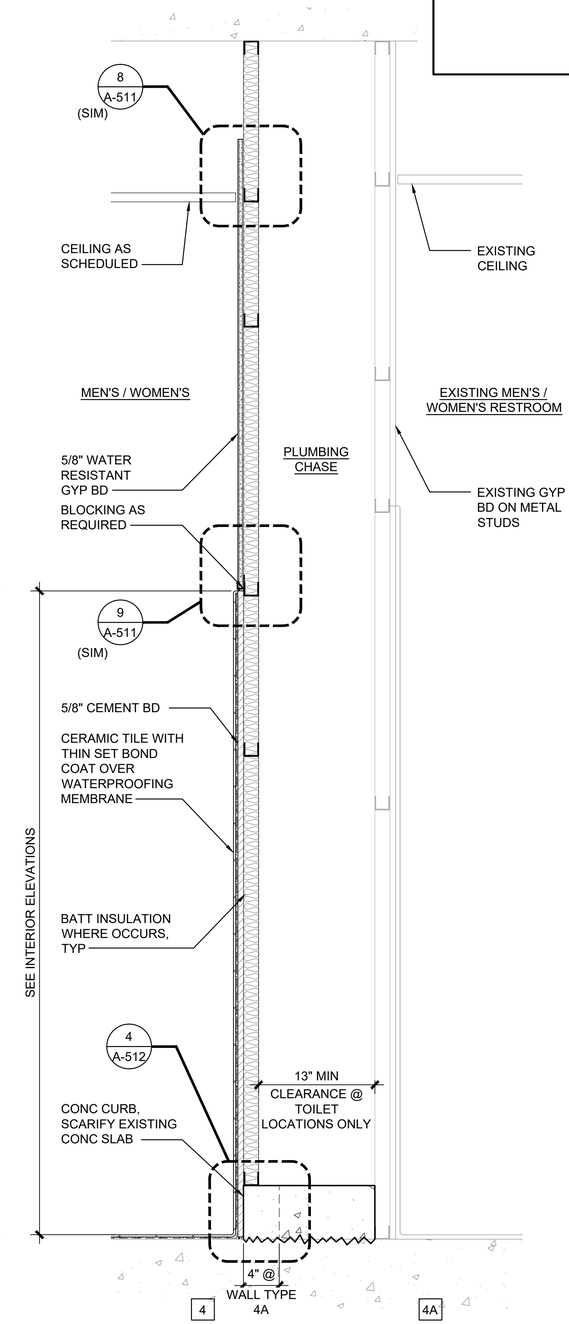


NON RATED FULL HEIGHT PARTITION WALL W/ WAINSCOT ON ONE SIDE

NON RATED FULL HEIGHT PARTITION WALL W/ WAINSCOT ON BOTH SIDES



EXISTING CONCRETE WALL / COLUMN W/ WAINSCOT



NON RATED FULL HEIGHT PARTITION W/ WAINSCOT ON ONE SIDE

NON RATED FULL HEIGHT PARTITION W/ WAINSCOT ON ONE SIDE - NO MIN CLEARANCE

0 1' 2'

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

1 / A-510 WALL PARTITIONS

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

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

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PARTITION TYPES

Project Phase:
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-

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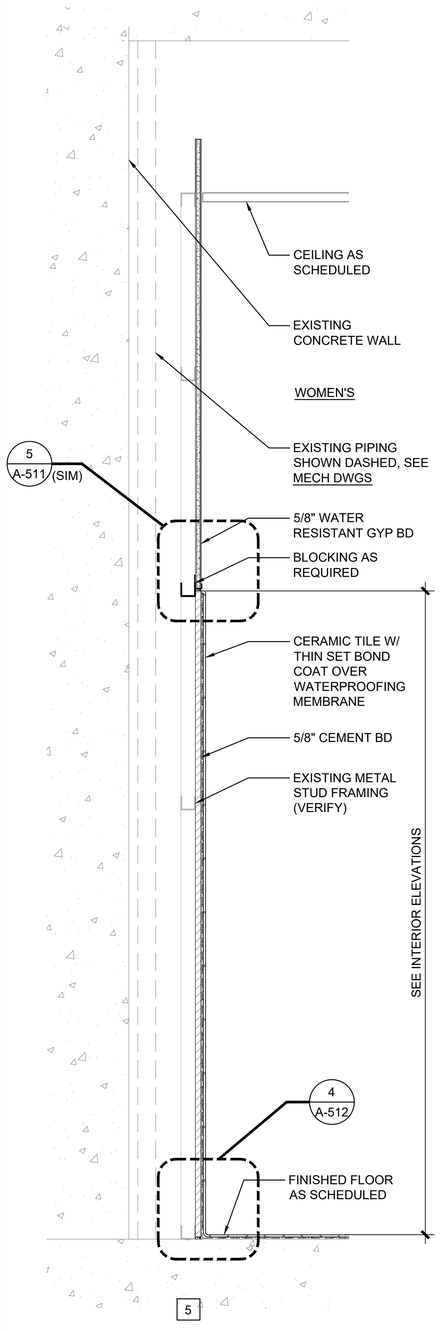
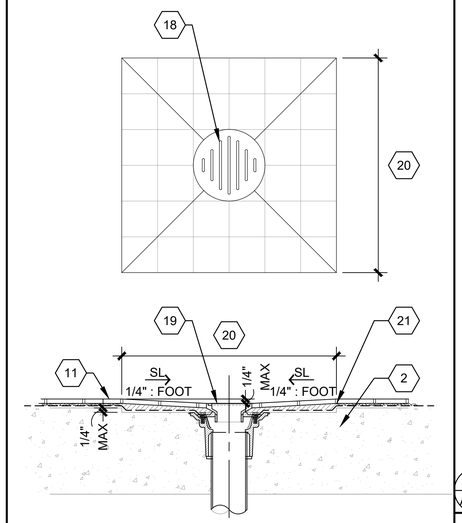
A-510

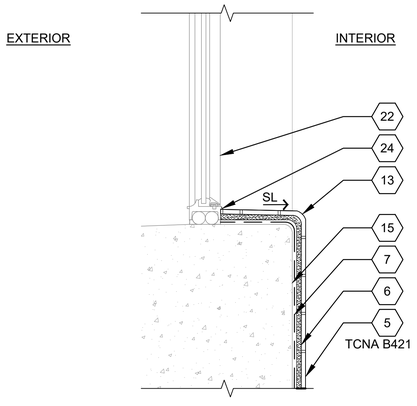


NON RATED FULL HEIGHT FURRED WALL W/ WAINSCOT ON EXISTING METAL STUDS

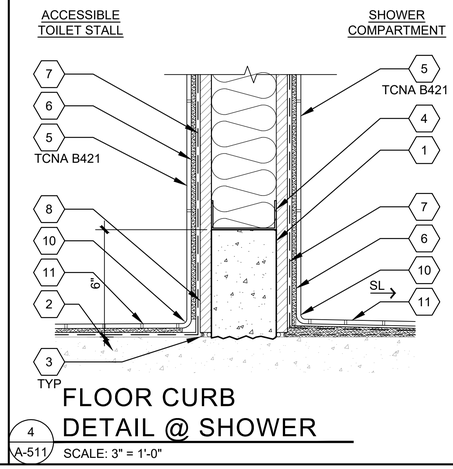
1 A-511 **WALL PARTITIONS**
SCALE: 1-1/2" = 1'-0"



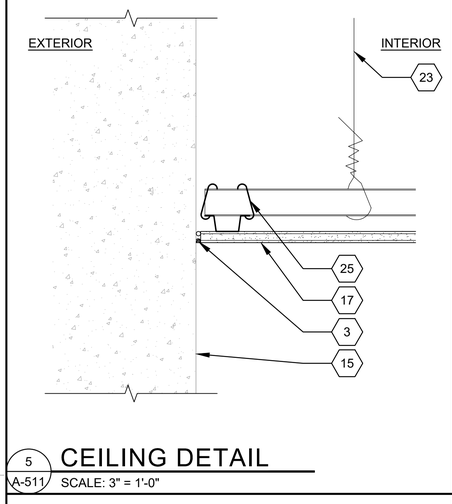
2 A-511 **FLOOR DRAIN**
SCALE: 3" = 1'-0"



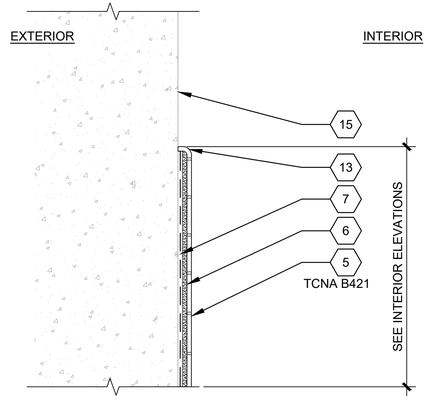
3 A-511 **WINDOW SILL DETAIL**
SCALE: 3" = 1'-0"



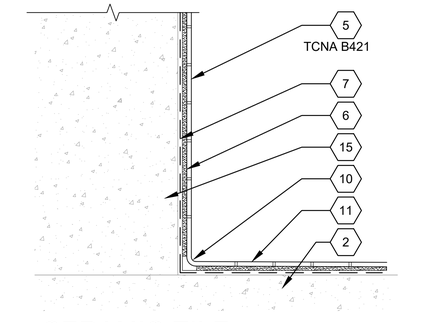
4 A-511 **FLOOR CURB DETAIL @ SHOWER**
SCALE: 3" = 1'-0"



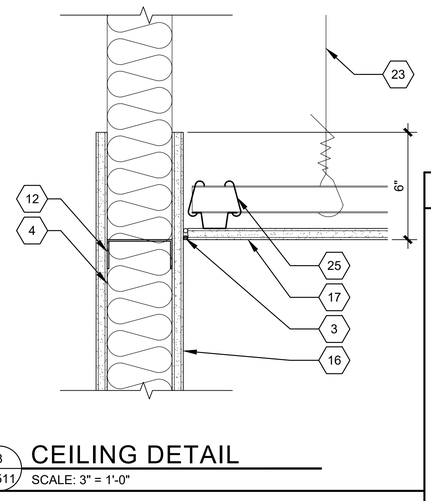
5 A-511 **CEILING DETAIL**
SCALE: 3" = 1'-0"



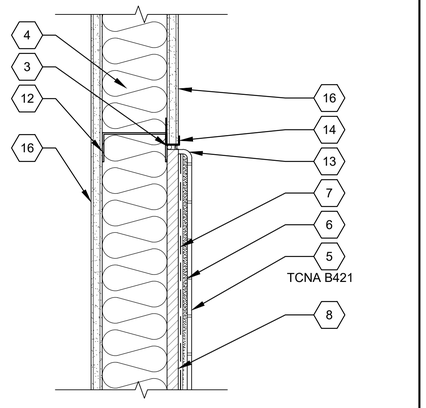
6 A-511 **WAINSCOT DETAIL**
SCALE: 3" = 1'-0"



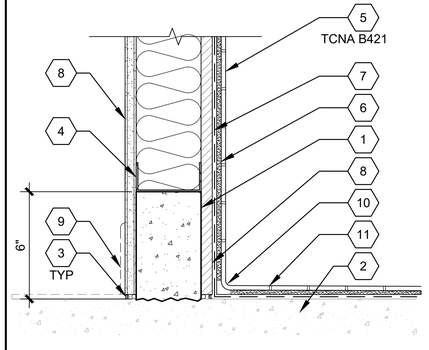
7 A-511 **CERAMIC TILE FLOOR DETAIL**
SCALE: 3" = 1'-0"



8 A-511 **CEILING DETAIL**
SCALE: 3" = 1'-0"



9 A-511 **WAINSCOT DETAIL**
SCALE: 3" = 1'-0"



10 A-511 **FLOOR CURB DETAIL**
SCALE: 3" = 1'-0"

SHEET KEYNOTES

1. CONCRETE CURB
2. EXISTING CONCRETE FLOOR SLAB
3. CONTINUOUS SEALANT W/ BACKER ROD
4. METAL STUDS, FRAME AS REQUIRED
5. CERAMIC TILE AS SCHEDULED
6. THIN SET BOND COAT
7. WATERPROOFING MEMBRANE
8. 5/8" CEMENT BOARD
9. WALL BASE AS SCHEDULED
10. COVE BASE AS SCHEDULED
11. FINISH FLOOR AS SCHEDULED
12. BLOCKING AS REQUIRED
13. BULLNOSE TILE AS SCHEDULED
14. CONTINUOUS METAL "J" TRIM
15. EXISTING CONCRETE WALL
16. 5/8" WATER RESISTANT GYP BOARD
17. CEILING AS SCHEDULED
18. FLOOR DRAIN, SEE MECH DWGS
19. FLOOR DRAIN STRAINER AND FLOOR DRAIN BODY, SEE MECH DWGS
20. 1'-0" SQUARE (REMOVE PORTION OF EXISTING CONC SLAB TO RECESSED FLOOR DRAIN)
21. SLOPED MORTAR FILL
22. EXISTING WINDOW
23. HANGAR WIRE @ 4'-0" MAX, AS REQUIRED
24. CONTINUOUS SEALANT
25. SECURE FRAMING TO SUSPENDED FURRING CHANNELS

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

0 3" 6" 9" 1'
SCALE: 3"=1'-0"

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
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PARTITION TYPES AND DETAILS

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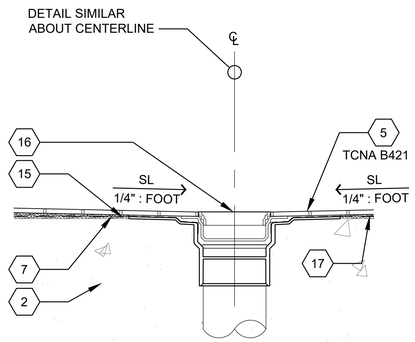
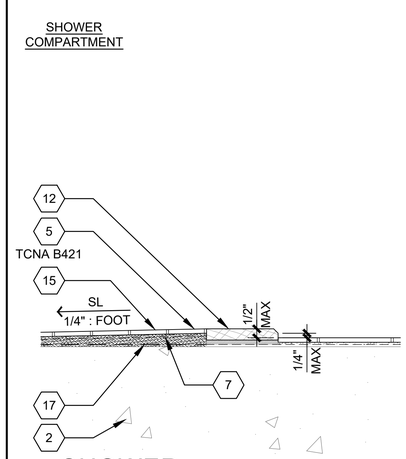
A-511



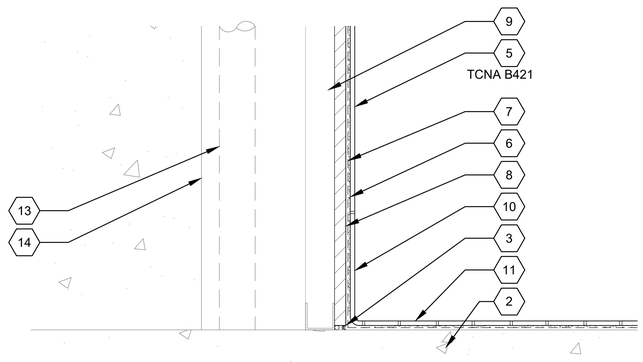
1 A-512 SCALE: 3" = 1'-0"

SHOWER DRAIN DETAIL



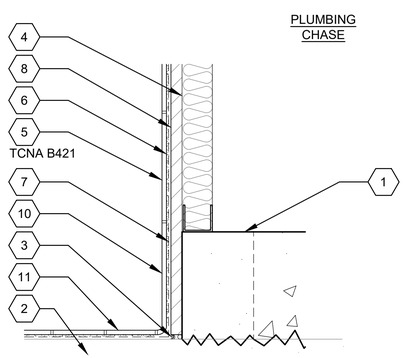
2 A-512 SCALE: 3" = 1'-0"

SHOWER THRESHOLD DETAIL



3 A-512 SCALE: 3" = 1'-0"

BASE DETAIL @ EXISTING PIPING



4 A-512 SCALE: 3" = 1'-0"

FLOOR CURB DETAIL

SHEET KEYNOTES

1. CONCRETE CURB
2. EXISTING CONCRETE FLOOR SLAB
3. CONTINUOUS SEALANT W/ BACKER ROD
4. 3-5/8" METAL STUDS
5. CERAMIC TILE AS SCHEDULED
6. THIN SET BOND COAT
7. WATERPROOFING MEMBRANE
8. 5/8" CEMENT BOARD
9. EXISTING METAL STUD FRAMING (VERIFY IN FIELD)
10. COVE BASE AS SCHEDULED
11. FINISH FLOOR AS SCHEDULED
12. MARBLE THRESHOLD SET IN BED OF SEALANT
13. EXISTING PIPING SHOWN DASHED
14. EXISTING CONCRETE WALL
15. SLOPED MORTAR BED
16. FLOOR DRAIN, SEE MECH DWGS
17. MORTAR BED BOND COAT

0 3" 6" 9" 1'

SCALE: 3"=1'-0"

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PARTITION DETAILS

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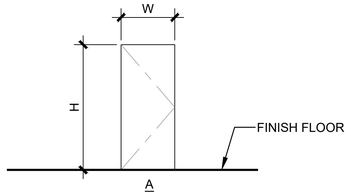
Sheet No.:

A-512

DOOR SCHEDULE

INT/ EXT	DOOR NUMBER	TYPE	DOOR		FRAME		SIZE			DETAILS (A-601 THIS SHEET)			HW GROUP	FIRE RATING	REMARKS
			MATERIAL	FIN	MATERIAL	FIN	WIDTH	HEIGHT	THICKNESS	HEAD	JAMB	THRESHOLD			
INT	101	A	SC WD	PL-1	MET	PT-2	3'-0"	7'-0"	1 3/4"	4	3, 4	1	001	0	-
INT	102	A	SC WD	PL-1	MET	PT-2	3'-0"	7'-0"	1 3/4"	4	3	2	002	0	-
INT	103	A	SC WD	PL-1	MET	PT-2	3'-0"	7'-0"	1 3/4"	4	3	2	003	0	-

DOOR TYPES



SOLID CORE WOOD
FLUSH PANEL

MATERIAL INDEX

CODE	MATERIAL	MANUFACTURER	MODEL/SIZE	COLOR	LOCATIONS	REMARKS
ACT-1	ACOUSTIC CEILING TILE	ARMSTRONG	ULTIMA BEVELED TEGULAR 2'X4'	WHITE	CONFERENCE ROOM	PRELUDE 15/16" SUSPENSION SYSTEM
CT-1	CERAMIC TILE	DALTILE	KEYSTONES 2"X2"	WHEAT BLEND	FLOOR	GT-1
CT-2	CERAMIC TILE	DALTILE	COLORWHEEL CLASSIC 6"X6"	WHITE 0100	WALL	GT-2
CT-3	CERAMIC TILE	DALTILE	COLORWHEEL CLASSIC 3"X6"	MATTE SUEDE GRAY 0782	WALL ACCENT	GT-2
GT-1	EPOXY GROUT	MAPEI	KERAPOXY	PEARL GRAY 19	FLOOR	-
GT-2	EPOXY GROUT	MAPEI	KERAPOXY	COBBLESTONE 103	WALL	-
PT-1	PAINT	SHERWIN WILLIAMS	SEE SPEC	MATCH EXISTING	WALL	SEMI-GLOSS
PT-2	PAINT	SHERWIN WILLIAMS	SEE SPEC	MATCH EXISTING	DOOR FRAMES	SEMI-GLOSS
PT-3	PAINT	SHERWIN WILLIAMS	SEE SPEC	MATCH WALL COLOR	CEILING	EGG-SHELL
PL-1	PLASTIC LAMINATE	WILSONART	SEE SPEC	FUSION MAPLE 7909	DOORS	MATTE FINISH
RF-1	RESILENT FLOORING	METROFLOR	INCEPTION 200	SUNSET APPLE HAWIN 20008	CONFERENCE ROOM	-
TP-1	TOILET PARTITIONS	SCRANTON	HINY HIDERS	CONCRETE	-	
WB-1	WALL BASE	FLEXCO	WALLFLOWERS 4" RUBBER WALL BASE	MATCH EXISTING	HALLWAY	-
WB-2	WALL BASE	FLEXCO	WALLFLOWERS 4" RUBBER WALL BASE	DARK BEIGE 037	CONFERENCE ROOM	-
WF-1	WINDOW FILM	LLUMAR	DECORATIVE WINDOW FILM MATTE FROST	GLACIER NRM55 PS4	-	-

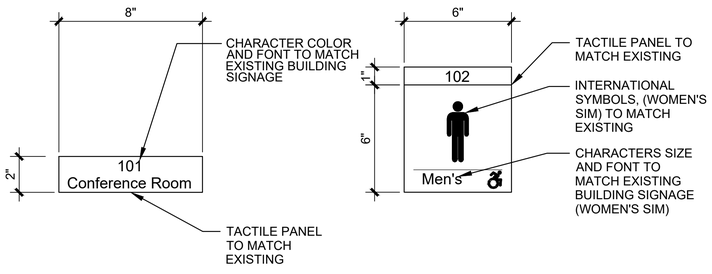
ROOM FINISH SCHEDULE

ROOM #	ROOM NAME	WALLS						CEILING	CEILING FINISH	REMARKS
		FLOOR	BASE	A	B	C	D			
101	CONFERENCE ROOM	RF-1	WB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	-	-
102	MEN'S	CT-1	CT-1	PT-1/CT-2	PT-1/CT-2	PT-1/CT-2	PT-1/CT-2	GYP BD	PT-3	-
103	WOMEN'S	CT-1	CT-1	PT-1/CT-2	PT-1/CT-2	PT-1/CT-2	PT-1/CT-2	GYP BD	PT-3	-

SIGNAGE SCHEDULE

SIGN NO.	ROOM NO.	SIGN TYPE	MOUNTING LOCATION	SIGN TEXT	REMARKS
01	101	A	LEFT SIDE OF DOOR	CONFERENCE ROOM	MATCH EXISTING
02	102	B	RIGHT SIDE EOF DOOR	MEN'S	MATCH EXISTING
03	103	C	LEFT SIDE OF DOOR	WOMENS	MATCH EXISTING

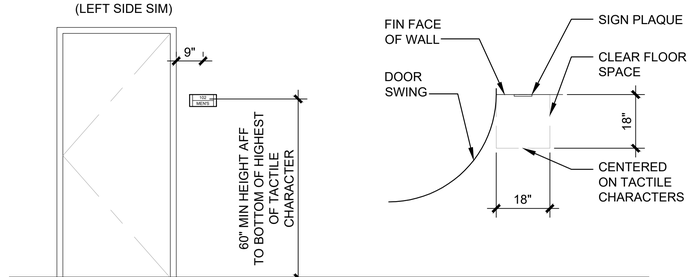
SIGNAGE TYPES



SIGN TYPE A

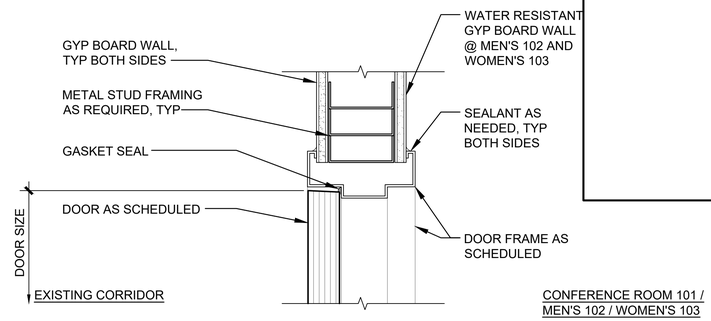
SIGN TYPE B (C SIM)

TYPICAL MOUNTING HEIGHTS



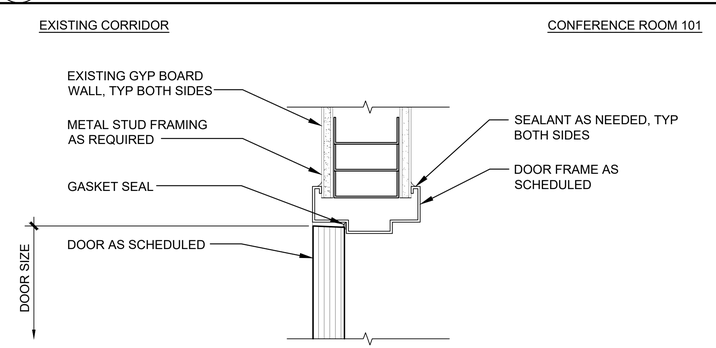
PLAN

ELEVATION



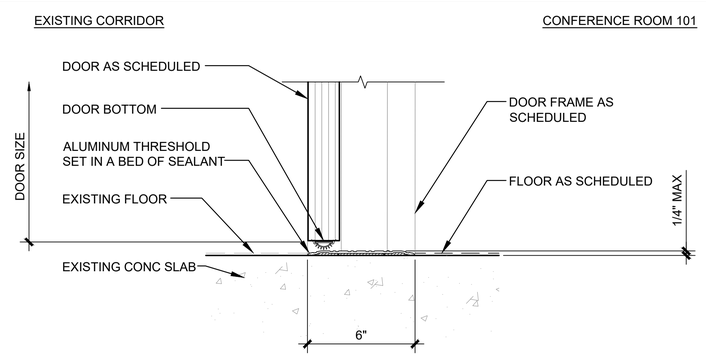
4 A-601 DOOR DETAIL - HEAD/JAMB (SIM)

SCALE: 3" = 1'-0"



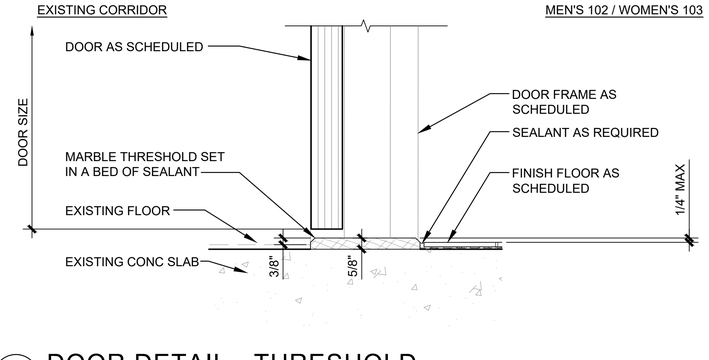
3 A-601 DOOR DETAIL - JAMB @ EXISTING GYP BD WALL

SCALE: 3" = 1'-0"



2 A-601 DOOR DETAIL - THRESHOLD

SCALE: 3" = 1'-0"



1 A-601 DOOR DETAIL - THRESHOLD

SCALE: 3" = 1'-0"

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INK ARCH LLC
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DOOR AND SIGNAGE SCHEDULE AND TYPES, MATERIAL INDEX, ROOM FINISH SCHEDULE, TYPICAL MOUNTING HEIGHTS, DOOR DETAILS

Project Phase:
-

Date:
-

Sheet No.:

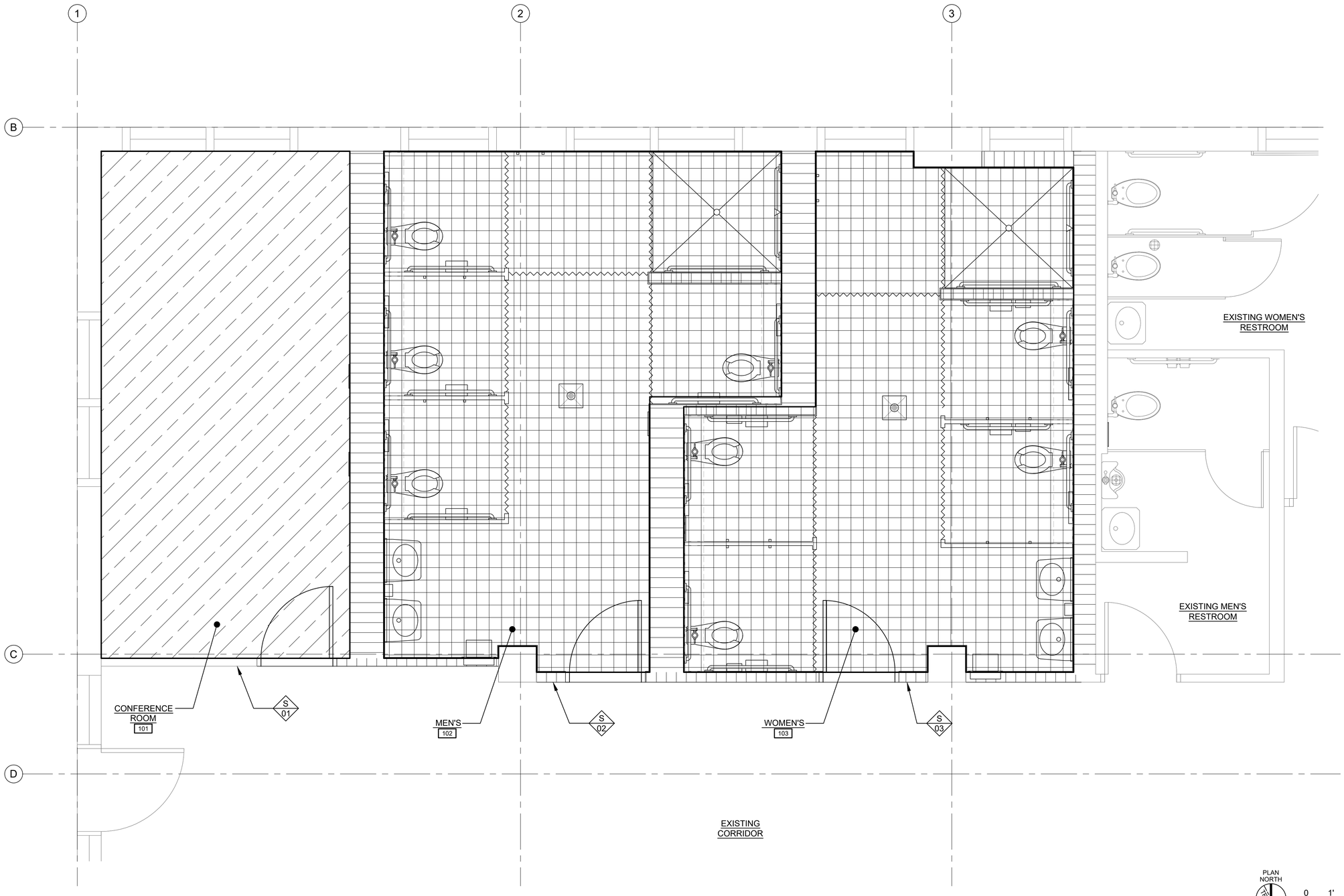
A-601

LEGEND

- GYP BOARD WALL W/ CERAMIC TILE (WHERE OCCURS)
- CERAMIC TILE FLOORING CT 01
- LVT FLOORING LVT 01
- EXISTING EXTERIOR CONCRETE WALL
- EXISTING CONCRETE COLUMN
- SIGNAGE TAG/NUMBER S #

GENERAL NOTES

1. PRIOR TO AND AFTER INSTALLATION / APPLICATION OF FINISH FLOORING SYSTEMS, THE GENERAL CONTRACTOR SHALL CONDUCT AND PERFORM WATER TEST(S) OF THE FLOORING TO ENSURE POSITIVE FLOW TOWARDS RESPECTIVE DRAINS, AND SHALL ENSURE NO PUDDLING OR NAM CONDITIONS OCCUR, TO THE COMPLETE SATISFACTION OF THE OWNER'S REPRESENTATIVE AND ARCHITECT.
2. PROVIDE POSITIVE SLOPES (2% MAX) TO ALL RESPECTIVE FLOOR DRAINS FOR ENTIRE FINISHED FLOORINGS SYSTEM SURFACE.
3. PREPARE EXISTING FLOOR SLAB AS REQUIRED FOR THE INSTALLATION OF FLOORING AS SCHEDULED, INCLUDING BUT NOT LIMITED TO LEVELNESS, FLATNESS, HIGH AND LOW SPOTS, GOUGES, CRACKS, AND EXCESS MOISTURE CONTENT.



1 FINISH FLOOR PLAN
AF101 SCALE: 1/2" = 1'-0"

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

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

Revisions:

No.	Description	Date

Project Title:

LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816
T.M.K.: 3-2-031:001

SCOTT R.J. HARADA
LICENSED PROFESSIONAL ARCHITECT
No. 14637
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

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EXP. DATE: 04/30/26

Sheet Title:

FINISH FLOOR PLAN

Project Phase:
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Date:
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Sheet No.:

AF101

GENERAL NOTES:

1. CONFORM TO ALL REQUIREMENTS OF THE 2018 IBC, 2021 UPC, 2018 IECC, AND 2018 NFPA 1 CODES OF THE CITY AND COUNTY OF HONOLULU, STATE OF HAWAII HEALTH REGULATIONS, FIRE DEPARTMENT REGULATIONS, MANUFACTURER'S RECOMMENDATIONS AND OTHER APPLICABLE REGULATIONS.
2. EXAMINE ALL PROJECT PLANS AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS AND THE EXTENT OF REMOVAL, RELOCATION AND/OR NEW WORK PRIOR TO BIDDING. NOTIFY AND COORDINATE WITH THE ENGINEER FOR ANY MAJOR DEVIATIONS OR DISCREPANCIES DISCOVERED IN THE PLANS AND SPECIFICATIONS DUE TO UNFORESEEN OR VARYING FIELD CONDITIONS.
3. INSTALLATION SHALL BE GUARANTEED TO BE FREE FROM DEFECTS FOR ONE YEAR FROM FINAL DATE OF ACCEPTANCE OF THE PROJECT AS A WHOLE.
4. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS PRIOR TO BID AND CONSTRUCTION
5. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING LINE SIZES, CONDITIONS, AND INVERTS PRIOR TO BID AND CONSTRUCTION.
6. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO COVER THE COMPLETE INSTALLATION OF SYSTEMS TO FUNCTION AS DESCRIBED AND SPECIFIED. THE OMISSION OF REFERENCE TO ANY NECESSARY ITEM OF LABOR OR MATERIAL SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH LABOR AND MATERIAL AT NO ADDITIONAL COST TO THE OWNER.
7. PAY FOR ALL PERMITS AND APPLICATIONS.
8. CAULK ALL PENETRATIONS WATERTIGHT. PROVIDE ALL CUTTING, PATCHING, AND RESTORING OF EXISTING SURFACES TO MATCH ORIGINAL SURFACE FINISHES. REPAIR ANY DAMAGE TO EXISTING CONSTRUCTION RESULTING FROM THE INSTALLATION OF MECHANICAL ITEMS. THE AREAS REPAIRED SHALL MATCH THE EXISTING ADJACENT SURFACES IN TEXTURE AND COLOR.
9. PREPARE SIX (6) SETS OF SHOP DRAWINGS SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF WORK. NO REPRODUCTIONS OF ANY KIND OF THE CONTRACT DOCUMENTS SHALL BE ACCEPTABLE AS SHOP DRAWINGS. PROVIDE ONE SET OF REPRODUCIBLE AS-BUILT DRAWINGS SHOWING THE ACTUAL INSTALLED CONDITIONS AND SUBMIT TO THE OWNERS UPON COMPLETION OF WORK.
10. ALL EQUIPMENT AND FIXTURES SHALL BE CAPABLE OF FITTING INTO THE SPACES ALLOTTED WHILE MEETING THE MANUFACTURER'S RECOMMENDED ACCESS REQUIREMENTS. REVIEW ALL SPACES WHERE EQUIPMENT AND FIXTURES ARE TO BE INSTALLED PRIOR TO ORDERING OF ITEMS AND NOTIFY THE ARCHITECT/ENGINEER OF ANY INADEQUATE CLEARANCES OR CONDITIONS THAT WILL PREVENT THE PROPER INSTALLATION, MAINTENANCE,AND OPERATION OF THE EQUIPMENT AND FIXTURES.
11. DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT SHOW EVERY EXACT DETAIL OF PIPING AND DUCTWORK. PROVIDE OFFSETS AS NECESSARY TO AVOID LOCAL OBSTRUCTIONS OR INTERFERENCES WITH OTHER TRADES. REVIEW ALL PIPING AND DUCT RUNS PRIOR TO FABRICATION AND IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER OF ANY INTERFERENCES AND/OR LACK OF ADEQUATE CLEARANCES.
12. SHOULD PROJECT CONDITIONS REQUIRE REARRANGEMENT OF WORK, MARK SUCH CHANGES ON THE AS-BUILT DRAWINGS. IF THESE CHANGES REQUIRE ALTERNATE METHODS TO THOSE APPROVED BY THE CONTRACT DOCUMENTS, SUBMIT SHOP DRAWINGS SHOWING THE PROPOSED ALTERNATE METHODS TO THE ARCHITECT/ENGINEER FOR REVIEW/APPROVAL PRIOR TO PROCEEDING WITH WORK.
13. COORDINATE ALL WORK WHICH WILL AFFECT AREAS WITH BUILDING SUPERVISOR. SCHEDULE OFF-HOUR WORK WHEN REQUIRED TO MINIMIZE DISRUPTIONS.
14. COORDINATE ALL SWITCH, THERMOSTAT, ETC. LOCATIONS WITH USER/ENGINEER PRIOR TO INSTALLATION TO AVOID INTERFERENCES WITH PAINTING, BULLETIN BOARDS, FURNITURE, ETC. ANY ITEM NOT PROPERLY COORDINATED SHALL BE RELOCATED AT NO ADDITIONAL COST TO THE OWNER.
15. ALL STEEL SHALL BE HOT DIPPED GALVANIZED. GALVANIZED STEEL EXPOSED TO WEATHER SHALL HAVE WEATHER PROOF PAINT TO MATCH SURFACES. PROVIDE TWO EXTRA COATS OF EPOXY PAINT.
16. ALL ELECTRICAL AND CONTROL WIRING SHALL BE IN CONDUIT. PROVIDE GALVANIZED STEEL PIPE CONDUIT FOR EXPOSED TO WEATHER CONDUIT.
17. ALL DUCT DIMENSIONS SHOWN ARE NET DIMENSIONS.
18. PROVIDE DUCTWORK REDUCER FITTINGS AT AIR DEVICE CONNECTIONS AS REQUIRED.
19. PROVIDE OPPOSED BLADE VOLUME DAMPERS AND STAINLESS STEEL BIRDSCREENS FOR ALL OUTSIDE AIR DUCTS.
20. ALL SWITCHES, TIMECLOCKS, THERMOSTATS, AND CONTROL ITEMS SHALL BE ADA ACCESSIBLE AND SHALL BE MOUNTED AT 44" AFF AS PER ADA REQUIREMENTS OR ACCORDING TO OWNER'S INSTRUCTIONS.
21. PROVIDE REBALANCING DURING ONE YEAR GUARANTEE PERIOD TO SATISFY USER'S REQUIREMENTS. CONTRACTOR SHALL PROVIDE TEST AND BALANCING REPORTS.
22. COORDINATE ALL WORK WITH OTHER TRADES TO AVOID INTERFERENCES AND DELAYS.
23. EXISTING PLUMBING/STORM DRAIN/CONDUITS SHALL BE REHUNG/REROUTED AS REQUIRED TO ACCOMMODATE NEW HVAC EQUIPMENT AND DUCTWORK. VERIFY ALL WASTE AND WATER INVERTS, LOCATIONS, SIZES, AND CONDITIONS OF PIPING.
24. ALL HVAC DUCTWORK SHALL HAVE EITHER TURNING VANES OR RADIUS ELBOWS AT EACH BEND OR ELBOW WHETHER SHOWN ON THE DRAWINGS OR NOT.
25. SEISMICALLY BRACE ALL EQUIPMENT, PIPING, AND DUCTWORK IN ACCORDANCE WITH THE CURRENT BUILDING CODE AND THERE RESPECTIVE SEISMIC ZONE LOCATIONS.
26. PROVIDE ACCESS PANELS FOR ALL ITEMS UNDER THIS SECTION REQUIRING SERVICING, INSPECTION, MAINTENANCE, AND ADJUSTMENT.
27. PROVIDE ESCUTCHEON PLATES AT ALL EXPOSED WALL PENETRATIONS IN FINISHED AREAS, EXTERIOR WALL, ETC.
28. AFTER CONNECTION OF NEW FIXTURES TO WASTE, CLEANOUT/SNAKE EXISTING LINES FOR PROPER OPERATION.
29. ALL PENETRATIONS THRU EXISTING WALLS, FOUNDATIONS, AND FLOOR SLABS SHALL BE IN TOTAL COMPLIANCE WITH ARCHITECTURAL/STRUCTURAL PROCEDURES AND DRAWINGS.
30. ALL PENETRATIONS THRU RATED WALLS AND CEILINGS SHALL BE EQUIPPED WITH APPROVED FIRE STOPPING AND OR FIRE & SMOKE DAMPERS.
31. DRAWING FILES WILL NOT BE AVAILABLE TO CONTRACTORS FOR SHOP DRAWINGS OR ANY OTHER PURPOSE.
32. PROVIDE ISOLATION VALVES ON PIPING BRANCH LINES AND VOLUME DAMPERS ON DUCTWORK BRANCH LINES WHETHER SHOWN ON THE DRAWINGS OR NOT.
33. CONTRACTOR SHALL SCHEDULE, TAG, AND LABEL ALL VALVES AND PIPING. ALL PIPING SHALL ALSO BE LABELED WITH DIRECTION OF FLOW.
34. ALL EXTERIOR NUTS, BOLTS, AND SCREWS, WASHERS, FASTENERS, SUPPORTS STRAPS, ETC. SHALL BE TYP 304 STAINLESS STEEL.
35. PRE TAB REPORT SHALL BE PERFORMED BEFORE START OF WORK ON THE EXISTING SYSTEM SERVING THE SPACE. POST TAB REPORT SHALL BE PERFORMED AFTER WORK IS COMPLETED ON THE SYSTEM SERVING THE SPACE TO ACCOMMODATE NEW WORK.
36. PROVIDE DIELECTRIC UNIONS OR SEPARATIONS AT ALL DISSIMILAR METALS. PROVIDE UNIONS AFTER ALL SHUTOFF VALVES.

MECHANICAL LEGEND

SYMBOL	ABBRV.	DESCRIPTION	SYMBOL	ABBRV.	DESCRIPTION
GENERAL			HVAC		
	AFF	ABOVE FINISHED FLOOR		AP	ACCESS PANEL
⌐	CAP	CAPPED		ACCU	AIR COOLED CONDENSING UNIT
	CLG	CEILING	●—	BDD	BACKDRAFT DAMPER
	CONC	CONCRETE	— CD —	CD	CONDENSATE
	CONT	CONTINUE		CFM	CUBIC FEET PER MINUTE
	DEMO	DEMOLITION		DT	DUCT
	ø	DIAMETER		EA	EXHAUST AIR
	DN	DOWN	⊠	EF	EXHAUST FAN
(E)	EXIST	EXISTING (TO REMAIN)	⊠	ER	EXHAUST REGISTER
	FLR	FLOOR		FCU	FAN COIL UNIT
	MIN	MINIMUM	~		FLEX DUCTWORK
(N)		NEW		NK	NECK
	NTS	NOT TO SCALE	└—	OBVD	OPPOSED BLADE VOLUME DAMPER
	POC	POINT OF CONNECTION		OA	OUTSIDE AIR
	POR	POINT OF REMOVAL	⊠	OAD	OUTSIDE AIR DIFFUSER
(RE)		RELOCATE	—RL—	RL	REFRIGERANT LIQUID
(R)		REMOVE	—RS—	RS	REFRIGERANT SUCTION
	TERM	TERMINATED		RA	RETURN AIR
	TYP	TYPICAL	⧅	RAR	RETURN AIR REGISTER
	W/	WITH		SC	SERVICE CLEARANCE
PLUMBING			Ⓣ	TSTAT	THERMOSTAT
	AHS	ACCESSIBLE HAND SINK		TV	TURNING VANE
	ALAV	ACCESSIBLE LAVATORY	FIRE PROTECTION		
	ASK	ACCESSIBLE SINK			CONCEALED PENDANT TYPE FIRE SPRINKLER HEAD
	AWC	ACCESSIBLE WATER CLOSET		FE	FIRE EXTINGUISHER
—||	CO	CLEANOUT		FS	FIRE SPRINKLER
— · —	CW	COLD WATER			PENDANT TYPE FIRE SPRINKLER HEAD
⊘	FD	FLOOR DRAIN			
	FNL DR	FUNNEL DRAIN			
	GPD	GALLONS PER DAY			
	GPF	GALLONS PER FLUSH			
	GPM	GALLONS PER MINUTE			
⋈	GV	GATE VALVE			
	HS	HAND SINK			
— ·· —	HW	HOT WATER			
	HWD	HOT WATER DISPENSER			
	IWH	INSTANT WATER HEATER			
	INSUL	INSULATION			
	LAV	LAVATORY			
———	S	SANITARY			
	SK	SINK			
⋈	SOV	SHUT OFF VALVE			
— — —	V	VENT			
⅃¦└	VTR	VENT TO ROOF			
—||	WCO	WALL CLEANOUT			
	WC	WATER CLOSET			
	WHA	WATER HAMMER ARRESTOR			

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
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HONOLULU, HI 96816

ROSS R. TANAKA
LICENSED PROFESSIONAL ENGINEER
No. 9301-M
HAWAII, U.S.A.

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GENERAL NOTES

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Date:

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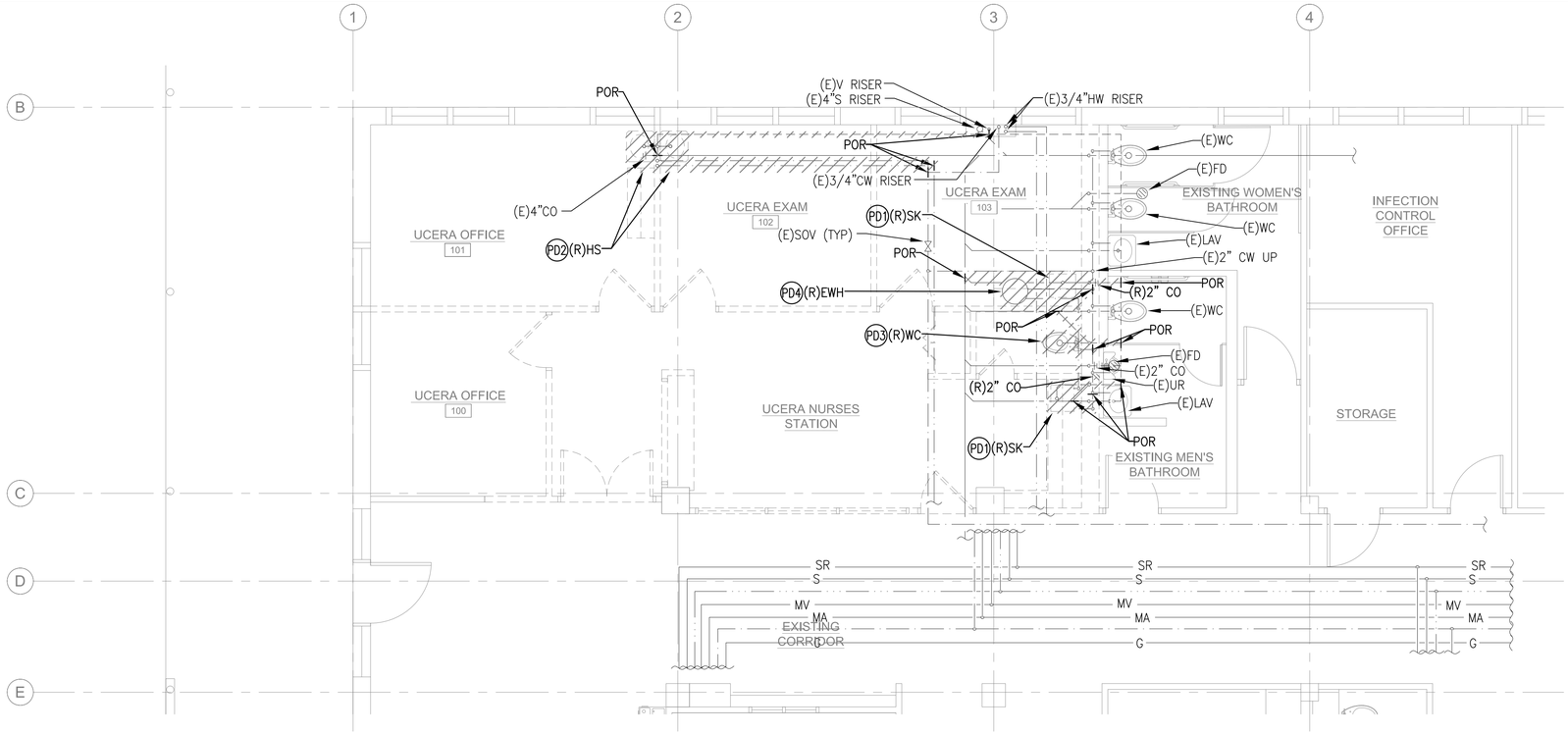


1 MD101 DEMOLITION PLUMBING PLAN

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

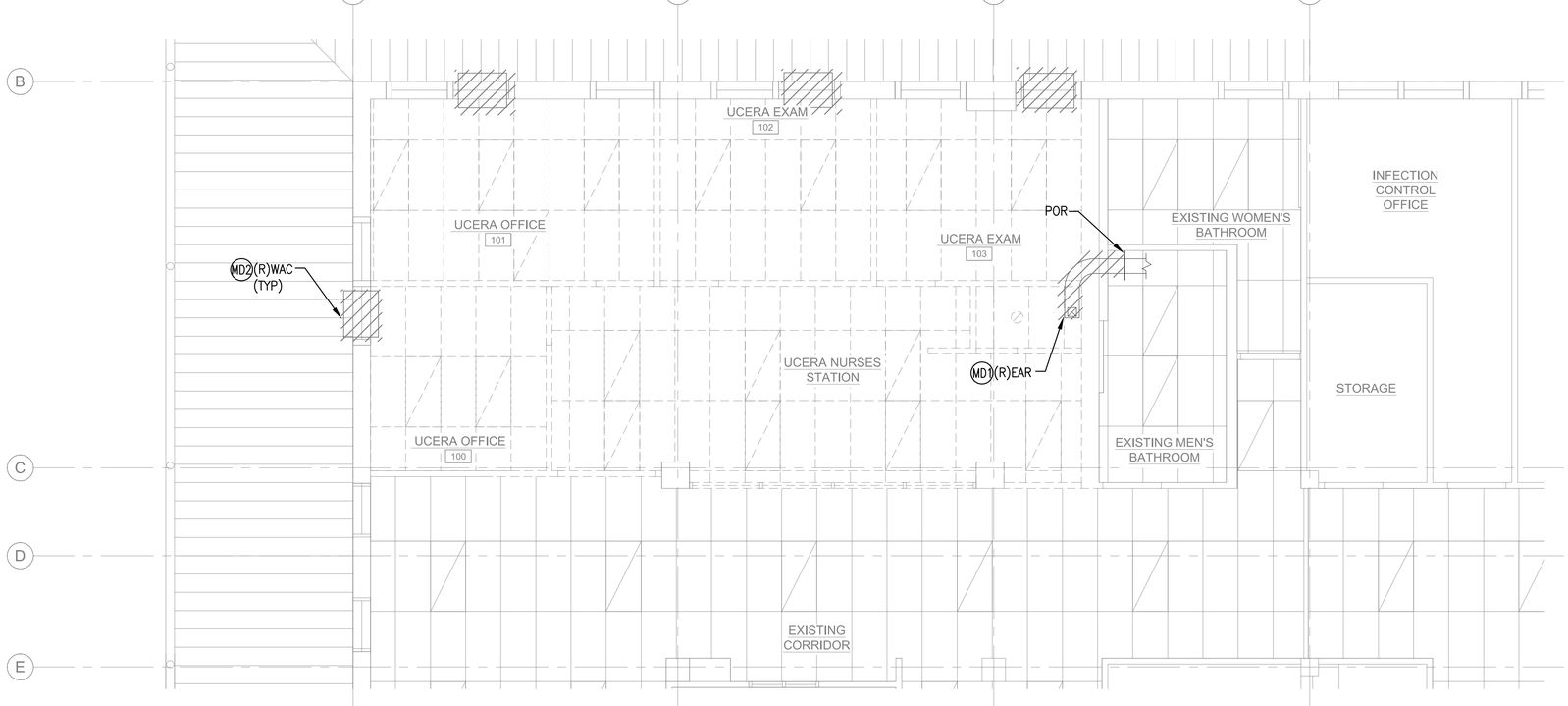
PLUMBING DEMOLITION WORK NOTES:

PD1 EXISTING SINK TO BE REMOVE COMPLETELY INCLUDING ASSOCIATED ACCESSORIES. REMOVE EXISTING CW/S/V LINES FROM SINK TO POR AS SHOWN. REMOVE EXISTING HW LINES FROM SINK COMPLETELY AS REQUIRED. CUT/CAP EXISTING PLUMBING LINES AS REQUIRED. SEE NEW PLUMBING WORK NOTES. PATCH/REPAIR TO MATCH EXISTING. CONTRACTOR TO FIELD VERIFY.

PD2 EXISTING HAND SINK TO BE REMOVE COMPLETELY INCLUDING ASSOCIATED ACCESSORIES. REMOVE EXISTING CW/HW/S/V LINES FROM HAND SINK TO POR AS SHOWN. CUT/CAP EXISTING PLUMBING LINES AS REQUIRED. SEE NEW PLUMBING WORK NOTES. PATCH/REPAIR TO MATCH EXISTING. CONTRACTOR TO FIELD VERIFY.

PD3 EXISTING WATER CLOSET TO BE REMOVE COMPLETELY INCLUDING ASSOCIATED ACCESSORIES. REMOVE EXISTING CW/S/V LINES FROM WATER CLOSET TO POR AS SHOWN. CUT/CAP EXISTING PLUMBING LINES AS REQUIRED. SEE NEW PLUMBING WORK NOTES. PATCH/REPAIR TO MATCH EXISTING. CONTRACTOR TO FIELD VERIFY.

PD4 EXISTING ELECTRIC WATER HEATER TO BE REMOVE COMPLETELY INCLUDING ASSOCIATED ACCESSORIES. REMOVE EXISTING CW LINES FROM EWH TO POR AS SHOWN. REMOVE EXISTING HW LINES FROM EWH COMPLETELY AS REQUIRED. CUT/CAP EXISTING PLUMBING LINES AS REQUIRED. PATCH/REPAIR TO MATCH EXISTING. CONTRACTOR TO FIELD VERIFY.



2 MD101 DEMOLITION MECHANICAL PLAN

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

GENERAL MECHANICAL NOTES:

1.CONTRACTOR SHALL SCHEDULE/PROVIDE A POST TAB REPORT OF THE ENTIRE SPACE, AFTER NEW WORK IS COMPLETED TO REDISTRIBUTE/REBALANCE THE AFFECTED SPACES AND AIR DEVICES, RESPECTIVELY.

2. CONTRACTOR SHALL CONFIRM RENOVATION DOES NOT INTERFERE WITH NEIGHBORING SPACE MECHANICAL SYSTEM OPERATIONS AS REQUIRED.

MECHANICAL DEMOLITION WORK NOTES:

MD1 REMOVE EXISTING EAR COMPLETELY. REMOVE ASSOCIATED DUCT FROM AIR DEVICE TO POR AS SHOWN. CUT/CAP/SEAL AIRTIGHT EXISTING DUCTWORK AS REQUIRED. PATCH/REPAIR TO MATCH EXISTING. CONTRACTOR TO FIELD VERIFY.

MD2 REMOVE EXISTING WAC AND CONDENSATE DRAIN LINE COMPLETE. PATCH/REPAIR TO MATCH EXISTING. CONTRACTOR TO FIELD VERIFY.

PLAN NORTH

TRUE N

0 4' 8' 12'

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

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

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LICENSED PROFESSIONAL ENGINEER
No. 9301-M
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DEMOLITION PLUMBING AND MECHANICAL PLAN

Project Phase:

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Date:

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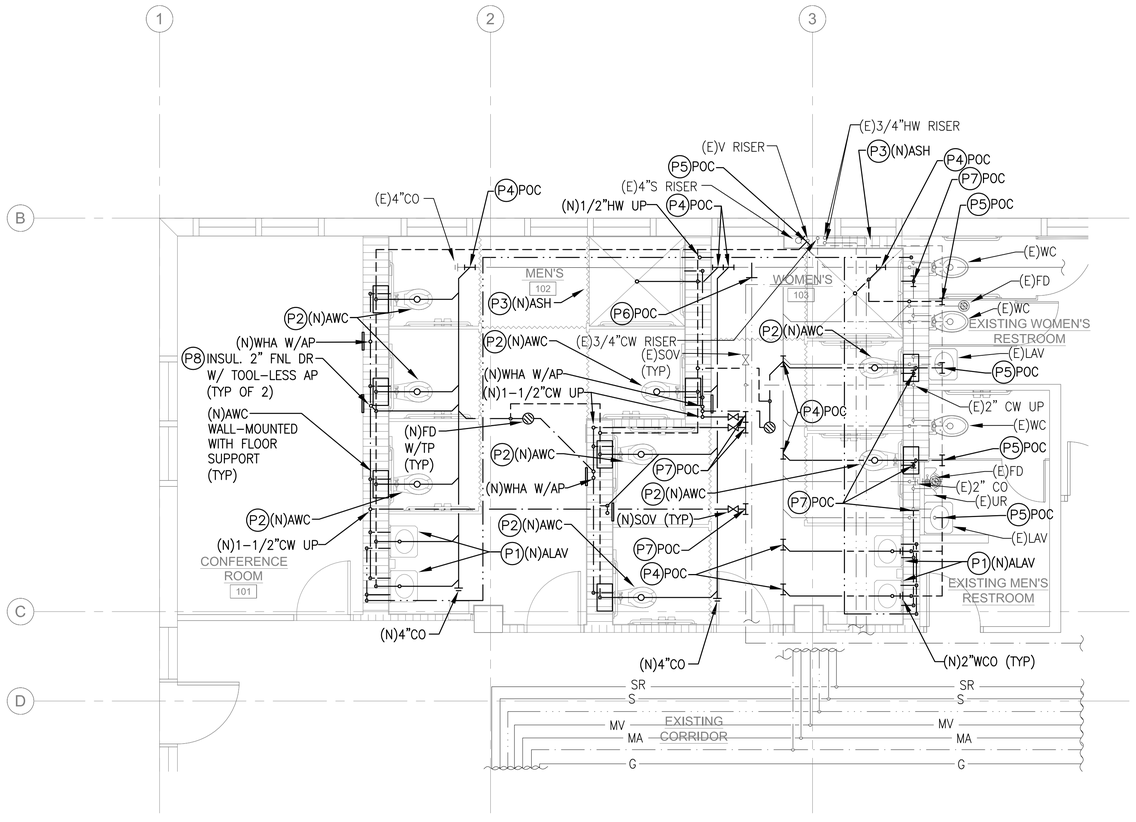
Sheet No.:

MD101



1 M-101 NEW PLUMBING PLAN

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

PLUMBING GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE WITH BUILDING MANAGER THAT ALL EXISTING CW/HW/S/V RISERS SERVING UPPER AND LOWER FLOOR DOES NOT INTERFERE OTHER BUSINESS HOURS AND OPERATIONS. CONTRACTOR TO FIELD VERIFY.

PLUMBING NEW WORK NOTES:

P1 PROVIDE AND INSTALL NEW WALL HUNG LAVATORY WITH DECK-MOUNTED METERED FAUCET INCLUDING ASSOCIATED CW/HW/S/V PIPING, FLOOR MOUNTED SUPPORT, AND ASSOCIATED ACCESSORIES AS REQUIRED. INSTALL IN ACCORDANCE WITH ADAAG 606 GUIDELINES. PROVIDE HW INSULATION IN ACCORDANCE IECC TABLE C403.11.3. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P2 PROVIDE AND INSTALL NEW AWC COMPLETE WITH ASSOCIATED CW/S/V PIPING, MANUAL FLUSHOMETER, WALL MOUNTED WITH FLOOR MOUNTED SUPPORT, AND ASSOCIATED ACCESSORIES AS REQUIRED. INSTALL IN ACCORDANCE WITH ADAAG 604 GUIDELINES. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P3 PROVIDE AND INSTALL NEW SHOWER COMPLETE WITH ASSOCIATED CW/HW/S/V PIPING AND ASSOCIATED ACCESSORIES AS REQUIRED. PROVIDE HW INSULATION IN ACCORDANCE IECC TABLE C403.11.3. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P4 CUT/CONNECT NEW SANITARY PIPING TO EXISTING SANITARY PIPING AS INDICATED. MODIFIED EXISTING SANITARY PIPING AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P5 CUT/CONNECT NEW VENT PIPING TO EXISTING VENT PIPING AS INDICATED. MODIFIED EXISTING VENT PIPING AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P6 CUT/CONNECT NEW HW PIPING TO EXISTING HW PIPING AS INDICATED. MODIFIED EXISTING HW PIPING AS REQUIRED. PROVIDE HW INSULATION IN ACCORDANCE IECC TABLE C403.11.3. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P7 CUT/CONNECT NEW CW PIPING TO EXISTING CW PIPING AS INDICATED. MODIFIED EXISTING CW PIPING AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P8 PROVIDE AND INSTALL NEW INSULATED FUNNEL DRAIN WITH TOOL-LESS ACCESS PANEL AND ASSOCIATED ACCESSORIES AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

PLAN NORTH

0 4' 8' 12'

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

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NEW PLUMBING PLAN

Project Phase:

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Date:

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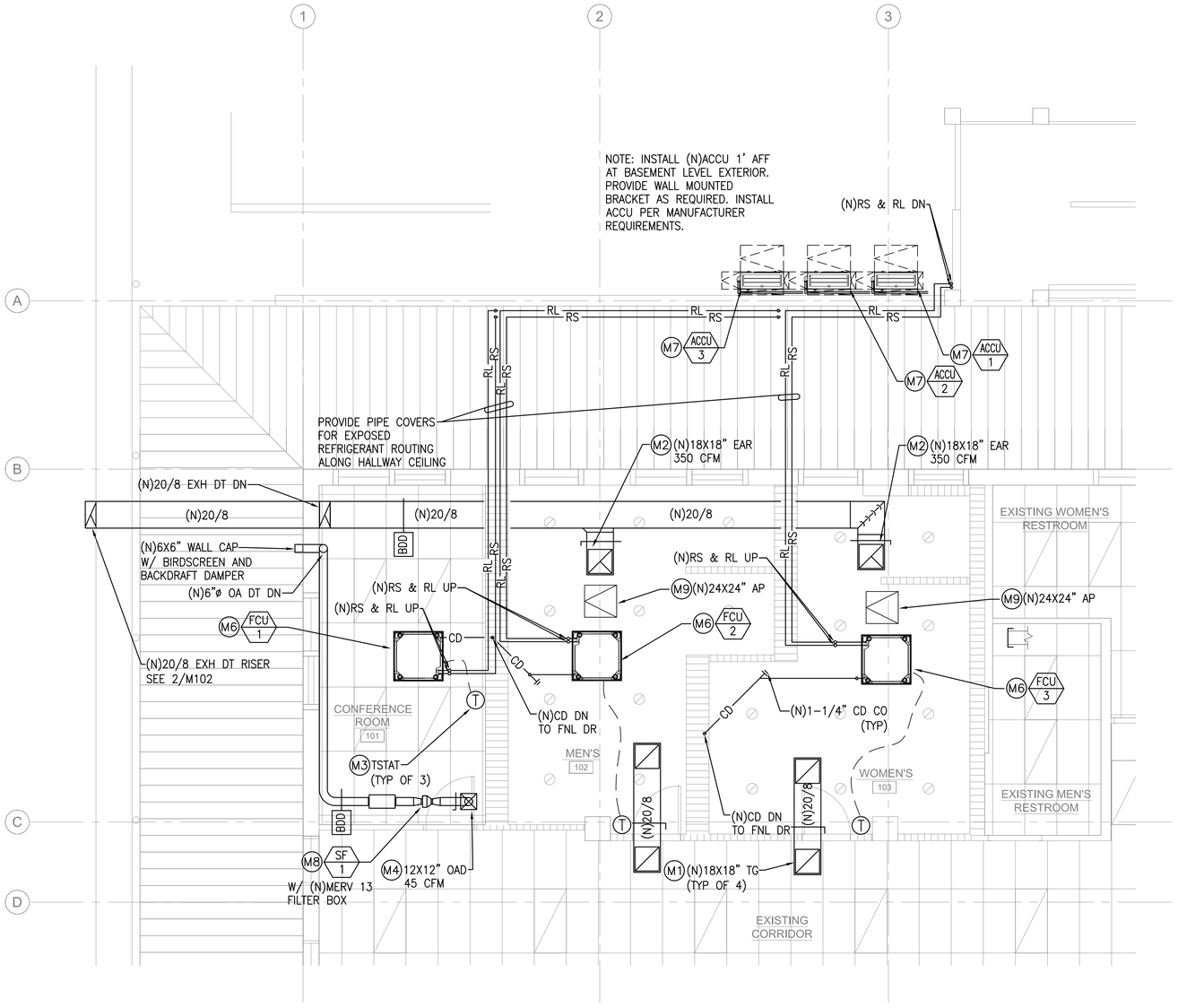
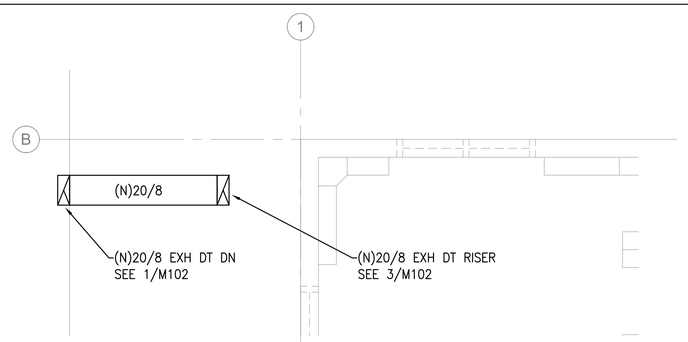
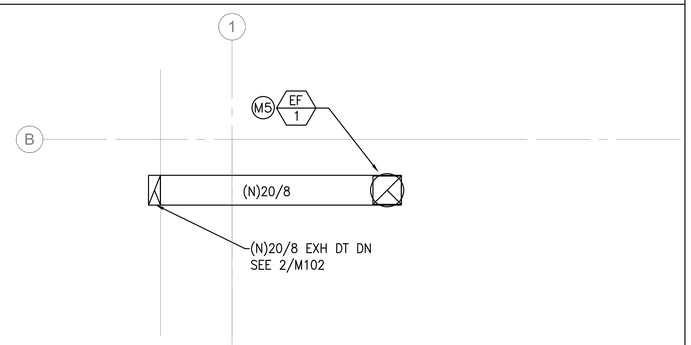
M-101



1 M-102 NEW MECHANICAL PLAN
SCALE: 1/4" = 1'-0" AT FIRST FLOOR



2 M-102 NEW MECHANICAL PLAN
SCALE: 1/4" = 1'-0" AT SECOND FLOOR



3 M-102 NEW MECHANICAL PLAN
SCALE: 1/4" = 1'-0" AT FIFTH FLOOR

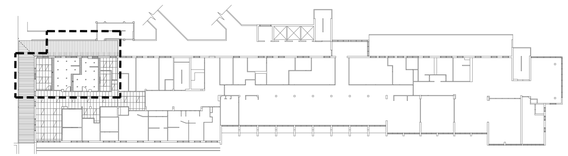
GENERAL MECHANICAL NOTES:

1. CONTRACTOR SHALL SCHEDULE/PROVIDE A POST TAB REPORT OF THE ENTIRE SPACE, AFTER NEW WORK IS COMPLETED TO REDISTRIBUTE/REBALANCE THE AFFECTED SPACES AND AIR DEVICES, RESPECTIVELY.

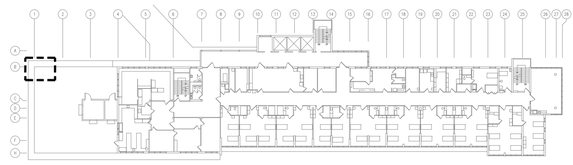
2. CONTRACTOR SHALL NOT INSTALL ELECTRICAL LINES, CONDENSATE LINE, AND REFRIGERANT LINES UNDER EQUIPMENT SHOWN FOR FUTURE REMOVAL AND SERVING REQUIREMENTS.

MECHANICAL WORK NOTES:

- (M1) PROVIDE AND INSTALL TRANSFER GRILLE, DUCTWORK, AND OPPOSED VOLUME DAMPER AT LOCATION SHOWN. PROVIDE ASSOCIATED ACCESSORIES AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.
- (M2) PROVIDE AND INSTALL EXHAUST REGISTER AND OPPOSED VOLUME DAMPER AT LOCATION SHOWN. PROVIDE EXHAUST DUCTWORK AND ASSOCIATED ACCESSORIES AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.
- (M3) PROVIDE TSTAT WITH CONTROL WIRING AND CONDUIT TO FCU AT LOCATION SHOWN. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.
- (M4) PROVIDE AND INSTALL NEW OAD WITH 4-WAY THROW AND OPPOSED VOLUME DAMPER AT LOCATION SHOWN. PROVIDE DUCTWORK AND CFM AS INDICATED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.
- (M5) PROVIDE AND INSTALL NEW ROOFTOP EXHAUST FAN WITH BACKDRAFT DAMPER, ELECTRICAL CONDUIT, AND ASSOCIATED ACCESSORIES AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.
- (M6) PROVIDE AND INSTALL FAN COIL UNIT AND REFRIGERANT PIPING, CONDENSATE PIPING, CEILING SUSPENDED SUPPORTS, REFRIGERANT PIPE COVERS FOR EXPOSED REFRIGERANT LINES OF THE BUILDING EXTERIOR, ELECTRICAL CONNECTION, ETC. AS SHOWN. ROUTE CONDENSATE LINE AS HIGH AS POSSIBLE TO FUNNEL DRAIN AS SHOWN. ROUTE REFRIGERANT AS HIGH AS POSSIBLE TO THE OUTDOOR CONDENSING UNIT. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.
- (M7) PROVIDE AND INSTALL ACCU COMPLETE WITH WALL MOUNTED BRACKET AND ASSOCIATED ACCESSORIES AS REQUIRED. PROVIDE REFRIGERANT PIPING, PIPE COVER, AND SERVICE CLEARANCE AS SHOWN. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.
- (M8) PROVIDE AND INSTALL NEW SUPPLY FAN WITH BACKDRAFT DAMPER, FILTER BOX, ELECTRICAL CONDUIT, AND ASSOCIATED ACCESSORIES AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.
- (M9) PROVIDE AND INSTALL ACCESS PANEL COMPLETE AND ASSOCIATED ACCESSORIES AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.



4 M-102 KEYPLAN
NOT TO SCALE AT FIRST FLOOR



5 M-102 KEYPLAN
NOT TO SCALE AT FIFTH FLOOR

PLAN NORTH

0 4' 8' 12'
SCALE: 1/4"=1'-0"

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

Revisions:

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LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

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HONOLULU, HI 96816

ROSS R. TANAKA
LICENSED PROFESSIONAL ENGINEER
No. 9301-M
HAWAII, U.S.A.

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NEW MECHANICAL PLAN

Project Phase:

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Date:

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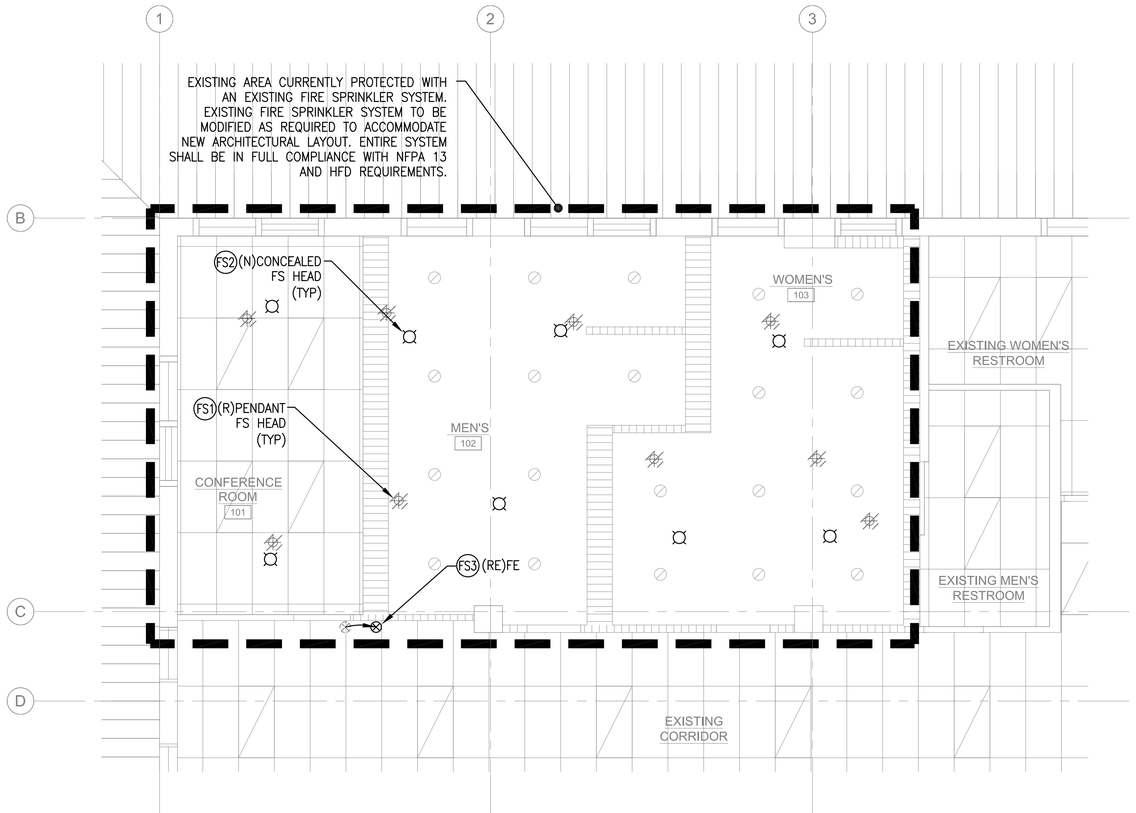
M-102



1 M-103 NEW FIRE SPRINKLER PLAN
SCALE: 1/4" = 1'-0"

FIRE SPRINKLER NEW WORK NOTES:

FS1 REMOVE EXISTING PENDANT FIRE SPRINKLER HEAD. CUT AND CAP EXISTING FIRE SPRINKLER PIPING AS REQUIRED. PATCH/REPAIR CEILING TO MATCH EXISTING ADJACENT SURFACE. CONTRACTOR TO FIELD VERIFY.

FS2 PROVIDE NEW CONCEALED TYPE FS HEAD AT LOCATION SHOWN. MODIFY EXISTING FIRE SPRINKLER PIPING AS REQUIRED. PATCH/REPAIR CEILING TO MATCH EXISTING ADJACENT SURFACE. CONTRACTOR TO FIELD VERIFY.

FS3 RELOCATE EXISTING FIRE EXTINGUISHER AT NEW LOCATION SHOWN. INSTALL IN ACCORDANCE WITH NFPA 10 AND HFD REQUIREMENTS. PATCH/REPAIR TO MATCH EXISTING ADJACENT SURFACE. CONTRACTOR TO FIELD VERIFY.

FIRE SPRINKLER GENERAL NOTES:

1. PROVIDE COMPLETE FIRE SPRINKLER COVERAGE IN ACCORDANCE WITH 2016 NFPA 13 AND THE FOLLOWING CRITERIA:
   CLASSIFICATION OF OCCUPANCY: LIGHT HAZARD
   OCCUPANCY: I–4
   TYPE OF CONSTRUCTION: TYPE I–A, SPRINKLED (EXISTING)
2. THE ENTIRE INSTALLATION SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE BUILDING CODE OF THE CITY & COUNTY OF HONOLULU, STATE DEPARTMENT OF HEALTH REGULATIONS, UNIFORM PLUMBING CODE, UNIFORM FIRE CODE, NATIONAL ELECTRICAL CODE, HAWAII STATE MODEL ENERGY CODE, AND ALL OTHER AGENCIES HAVING JURISDICTION.
3. ALL EQUIPMENT SHALL BE CAPABLE OF FITTING INTO THE SPACES ALLOCATED WHILE MEETING THE MANUFACTURER'S RECOMMENDED ACCESS REQUIREMENTS. REVIEW ALL SPACES WHERE EQUIPMENT IS TO BE INSTALLED PRIOR TO ORDERING OF EQUIPMENT AND NOTIFY THE ENGINEER OF ANY INADEQUATE CLEARANCES OR CONDITIONS THAT WILL PREVENT THE PROPER INSTALLATION, MAINTENANCE, AND OPERATION OF THE EQUIPMENT.
4. OBTAIN APPROVAL FROM THE ARCHITECT BEFORE MAKING ANY PENETRATIONS THROUGH STRUCTURAL MEMBERS, WALLS, AND SLABS.
5. REPAIR ANY DAMAGE TO EXISTING CONSTRUCTION RESULTING FROM THE INSTALLATION OF FIRE SPRINKLER _ ..:PAIRED SHALL MATCH THE ADJACENT SURFACES IN TEXTURE AND COLOR.
6. STRUCTURES UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION OPERATIONS, INCLUDING THOSE IN UNDERGROUND LOCATIONS, SHALL COMPLY WITH NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS, AND CHAPTER 16 OF 2018 NFPA 1.
7. THESE FIRE SPRINKLER PLANS ARE SUBMITTED FOR CONDITIONAL APPROVAL OF THE FIRE AND BUILDING DEPARTMENTS AND THE HAWAII INSURANCE RATING BUREAU. TWO (2) SETS OF COMPLETE WORKING PLANS AND HYDRAULIC CALCULATIONS (IF NECESSARY), STAMPED AND SIGNED BY A HAWAII LICENSED REGISTERED MECHANICAL OR FIRE PROTECTION ENGINEER, SHALL BE SUBMITTED, AS APPLICABLE, TO THE FIRE PROTECTION SPECIAL INSPECTOR (FPSI) FOR CODE COMPLIANCE REVIEW. ONE (1) SET WITH THE FPSI APPROVAL STAMP SHALL BE SUBMITTED TO THE DPP BUILDING DIVISION ALONG WITH THE FPSI FINAL REPORT/LETTER PRIOR TO CLOSING OF THE BUILDING PERMIT.
8. 50.4.4.1 FIRE EXTINGUISHING EQUIPMENT SHALL INCLUDE BOTH AUTOMATIC FIRE–EXTINGUISHING SYSTEMS AS PRIMARY PROTECTION AND PORTABLE FIRE EXTINGUISHERS AS SECONDARY BACKUP. 2018 NFPA 1, CHAPTER 50.
9. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO COVER THE COMPLETE INSTALLATION OF SYSTEMS TO FUNCTION AS DESCRIBED AND SPECIFIED. THE OMISSION OF REFERENCE TO ANY NECESSARY ITEM OF LABOR OR MATERIAL SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH LABOR AND MATERIAL

AUTOMATIC FIRE SPRINKLER SYSTEM NOTES:

1. PROVIDE COMPLETE FIRE SPRINKLER COVERAGE IN ACCORDANCE WITH NFPA 13, 2016 EDITION.
2. HANGERS FOR FIRE SPRINKLER PIPING SHALL BE IN ACCORDANCE TO NFPA 13.
3. FIRE SAFETY DURING CONSTRUCTION, ALTERATION OR DEMOLITION SHALL BE IN ACCORDANCE WITH CHAPTER 16 OF NFPA 1, 2018.
4. FIRESTOP ALL PIPE AND CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS.
5. ALL DEVICES AND EQUIPMENT SHALL BE UL LISTED AND FM APPROVED.
6. ALL SPRINKLERS SHALL BE APPROVED QUICK RESPONSE TYPE.
7. PIPE AND FITTINGS SHALL COMPLY WITH NFPA 13, EXCEPT THAT ALL PIPING SHALL BE HARD DRAWN COPPER WITH SILVER CONTENT. SOLDER OR BRAZED FITTINGS, OR CARBON STEEL WITH CORROSION–RESISTANT COATINGS. PROVIDE HOT DIPPED GALVANIZED PIPE AND FITTINGS ON ALL STEEL PIPING INCLUDING THE RISER.
8. PIPING SHALL BE PROVIDED WITH EARTHQUAKE PROTECTION IN ACCORDANCE WITH NFPA 13.
9. PROVIDE INSPECTION AND HYDROSTATIC TESTS IN ACCORDANCE WITH NFPA 13 CHAPTER 25. PRIOR TO HYDROSTATIC TESTS THE CONTRACTOR SHALL PERFORM AN AIR PRESSURE TEST TO LOCATE POTENTIAL LEAKAGE POINTS. INSPECTION AND TESTS SHALL BE CERTIFIED IN ACCORDANCE WITH HONOLULU FIRE DEPARTMENT REQUIREMENTS. CONTRACTOR SHALL TAG SYSTEM AND SUBMIT TEST REPORT IN ACCORDANCE TO HFD REQUIREMENTS. SPECIAL INSPECTIONS FOR AUTOMATIC FIRE SPRINKLER SYSTEM SHALL BE PROVIDED IN ACCORDANCE WITH HONOLULU BUILDING CODE AMENDMENTS TO SECTION 1705.18
10. SPARE SPRINKLERS SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13, 6.2.9.

    6.2.9.1 A SUPPLY OF SPARE SPRINKLERS (NEVER FEWER THAN SIX) SHALL BE MAINTAINED ON THE PREMISES SO THAT ANY SPRINKLERS THAT HAVE OPERATED OR BEEN DAMAGED IN ANY WAY CAN BE PROMPTLY REPLACED.

    6.2.9.3 THE SPRINKLERS SHALL BE KEPT IN A CABINET LOCATED WHERE THE TEMPERATURE IN WHICH THEY ARE SUBJECTED WILL AT NO TIME EXCEED 100°F (38°C).

    6.2.9.5 THE STOCK OF SPARE SPRINKLERS SHALL INCLUDE ALL TYPES AND RATINGS INSTALLED AND SHALL BE AS FOLLOWS:

    1. FOR PROTECTED FACILITIES HAVING UNDER 300 SPRINKLERS – NO FEWER THAN 6 SPRINKLERS.
    2. FOR PROTECTED FACILITIES HAVING 300–1000 SPRINKLERS – NO FEWER THAN 12 SPRINKLERS.
    3. FOR PROTECTED FACILITIES HAVING OVER 1000 SPRINKLERS – NO FEWER THAN 24 SPRINKLERS.

    6.2.9.6 A SPECIAL SPRINKLER WRENCH SHALL BE PROVIDED AND KEPT IN THE CABINET TO BE USED IN THE REMOVAL AND INSTALLATION OF SPRINKLERS. ONE SPRINKLER WRENCH SHALL BE PROVIDED FOR EACH TYPE OF SPRINKLER INSTALLED.

PLAN NORTH

0 4' 8' 12'
SCALE: 1/4"=1'-0"

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NEW FIRE SPRINKLER PLAN

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MECHANICAL SCHEDULE NOTE

PROVIDE INTEGRAL MAGNETIC STARTER/DISCONNECTS WITH AUTOMATIC RESET FOR ALL UNITS. PROVIDE NEMA-4X STARTER ENCLOSURE FOR ALL OUTDOOR EQUIPMENT. ALL OUTDOOR EQUIPMENT SHALL HAVE POLYSILOXANE COATING PROTECTION ON INSIDE AND OUTSIDE OF HOUSING. COILS(CONDENSER) SHALL HAVE BLYGOLD POLUAL COATING. PROVIDE HORIZONTALLY AND VERTICALLY RESTRAINED SPRING ISOLATORS WITH NEOPRENE DIPPED SPRINGS AND GALV. HOUSINGS ON ALL EQUIPMENT. PROVIDE PLASTIC COATED CABLE SWAY BRACING ALL SUSPENDED EQUIPMENT. PROVIDE FLEXIBLE DUCT CONNECTIONS AT ALL EQUIPMENT. PROVIDE S.S. BIRDSCREEN AT ALL NEW OA INTAKES. PROVIDE PHASE FAILURE/PHASE REVERSAL/OVER VOLTAGE/UNDER VOLTAGE ELECTRICAL PROTECTION. PROVIDE CONTROL VOLTAGE TRANSFORMERS.

FAN SCHEDULE

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	AREA SERVED	TYPE	CFM	ESP (IN WG)	FAN RPM	ELECTRICAL				OPR WT (LBS)	SONES	REMARKS
							V	ø	Hz	W			
SF 1	FANTECH FG 4	CONFERENCE ROOM	INLINE	45	0.6	3000	120	1	60	22	5	–	PROVIDE ISOLATION MOUNTS, FAN SPEED CONTROLLER & DISCONNECT. PROVIDE EXTERNAL BACKDRAFT DAMPER AND MERV 13 FILTER BOX. INTERLOCK WITH FCU-1.

EXHAUST FAN SCHEDULE

UNIT	MANUFACTURER AND MODEL OR APPROVED EQUAL	AREA SERVED	DRIVE TYPE	LOCATION	CFM	ESP (IN WG)	FAN RPM	ELECTRICAL						MAX SONE	REMARKS
								V	ø	Hz	HP	MCA	MOP		
EF 1	GREENHECK CUE-095-VG	MEN'S AND WOMEN'S RESTROOM	DIRECT	ROOF	700	0.6	1720	115	1	60	1/6	3.5	15	9.6	PROVIDE SPEED CONTROLLER CURB, BACKDRAFT DAMPER, AND INTERLOCK WITH MEN'S AND WOMEN'S RESTROOM LIGHT FIXTURE.

DX SPLIT-SYSTEM AIR CONDITIONING UNIT SCHEDULE - CONFERENCE ROOM

INDOOR UNITS

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	AREA SERVED	TYPE	MAX SUPPLY AIR, CFM	DESIGN SUPPLY AIR, CFM	OUTSIDE AIR, CFM	TOTAL CAPACITY (BTUH)	ENT AIR TEMP		ELECTRICAL					REFRIG LINES*		COND DRAIN	MAX SOUND LEVEL (dBA)	OPR WT (LBS)	REMARKS
								db (°F)	wb (°F)	V	ø	Hz	MCA	MOCP	LIQ	GAS				
FCU 1	MITSUBISHI PLA-A12EA8	CONFERENCE ROOM	CEILING CASSETTE	530	490	–	12,000	80	65	208	1	60	1.0	–	1/4"	1/2"	1-1/4"	29	46	PROVIDE WITH DISCONNECT AND ISOLATION MOUNTS. ROUTE CONDENSATE PIPE FROM INTEGRAL LIFT PUMP OUTLET. PROVIDE FILTER BOX WITH MERV 8 FILTER BANK.

*CONTRACTOR SHALL CONFIRM REFRIGERANT PIPE SIZES WITH MANUFACTURER PRIOR TO PROCUREMENT.

OUTDOOR UNIT

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	LOCATION	TYPE	REFRIG	NOMINAL CAPACITY (TONS)	TOTAL CAPACITY (BTUH)	AMBIENT AIR TEMP (°F)	ELECTRICAL					EER	OPR WT (LBS)	REMARKS
								V	ø	Hz	MCA	MOCP			
ACCU 1	MITSUBISHI PUY-A12NKA7	OUTSIDE	VARIABLE REFRIG FLOW	R410A	1	12,000	95	208	1	60	11	28	16.4	92	"INVERTER" DRIVEN COMPRESSOR; PROVIDE NEOPRENE PAD AND WALL MOUNTED BRACKET, INTEGRAL STARTER AND DISCONNECT, FACTORY APPLIED CORROSION INHIBITOR COATING ON CONDENSER COIL AND CASING.

DX SPLIT-SYSTEM AIR CONDITIONING UNIT SCHEDULE - MEN'S RESTROOM

INDOOR UNITS

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	AREA SERVED	TYPE	MAX SUPPLY AIR, CFM	DESIGN SUPPLY AIR, CFM	OUTSIDE AIR, CFM	TOTAL CAPACITY (BTUH)	ENT AIR TEMP		ELECTRICAL					REFRIG LINES*		COND DRAIN	MAX SOUND LEVEL (dBA)	OPR WT (LBS)	REMARKS
								db (°F)	wb (°F)	V	ø	Hz	MCA	MOCP	LIQ	GAS				
FCU 2	MITSUBISHI PLA-A12EA8	MEN'S RESTROOM	CEILING CASSETTE	530	490	–	12,000	80	65	208	1	60	1.0	–	1/4"	1/2"	1-1/4"	29	46	PROVIDE WITH DISCONNECT AND ISOLATION MOUNTS. ROUTE CONDENSATE PIPE FROM INTEGRAL LIFT PUMP OUTLET. PROVIDE FILTER BOX WITH MERV 8 FILTER BANK.

*CONTRACTOR SHALL CONFIRM REFRIGERANT PIPE SIZES WITH MANUFACTURER PRIOR TO PROCUREMENT.

OUTDOOR UNIT

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	LOCATION	TYPE	REFRIG	NOMINAL CAPACITY (TONS)	TOTAL CAPACITY (BTUH)	AMBIENT AIR TEMP (°F)	ELECTRICAL					EER	OPR WT (LBS)	REMARKS
								V	ø	Hz	MCA	MOCP			
ACCU 2	MITSUBISHI PUY-A12NKA7	OUTSIDE	VARIABLE REFRIG FLOW	R410A	1	12,000	95	208	1	60	11	28	16.4	92	"INVERTER" DRIVEN COMPRESSOR; PROVIDE NEOPRENE PAD AND WALL MOUNTED BRACKET, INTEGRAL STARTER AND DISCONNECT, FACTORY APPLIED CORROSION INHIBITOR COATING ON CONDENSER COIL AND CASING.

DX SPLIT-SYSTEM AIR CONDITIONING UNIT SCHEDULE - WOMEN'S RESTROOM

INDOOR UNITS

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	AREA SERVED	TYPE	MAX SUPPLY AIR, CFM	DESIGN SUPPLY AIR, CFM	OUTSIDE AIR, CFM	TOTAL CAPACITY (BTUH)	ENT AIR TEMP		ELECTRICAL					REFRIG LINES*		COND DRAIN	MAX SOUND LEVEL (dBA)	OPR WT (LBS)	REMARKS
								db (°F)	wb (°F)	V	ø	Hz	MCA	MOCP	LIQ	GAS				
FCU 3	MITSUBISHI PLA-A12EA8	WOMEN'S RESTROOM	CEILING CASSETTE	530	490	–	12,000	80	65	208	1	60	1.0	–	1/4"	1/2"	1-1/4"	29	46	PROVIDE WITH DISCONNECT AND ISOLATION MOUNTS. ROUTE CONDENSATE PIPE FROM INTEGRAL LIFT PUMP OUTLET. PROVIDE FILTER BOX WITH MERV 8 FILTER BANK.

*CONTRACTOR SHALL CONFIRM REFRIGERANT PIPE SIZES WITH MANUFACTURER PRIOR TO PROCUREMENT.

OUTDOOR UNIT

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	LOCATION	TYPE	REFRIG	NOMINAL CAPACITY (TONS)	TOTAL CAPACITY (BTUH)	AMBIENT AIR TEMP (°F)	ELECTRICAL					EER	OPR WT (LBS)	REMARKS
								V	ø	Hz	MCA	MOCP			
ACCU 3	MITSUBISHI PUY-A12NKA7	OUTSIDE	VARIABLE REFRIG FLOW	R410A	1	12,000	95	208	1	60	11	28	16.4	92	"INVERTER" DRIVEN COMPRESSOR; PROVIDE NEOPRENE PAD AND WALL MOUNTED BRACKET, INTEGRAL STARTER AND DISCONNECT, FACTORY APPLIED CORROSION INHIBITOR COATING ON CONDENSER COIL AND CASING.

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M-109

REMOVE	EXIST	NEW	DESCRIPTION
			CEILING LUMINAIRE
			CEILING LUMINAIRE
			RELOCATE/RELOCATED CEILING LUMINAIRE
		S	SWITCH, 1P20A, +42"
		S_3	SWITCH, 3P20A, +42"
		S_M	SWITCH, OCCUPANCY SENSOR, +42"
			COMBINATION INFRARED/ULTRASONIC MOTION SWITCH, CEILING MOUNTED
			DUPLEX CONVENIENCE OUTLET, 3W, 15A, 125V, GROUNDING TYPE, +18" UNLESS OTHERWISE NOTED
			DUPLEX CONVENIENCE RECEPTACLE, 3W, 15A, 125V, GROUND FAULT INTERRUPTING TYPE, +18" UNLESS OTHERWISE NOTED
			SPECIAL OUTLET, RATING AND TYPE AS NOTED
			FLOOR OUTLET, DUPLEX 32, 15A, GROUNDING TYPE WITH DUAL HINGED BRASS CAPS, HUBBEL S3925
			CLOCK OUTLET, 3W, 15A, 125V, GROUNDING TYPE
			CEILING FAN
			PANELBOARD, SURFACE
			PANELBOARD, FLUSH
			JUNCTION BOX, CEILING, 4 11/16" SQUARE MINIMUM
			TELECOMMUNICATION OUTLET, +18" UNLESS OTHERWISE NOTED
			TELEPHONE OUTLET, +18" UNLESS OTHERWISE NOTED
			FIRE ALARM AUTOMATIC DETECTOR, CEILING
			FIRE ALARM AUDIO SIGNAL WITH FLASHING LIGHT, +80" TO BOTTOM OF APPLIANCE
			FIRE ALARM FLASHING LIGHT, +80" TO BOTTOM OF APPLIANCE
			FIRE ALARM CONTROL PANEL
			FIRE ALARM BELL, +80"
			MOTOR CONNECTION
			MOTOR CONTROLLER
			SAFETY SWITCH
		WP	WEATHER PROOF
		AC	ABOVE COUNTER
			CONDUIT STUB
			WIRING IN RACEWAY CONCEALED IN WALL OR CEILING
			WIRING IN FLEXIBLE RACEWAY, 6 FEET MAXIMUM

NOTES:

1. ANY CIRCUIT WITH NO FURTHER DESIGNATION INDICATES A TWO WIRE CIRCUIT. CIRCUITS WITH ADDITIONAL WIRES ARE INDICATED AS FOLLOWS —//—, 3 WIRES: —///—, 4 WIRES, ETC.
2. —⏚— INDICATES GROUNDING CONDUCTOR SIZED PER NATIONAL ELECTRICAL CODE ARTICLE 250.122. PROVIDE GROUNDING CONDUCTOR IN ALL RACEWAYS.

FIRE ALARM NOTES:

FIRE PLANS REVIEW FEE
WHEN PLANS OR OTHER SPECIFICATIONS ARE SUBMITTED TO THE FIRE DEPARTMENT PER THE BUILDING CODE, A PLAN REVIEW FEE SHALL BE PAID AT THE TIME OF SUBMITTAL. THE FIRE PLANS REVIEW FEE SHALL BE TEN (10) PERCENT OF THE BUILDING PERMIT FEE, BUT NOT MORE THAN $2,500, PAYABLE TO THE CITY PRIOR TO THE ISSUANCE OF THE BUILDING PERMIT. ROH 20-1.12.20.

ROH 18.5.2
SEC. 18-5.2 RETENTION OF PLANS
ONE SET OF APPROVED PLANS, SPECIFICATIONS, AND COMPUTATIONS SHALL BE RETAINED BY THE BUILDING OFFICIAL FOR A PERIOD OF NOT LESS THAN 90 DAYS OF COMPLETION OF THE WORK COVERED THEREIN, AND ONE SET OF APPROVED PLANS SHALL BE RETURNED TO THE APPLICANT, AND SAID SET SHALL BE KEPT ON THE SITE OF THE BUILDING OR WORK AT ALL TIMES DURING WHICH THE WORK AUTHORIZED THEREBY IS IN PROGRESS. (SEC. 18-5.2 R.O. 1978 (1983 Ed.); Am. Ord. 93-59).

10.8.1.1 AS NECESSARY DURING EMERGENCIES, MAINTENANCE, DRILLS, PRESCRIBED TESTING, ALTERATIONS, OR RENOVATIONS, PORTABLE OR FIXED-EXTINGUISHING SYSTEMS OR DEVICES OR ANY FIRE-WARNING SYSTEM SHALL BE PERMITTED TO BE MADE INOPERATIVE OR INACCESSIBLE. A FIRE WATCH SHALL BE REQUIRED AS SPECIFIED IN SECTIONS 13.3.4.3.5.2(3), 13.7.1.4.4, 16.5.4, 20.2.3.6, 34.6.3.3, 41.2.2.5, 41.2.2.6, 41.2.4, 41.3.4, 41.4.1, 34.5.4.3, AND 25.1.8 AT NO COST TO THE AHJ. NFPA 1 2018, AS AMENDED.

AHJ APPROVAL
13.1.1 THE AHJ SHALL HAVE THE AUTHORITY TO REQUIRE THAT CONSTRUCTION DOCUMENTS FOR ALL FIRE PROTECTION SYSTEMS BE SUBMITTED FOR REVIEW AND APPROVAL AND A PERMIT BE ISSUED PRIOR TO THE INSTALLATION, REHABILITATION, OR MODIFICATION. (FOR ADDITIONAL INFORMATION CONCERNING CONSTRUCTION DOCUMENTS, SEE SECTION 1.14) FURTHER, THE AHJ SHALL HAVE THE AUTHORITY TO REQUIRE THAT FULL ACCEPTANCE TESTS OF THE SYSTEMS BE PERFORMED IN THE AHJ'S PRESENCE PRIOR TO FINAL SYSTEM CERTIFICATION.
FIRE ALARM SYSTEMS; FIRE HYDRANT SYSTEMS; FIRE-EXTINGUISHING SYSTEMS; STANDPIPES; AND OTHER FIRE-PROTECTION SYSTEMS AND APPURTENANCES REQUIRED BY THIS CODE SHALL BE APPROVED BY THE AHJ AS TO INSTALLATION AND LOCATION AND SHALL BE SUBJECT TO ACCEPTANCE TESTS REQUIRED BY THE APPROPRIATE COUNTY AGENCY.
A COPY OF A SYSTEM'S UNSATISFACTORY INSPECTION AND MAINTENANCE TEST REPORT SHALL BE SUBMITTED TO THE AHJ BY THE TESTING COMPANY WITHIN FIVE (5) WORKING DAYS AFTER THE COMPLETION OF THE TEST. NFPA 1, CHAPTER 13 AS AMENEDED.

DETECTION, ALARM, AND COMMUNICATION SYSTEMS
13.7.1.1 WHERE BUILDING FIRE ALARM SYSTEM OR AUTOMATIC FIRE DETECTORS ARE REQUIRED BY OTHER SECTIONS OF THE CODE, THEY SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH NFPA 70, NFPA 72, NATIONAL FIRE ALARM CODE. AND SECTION 13.7 2018 NFPA 1.
FIRE ALARM SYSTEM INSTALLATION AND MAINTENANCE SHALL BE IN ACCORDANCE WITH NFPA 72, NATIONAL FIRE ALARM CODE, AND 2018 NFPA 1.

13.7.1.4.10.8 AUDIBLE ALARM NOTIFICATION APPLIANCES SHALL PRODUCE SIGNALS THAT ARE DISTINCTIVE FROM AUDIBLE SIGNALS USED FOR OTHER PURPOSES IN A GIVEN BUILDING. [101:9.6.3.8].

ENSURE FIRE ALARM SYSTEM AUDIBILITY AND VISIBILITY IS ADEQUATE THROUGH ALL OCCUPIABLE AREAS AND SPACES. THIS WILL BE THOROUGHLY CHECKED AT TIME OF FIRE ALARM ACCEPTANCE TESTING.

13.7.3.2.5. TAG
A TAG SHALL BE PLACED ON THE FIRE ALARM PANEL WHEN TESTED IN ACCORDANCE WITH SECTION 13.7.3.2. INFORMATION ON THE TAG SHALL INCLUDE THE DATE OF TESTING, TESTING COMPANY, AND CONTACT INFORMATION, TECHNICIAN PERFORMING THE TEST, AND THAT THE TEST WAS SATISFACTORY. NFPA 1, CHAPTER 13 AS AMENDED.

13.7.3.2.1 APPROVAL AND ACCEPTANCE.
13.7.3.2.1.1 THE AHJ SHALL BE NOTIFIED PRIOR TO INSTALLATION OR ALTERATION OF EQUIPMENT OR WIRING.

13.7.3.2.1.2 AT THE AHJ'S REQUEST, COMPLETE INFORMATION REGARDING THE SYSTEM OR SYSTEM ALTERATIONS, INCLUDING SPECIFICATIONS, TYPE OF SYSTEM OR SERVICE, SHOP DRAWINGS, INPUT/OUTPUT MATRIX, BATTERY CALCULATIONS, AND NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROP CALCULATIONS, SHALL BE SUBMITTED FOR APPROVAL.

13.7.3.2.1.3 BEFORE REQUESTING FINAL APPROVAL OF THE INSTALLATION, IF REQUIRED BY THE AHJ, THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT STATING THAT THE SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS AND TESTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND THE APPROPRIATE NFPA REQUIREMENTS. [72:10.18.1.3]

13.7.3.2.1.4* THE RECORD OF COMPLETION FORM, FIGURE 10.18.2.1.1 OF NFPA 72, SHALL BE PERMITTED TO BE A PART OF THE WRITTEN STATEMENT REQUIRED IN 13.7.3.2.1.3. WHEN MORE THAN ONE CONTRACTOR HAS BEEN RESPONSIBLE FOR THE INSTALLATION, EACH CONTRACTOR SHALL COMPLETE THE PORTIONS OF THE FORM FOR WHICH THAT CONTRACTOR HAD RESPONSIBILITY. [72:10.18.1.5].

13.7.3.2.1.5 THE RECORD OF COMPLETION FORM, FIGURE 10.18.2.1.1 OF NFPA 72, SHALL BE PERMITTED TO BE A PART OF THE DOCUMENTS THAT SUPPORT THE REQUIREMENTS OF 13.7.3.2.2.4. [72:10.18.1.5].

NOTIFICATION DEVICES
13.7.1.4.10.5 UNLESS OTHERWISE PROVIDED IN 13.7.1.4.10.5.1 THROUGH 13.7.1.4.10.5.8, NOTIFICATION SIGNALS FOR OCCUPANTS TO EVACUATE SHALL BE AUDIBLE AND VISIBLE SIGNALS IN ACCORDANCE WITH NFPA 72 AND ICC/ANSI A117.1, AMERICAN STANDARD FOR ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES, OR OTHER MEANS OF NOTIFICATION ACCEPTABLE TO THE AHJ SHALL BE PROVIDED. [101:9.6.3.5].

FIRE SAFETY NOTE
16.1.1 STRUCTURES UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION OPERATIONS, INCLUDING THOSE IN UNDERGROUND LOCATIONS, SHALL COMPLY WITH NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS, AND THIS CHAPTER. 2018 NFPA 1.

ALTERATION OF BUILDINGS
16.4.4.1 WHERE THE BUILDING IS PROTECTED BY FIRE PROTECTION SYSTEMS, SUCH SYSTEMS SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES DURING ALTERATION.

16.4.4.2 WHERE ALTERATION REQUIRES MODIFICATION OF A PORTION OF THE FIRE PROTECTION SYSTEM, THE REMAINDER OF THE SYSTEM SHALL BE KEPT IN SERVICE AND THE FIRE DEPARTMENT SHALL BE NOTIFIED.

16.4.4.3 WHEN IT IS NECESSARY TO SHUT DOWN THE SYSTEM, THE AHJ SHALL HAVE THE AUTHORITY TO REQUIRE ALTERNATE MEASURES OF PROTECTION UNTIL THE SYSTEM IS RETURNED TO SERVICE.

16.4.4.4 THE FIRE DEPARTMENT SHALL BE NOTIFIED WHEN THE SYSTEM IS SHUT DOWN AND WHEN THE SYSTEM IS RETURNED TO SERVICE.

FIRE ALARM SYSTEM SHALL BE ELECTRONICALLY SUPERVISED AND UL LISTED.

FIRE ALARM MANUFACTURER SHALL PROVIDE FIRE ALARM SHOP DRAWINGS PRIOR TO START OF WORK FOR ENGINEERS APPROVAL. SHOP DRAWINGS SHALL INCLUDE SPECIFIED PRODUCTS, COMPLETE FLOOR PLANS INDICATING DEVICE LOCATIONS, WIRE AND QUANTITIES, ZONING, POINT TO POINT WIRING DIAGRAMS, CALCULATIONS, ONE LINE DIAGRAM SHOWING INTERFACING WITH EXISTING FIRE ALARM SYSTEM, AND COMPLETE SEQUENCE OF OPERATION OF SYSTEM. THIS IS MANDATORY.

72.18.4.3.1 TO ENSURE THAT AUDIBLE PUBLIC MODE SIGNALS ARE CLEARLY HEARD, UNLESS OTHERWISE PERMITTED BY 18.4.3.2 THROUGH 18.4.3.5, THEY SHALL HAVE A SOUND LEVEL AT LEAST 15dB ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5dB ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION AT LEAST 60 SECONDS, WHICHEVER IS GREATER, MEASURED 5FT ABOVE THE FLOOR IN THE AREA REQUIRED TO BE SERVED BY THE SYSTEM USING THE A-WEIGHTED SCALE.

72.18.4.5 SLEEPING AREA REQUIREMENTS
72.18.4.5.1* WHERE AUDIBLE APPLIANCES ARE INSTALLED TO PROVIDE SIGNALS FOR SLEEPING AREAS, THEY SHALL HAVE A SOUND LEVEL OF AT LEAST 15 dB ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 dB ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS OR A SOUND LEVEL OF AT LEAST 75 dBA, WHICHEVER IS GREATER, MEASURED AT THE PILLOW LEVEL IN THE AREA REQUIRED TO BE SERVED BY THE SYSTEM USING THE A-WEIGHTED SCALE (dBA).

72.18.4.5.2 IF ANY BARRIER, SUCH AS A DOOR, CURTAIN, OR RETRACTABLE PARTITION, IS LOCATED BETWEEN THE NOTIFICATION APPLIANCE AND THE PILLOW, THE SOUND PRESSURE LEVEL SHALL BE MEASURED WITH THE BARRIER PLACED BETWEEN THE APPLIANCE AND THE PILLOW.

72.18.4.5.3* EFFECTIVE JANUARY 1, 2014, WHERE AUDIBLE APPLIANCES ARE PROVIDED TO PRODUCE SIGNALS FOR SLEEPING AREAS, THEY SHALL PRODUCE A LOW FREQUENCY ALARM SIGNAL THAT COMPLIES WITH THE FOLLOWING:
(1) THE ALARM SIGNAL SHALL BE A SQUARE WAVE OR PROVIDE EQUIVALENT AWAKENING ABILITY.
(2) THE WAVE SHALL HAVE A FUNDAMENTAL FREQUENCY OF 520 Hz ± 10 PERCENT.

FIRE ALARM AUDIBILITY/VISIBILITY REQUIREMENTS WILL BE TESTED IN ALL OCCUPIABLE SPACES (FOR WITHIN THE PROPOSED SCOPE OF WORK) WITH DOORS IN THE CLOSED POSITION. ENSURE THAT ENOUGH DEVICES ARE INSTALLED TO MEET REQUIREMENTS. VISIBLE DEVICES SHOULD BE LOCATED IN ALL OCCUPIABLE AREAS UNLESS THE EFFECTS OF DIAGRAMMED VISUAL DEVICES CAN BE SEEN FROM THE OCCUPIABLE SPACE, IN SUCH CASES, NO VISIBLE DEVICES NEED BE INSTALLED.

13.7.1.4.8 SIGNAL INITIATION
13.7.1.4.8.6* FOR FIRE ALARM SYSTEMS USING AUTOMATIC FIRE DETECTION OR WATERFLOW DETECTION DEVICES TO INITIATE THE FIRE ALARM SYSTEM IN ACCORDANCE WITH CHAPTERS 11 THROUGH 43 OF NFPA101, NOT LESS THAN ONE MANUAL FIRE ALARM BOX SHALL BE PROVIDED TO INITIATE A FIRE ALARM SIGNAL. THE MANUAL FIRE ALARM BOX SHALL BE LOCATED WHERE REQUIRED BY THE AHJ. [101:9.6.2.6]

1.14 PLAN REVIEW
1.14.4 REVIEW AND APPROVAL BY THE AHJ SHALL NOT RELIEVE THE APPLICANT OF THE RESPONSIBILITY OF COMPLIANCE WITH THIS CODE.

1.3.6.3 REPAIRS, RENOVATIONS, ALTERATIONS, RECONSTRUCTION, CHANGE OF OCCUPANCY, AND ADDITIONS TO BUILDINGS SHALL CONFORM TO THIS CODE, NFPA 101, AND THE BUILDING CODE.

FIRE SAFETY NOTE
16.1.1 STRUCTURES UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION OPERATIONS, INCLUDING THOSE IN UNDERGROUND LOCATIONS, SHALL COMPLY WITH NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS, AND THIS CHAPTER. 2018 NFPA 1.

PULL STATIONS
13.7.3.3.6 MANUAL FIRE ALARM BOXES SHALL BE LOCATED WITHIN 5FT(60IN.) OF THE EXIT DOORWAY OPENING AT EACH EXIST ON EACH FLOOR [72:17.14.6]. THE LOCATION OF MANUAL FIRE ALARM BOXES MAY BE MODIFIED BY THE AHU.

13.7.3.3.4 THE OPERABLE PART OF EACH MANUAL FIRE ALARM BOX SHALL BE NOT LESS THAN 3.5FT AND NOT MORE THAN 4.5FT ABOVE FLOOR LEVEL.

PROTECTION OF FIRE ALARM SYSTEMS
72.10.15 IN AREAS THAT ARE NOT CONTINUOUSLY OCCUPIED, AUTOMATIC SMOKE DETECTION SHALL BE PROVIDED AT THE LOCATION OF EACH FIRE ALARM CONTROL UNIT(S), NOTIFICATION APPLIANCE CIRCUIT POWER EXTENDERS, AND SUPERVISING TRANSMITTING EQUIPMENT TO PROVIDE NOTIFICATION OF FIRE AT THAT LOCATION.

13.1.1.1 PERMITS. PERMITS WHERE REQUIRED, SHALL COMPLY WITH SECTION 1.12

GENERAL SAFETY REQUIREMENTS
10.1.1 EVERY NEW AND EXISTING BUILDING OR STRUCTURE SHALL BE CONSTRUCTED, ARRANGED, EQUIPPED, MAINTAINED, AND OPERATED IN ACCORDANCE WITH THIS CODE SO AS TO PROVIDE A REASONABLE LEVEL OF LIFE SAFETY, PROPERTY PROTECTION, AND PUBLIC WELFARE FROM THE ACTUAL AND POTENTIAL HAZARDS CREATED BY FIRE, EXPLOSION, AND OTHER HAZARDOUS CONDITIONS.

10.1.2* LIFE SAFETY CODE. EVERY NEW AND EXISTING BUILDING SHALL COMPLY WITH THIS CODE AND NFPA 101, LIFE SAFETY CODE.

10.1.3 BUILDING CODE. WHERE A BUILDING CODE HAS BEEN ADOPTED, ALL NEW CONSTRUCTION SHALL COMPLY WITH THIS CODE AND THE BUILDING CODE.

10.3.4 CHANGE OF USE OR OCCUPANCY CLASSIFICATION.

10.3.4.1 IN ANY BUILDING OR STRUCTURE, WHETHER OR NOT A PHYSICAL ALTERATION IS NEEDED, A CHANGE FROM ONE USE OR OCCUPANCY CLASSIFICATION TO ANOTHER SHALL COMPLY WITH 4.6.7 OR NFPA 101. [101:4.6.11]

11.8.5 THE AHJ SHALL BE PERMITTED TO REQUIRE THE BUILDING TO BE EVACUATED OR AN APPROVED FIRE WATCH TO BE PROVIDED FOR ALL PORTIONS LEFT UNPROTECTED BY THE FIRE PROTECTION SYSTEM SHUTDOWN UNTIL THE FIRE PROTECTION SYSTEM HAS BEEN RETURNED TO SERVICE.

13.1.2 THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE PROPER TESTING AND MAINTENANCE OF THE EQUIPMENT AY SYSTEMS.

13.1.9 WHEN A FIRE PROTECTION SYSTEM IS OUT OF SERVICE FOR MORE THAN 4 HOURS IN A 24-HOUR PERIOD, THE AHJ SHALL BE PERMITTED TO REQUIRE THE BUILDING TO BE EVACUATED OR AN APPROVED FIRE WATCH TO BE PROVIDED FOR ALL PORTIONS LEFT UNPROTECTED BY THE FIRE WATCH PROTECTION SYSTEM SHUTDOWN UNTIL THE FIRE PROTECTION SYSTEM HAS BEEN RETURNED TO SERVICE.

13.1.11* FOR OCCUPANCIES OF AN ESPECIALLY HAZARDOUS NATURE OR WHERE SPECIAL HAZARDS EXIST IN ADDITION TO THE NORMAL HAZARD OF THE OCCUPANCY, OR WHERE ACCESS FOR FIRE APPARATUS IS UNDULY DIFFICULT, OR WHERE THE SIZE OR CONFIGURATION OF THE BUILDING OR CONTENTS LIMITS NORMAL FIRE SUPPRESSION EFFORTS, THE AHJ SHALL HAVE THE AUTHORITY TO REQUIRE ADDITIONAL SAFEGUARDS CONSISTING OF ADDITIONAL FIRE SAFETY EQUIPMENT, MORE THAN ONE TYPE OF FIRE SAFETY EQUIPMENT, OR SPECIAL SYSTEMS SUITABLE FOR THE PROTECTION OF THE HAZARD INVOLVED.

11.10* TWO-WAY RADIO COMMUNICATION ENHANCEMENT SYSTEMS.
11.10.1 IN ALL NEW AND EXISTING BUILDINGS, MINIMUM RADIO SIGNAL STRENGTH FOR FIRE DEPARTMENT COMMUNICATIONS SHALL BE MAINTAINED AT -95 dB. FREQUENCY RANGE SHALL BE 850-854 MHz, DONOR TO BDA (BI DIRECTIONAL AMPLIFIER) WILL BE FROM HFD'S SIMULCAST (800 MHz).

11.10.2 WHERE REQUIRED BY THE AHJ, TWO-WAY RADIO COMMUNICATION ENHANCEMENT SYSTEMS SHALL COMPLY WITH NFPA 72.

11.10.3 WHERE A TWO-WAY RADIO COMMUNICATION ENHANCEMENT SYSTEM IS REQUIRED AND SUCH SYSTEM, COMPONENTS, OR EQUIPMENT HAS A NEGATIVE IMPACT ON THE NORMAL OPERATIONS OF THE FACILITY AT WHICH IT IS INSTALLED, THE AHJ SHALL HAVE THE AUTHORITY TO ACCEPT AN AUTOMATICALLY ACTIVATED RESPONDER SYSTEM.

13.7.2.27.2 NEW HIGH-RISE BUILDINGS.
13.7.2.27.1* A FIRE ALARM SYSTEM USING AN APPROVED EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 13.7 AND NFPA 101. [101:11.8.4.1]

13.7.2.27.2.2 TWO-WAY TELEPHONE SERVICE SHALL BE IN ACCORDANCE WITH 13.7.2.27.2.2.1 AND 13.7.2.27.2.2.2. [101:11.8.4.2]

13.7.2.27.2.2.1 TWO-WAY TELEPHONE COMMUNICATION SHALL BE PROVIDED FOR FIRE DEPARTMENT USE. THIS SYSTEM SHALL BE IN ACCORDANCE WITH NFPA72. THE COMMUNICATIONS SYSTEM SHALL OPERATE BETWEEN THE EMERGENCY COMMAND CENTER AND EVERY ELEVATOR CAR, EVERY ELEVATOR LOBBY, AND EACH FLOOR LEVEL OF EXIT STAIRS. [101:11.8.4.2.1]

1.9.4 THIS CODE SHALL NOT BE CONSTRUED TO RELIEVE FROM OR LESSEN THE RESPONSIBILITY OF ANY PERSON OWNING, OPERATING, OR CONTROLLING ANY BUILDING OR STRUCTURE FOR ANY DAMAGES TO PERSONS OR PROPERTY CAUSED BY DEFECTS, NOR SHALL THE CODE ENFORCEMENT AGENCY OR ITS PARENT JURISDICTION BE HELD AS ASSUMING ANY SUCH LIABILITY BY REASON OF THE INSPECTIONS AUTHORIZED BY THIS CODE OR ANY PERMITS OR CERTIFICATES ISSUED UNDER THIS CODE.

4.5.1.1 THE AHJ SHALL DETERMINE WHETHER THE PROVISIONS OF THIS CODE ARE MET.

4.5.1.2 WHERE IT IS EVIDENT THAT A REASONABLE DEGREE OF SAFETY IS PROVIDED, ANY REQUIREMENT SHALL BE PERMITTED TO BE MODIFIED IF ITS APPLICATION WOULD BE HAZARDOUS UNDER NORMAL OCCUPANCY CONDITIONS IN THE JUDGMENT OF THE AHJ.

13.1.8 THE AHJ SHALL BE NOTIFIED WHEN ANY FIRE PROTECTION SYSTEM IS OUT OF SERVICE AND ON RESTORATION OF SERVICE.

13.7.1.4.6 PROTECTION OF FIRE ALARM SYSTEM.
13.7.1.4.6.1* IN AREAS THAT ARE NOT CONTINUOUSLY OCCUPIED, AND UNLESS OTHERWISE PERMITTED BY 13.7.1.4.6.1.1 OR 13.7.1.4.6.1.2, AUTOMATIC SMOKE DETECTION SHALL BE INSTALLED TO PROVIDE NOTIFICATION OF FIRE AT THE FOLLOWING LOCATIONS:
(1) EACH FIRE ALARM CONTROL UNIT
(2) NOTIFICATION APPLIANCE CIRCUIT POWER EXTENDERS
(3) SUPERVISING STATION TRANSMITTING EQUIPMENT [101:9.6.1.8.1]

1.16.4.1 ANY PERSON WHO FAILS TO COMPLY WITH THE PROVISIONS OF THIS CODE, FAILS TO CARRY OUT AN ORDER MADE PURSUANT TO THIS CODE, OR VIOLATES ANY CONDITION ATTACHED TO A PERMIT, APPROVAL, OR CERTIFICATE SHALL BE SUBJECT TO THE PENALTIES ESTABLISHED BY THE AHJ.

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

Revisions:

No.	Description	Date

Project Title:

LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816

ALBERT RICHARD CHONG
LICENSED PROFESSIONAL ENGINEER
No. 6183-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

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EXP. DATE: 04/30/26

Sheet Title:

ELECTRICAL SYMBOLS LIST AND FIRE ALARM NOTES

Project Phase:

-

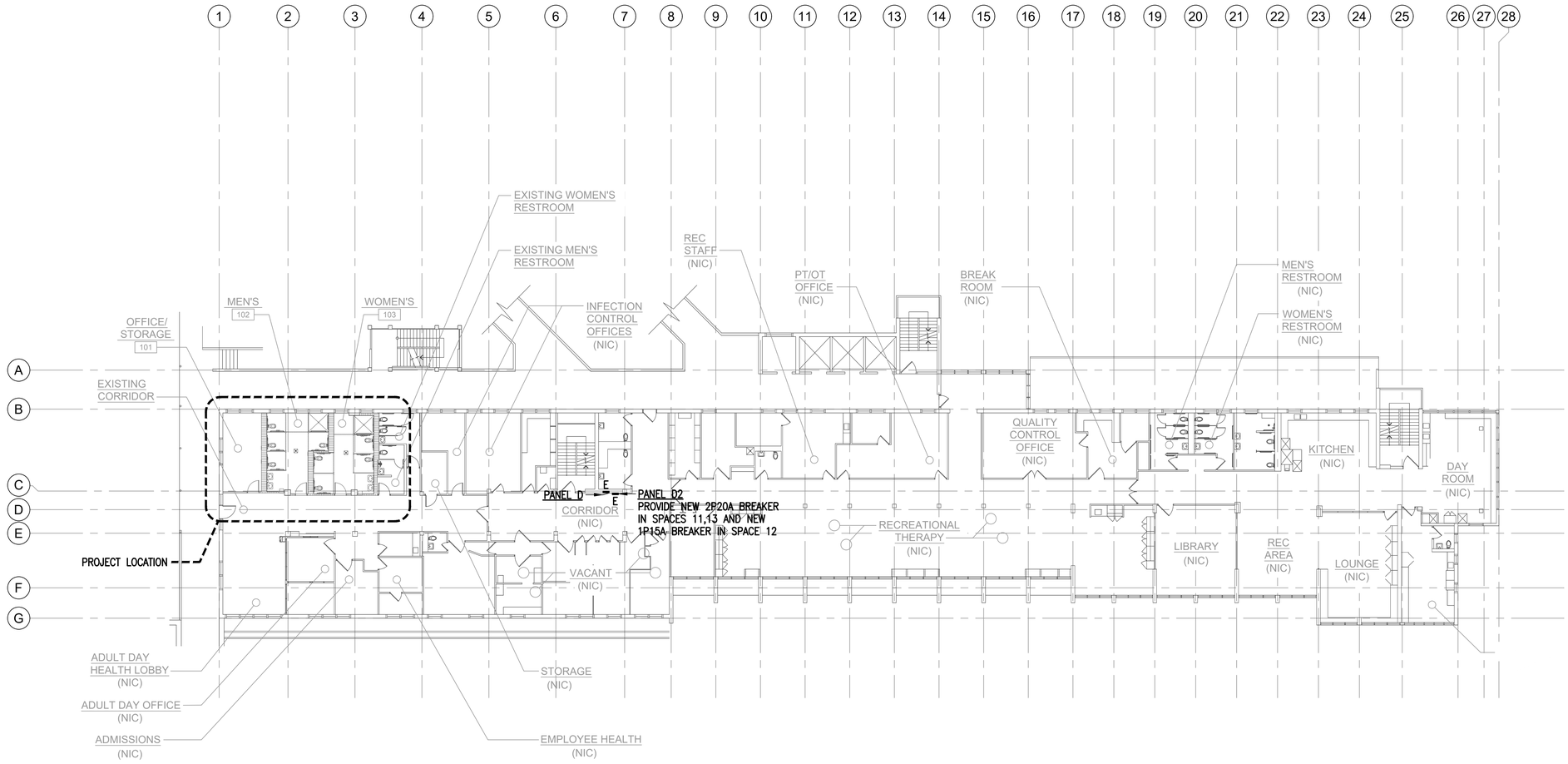
Date:

-

Sheet No.:

E000

Albert Chong Associates Inc.
Consulting Electrical Engineers and Lighting Designers
1117 Kapahulu Avenue
Honolulu, Hawaii 96816
Telephone (808) 738-5355



1 / E001 OVERALL ELECTRICAL PLAN

SCALE: 1/16" = 1'-0"

PLAN NORTH

0 8' 16' 24' 32' 40' 48'

SCALE: 1/16" = 1'-0"

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

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HONOLULU, HI 96816

ALBERT RICHARD CHONG
LICENSED PROFESSIONAL ENGINEER
No. 6183-E
HAWAII, U.S.A.

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Sheet Title:

OVERALL ELECTRICAL PLAN

Project Phase:

-

Date:

-

Sheet No.:

E001

Albert Chong Associates Inc.
Consulting Electrical Engineers and Lighting Designers
1117 Kapahulu Avenue
Honolulu, Hawaii 96816
Telephone (808) 738-5355

1 ED01 LIGHTING DEMOLITION PLAN

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

DEMOLITION NOTES:

1. EXISTING PLANS DO NOT INDICATE COMPLETE EXISTING WIRING CONDITIONS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK.
2. BEFORE ANY WIRING IS CUT, CONTRACTOR SHALL VERIFY USAGE OF WIRING TO BE CUT TO ASSURE THAT SERVICES REQUIRED ARE NOT DISCONNECTED.
3. REMOVE ALL EXISTING WIRING NOT TO REMAIN IN SERVICE.
4. REMOVE ALL CONDUITS NO LONGER REQUIRED
5. PHASE WORK TO ASSURE CONTINUITY OF ELECTRICAL, TELEPHONE AND SIGNAL SERVICES TO PARTS OF BUILDING THAT WILL REMAIN IN USE.
6. REMOVE ALL EXISTING LIGHT FIXTURES, RECEPTACLES, SWITCHES INDICATED TO BE REMOVED OR NO LONGER REQUIRED. BLANK OUTLETS. PLUG ALL HOLES IN BOXES AND CABINETS. PATCH CONCRETE WALLS.

PLAN NORTH (TRUE N)

0 4' 8' 12'

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

Albert Chong Associates Inc.
Consulting Electrical Engineers and Lighting Designers
1117 Kapahulu Avenue
Honolulu, Hawaii 96816
Telephone (808) 738-5355

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

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LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816

ALBERT RICHARD CHONG
LICENSED PROFESSIONAL ENGINEER
No. 6183-E
HAWAII, U.S.A.

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LIGHTING DEMOLITION PLAN

Project Phase:

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Date:

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Sheet No.:

ED01

1 ED02 POWER AND SIGNAL DEMOLITION PLAN

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

PLAN NORTH

0 4' 8' 12'

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

DEMOLITION NOTES:

1. EXISTING PLANS DO NOT INDICATE COMPLETE EXISTING WIRING CONDITIONS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK.
2. BEFORE ANY WIRING IS CUT, CONTRACTOR SHALL VERIFY USAGE OF WIRING TO BE CUT TO ASSURE THAT SERVICES REQUIRED ARE NOT DISCONNECTED.
3. REMOVE ALL EXISTING WIRING NOT TO REMAIN IN SERVICE.
4. REMOVE ALL CONDUITS NO LONGER REQUIRED
5. PHASE WORK TO ASSURE CONTINUITY OF ELECTRICAL, TELEPHONE AND SIGNAL SERVICES TO PARTS OF BUILDING THAT WILL REMAIN IN USE.
6. REMOVE ALL EXISTING LIGHT FIXTURES, RECEPTACLES, SWITCHES INDICATED TO BE REMOVED OR NO LONGER REQUIRED. BLANK OUTLETS. PLUG ALL HOLES IN BOXES AND CABINETS. PATCH CONCRETE WALLS.

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

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RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816

ALBERT RICHARD CHONG
LICENSED PROFESSIONAL ENGINEER
No. 6183-E
HAWAII, U.S.A.

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POWER AND SIGNAL DEMOLITION PLAN

Project Phase:

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Date:

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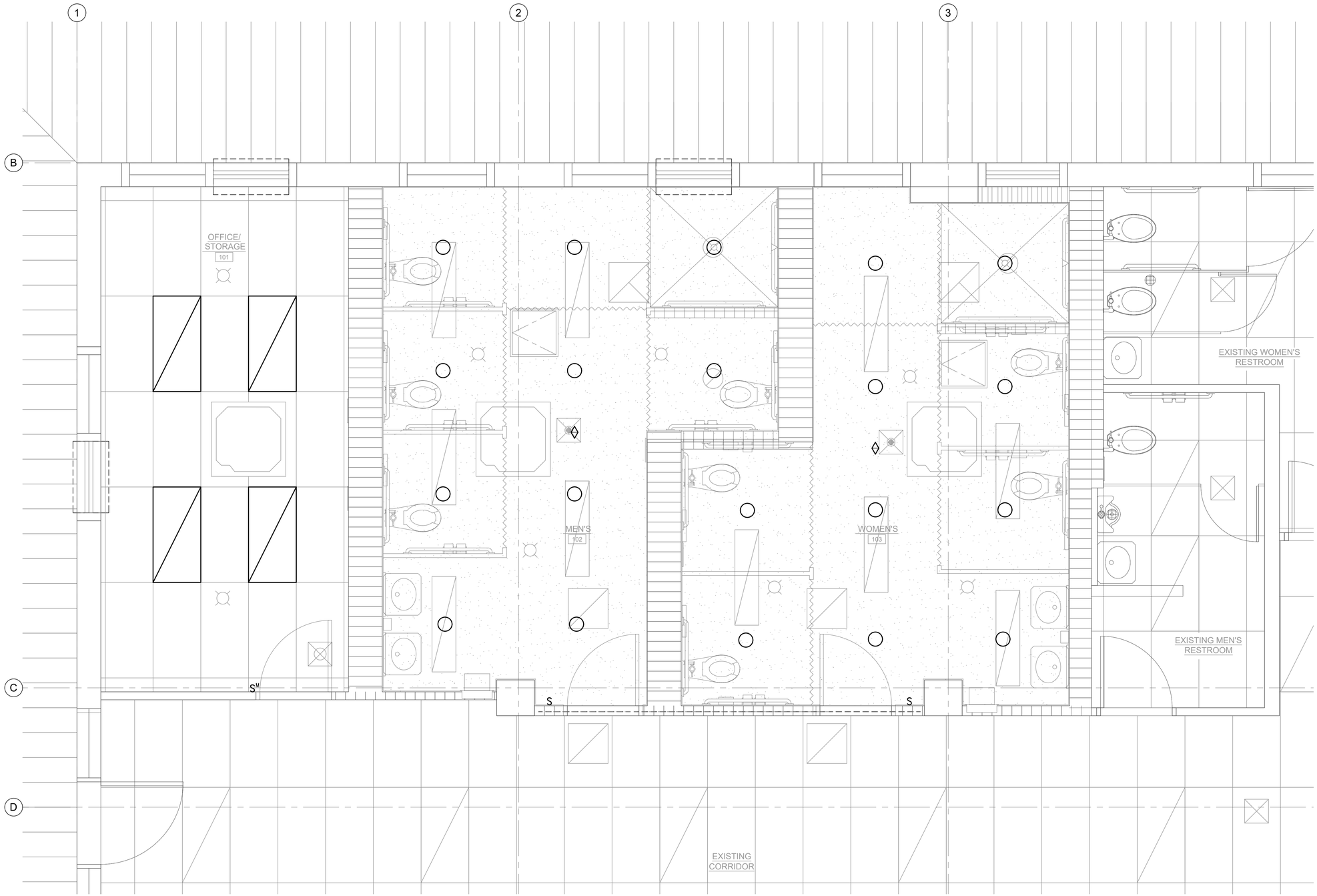
Sheet No.:

ED02

Albert Chong Associates Inc.
Consulting Electrical Engineers and Lighting Designers
1117 Kapahulu Avenue
Honolulu, Hawaii 96816
Telephone (808) 738-5355



1 E101 NEW LIGHTING PLAN
SCALE: 1/2" = 1'-0"

PLAN NORTH (TRUE N)

0 1' 2' 3' 4' 5' 6'
SCALE: 1/2"=1'-0"

Albert Chong Associates Inc.
Consulting Electrical Engineers and Lighting Designers
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Honolulu, Hawaii 96816
Telephone (808) 738-5355

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INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
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HONOLULU, HI 96816

ALBERT RICHARD CHONG
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No. 6183-E
HAWAII, U.S.A.

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NEW LIGHTING PLAN

Project Phase:
-

Date:
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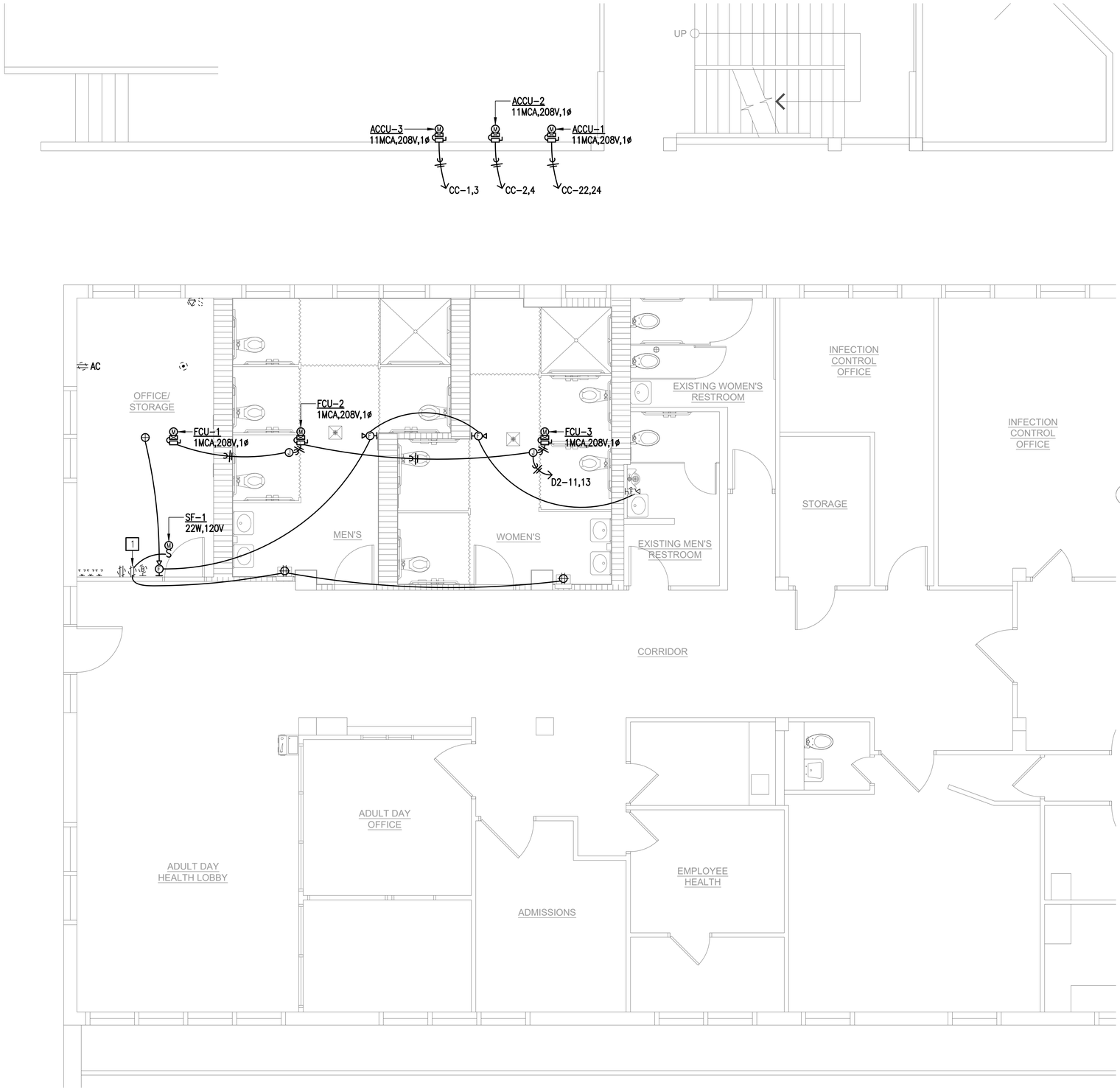
Sheet No.:

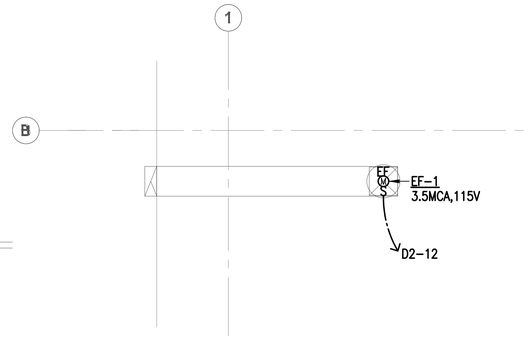
E101



1 E102 NEW POWER AND SIGNAL PLAN
SCALE: 1/4" = 1'-0"

NEW POWER AND SIGNAL NOTE:

1 EXTEND EXISTING CIRCUIT



1 E102 NEW POWER PLAN (5TH FLOOR)
SCALE: 1/4" = 1'-0"

PLAN NORTH (TRUE N)

0 4' 8' 12'
SCALE: 1/4"=1'-0"

Albert Chong Associates Inc.
Consulting Electrical Engineers and Lighting Designers
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Honolulu, Hawaii 96816
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INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

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LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816

ALBERT RICHARD CHONG
LICENSED PROFESSIONAL ENGINEER
No. 6183-E
HAWAII, U.S.A.

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NEW POWER AND SIGNAL PLAN

Project Phase:

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Date:

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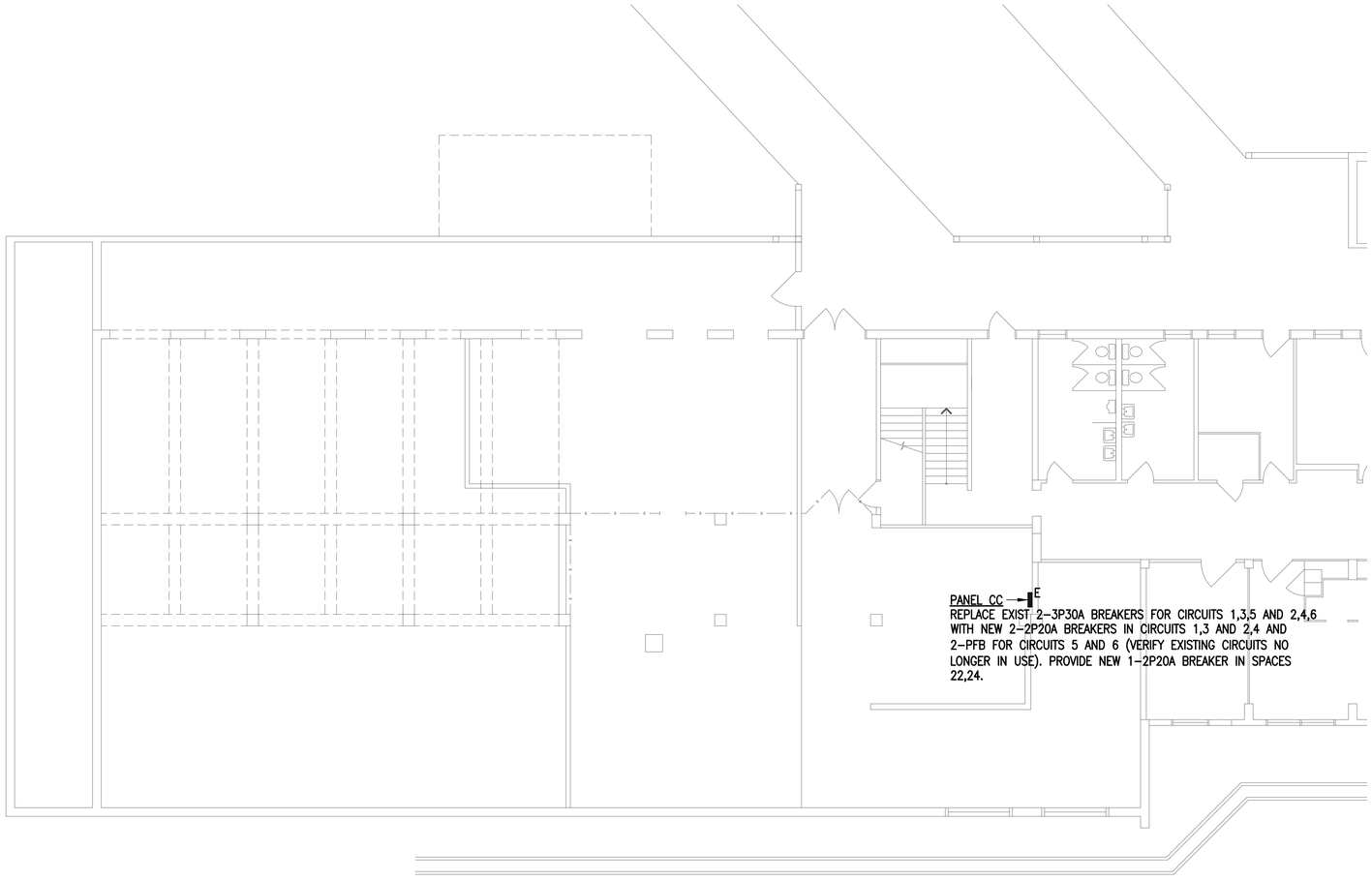
Sheet No.:

E102



1 E103 PARTIAL NEW BASEMENT POWER PLAN

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

PLAN NORTH

0 4' 8' 12'

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

Albert Chong Associates Inc.
Consulting Electrical Engineers and Lighting Designers
1117 Kapahulu Avenue
Honolulu, Hawaii 96816
Telephone (808) 738-5355

INK ARCHITECTS

INK ARCH LLC
650 Iwilei Road, Suite 288
Honolulu, Hawaii 96817
Phone: 808.536.1174
Fax: 808.536.1559
E-mail: ink@inkarch.com

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RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816

ALBERT RICHARD CHONG
LICENSED PROFESSIONAL ENGINEER
No. 6183-E
HAWAII, U.S.A.

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PARTIAL NEW BASEMENT POWER PLAN

Project Phase:

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Date:

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E103