Invitation for Bids

IFB 20L-0040
Leahi Hospital – Suspended Walkway Repairs

The Hawaii Health Systems Corporation (HHSC) Oahu Region is requesting bids from qualified companies for the repair of the suspended walkways between Young Building and Administration Building 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/

Due to the recent events of the COVID-19 outbreak, a pre-bid orientation will not be scheduled. The deadline for submission of written/emailed questions pertaining to the IFB is April 9, 2020.

All bids must be received by April 23, 2020, 2:00 p.m. Hawaii Standard Time. Bids may be mailed to the Purchasing Office of **Maluhia**, at 1027 Hala Dr., Honolulu, Hawaii 96817. Bids via e-mail are acceptable and shall be sent 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 (MS Outlook) delays delivery.

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.

Purchasing Office
Maluhia
1027 Hala Dr.
Honolulu, Hawaii 96817

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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	March 23, 2020
2.	No Pre-Bid Orientation due to COVID-19	
3.	Closing Date for Receipt of Questions	April 9, 2020
4.	Closing Date for Receipt of Bids 2:00 p.m. at **Maluhia**	**April 23, 2020**
5.	Contractor Selection/Award Notification (on/about)	April 24, 2020
6.	Contract Start Date (on/about)	May 15, 2020

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
Maluhia, Purchasing Office
1027 Hala Drive
Honolulu, Hawaii 96817
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, Scott Kawai, 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. Bid documents will be available upon request from the office of the Chief Executive Officer, at Leahi Hospital, 3675 Kilauea Avenue, Honolulu, HI, 96816.

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

C. 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.

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.

SECTION 2
SCOPE OF SERVICES

2.0 INTRODUCTION

LEAHI HOSPITAL – SUSPENDED WALKWAY REPAIRS

Work for this project shall include, but is not limited to repairing the suspended walkways between Young Building and Administration Building, and miscellaneous associated work.

2.1 CONTRACT PERIOD

The work shall be completed within 60 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 May 15, 2020 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 be an original signature in ink. If the Bid Form on Appendix A is unsigned or the affixed signature is a facsimile or a photocopy, 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. Leahi Hospital 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 – Suspended Walkway Repairs IFB No. 20L-0040, for which fees/costs have been set. The fees/costs offered herein shall apply from XXX, 2020 to XXX, 2022.

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. 20L-0040
Leahi Hospital – Suspended Walkway Repairs

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 pay liquidated damages to the HHSC to be 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

SUSPENDED WALKWAY REPAIRS

3675 KILAUEA AVENUE
HONOLULU, HAWAII 96816

TAX MAP KEY: 03-02-031: 001

FOR THE

HAWAII HEALTH SYSTEMS CORPORATION (HHSC)

STATE OF HAWAII

STRUCTURAL ENGINEER: MKE ASSOCIATES LLC

MARCH 2020

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DIVISION 0 – BIDDING AND CONTRACT REQUIREMENTS

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 Provisions" 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 Contract Manager. Bidders shall comply with the following procedures:

1. Identify each request with the Project Name and HHSC Project Number.

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 in ink or type the “Sealed Bid Form” completely. In addition to the following paragraphs with instructions, there are supplemental Bidder’s Instructions within the text of the “Sealed Bid Form”; bidders shall comply with these instructions. Bidders shall not alter the “Sealed Bid Form”, and shall maintain the form intact.

B. RECYCLED PRODUCT PREFERENCE: 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 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 INSTRUCTION TO BIDDERS

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 the GTC.

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) 486-8048

B. Project Coordinator - For questions and clarifications during bidding and Requests for Substitutions.

NAME:	Mr. Glenn Miyasato
POSITION OR TITLE:	Project Engineer
TELEPHONE NUMBER:	(808) 488-7579
Email:	glenn@mkellc.com

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

NAME:	Mr. Scott Kawai
POSITION OR TITLE:	Contracts Manager
TELEPHONE NUMBER:	(808) 832-3025
Email:	SKawai@hhsc.org

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 60 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 $250.00 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 Contractor 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 are 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".

1.06 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 Contracting Officer. The Contracting Officer 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.

1.07 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 up-dated on a weekly or bi-weekly basis as directed by the Contracting Officer.

B. On a weekly or bi-weekly basis, the Contractor shall conduct a progress meeting with the Hospital and Contracting Officer. 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 Contracting Officer 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 Contracting Officer for review and confirmation. Approved requests for payment will be forwarded to the Contracts Office for processing of payment.

E. Upon substantial completion of the project, the Contractor shall submit in writing to the Contracting Officer 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 Contracting Officer 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.

1.08 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 area at a time. If 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 not be allowed unless coordinated and approved 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 is not 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

DIVISION 1 – GENERAL REQUIREMENTS

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 Contracting Officer 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 Contracting Officer 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 Contracting Officer determines does not accurately record the deviation may be corrected by the Contracting Officer and the Contractor shall be charged for the services.

7. Submit the set of “FIELD POSTED AS-BUILT” drawings to the Contracting Officer 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 Contracting Officer and notify the HHSC 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 Contracting Officer 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 Contracting Officer 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 Contracting Officer 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 Contracting Officer'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 Contracting Officer 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 Contracting Officer may reject as non-complying such material and products that do not bear identification satisfactory to the Contracting Officer 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 Contracting Officer, and any change shall be made in accordance with the Contracting Officer'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.

E. 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.

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

G. 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 Contracting Officer for interpretations before proceeding with the associated work.

3.03 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.

3.04 ENVIRONMENTAL

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

3.05 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, 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 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 Contracting Officer 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.

3.06 BARRICADE

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

B. Maintain temporary construction barricade(s) throughout the duration of the Work. During the course of the project, the Contracting Officer 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.

3.07 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.

3.08 CUTTING AND 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.

3.09 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 Contracting Officer 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 Contracting Officer and/or HHSC Representative.

END OF SECTION

SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: The purpose of this project is to repair the second floor suspended walkway. The work shall generally consist of removal of corroded structural steel walkway framing, lath and plaster railings, and adjacent concrete slab, and installation of new structural steel framing members and lath and plaster railing. Other associated work includes replacement of removed portions of concrete slab, repair of corroded metal deck at second floor suspended walkway, repair of corroded portions of the railing soffit at all the first, second, and third floor suspended walkways, waterproofing of the concrete slab at the second floor suspended walkway near the Young building, and painting.

1. Project Location: Leahi Hospital, 3675 Kilauea Avenue, 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 Contracting Officer.

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.

1.04 WORK SEQUENCE

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

1.05 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 Contracting Officer 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 Contracting Officer 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 Contracting Officer and/or HHSC Representative.

b. Permanent use of the loading area is prohibited.

c. Subject to availability, the Contracting Officer 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 Contracting Officer and/or HHSC Representative.

b. Arrange all temporary electricity and water service with the Contracting Officer and/or 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 Contracting Officer and/or HHSC Representative. A minimum five (5) working days notice shall be provided. Contractor is forewarned that the Contracting Officer and/or 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.

1.06 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 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 Contracting Officer 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 Contracting Officer or 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.

7. 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 and/or Contracting Officer.

B. Stoppage of work for the duration of CMS and State Survey audits shall not incur additional costs to the HHSC.

C. All work shall be coordinated and scheduled with the hospital and/or HHSC Representative. In general, the Contractor will be restricted to work areas as coordinated with the HHSC Representative.

END OF SECTION

SECTION 01300 - SUBMITTALS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

Where indicated in these specifications, provide submittals to the Contracting Officer for review.

1.02 PROCEDURES

A. Unless otherwise specified, deliver submittals to the Contracting Officer 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 Contracting Officer or his Consultant's review stamp.

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

1.03 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 Contracting Officer will retain three (3) copies and return the balance to the Contractor.

5. The Contracting Officer 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 Contracting Officer'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 Contracting Officer 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 Contracting Officer on previous submissions.

7. The Contracting Officer'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 Contracting Officer'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 Contracting Officer. 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.

1.04 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 Contracting Officer 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 Contracting Officer, prior to any ordering of materials and equipment. Submittals that have not been reviewed by the General Contractor shall be returned for review.

1.05 MANUFACTURER'S CERTIFICATES

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

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

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

C. 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.

D. 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.

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

F. 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 OTHERS

A. Wherever trucks and/or vehicles leave the site and enter surrounding paved streets, Contractor shall prevent any material from being carried onto the pavement. Waste water shall not be discharged into existing streams, waterways, or drainage systems such as gutters and catch basins unless treated to comply with the State Department of Health water pollution regulations. The Contractor shall construct a vehicle wash-down area, within the project site, to remove all mud, gravel, etc., before leaving the site.

B. Trucks hauling debris shall be covered as required by PUC Regulation. Trucks hauling fine materials shall be covered.

C. No dumping of waste concrete will be permitted at the job-site.

D. Except for rinsing of the hopper and delivery chute, and for wheel washing where required, concrete trucks shall not be cleaned on the job-site.

E. Except in an emergency, such as a mechanical breakdown, all vehicle fueling and maintenance shall be done in a designated area. A temporary berm shall be constructed around the area when runoff can cause a problem.

F. If allowed in this Contract, spray painting shall be done by the “airless spray” process only. All other types of spray painting shall not be permitted.

1.06 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 Contracting Officer and/or HHSC Representative may also suspend any operations which creates a pollution problem 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

DIVISION 2 - SITE CONSTRUCTION

SECTION 02410 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

A. Extent of selective demolition work is indicated on the drawings. Selective demolition work includes, but is not limited to, selective demolition, removal, and subsequent disposal of all materials indicated or required to be removed.

B. It shall be the responsibility of the Contractor to examine the project site and determine for himself the existing conditions.

C. Execute all work in an orderly and careful manner with due consideration for all items of work to remain.

D. Obvious conditions which exist on the site shall be accepted as part of the work, even though they may not be clearly indicated on the Drawings and/or described herein, or may vary therefrom.

E. All debris of any kind accumulated from the work of this section shall be disposed of off the site.

F. Protect all existing conditions surrounding the work area, including, but not limited to, walkways, parking, landscaping, etc. at all times from damage.

G. Any damage as a result of demolition work and any neglect to provide protection shall be fixed new at Contractor's own expense.

H. Demolish and remove materials as indicated on the drawings and as required to perform work under this project.

I. Remove/relocate existing equipment, signage, etc. as required to perform demolition work. Return all items to its original location, unless otherwise indicated or directed by the Contracting Officer, after completion of work.

J. Existing Conditions: The Contractor is cautioned that the existing suspended walkway contains hazardous substances. Abatement of this is part of the scope of work of this project and shall be performed as specified in DIVISION 13 - SPECIAL CONSTRUCTION.

K. Permits, Notice, Etc.:

1. The Contractor shall procure and pay for all necessary permits or certificates that may be required in connection with this work.

2. The Contractor shall serve proper notice and consult with the Contracting Officer regarding any temporary disconnections of electrical or other utility lines in the area which may interfere with the removal work, and all such lines where necessary shall be properly disconnected or relocated before commencing with the work.

3. Submit proper notification of the suspended walkway repairs to the Department of Health.

1.03 SUBMITTALS

A. Submit under provisions of Section 01300 - SUBMITTALS.

B. Schedule: Submit schedule indicating proposed methods and sequence of operations for selective demolition work for review prior to commencement of work. Include coordination for temporary shut-off and continuation of utility services as required, together with details for dust and noise control protection.

1.04 JOB CONDITIONS

A. Condition of Structure: The State assumes no responsibility for actual condition of items or portions of structure to be demolished.

B. Existing Conditions: Conditions existing at time of commencement of contract will be maintained by the State insofar as practicable.

C. Occupied Spaces: Do not interfere with use of adjacent occupied spaces. Maintain free and safe passage to and from occupied spaces.

D. Partial Demolition and Removal: Items indicated to be removed but of salvageable value to Contractor, may be removed from structure as work progresses. Transport salvaged items from site as they are removed. Storage or sale of removed items on site will not be permitted.

E. Explosives: Use of explosives will not be permitted.

F. Utility Services: The existence of exposed and concealed utility lines other than those shown on the drawings is not definitely known. Should any other utility lines be encountered, the Contractor shall immediately notify the Contracting Officer and follow his direction as to procedure. Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations. Do not interrupt existing utilities serving occupied building or facilities, except when authorized in writing by the Contracting Officer. Outages and interruptions must be accepted in advance by the Contracting Officer. Submit written notice of outages and interruptions not less than fourteen days in advance of intended outage. Report damage, however slight, immediately. Do not repair or reconstruct any pipe, conduit, or installation without authorization, except perform emergency repairs immediately.

G. Dust Control:

1. Keep dust within acceptable levels at all times, including non-working hours, weekends and holidays, in conformance with Hawaii Administrative Rules, Title 11, Department of Health, Chapter 60.1, Air Pollution Control, latest edition as amended.

2. Mechanical dry sweeping not permitted. Vacuuming, wet mopping, approved limited dry hand, wet or damp sweeping is acceptable.

3. During loading operations, water down debris and waste materials to allay dust.

4. The method of dust control and all costs incurred thereof shall be the responsibility of the Contractor.

H. Noise Control:

1. Noise shall be kept within acceptable levels at all times in conformance with Hawaii Administrative Rules, Title 11, Department of Health, Chapter 46 - Community Noise Control, latest edition as amended. The Contractor shall obtain and pay for community noise permit from the State Department of Health when the construction equipment or other devices emit noise at level exceeding the allowable limits.

2. All internal combustion engine powered equipment shall have mufflers to minimize noise and shall be properly maintained to reduce noise to acceptable levels.

3. Starting up of on-site vehicular equipment meeting allowable noise limits shall not be done prior to 6:45 a.m. without prior acceptance of the Contracting Officer. Equipment exceeding allowable noise limits shall not be started up prior to 7:00 a.m.

4. Conform to noise control related to events at the project site or adjoining facilities as directed by the Contracting Officer.

I. Other Controls:

1. Wherever trucks and/or vehicles leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried onto the pavement. Waste water shall not be discharged into existing streams, waterways, or drainage systems such as gutter and catch basins unless treated to comply with Department of Health pollution regulations.

2. Trucks hauling materials shall be covered as required by PUC regulation. Trucks hauling fine materials shall be covered.

J. Existing Conditions: The Contractor shall be responsible for protection of existing conditions for the entire duration of the project. Damage to the existing conditions as a result of the work of this section shall be corrected at Contractor's own expense.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 INSPECTION

A. Prior to commencement of selective demolition work, inspect areas in which work will be performed. Inventory existing conditions of structure surfaces, equipment or surrounding properties which could be misconstrued as damage resulting from selective demolition work; photograph, video or otherwise document and file with the Contracting Officer prior to starting work.

3.02 SELECTIVE DEMOLITION

A. Perform selective demolition work, including all improvements indicated on the drawings, in a systematic manner. Use such methods as required to complete work indicated on drawings in accordance with demolition schedule and governing regulations.

1. Demolish concrete in small sections. Cut concrete at junctures with construction to remain using power-driven masonry saw or hand tools; do not use power-driven impact tools.

2. Provide services for effective air and water pollution controls as required by local authorities having jurisdiction. All dust shall be suppressed by a fog spray or other approved method.

3. Extent of demolition and removal as shown are minimum requirements. Contractor shall be responsible for the extent of the work required to properly accommodate the methods of construction required for the new work. Additional work required to accommodate construction shall be considered incidental to the new work and shall be done at no additional cost to the Hospital.

B. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to the Contracting Officer in written, accurate detail. Pending receipt of directive from the Contracting Officer rearrange selective demolition schedule as necessary to continue overall job progress without delay.

3.03 PROTECTIONS

A. Provide temporary barricades and other forms of protection as required to protect the general public from injury due to selective demolition work.

1. Erect temporary barricades as required, to prevent people from entering into project area to the extent as accepted by the Contracting Officer. The extent of barricade may be adjusted as necessary with the acceptance of the Contracting Officer. This work shall be accomplished at Contractor's own expense.

2. When necessary, the Contractor shall provide, erect and maintain lights, barriers, etc., as required by traffic and safety regulations with special attention to protection of life.

3. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or elements to be removed, and adjacent facilities or work to remain.

4. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.

5. Life safety procedures and provisions shall be in conformance with all applicable Federal, State, and City and County regulations, including OSHA.

6. Remove protections at completion of work.

3.04 DAMAGES

A. Promptly repair damages caused to adjacent facilities by demolition work at Contractor's own expense.

3.05 TRAFFIC

A. Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close, block or otherwise obstruct streets, walks or other occupied or used facilities without written permission from the Contracting Officer. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations, as directed by the Contracting Officer.

B. Buildings and facilities which are essential for public use for the construction period shall be provided with safe pedestrian passageways around the construction site as per ADAAG 206.

3.06 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove debris, rubbish, and other materials resulting from demolition operations from building site daily. Transport and legally dispose of materials off site. Burning of removed materials is not permitted on project site.

3.07 HAZARDOUS MATERIALS

A. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.

3.08 MATERIAL STORAGE

A. Removed items to be re-installed by the Contractor shall be stored in a secured room. The Contractor shall be responsible for all items and shall replace any missing items at his own expense.

3.09 CLEAN-UP AND REPAIR

A. Clean up the work site daily and at the completion of removal work. Leave the area neat and clean to the satisfaction of the Contracting Officer.

B. Upon completion of demolition work, remove tools, equipment, and demolished materials from site. Remove protections and leave interior areas broom clean.

C. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

D. Where exposed existing surfaces and/or materials are damaged or left unfinished by the removal work, the resultant exposed unfinished surfaces shall be repaired, patched, filled or finished to match the adjoining existing surfaces. Where the method of repair work is not indicated or specified, the Contractor shall perform the repair work in accordance with the best recognized workmanlike procedure.

E. All existing grass areas disturbed or damaged due to construction or ingress or egress to the site shall be repaired to its original conditions. Grass areas shall be recultivated, topsoiled, and then grassed with the same kind and type of material as existing.

END OF SECTION

DIVISION 3 - CONCRETE

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes.

1.02 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.03 SUBMITTALS

A. Submit under provisions of Section 01300 - SUBMITTALS.

B. Product Data:

1. Reinforcing steel - Certified mill test results or laboratory test results. Indicate bar size, yield strength, ultimate tensile strength, elongation and bend test. Provide chemical composition for rebars that are to be welded.

C. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments. Indicate amounts of mix water to be withheld for later addition at Project site.

D. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, “Details and Detailing of Concrete Reinforcement.” Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement.

E. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance with the requirements indicated, based on comprehensive testing of current materials.

F. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:

1. Form materials and form-release agents.

2. Steel reinforcement and reinforcement accessories.

3. Curing materials.
4. Adhesives.

5. Repair materials.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94/C 94M requirements for production facilities and equipment.

B. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 to conduct the testing indicated.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.

D. ACI Publications: Comply with the following, unless more stringent provisions are indicated and maintain a copy at the field office.

1. ACI 301, “Specification for Structural Concrete.”

2. ACI 117, “Specifications for Tolerances for Concrete Construction and Materials.”

3. ACI 347R “Guide to Formwork for Concrete”.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle steel reinforcement to prevent bending and damage.

B. Store materials out of weather in original containers or unopened packages as recommended by the manufacturer.

PART 2 - PRODUCTS

2.01 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Comply with ACI 347R. Provide new or good finish form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, or other ACI 347R accepted panel materials.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair

subsequent treatments of concrete surfaces. Form oils or waxes shall not be used for concrete surfaces intended to be painted. Formulate form-release agent with rust inhibitor for steel form-facing materials.

2.02 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed, unless otherwise noted on the drawings.

B. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.

2.03 REINFORCEMENT ACCESSORIES

A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars in place. Use plastic straps or brightly colored tie wires to secure reinforcing. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from plastic. Refer to item entitled "STEEL REINFORCEMENT" hereinbelow for chair support spacing.

2.04 CONCRETE MATERIALS

A. Portland Cement: ASTM C 150/C 150M, Type II.

B. Pozzolans - Fly Ash: ASTM C 618, Class C or F.

C. Normal-Weight Aggregate: ASTM C 33/C 33M, uniformly graded, and as follows:

1. Class: Moderate weathering region, but not less than 3M.

2. Aggregate Size: No. 67 (3/4-inch to No. 4).

D. Size of Coarse Aggregate: Except when otherwise specified or permitted, maximum size of coarse aggregate shall not exceed three-fourths of the minimum clear spacing between reinforcing bars (or bundled bars), one-fifth of the narrowest dimension between the sides of forms, or one-third of the thickness of slabs or toppings.

E. Water: Potable and complying with ASTM C 94/C 94M or non potable meeting ASTM C 94/C 94M Acceptance Criteria for Questionable Water Supply. Use only potable water for job site mixing.

2.05 ADMIXTURES

A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures, coloring admixtures, and cementitious materials. Do not use admixtures containing calcium chloride.

B. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.

C. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.

D. Water-Reducing and Accelerating Admixture: ASTM C 494/C 494M, Type E.

E. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.

2.06 CURING MATERIALS AND EVAPORATION RETARDERS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.

C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

D. Water: Potable.

2.07 RELATED MATERIALS

A. Epoxy-Bonding Adhesive: ASTM C 881/C 881M, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements, and as follows:

1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.08 REPAIR MATERIALS

A. Patching Mortar: Cement-based, polymer-modified, shrinkage compensating product with a corrosion inhibitor that can be applied in thicknesses of featheredge to 3". Compressive strength not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

2.09 CONCRETE MIXES

A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases.

1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.

2. Compressive strength (28 days): As indicated.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than Portland cement in concrete as follows:

1. Fly Ash: 25 percent.

2. Combined Fly Ash and Pozzolan: 25 percent.

C. Maximum Water-Cementitious Materials Ratio: 0.40.

D. Do not add air entrainment to concrete.

E. Limit water-soluble, chloride-ion content in hardened concrete per ACI 318 Chapter 4 for corrosion protection of reinforcing steel.

F. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.

2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

2.10 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.11 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and ASTM C 1116/C 1116M and furnish batch ticket information. Batch ticket information shall include design mix reference, water that can be added at the jobsite, and admixtures. For transit mixing, complete not less than 70 revolutions of the drum at the manufacturer's rated mixing speed. Discharge concrete into its final position within 90 minutes after introduction of batch water to the cement. If a retarder admixture is used, the discharge time limit of 90 minutes may be increased by the time specified for retardation by the admixture manufacturer or the concrete supplier. Mix concrete a minimum of one minute at mixing speed immediately prior to discharge.

B. Project-Site Mixing: Measure, batch, and mix concrete materials according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. or less, continue mixing at least one and one-half minutes, but not more than five minutes after all ingredients are in mixer, before any part of batch is released.

2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd.

3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mix type, mix time, quantity, and amount of water added. Record approximate location of concrete placement in structure.

4. Hand mixed concrete will not be allowed.

PART 3 - EXECUTION

3.01 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

1. Class A, 1/8 inch.

D. Construct forms to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.

1. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Chamfer exterior corners and edges of permanently exposed concrete.

H. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

I. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

J. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.02 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor bolts, accurately located, to elevations required.

2. Install inserts, hangers, metal ties, nailing strips, blocking, grounds and other fastening devices needed for attachment of other work.

3.03 REMOVING AND REUSING FORMS

A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.

3.04 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars. Support slab reinforcing bars as follows:

BAR SIZE	MAXIMUM DISTANCE BETWEEN SUPPORTS
#3	2 feet
#4	3 feet
#5	4 feet
#3 at 15" E.W.	4'-6" o.c. each way

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

3.05 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been

performed. Provide one day notification to the Contracting Officer for each scheduled pour.

B. Do not add water to concrete during delivery, at Project site, or during placement, unless included in the accepted concrete mix design.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mix.

C. Convey concrete from mixer to the place of final deposit rapidly by methods that prevent segregation or loss of ingredients and will ensure the required quality of concrete. Use conveying equipment, conveyors, hoppers, baffles, chutes, pumps that are sized and designed to prevent cold joints from occurring and prevent segregation in discharged concrete. Clean conveying equipment before each placement.

D. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. Deposit concrete to avoid segregation.

E. Deposit concrete in forms in horizontal layers with proper consolidation into previous layers and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints.

1. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended by ACI 309R.

2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.

F. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.

2. Maintain reinforcement in position on chairs during concrete placement.

3. Screed slab surfaces with a straightedge and strike off to correct elevations.

4. Slope surfaces uniformly to drains where required.

5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, free of humps or hollows, before excess moisture or bleed-water appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

G. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.

3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.06 FINISHING FORMED SURFACES

A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch in height.

1. Apply to concrete surfaces exposed to public view or to be covered with a coating or covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, or painting.

B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.07 FINISHING FLOORS AND SLABS

A. General: Comply with recommendations in ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces indicated and to surfaces to receive trowel finish.

C. Trowel Finish: After applying float finish, apply first trowel finish and consolidate concrete by hand or by power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

1. Apply a trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with paint or another thin film-finish coating system.

2. Finish and measure surface so gap at any point between concrete surface and an unleveled freestanding 10-foot-long straightedge, resting on 2 high spots and placed anywhere on the surface, does not exceed 1/4 inch.

3.08 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with recommendations in ACI 305R for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing by one or a combination of the curing methods listed in paragraph entitled "Unformed Surfaces" hereinbelow.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

a. Water.

b. Continuous water-fog spray.

c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3. Curing Compound: Apply uniformly in continuous operation by spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period. Curing compound shall be compatible with floor covering and floor treatment.

3.09 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas. Remove and replace concrete that cannot be repaired and patched to the acceptance of the Contracting Officer.

B. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension in solid concrete but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean exposed surface of concrete with a scrub brush and thoroughly rinse with potable water.

2. Mix all materials in strict accordance with the manufacturer's mixing instructions. Scrub patching mortar into the saturated surface dry concrete substrate and cover all areas to be patched. Build the patching mortar to fill all voids and match surrounding concrete surface. Patching mortar shall blend with adjacent surfaces such that after application of final finishes specified in other sections of these specifications, the lines at the edges of the patching mortar are not visible.
3. Commence initial curing of patching mortar immediately after final troweling is completed. Curing shall be in strict accordance with the patching mortar manufacturer's recommendations, including curing materials used, method of application, and period of cure.

4. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by the Contracting Officer.

C. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface.

Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.

2. After concrete has cured at least 14 days, correct high areas by grinding.

3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.

4. Repair defective areas, except random cracks and single holes 1-inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mix as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

5. Repair random cracks and single holes 1-inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Clean exposed surface of concrete with a scrub brush and thoroughly rinse with potable water. Mix all materials in strict accordance with the manufacturer's mixing instructions. Scrub patching mortar into the saturated surface dry concrete substrate and cover all areas to be patched. Build the patching mortar to fill all voids and match surrounding concrete surface. Patching mortar shall blend with adjacent surfaces such that after application of final finishes specified in other sections of these specifications, the lines at the edges of the patching mortar are not visible. Commence initial curing of patching mortar immediately after final troweling is completed. Curing shall be in strict accordance with the patching mortar manufacturer's recommendations, including curing materials used, method of application, and period of cure.

D. Perform structural repairs of concrete, subject to acceptance of the Contracting Officer, using epoxy adhesive and patching mortar.

E. Repair materials and installation not specified above may be used, subject to acceptance of the Contracting Officer.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Contractor will retain and pay a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement according to requirements specified in this Article.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172/C 172M shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mix exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.

3. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.

4. Compression Test Specimens: ASTM C 31/C 31M. Cast and field cure one set of four standard cylinder specimens for each composite sample.

5. Compressive-Strength Tests: ASTM C 39/C 39M; test two field-cured specimens at 28 days.

    a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at age indicated.

C. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

D. Test results shall be reported in writing to the Contracting Officer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break.

E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by the Contracting Officer but will not be used as sole basis for acceptance or rejection of concrete.

F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, compressive strengths, or other requirements have not been met, as directed by the Contracting Officer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by the Contracting Officer.

END OF SECTION

DIVISION 5 - METALS

SECTION 05120 - STRUCTURAL STEEL

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Structural steel.

2. Grout.

1.02 DEFINITIONS

A. Structural Steel: Elements of structural-steel frame, as classified by AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

1.03 SUBMITTALS

A. Submit under provisions of Section 01300 - SUBMITTALS.

B. Product Data: For each type of product indicated.

C. Shop Drawings: Show fabrication of structural-steel components and steel deck.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.

2. Include embedment drawings.

3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.

4. Include layout and types of deck panels, anchorage details, special jointing, accessories, and attachments to other construction.

D. Mill test reports for structural steel, including chemical and physical properties.

E. Product Test Reports: For the following:

1. Bolts, nuts, and washers including mechanical properties and chemical analysis.

2. Concrete screws.

3. Nonshrink grout.

4. Evaluation reports for steel deck.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Engage and experienced Installer who has completed structural steel work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Fabricator Qualifications: Engage a firm experienced in fabricating structural steel similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate structural steel without delaying the Work.

C. Comply with applicable provisions of the following specifications and documents:

1. AISC 303.

2. AISC 360.

D. Welding Standards: Comply with applicable provisions of AWS D1.1 “Structural Welding Code – Steel.”

1. Present evidence that each welder has satisfactorily passed AWS qualification tests for welding process involved and, if pertinent, has undergone recertification.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver structural steel to Project site in such quantities and at such times to ensure continuity of installation.

B. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

C. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

1.06 COORDINATION

A. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

PART 2 - PRODUCTS

2.01 STRUCTURAL-STEEL MATERIALS

A. Angles and Channels: ASTM A 36/A 36M.

B. Hollow Structural Sections: ASTM A500, Grade C or ASTM A1085.

C. Plate and Bar: Type 316 stainless steel.

2.02 BOLTS, CONNECTORS, AND ANCHORS

A. Wedge Anchors: Simpson Strong-Tie Wedge-All wedge-style expansion anchor with nut and washer by Simpson Strong-Tie, Inc. or approved equal. Mechanically galvanized per ASTM B 695.

B. Concrete Screws: Concrete screws shall be stainless steel Type 410, self-tapping hex head Tapcon anchors as manufactured by ITW Red Head, Inc. or approved equal.

2.03 PRIMER

A. Primer: Fast-curing, lead- and chromate-free, universal modified alkyd primer with good resistance to normal atmospheric corrosion, complying with performance requirements of FS TT-P-664.

B. Galvanizing Repair Paint: ASTM A780/A780M.

2.04 WELDS

A. Electrodes for Welding: E70XX.

2.0*5* GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory- packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.06 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC 360.

1. Mark and match-mark materials for field assembly.

2. Complete structural-steel assemblies before starting shop-priming operations.

B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.

D. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel framing members.

1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.

2.07 SHOP CONNECTIONS

A. Welded Connections: Welds and welding procedures shall conform to the structural welding code AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting welding work.

1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without warp.

2.08 SHOP PRIMING

A. Shop prime steel surfaces, except surfaces to be field welded.

B. Surface Preparation: Clean surfaces to be painted. Remove loose rust, loose mill scale, and spatter, slag, or flux deposits.

C. Priming: Immediately after surface preparation, apply primer according to manufacturer's instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

D. Painting: Apply a 1-coat, nonasphaltic primer complying with SSPC's "Painting System Guide No. 7.00" to provide a dry film thickness of not less than 1.5 mils.

2.09 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/A 123M.

1. Fill vent and drain holes that will be exposed in the finished Work unless they will function as weep holes, by plugging with zinc solder and filing off smooth.

2. Galvanize all structural steel.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Before erection proceeds, and with the steel erector present, verify locations of anchorages for compliance with requirements.

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

3.02 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

3.03 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.

B. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."

C. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment. Level and plumb individual members of structure.

D. Splice members only where indicated.

E. Do not use thermal cutting during erection.

F. Finish sections thermally cut during erection equal to sheared appearance.

G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

3.04 FIELD CONNECTIONS

A. Wedge Anchors: Install per manufacturer's printed installation instructions.

B. Concrete Screws: Install per manufacturer's printed installation instructions.

C. Weld Connections: Welds and welding procedures shall conform to the structural welding code AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting welding work.

1. Comply with AISC specifications referenced in this section for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

2. Assemble and weld built-up sections by methods that will maintain true alignment of axes without warp.

3.05 FIELD QUALITY CONTROL

A. Contractor will engage an independent testing and inspecting agency to perform field inspections and tests and to prepare test reports.

1. Testing agency will conduct and interpret tests and state in each report whether tested work complies with or deviates from requirements.

B. Correct deficiencies in or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.

C. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.

D. In addition to visual inspection, field-welded connections will be inspected and tested according to AWS D1.1 and the inspection procedures listed below, at testing agency's option.

1. Liquid Penetrant Inspection: ASTM E 165.

2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.

3. Radiographic Inspection: ASTM E 94 and ASTM E 142; minimum quality level, "2-2T."

4. Ultrasonic Inspection: ASTM E 164.

E. In addition to visual inspection, field-welded shear connections will be inspected and tested according to AWS D1.1 for stud welding as follows:

1. Bond tests will be performed when visual inspections reveal either less than a continuous 360-degree flash or welding repairs to any shear connector.

2. Tests will be conducted on additional shear connectors when weld fracture occurs on shear connectors already tested, according to requirements of AWS D1.1.

3.06 REPAIRS AND PROTECTION

A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780/A 780M.

B. Touchup Painting: Immediately after erection, clean field welds and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting. Apply by brush or spray to provide a minimum dry film thickness of 1.5 mils.

END OF SECTION

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07100 - WATERPROOFING

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes all coatings identified in the contract drawings.

B. Related Work Described Elsewhere:

1. Section 03300 - CAST-IN-PLACE CONCRETE
2. Section 09900 - PAINTING

C. Where this system integrates with adjacent systems, provide for tie-in of this system to those systems to allow for both continuity of envelope systems and divorcing of this system from materials that are not compatible for tie-in with this system. Membrane, metal, and other flashings/materials shall be utilized as required to achieve this integration.

1.02 SUBMITTALS

A. Submit under provisions of Section 01300 - SUBMITTALS.

B. Product Data: For each type of product indicated.

C. Product Test Reports:

1. AC Tech 2170 epoxy: Submit Anhydrous Calcium Chloride testing according to ASTM F1869 (using latest ASTM standard) and/or RH in-Situ Probe testing according to ASTM F2170 (using ASTM latest standard). Tests shall be performed by the Owner's Special Inspector and results provided to the Architect, Owner, General Contractor, and Water Vapor Reduction System Manufacture's Representative.

D. Samples: Submit samples of specified pedestrian traffic coating system. Samples shall be construed as examples of finished color and texture of the system only.

E. VOC Content: Manufacturers' statement of VOC content and chemical components for pedestrian traffic coatings.

1. Certification: Certification by the Manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds.

F. Applicator Approval: Submit letter from manufacturer stating applicator is approved to install the specified pedestrian traffic coating system.

G. Warranty: Submit copy of manufacturer's standard warranty for each type of product indicated.

K. Provide copies of field quality control reports.

1.03 QUALITY ASSURANCE

A. Applicator Qualifications: Employ an applicator currently approved by the manufacturer, experienced in surface preparation and application of the material, and subject to inspection and control of the manufacturer.

B. Manufacturer's Qualifications:

1. AC Tech 2170 "Moisture Vapor Reduction" Epoxy: Manufacturer shall have no less than ten (10) years of experience in manufacturing water vapor reduction systems. The water vapor reduction system must be specifically formulated and marketed for water vapor reduction and alkalinity control without change of system design for a minimum period of five (5) years. Submit a list of product use and performance history, for the same formulation and system design, listing reference sources for at least 3 projects dating back for a minimum of 5 years.

2. NEOGARD "Peda-Gard FC Aliphatic": Peda-Gard, as supplied by NEOGARD, is approved for use on this project.

C. Comply with applicable codes, regulations, ordinances, and laws regarding use and application of coating systems.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

1. Manufacturer's brand name.
2. Type of material.
3. Directions of storage.
4. Date of manufacture and shelf life.
5. Lot or batch number.
6. Mixing and application instructions.
7. Color.

B. Storage and Handling:

1. Store materials not in use in tightly covered containers in well-ventilated area. Do not allow temperature in storage area to exceed temperature allowed by the stored product manufacturer.

2. Maintain containers used in storage in a clean condition, free of foreign materials and residue.

3. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.05 PROJECT/SITE CONDITIONS

A. Prior to starting work, read and follow the SDS and container labels for detailed health and safety information.

B. Environmental Conditions:

1. Do not apply material to unprotected surfaces or to damp, dirty, or frosty surfaces.

2. Do not apply material when surface and ambient temperatures are outside the temperatures range required by the coating manufacturer.

3. Do not apply exterior coatings during rain, or when relative humidity exceeds the maximum humidity allowed by the coating manufacturer.

C. Coordination: Coordinate waterproofing work with other trades. Applicator shall have sole right of access to the specified area for the time needed to complete the application and allow the pedestrian traffics to cure adequately.

D. Keep products away from spark or flame. Do not use equipment which may produce sparks during application and until all vapors have dissipated. Post “No Smoking” signs

E. Maintain work area in a neat and orderly condition, removing empty containers, rags, and rubbish daily from site.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. AC•Tech 2170™ Vapor Reduction System: by Allied Construction Technologies, Inc. (AC•Tech) Corporate Headquarters: (757) 855-5100.

B. Peda-Gard®: NEOGARD®, a Division of Hempel (USA), Inc., 2728 Empire Central, Dallas, TX 75235, (800) 321- 6588, www.neogard.com

2.02 AC TECH MOISTURE VAPOR REDUCTION MATERIALS

A. AC Tech 2170 100% solids, plural-component “moisture vapor reduction” epoxy.

B. Crack and Joint Filler: AC Tech 2170 epoxy.

C. Fillers: Silica Flour or Cabosil.

2.03 NEOGARD PEDESTRIAN TRAFFIC COATING MATERIALS

A. Primer: 70714/70715 100% solids, plural-component “clear” epoxy.

B. Reinforcing Fabric: 86220 stitch-bond polyester fabric or equal.

C. Sealant: 70991, Sika 1A, NP-1 or other approved urethane sealant.

D. Aggregate: 7992 (16/30 mesh) silica (quartz) sand.

E. Base Coat: FC7500/FC7960 plural-component urethane coating.

F. Wear Coat: FC7510/FC7961 plural-component urethan coating.

G. Topcoat: FC7530/FC7963 plural-component aliphatic urethan coating. (Tintable to custom colors)

2.04 ACCESSORIES

A. Miscellaneous materials such as cleaning agents, adhesives, reinforcing fabric, backer rod, deck drains, etc., shall be compatible with the specified pedestrian traffic coating system.

2.05 MIXING

A. Comply with manufacturer’s instructions for mixing procedures.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that the work done under other sections meets the following requirements:

1. That the concrete deck is free of ridges and sharp projections. If metal forms or decks are used they should be ventilated to permit adequate drying of concrete.

2. That the concrete was cured for a minimum of 28 days. (Minimum of 3,000 psi compressive strength.) Water-cured treatment of concrete is preferred. The use of concrete curing agents, if any, shall be of the sodium silicate base only; others require written approval by NEOGARD.
3. That the concrete was finished by a power or hand steel trowel followed by soft hair broom to obtain light texture or “sidewalk” finish.

4. That damaged areas of the concrete deck be restored to match adjacent areas. Use 7014/7015-09 clear 100% solids epoxy (45069/95075) and sand for filling and leveling.

B. On existing slabs where the history of the previous usage is unknown or there is suspected or anticipated contamination that may cause bonding issues, the concrete should receive testing for concrete deficient and contaminants using the following protocols:

1. Ion-Chromatography (IC)
   a. Checks for metallic sodium and potassium salts and chlorides
   b. Checks for un-reacted sodium and potassium silicates
2. Infrared Spectroscopy (IR)
   a. Checks for organic contaminants (Hydrocarbons: Oils, grease, fuel. Organics: Blood, urine and other organic contamination)
3. X-Ray Diffraction (XRD) & Energy Dispersive X-Ray (EDXA)
   a. Checks for constituents in concrete matrix (Aggregate, Fines)
4. (Optional) Thin-Slice Petrography
   a. Checks for Alkali-Silica-Reaction (ASR) and other reactive or heavy aggregate weathering conditions in concrete.
5. This testing should be performed by the owner's independent testing agency utilizing standard core-sampling methods and review of the history of the slab installation if available. Concrete should conform to ACI Committee 201 Report "Guide to Durable Concrete."
6. Ensure manufacturer's technical staff receives all testing analysis and results.

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

3.02 PREPARATION

A. The areas of the concrete top surface noted on the floor plans shall be waterproofed. Waterproofing shall lap over adjacent repainted steel at the edge of the concrete surfaces a minimum of 2" or as noted in the drawings.

B. Existing Coating: Completely remove all existing horizontal deck surface coatings downs to bare concrete by mechanical methods. The use of chemical strippers is not allowed.

C. Laps to Steel Surfaces: Where existing coatings area in place on steel surfaces to be lapped, such coatings will remain in-place provided the coatings are sound and exhibit sufficient bond to the underlying substrate.

D. Shot-Blasting: Mechanically prepare horizontal deck surface by "mandatory" shot-blasting to industry standard surface texture (ICRI's CSP 4) without causing additional surface defects in substrate. Where shot-blasting is not achievable (perimeters, etc…), mechanically prepare surface by means of power diamond grinding to meet proper CSP profile. Proper cleaning procedures should be followed to ensure proper bonding of the deck coating.

E. Crack Repair:

1. Cracks < 1/16” width: Fill all non-moving cracks less than 1/16” with AC Tech 2170 epoxy, missed with silica flour or cabosil to form a paste. The mix ratio is one part AC Tech 2170 epoxy to 3-4 parts silica flour or cabosil by volume. Using a trowel, strike mixed epoxy over crack to fill. Scrape off excess epoxy.

2. Cracks 1/16” width or greather: Rout crack approximately 3/8” (width/depth) and fill with AC Tech 2170 epoxy, mixed with silica flour or cabosil. The mix ratio is one part AC Tech 2170 epoxy to 3-4 parts silica flour or cabosil by volume. Using a trowel, strike mixed epoxy into routed crack to fill. Scrape off excess epoxy. Detail sealed cracks with thoroughly mixed FC7500/FC7960 base coat material a distance of 2” on each side of crack to yield a total thickness of 30 dry mils.

F. Control Joints: Seal control joints equal to or less than 1” in width with urethane sealant. Depending on the width to depth ratio of the joint, backing material and a bond breaker may be required. Install sealants in accordance with ASTM C 1193 and manufacturer’s instructions. Detail sealed joints with thoroughly mixed FC7500/FC7960 base coat material a distance of 2” on each side of joint to yield a total thickness of 30 dry mils.

G. Perimeter Joints: Seal all perimeters, transitions, and changes in surface plane with urethane sealant. Apply a generous bead of sealant and tool to achieve a concave cant. Tooled caulk bead should measure an approximate 1-1/4” width x 1/4” depth at arc radius. Detail sealed joints with thoroughly mixed FC7500/FC7960 base coat material a distance of 2” on each side of joint to yield a total thickness of 30 dry mils.

H. Reinforcing Fabric: Install 86220 reinforcing fabric only where a field condition deems necessary and/or where required by the manufacturer prior to the application of base coat.

I. Surface Condition: Surface condition shall be clean and dry prior to coating.

3.03 APPLICATION

A. Comply with manufacturer’s instructions for mixing procedures. Factors that affect dry film thickness: volume of solids, thinning, surface profile, application technique and equipment, overspray, squeegee, brush and roller wet out, container residue, spills and other waste are among the many factors that affect the amount of wet coating required to yield proper dry film thickness. To ensure that specified dry film thickness is achieved, use a wet mil gauge and grid layout to verify actual thickness of wet coating applied, adjusting as needed for those factors which directly affect the dry film build.

B. AC Tech 2170 “Moisture Vapor Reduction” Epoxy:

1. Thoroughly mix AC Tech 2170 epoxy and apply at an approximate spread rate of 75 sf/gal (1.33 gal/100 sf or 21 wet mils) to yield 21 dry mils to all properly prepared concrete surfaces. Within 24 hours, apply NEOGARD system primer coat. If subsequent NEOGARD primer cannot be applied within 24 hours, inspect surface for contaminants, clean surface as necessary, and re-apply.

C. NEOGARD “Pedagard FC Aliphatic:

1. Primer: Thoroughly mix 70714/70715 100% “clear” epoxy material and apply at an approximate spread rate of 200 sf/gal (0.5 gal/100 sf or 8 wet mils) to yield 8 dry mils. Extend primer up vertical wall turn-ups, curbs, etc… to meet existing demarcation. Subsequent base coat must be applied within 24 hours. If base coat cannot be applied within 24 hours, inspect surface for contaminants, clean surface as necessary, and re-prime.

2. Base coat: Thoroughly mix FC7500/FC7960 base coat material and apply at an approximate spread rate of 88 sf/gal (1.13 gal/100 sf or 18 wet mils), to yield 18 dry mils. Extend base coat over cracks and control joints which have received detail treatment.

3. Wear coat: Thoroughly mix FC7510/FC7961 wear coat material and apply at an approximate spread rate of 200 sf/gal (0.5 gal/100 sf or 8 wet mils), to yield 8 dry mils, and immediately broadcast aggregate, evenly distributed, into wet coating at an approximate rate of 10 lbs/100 sf. When dry, remove excess aggregate.

4. Topcoat: Thoroughly mix FC7530/FC7963 topcoat material and apply at an approximate spread rate of 175 sf/gal (0.57 gal/100 sf or 9 wet mils), to yield 9 dry mils.

5. PEDAGARD FC aliphatic system coating thickness yields an average 35 dry mils exclusive of primer and aggregate

6. After completion of application, do not allow traffic on coated surfaces for a period of at least 24 hours at 75°F and 50% R.H., or until completely cured.

3.04 FIELD QUALITY CONTROL

A. The Owner’s Special Inspection shall verify proper adhesion of flooring adhesives, coatings, and leveling compounds to the final vapor reduction coating system for acceptability. Contact Manufacturer’s Representatives for recommendations.

3.05 CLEANING

A. Clean all tools and equipment with xylene or like solvent immediately after use when using the AC Tech 2170 System.

B. Refer to the NEOGARD Pedestrian Deck Coating Systems Preventive Maintenance Manual for typical cleaning methods.

C. Remove debris resulting from water vapor reduction system installation and coating operation from the project site.

D. Clean equipment and containers in a manner acceptable under City, State, and Federal Water pollution laws.

E. Do not rinse or clean equipment or containers in any landscaped areas.

END OF SECTION

DIVISION 9 – FINISHES

SECTION 09220 – METAL LATH AND PORTLAND CEMENT PLASTER

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Metal lath and accessories.

2. Portland cement plaster system.

1.02 SUBMITTALS

A. Submit under provisions of Section 01300 - SUBMITTALS.

B. Product Data: Submit manufacturer's descriptive literature, product specification, and installation instructions for each product.

C. Samples: Submit one 12 inch by 12 inch sample.

1.03 QUALITY ASSURANCE

A. Applicator Qualifications: Firm specializing in installing work specified in this Section with experience on at least 5 projects of similar size and scope in past 3 years.

PART 2 - PRODUCTS

2.01 METAL LATH AND PLASTERING ACCESSORIES

A. 3/8" Rib Lath: 3/8 inch expanded metal lath, deep longitudinal ribs, hot-dipped galvanized minimum G60 coating (ASTM A653/A653M), minimum 3.4 lbs/yd^2, in accordance with CBC Table 25-B. Acceptable products: as manufactured by Amico, or approved equal.

2.02 CEMENT PLASTER

A. Cement: ASTM C150, Type I or II, low alkali, gray color.

B. Aggregate: ASTM C897; gradation as follows:

Sieve Size	Percent Retained on Each Sieve by Weight	
	Maximum	Minimum
No. 4	0	–
No. 8	10	0

No. 16	40	10
No. 30	65	30
No. 50	90	70
No. 100	100	90-95

No more than 50% of sand shall be retained between any two consecutive sieves and no more than 25% between sieve No. 50 and No. 100.

C. Water: Clean, fresh, potable, and free from organic matter or minerals injurious to the plaster and to any metal in the system.

D. Lime:

1. ASTM C206, Type S.

2. Plasticity agents to replace lime: Conform to CBC Section 2508 with current ICC-ES Report. Acceptable products: Gibco MRF and PRF Liquid and Dry Admixtures (ICC-ES ER-3213) by Gibco Industries, Pozalite (ICC-ES ER-6248) by Stockton Products, or approved equal.

E. Plaster Mix Reinforcement (for base coat): ASTM C116; alkali resistant glass fibers, ½ inch nominal length.

F. Acrylic Finish Coat: Clean, fresh, potable, and free from organic matter or minerals injurious to the plaster and to any metal in the system.

1. Description: Pre-mixed, vapor permeable, 100% acrylic polymer finish coat with crushed mineral aggregates, properties as follows:

Adhesion to concrete (ASTM D4541):	100 psi minimum.
Water vapor transmission (ASTM E96):	3.8 perms minimum.
Accelerated weathering (ASTM G26; 2,000 hours):	No cracking, checking, blistering, or adhesion loss.
Wind driven rain (FS TT-C-555B):	Pass.
Abrasion resistance (ASTM D4060; 1,000 cycles):	6.8% weight loss maximum.
Chemical resistance (ASTM D1308)	Good resistance to mild acids, alkalis, and salts.

2. Related products: Leveler and primer by finish coat manufacturer

3. Color and Texture: Match existing plaster.

G. Mixes: Mix and proportion cement plaster in accordance with ASTM C926 and PCA Portland Cement/Stucco Manual. Mix plasticity agents (lime replacement admixtures) in accordance with manufacturer's instructions and ICC-ES report.

H. Suspension Tie Wires: ASTM A641, 6 gauge galvanized, soft annealed mild steel.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine job site conditions and verify substrate is ready to receive work.

B. Inspect installed work of other trades and verify such work is complete to the point work of this section may begin.

C. Verify substrate is plumb, level, square, and aligned.

3.02 PREPARATION

A. Protect surfaces near the work of this Section from damage or disfiguration.

3.03 METAL LATH AND ACCESSORIES INSTALLATION

A. Apply metal lath with the long dimension across the supports with true even surfaces, and without sags, or buckles in accordance with ASTM C841. Orient metal lath on vertical surfaces to provide maximum mechanical bond with plaster. Apply upper sheets to overlap lower sheet.

B. Secure metal lath to framing members at maximum 12 inches on center, furred out away from the substrate at least 1/4 inch.

3.04 PLASTERING

A. Apply plaster in accordance with ASTM C926.

B. Plaster Thickness: Match existing thickness.

3.05 ACRYLIC FINISH COAT

A. Apply acrylic finish coat in accordance with manufacturer’s instructions.

3.06 CLEANING

A. Promptly remove and clean plaster from all surface not scheduled to receive finish.

B. Clean substrates as recommended by substrate manufacturer. Do not use materials or methods which may damage substrate/finish or surrounding construction.

C. Clean up and remove from the site all excess and waste materials.

END OF SECTION

SECTION 09900 - PAINTING

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes surface preparation and field painting of vertical and underside repair surfaces that were previously painted. The contractor shall attempt to match existing colors and textures to the best of his ability.

B. Related Work Described Elsewhere:

1. Section 05120 – STRUCTURAL STEEL
2. Section 07100 – WATERPROOFING
3. Section 09220 – METAL LATH AND PORTLAND CEMENT PLASTER

1.02 REFERENCES

A. ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.

B. PDCA (Painting and Decorating Contractors of America) – Painting – Architectural Specifications Manual.

1.03 SUBMITTALS

A. Submit under provisions of Section 01300 - SUBMITTALS.

B. Product Data: For each coating system provide a list of required coating materials including primers. Provide manufacturer's technical information, including instructions for handling, storing, and applying coating material proposed for use.

C. Test Area: Provide 1 sq. ft of each finish coating for comparison with original color.

1.04 QUALITY ASSURANCE

A. Applicator Qualifications: Engage an experienced applicator who has completed coating system applications similar in material and extent to that indicated for this Project with a record of successful in-service performance.

B. Source Limitations: Obtain primers and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.
8. VOC content.

B. Product Storage:

1. Store materials not in use in tightly covered containers in a well-ventilated area. Do not allow temperature in storage area to exceed temperature allowed by the stored product manufacturer.

2. Maintain containers used in storage in a clean condition, free of foreign materials and residue.

3. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.06 PROJECT/SITE CONDITIONS

A. Do not apply material when surface and ambient temperatures are outside the temperature range required by the coating manufacturer.

B. Do not apply exterior coatings during rain, or when relative humidity exceeds the maximum humidity allowed by the coating manufacturer.

PART 2 - PRODUCTS

2.01 COATING MATERIALS, GENERAL

A. Material Compatibility: Provide primers, undercoats, and finish-coat materials of the types scheduled under Finish Systems below that are:

1. Compatible with one another and the substrates indicated under conditions of service and application,

2. Recommended by coating manufacturer based on testing and field experience as documented in published product literature or confirmed in writing by manufacturer.

B. Material Quality: Coating systems and components product types are specified in Part 3 below. Provide paint products from the product lines offered by a single manufacturer listed below.

C. Hazardous Content: Do not use paint or paint products containing lead, cadmium, zinc, or strontium chromates or mercury.

D. Provide paint primer and finish coats with a suitable chemical mildewstat or mildewcide in amounts to suit local conditions but no less than one ounce per gallon.

E. Containers not displaying manufacturer's product identification will not be acceptable.

2.02 MANUFACTURERS' PRODUCT LINES

A. The product names below represent the manufacturer's professional quality product lines in selected categories

1. Substitutions of products of another manufacturer may be allowed if the Engineer determines that the proposed products are of comparable tested quality to those products specified herein. Qualities as tested by appropriate industry methods include the following;

a. Percent solids by volume
b. Square foot coverage at the scheduled dry film thickness (dft) in mils.
c. Quantitative material analysis: percent resin binder and percent titanium dioxide.
d. Abrasion resistance.
e. Flexibility.
f. Washability.
g. Accelerated weathering.
h. Color retention.
i. Alkali and mildew resistance.

B. Opaque 100% Acrylic Latex Paint Finishes: Provide Sherwin-Williams Co. Super Paint Exterior Latex or approved equal.

2.03 COLOR AND GLOSS

A. Colors of finish coats shall match existing colors of similar existing face.

B. The tinting base for finish coats shall be only as recommended by paint manufacturer for the color tones selected.

C. Gloss of finish coats shall match existing finishes.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, area, and conditions under which coating will be performed for compliance with coating application requirements of this section and the coating manufacturer.

3.02 PREPARATION

A. Cleaning: Before applying coating, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning. Schedule cleaning and coating so dust and other contaminants from the cleaning process will not fall on wet, newly coated surfaces.

B. Surface Preparation for Cementitious Materials: Clean and prepare surfaces to be coated according to manufacturer's written instructions for each particular substrate condition and as specified. Prepare concrete surfaces to be coated. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze.

C. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes, including primers, unless moisture content of surfaces are below 12 percent.

D. Materials Preparation: Mix and prepare paint according to manufacturer's instructions.

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.

2. Stir material before application to produce a mixture of uniform density. Stir as require during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.

3. Use only thinners approved by paint manufacturer and only within recommended limits.

E. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.03 APPLICATION

A. General: Apply coating according to manufacturer's written instructions. Use applicators and techniques best suited for substrate type of material being applied. Do not paint over dirt, rust, scale, grease, moisture, scuffled surfaces, or conditions detrimental to formation of a durable film.

B. Scheduling Coating: Apply first coat to surfaces that have been cleaned, pretreated or otherwise treated for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer.

2. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

3. Allow sufficient time between successive coats to permit proper drying or curing.

4. For paint, do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.

C. Application Procedures: Apply coatings by brush, roller, or other applicators according to manufacturer's written instructions.

1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.

2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.

3. Spray Equipment: Spraying is expressly prohibited.

D. Minimum Coating Thickness: Apply coating materials no thinner than manufacturer's recommended spreading rate.

E. Prime Coats: Before applying base or finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be coated.

F. Pigmented (Opaque) Paint Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

G. Completed Work: Match approved samples and adjacent areas for color texture and coverage. Remove, refinish, or recoat work not complying with requirements.

3.04 CLEANING

A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded coating materials from the site.

1. After completing coating, clean paint-spattered surfaces. Remove spattered coating by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

2. Clean equipment and containers in a manner acceptable under City, State, and Federal Water pollution laws.

3. Do not rinse or clean equipment or containers in any landscaped areas.

3.04 PROTECTION

A. Protect adjacent materials, whether being coated or not, against damage by coating. Correct damage by cleaning, repairing or replacing, and recoating, as approved by Engineer.

B. Provide “Wet Paint” signs to protect newly painted finishes accessible to occupants.

END OF SECTION

DIVISION 13 – SPECIAL CONSTRUCTION

SECTION 13282 – LEAD-CONTAINING PAINT CONTROL MEASURES

PART 1 - GENERAL

1.01 SUMMARY

A. General:

1. The work shall include the handling, treatment, removal, demolition, transportation, and disposal procedures of lead-containing paint (LCP) and LCP-coated debris, as required.

2. The Contractor acknowledges that he alone is responsible for the lead work and for enforcing personnel protective requirements, and that this specification provides only a minimum acceptable standards. The Contractor shall comply with all requirements of 29 Code of Federal Regulations (CFR) 1926.62, Hawaii Occupational Safety and Health (HIOSH) 12-148.1, and all applicable Environmental Protection Agency (EPA) regulations regarding lead paint.

3. The Contractor shall coordinate all work with the General Contractor and the Hospital Manager.

B. Applicable Standards and Guidelines: All work under this contract, and any other trade work conducted with the project, shall be done in strict accordance with all applicable federal, state, and local regulations, standards, and codes governing lead paint handling, treatment, removal, demolition, transportation, and disposal of LCP and LCP-coated debris, as required. The most recent edition of any relevant document shall be in effect. Other specific Statutory and Regulatory Requirements include, but are not limited to the following:

1. Title 29 CFR Section 1926.62 Lead Exposure in Construction; Interim Final Rule.

2. Title 29 CFR Part 1910.134 Respiratory Protection.

3. Department of Labor, Occupational Safety and Health Administration (OSHA) 29 CFR Part 1910.1025; Occupational Exposure to Lead.

4. Title 40 CFR Part 61 National Emissions Standards for Hazardous Air Pollutants (NESHAP).

5. Hawaii Administrative Rules (HAR), Department of Labor and Industrial Relations, Division of Occupational Safety and Health Construction Standards, Title 12, Subtitle 8, Part 3, Chapter 148.1 Lead

C. Definitions:

1. Action Level (AL): Employee exposure averaged over an 8-hour period, without regard to the use of respirators, to a particular airborne concentration. OSHA requirements become effective at this level. The AL for lead is 30 micrograms per cubic meter of air.

2. Air Monitoring: Process of measuring the content of a specific, known volume of air in a stated period of time. For this project, National Institute for Occupational Safety and Health (NIOSH) Method 7082 shall be used for lead air monitoring.

3. Authorized Visitor: Hospital Manager, Qualified Consultant, their representatives, air monitoring personnel, or a representative of any regulatory or other agency having jurisdiction over the project.

4. Contractor: Individual and/or legal entity and its subcontractors and employees of the contractor and subcontractor awarded the contract

5. Control Area: An area where unwanted toxic or harmful substances exist.

6. High Efficiency Particulate Air (HEPA) Filter: Filter capable of trapping and retaining 99.97% of particulates greater than 0.3 micron in length.

7. Lead: Metallic lead, all inorganic lead compounds, and inorganic lead soaps. Excluded are all other organic lead compounds.

8. Monitoring Specialist: Person under the supervision of the Contractor-hired Qualified Consultant who is trained in health and safety requirements for lead exposure and air monitoring.

9. Permissible Exposure Limit (PEL): Maximum amount or concentration of a chemical that a worker may be exposed to under OSHA regulations. The PEL for lead is 50 micrograms per cubic meter, as determined from an 8-hour time weighted average.

10. Personal Monitoring: Contractor's sampling of lead in air concentrations within the breathing zone of an employee to determine the 8-hour time weighted average. The samples shall be representative of the employee's work tasks. The breathing zone shall be considered an area within 12 inches of the nose or mouth of the employee.

11. Qualified Consultant: Independent third-party, not an employee of the Contractor or on the Contractor’s payroll, who is hired by the Contractor and who is educated and trained in recognizing and evaluating work place hazards and providing guidance on the methods and means of removing or correcting such hazards within the work environment. For this contract, the work place hazards are

work related to removal and demolition of LCP and LCP-coated debris.

12. Hospital Manager: Leahi Hospital's representative for this project.

13. Time Weighted Average (TWA): Average exposure to a contaminant or condition to which workers may be exposed without adverse effect over a period such as in an 8-hour day or 40-hour week.

1.02 SUBMITTALS

A. Submit under provisions of Section 01300 – SUBMITTALS.

B. Work Plan: The Contractor shall submit in accordance with Submittal Procedures prior to starting work a project work plan for the lead paint disturbance work, to include:

1. Work Methods and Procedures:

a. Sequence of work and performance schedule, in coordination with other trades.

b. Work area preparation and setup, including the lead work control area, staging areas, entrances and exits to the work area, location of decontamination units, locations of ambient air sampling pumps, location of waste storage area, etc.

c. Lead paint handling, treatment, removal, transportation, and disposal, as required.

d. Materials, equipment, and tools, including personal protective equipment (PPE), respirators, and cartridges/filters.

e. Air monitoring.

f. Decontamination procedures.

g. Cleanup and clearance.

h. TCLP sampling and analysis.

i. Waste transportation and disposal.

2. Documentation:

a. NESHAP Compliance: Compliance with the requirements of EPA's NESHAP regulation is required for this project.

b. Insurance: Proof of Workman's Compensation and General Liability Insurance, which covers lead, asbestos, and pollution.

c. Lead Training: Documentation of experience, assigned responsibilities during the project, and lead paint removal

training, based on 29 CFR 1926.62, HIOSH 12-148.1, and/or the EPA Model Accreditation for Lead-Based Paint Removal Work Training, and current EPA regulatory requirements.

d. Respiratory Protection: Written program and current documentation of training and fit-testing for all personnel who will enter the work area wearing negative-pressure respirators.

e. Medical Examination: Current clearance of comprehensive medical examination, including ability to wear a respirator.

f. Qualified Consultant Qualifications: Name, address, telephone number, and certifications.

g. Testing Laboratory Qualifications: Name, address, telephone number, and certifications, including EPA National Lead Laboratory Accreditation Program (NLLAP) by either the American Association for Laboratory Accreditation (A2LA) or the American Industrial Hygiene Association (AIHA), and the Environmental Lead Proficiency Analytical Testing (ELPAT) Program.

h. Proposed Disposal Landfill Waste Acceptance: Name, address, telephone number, and type of waste accepted.

i. Emergency Response and Evacuation Plan: Written program and training.

3. Manufacturer's Data: Specifications, installation instructions, and field test procedures for each material and all equipment related to lead work

4. Respiratory Protection Program: Written program meeting the requirements of 29 CFR 1910.134(b)(d)(e).

5. Emergency Response and Evacuation Plan: To include consideration of fire explosion; toxic atmospheres; electrical hazards; slips, trips, and falls; confined spaces; and heat-related injury. In non-life threatening situations, the injured or incapacitated employee shall decontaminate following normal procedures, with assistance from co-workers if necessary, before exiting the work area to obtain proper medical treatment. In life threatening situations, worker decontamination shall take least priority after measures to stabilize the injured worker, remove the injured worker from the work area, and secure proper medical treatment.

C. Final Clearance Report: The Contractor shall submit after completing work in accordance with Submittal Procedures a project final clearance report for the lead paint disturbance work, to include:

1. Statement signed by the Contractor that all lead handling and disposal was completed in compliance with federal, state, and local regulations, this specification, and the approved Work Plan.

2. Contractor license number, work duration, respiratory protection and decontamination procedures employed, employee exposure and ambient air sample results, and results of the current Proficiency Analytical Testing (PAT) Program results for the laboratory conducting the air analysis.

3. Visual clearance certification received from the Qualified Consultant.

4. EPA waste generator number, material removed, total quantity of waste, and Toxicity Characteristic Leaching Procedure (TCLP) lead reports.

5. Waste shipping and disposal manifests of all waste material signed and accepted by the waste disposal facility, to include names and addresses of the Contractor, the Transporter, the Facility, and information on the type and number of waste containers.

6. Visitor/Worker Entry Log: The daily log of all personnel who enter the work area while lead disturbance operations are in progress and until final clearance is received. The log shall include, as a minimum: Date of visit/worker entry; Visitor/Worker's name, employer, business address, and telephone number; Time of entry and exit from work area; Purpose of visit; Type of protective clothing and respirator worn; and Certificate of release signed and filed with the contractor.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Respirators and Cartridges/Filters: Use appropriate respirators and cartridges/filters, which meet all requirements of OSHA 29 CFR 1926.62 and HIOSH 12-148.1.

B. Personal Protective Clothing: Use appropriate personal protective clothing (disposable coveralls/suits, boots, gloves, eye protection, etc.) as required by OSHA 29 CFR 1926.62 and HIOSH 12-148.1.

PART 3 - EXECUTION

3.01 CONSTRUCTION

A. Potential Lead Hazard:

1. The disturbance of the walkway walls may cause LCP dust to be released into the atmosphere, thereby creating a potential health hazard to the workers and the general public. Apprise all workers, supervisory personnel, subcontractors, consultants, authorized visitors, occupants, and neighbors who will be at or near the project

site of the seriousness of the hazard and of proper work and protective procedures, which must be followed.

2. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants who may encounter, disturb, or otherwise function in the immediate vicinity of any identified lead paint, take appropriate continuous measures as necessary to protect all workers and the general public from the potential hazard of exposure to respirable airborne lead dust. Such measures shall include the procedures and methods described in the regulations of applicable federal, state, and local agencies. All possible safeguards, precautions, and protective measures shall be utilized to prevent exposure of any individual to lead particulates.

B. Description of Work:

1. Most of the paint at the project site was in generally intact condition and was found to contain lead, ranging in concentrations of 80 to 1,400 milligrams per kilogram (mg/kg) and are considered LCP. Refer to the *Draft Letter Report, Limited Asbestos and Lead Paint Survey, Leahi Hospital Walkway 165 Repairs Project, Honolulu, Oahu, Hawaii,* dated July 2019*,* prepared by Element Environmental, LLC.

2. Furnish all labor, materials, and equipment necessary to complete the safe and proper handling, treatment, removal, cleanup, transportation, and disposal of LCP, and associated LCP debris, as required, in compliance with all applicable laws and regulations concerning lead, including all incidental and pertinent operations.

C. Work Area Preparation:

1. Notice and Protection of Occupants: Inform occupants of the lead distrubance work. Protect occupants, spaces, and surrounding area from possible contamination.

2. Lead Work: During lead disturbance work, acceptable industry standard dust control methods shall be used to control dust such as, providing dust screens; using negative pressure enclosures; remove paint using manual methods; encapsulating material prior to disturbance; using amended water; wetting the materials to be removed by misting; removing items in large, whole pieces; avoiding crushing and pulverizing removal methods; and containerizing wet waste material, as applicable. Seal any penetrations to the affected work area with 6-mil polyethylene plastic sheeting and duct tape, if necessary. Separate the work area from non-work areas using two layers of 6-mil poly sheeting, if necessary.

3. Daily Cleanup: HEPA vacuum and wet clean surfaces and surrounding ground within the work area daily. Do not allow lead-painted/coated debris, paint chips, and dust to accumulate. Restrict the spread of dust and debris. Keep waste from being distributed

over the general area. Do not dry sweep or use compressed air to clean the area.

D. Air Monitoring:

1. Personal: The Contractor shall be responsible for his employees' personnel protection, personal air monitoring, and required certifications. Contractor shall collect daily personal air samples on at least 25% of the personnel performing removal work with the most exposure for a minimum of the first three days of work.

2. Ambient: The Qualified Consultant will develop the sampling locations and frequencies. The exact location of these sites shall be determined by the Contractor, consist of three locations (one upwind and two downwind of the work area), and be performed for 8-hours during of the actual disturbance of lead paint.

3. Monitoring may be discontinued if the Qualified Consuntant receives negative analytical laboratory reports, and sufficiently maintains the procedures resulting in negative determination for the duration of the project.

E. Cleanup and Clearance:

1. Waste Segregation: During the course of the work, the Contractor shall separate non-hazardous waste material (e.g., plastic sheeting, disposable tools, disposable protective suits, etc.) from potentially hazardous waste material (e.g., lead paint chips, debris, trash, etc.). The waste must be placed in UN-approved (49 CFR 178) and appropriately labeled containers. The waste containers shall be removed from the immediate work area and shall be stored onsite for TCLP testing.

2. Final Cleanup: When the lead work has been completed, the area will be cleaned of all visible lead paint contamination by vacuuming with a HEPA-filtered vacuum cleaner followed by wet mopping, where applicable.

3. Visual Clearance:

a. The Qualified Consultant shall visually inspect the affected surfaces for residual lead paint chips and accumulated dust before the eventual removal of the lead control area.

b. If the Qualified Consultant requests recleaning due to visual dust or residual paint chips, the process will be repeated until the clearance is obtained. The Contractor shall not remove the lead control area or roped-off perimeter and warning signs prior to the Hospital Manager’s receipt of the Qualified Consultant's lead clearance certification. Any additional clearance inspection initiated by the Contractor or required

due to failure of the first clearance inspection, shall be at the Contractor's expense.

F. Toxicity Characteristic Leaching Procedure (TCLP) Sampling and Analysis for Waste Disposal:

1. The Contractor shall be responsible for required waste stream sampling and analysis; and for obtaining waste disposal approval from the landfill.

G. Waste Transportation and Disposal:

1. Hazardous Waste: Local waste landfill facilities do not accept Resource Conservation and Recovery Act (RCRA) hazardous waste. All hazardous waste must be disposed of at an EPA-approved U.S. mainland RCRA hazardous waste disposal facility. All hazardous waste must be removed from the project site within 90 days of the waste being created for disposal.

2. Non-hazardous Waste: Non-hazardous lead waste and debris may be disposed of at the local waste landfill facility that is State-approved to accept such waste.

a. Notify Non-hazardous Waste Landfill Operator: The Contractor shall advise the Non-hazardous Waste landfill operator, at least twenty-four (24) hours prior to transportation, of the material to be delivered.

b. Provide the Non-hazardous Waste Landfill Operator with applicable TCLP results, which indicate that the waste material is non-hazardous.

END OF SECTION

Letter Report
Limited Asbestos and Lead Paint Survey

Leahi Hospital Walkway 165 Repairs Project
Honolulu, Oahu, Hawaii

Prepared for:

Hawaii Health Systems Corporation

Under contract to:

MKE Associates, LLC
99-205 Moanalua Road, Suite 205
Aiea, Hawaii 96701

Submitted by:

element environmental llc
environmental · engineering · water resources

98-030 Hekaha Street, Unit 9
Aiea, Hawaii 96701

July 2019

element environmental llc
environmental · engineering · water resources

July 11, 2019

Dr. Glenn Miyasato, Ph.D., P.E.
MKE Associates, LLC
99-205 Moanalua Road, Suite 205
Aiea, Hawaii 96701

Subject: **Limited Asbestos and Lead Paint Survey**
Leahi Hospital Walkway Repairs Project
Honolulu, Oahu, Hawaii
E2 Project 190023

Dear Dr. Miyasato:

Element Environmental, LLC (E2) is pleased to submit this Limited Asbestos and Lead Paint Survey report for the Hawaii Health Systems Corporation (HHSC), Leahi Hospital Walkway Repairs project, located in Honolulu, Oahu, Hawaii.

According to MKE Associates, LLC (MKE), there is corrosion of the steel framing for three suspended walkways at Leahi Hospital. (The three walkways are on three separate floors.) MKE will investigate the extent of the deterioration and determine the best course of action for repair. To reach the structural steel, the existing guardwall plaster as well as soffit and top of walkway finishes will probably need to be removed and replaced.

On February 15, 2019, the fieldwork was performed at only Walkway 165. Digital color photographs were taken to document the field investigation, and select photographs are included in Appendix A.

Asbestos Survey

The asbestos survey consisted of the collection of a total of 15 samples from the Leahi Hospital Walkway 165 from observed accessible components that may be affected by the construction project, i.e., five homogeneous sampling areas (HSAs) consisting of three samples each, collected from non-skid flooring, concrete floor, plaster wall, wall sealant, and floor joint compound/crack sealant. A HSA contains a material that appears uniform in color, texture, and function.

Bernice Balete (#HIASB-0449), the asbestos inspector who completed the bulk sampling, is certified in accordance with the inspector training requirements of the Asbestos Hazard Emergency Response Act (AHERA) and the State of Hawaii Department of Health (HDOH) Asbestos Inspector Certification Program (Hawaii Administrative Rules [HAR] 11-504). E2 is a HDOH-registered asbestos entity (#A-0120).

Forensic Analytical Laboratories, Inc. (Forensic) of Rancho Dominguez, California provided asbestos analytical services. Forensic is registered with the HDOH, Indoor and Radiological Health Branch, Asbestos Section (#L-06-002). Forensic is accredited by the California Environmental Laboratory Accreditation Program (ELAP) Branch (#1366); the American Industrial Hygiene Association (AIHA) under the Industrial Hygiene Laboratory Accreditation Program (IHLAP) for asbestos/fiber microscopy core (#101629); and the National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos fiber analysis (#101459-1). Samples were analyzed by polarized light microscopy (PLM) with dispersion staining (visual estimation), in accordance with United States (U.S.) Environmental Protection Agency (EPA) Interim Method of the Determination of Asbestos in Bulk Samples, Appendix E, Subpart E, 40 Code of Federal Regulations (CFR) 763, EPA Method 600/R-93-116, Visual Area Estimation, for standard building materials.

Results were compared to standard presence/absence criteria for asbestos, i.e., materials containing over 1% asbestos are considered asbestos-containing material (ACM). Table 1 provides suspect asbestos sample data results and locations; and Appendix B contains the complete suspect asbestos analytical laboratory report. Asbestos was not found in any of the bulk samples collected from the Leahi Hospital Walkway 165 during this field effort.

Lead Paint Survey

The lead paint survey consisted of the collection of six paint chip samples from the Leahi Hospital Walkway 165 from components that may be affected by the construction project.

Bernice Balete (#PB-0449), the paint inspector who completed the paint chip sampling, is certified by the HDOH Lead Activities Inspector Certification Program. E2 is a HDOH-registered lead-based paint (LBP) Activities entity (#PBF-0032).

Forensic also provided the lead analytical services. Forensic is accredited by the AIHA under the Environmental Lead Laboratory Accreditation Program (ELLAP), #101629. Samples were analyzed by Atomic Absorption Spectrometry (AAS), in accordance with EPA Method 3050B/7000B.

Results were compared to standard presence/absence criteria for lead, i.e., paint containing 0.5% by weight or 5,000 milligrams per kilogram (mg/kg) or more of total lead were considered LBP. Paint with any detectable amount of lead is considered lead-containing paint (LCP). Both LBP and LCP are worker protection issues.

Table 2 provides paint sample results and locations; and Appendix C contains the complete suspect lead paint chip sample analytical laboratory report. Of the paint samples collected from the Leahi Hospital Walkway 165:

- No paint samples are considered LBP (lead concentrations equal to or greater than 5,000 mg/kg);
- Five of the six paint samples are considered LCP with lead concentrations ranging from 80 to 1,400 mg/kg; and
- The remaining one sample (sample LH-W165-L4 from the off-white plaster upper wall was non-detect (ND) for lead above the laboratory reporting limit.

Conclusions

No asbestos was found in the bulk samples collected from the Leahi Hospital Walkway 165 during this field effort. Other inaccessible and/or hidden suspect materials not sampled during this field effort, but discovered during construction, should be assumed ACM until sampled and proven otherwise.

LCP was found in five of the six paint samples collected from the Leahi Hospital Walkway 165 during this field effort. The painted surfaces may be affected by the proposed work. Lead that will be encountered at the project site may require proper handling, removal, and/or disposal in accordance with Federal and State regulations. Appropriate worker protection measures for lead should be taken during the lead disturbance work. Metal debris should be recycled. A representative toxicity characteristic leaching procedure (TCLP) sample(s) of the remaining waste stream(s) may need to be collected and analyzed prior to landfill acceptance. The landfill should be consulted as to their requirements and procedures for the disposal of lead-contaminated waste and debris at their facility.

In addition, future documents should include appropriate plans and specifications to address handling, treatment, removal, recycling, storage, transportation, and/or disposal of any other suspect materials not sampled due to inaccessibility or hidden from view.

We appreciate the opportunity to have worked with you on this project. Should you have any questions or require additional information related to this project, please do not hesitate to call me at (808) 864-3952.

Sincerely,
Element Environmental, LLC

Ryan S. Yamauchi, P.E.
President

Attachments
Table 1: Bulk (Asbestos) Sample Results
Table 2: Paint Chip (Lead) Sample Results

Appendix A: Site Photographs
Appendix B: Bulk (Asbestos) Sample Analytical Laboratory Report
Appendix C: Paint Chip (Lead) Sample Analytical Laboratory Report

TABLE 1: BULK (ASBESTOS) SAMPLE RESULTS

Sample Number	Material Location	Type of Suspect ACM (Miscellaneous, Surfacing, or TSI)	Friability	Physical Condition	Potential for Disturbance	Color	Asbestos Present?	Total % Asbestos	Other Materials
LH-W165-F-01A	Exterior, Walkway 165 transition	Miscellaneous – strip of textured non-skid floor coating	non-friable	damaged	high	black, gray	No	ND	cellulose (trace)
LH-W165-F-01B	"	"	"	"	"	"	"	"	"
LH-W165-F-01C	"	"	"	"	"	"	"	"	"
LH-W165-F-02A	Exterior, Walkway 165	Miscellaneous - concrete floor	non-friable	intact	high	gray	No	ND	cellulose (trace)
LH-W165-F-02B	"	"	"	"	"	"	"	"	"
LH-W165-F-02C	"	"	"	"	"	"	"	"	"
LH-W165-W-01A	Exterior, Walkway 165	Miscellaneous - plaster upper wall	non-friable	damaged	low	gray	No	ND	cellulose (trace)
LH-W165-W-01B	"	"	"	"	"	"	"	"	"
LH-W165-W-01C	"	"	"	"	"	"	"	"	"
LH-W165-W-02A	Exterior, Walkway 165	Miscellaneous – (possible) upper wall crack sealant	non-friable	damaged	low	black, red-brown	No	ND	cellulose (trace), fibrous glass (trace)
LH-W165-W-02B	"	"	"	"	"	"	"	"	"
LH-W165-W-02C	"	"	"	"	"	"	"	"	"
LH-W165-M-01A	Exterior, Walkway 165	Miscellaneous - Floor joint compound	non-friable	intact	high	gray	No	ND	cellulose (trace)
LH-W165-M-01B	"	"	"	"	"	"	"	"	"
LH-W165-M-01C	"	Miscellaneous - Floor crack sealant	"	"	"	"	"	"	"

Notes:
LH = Leahi Hospital, W = Walkway
F = floor, W = wall, M = miscellaneous
ND = No Asbestos Detected
TSI = Thermal System Insulation

TABLE 2: PAINT CHIP (LEAD) SAMPLE RESULTS

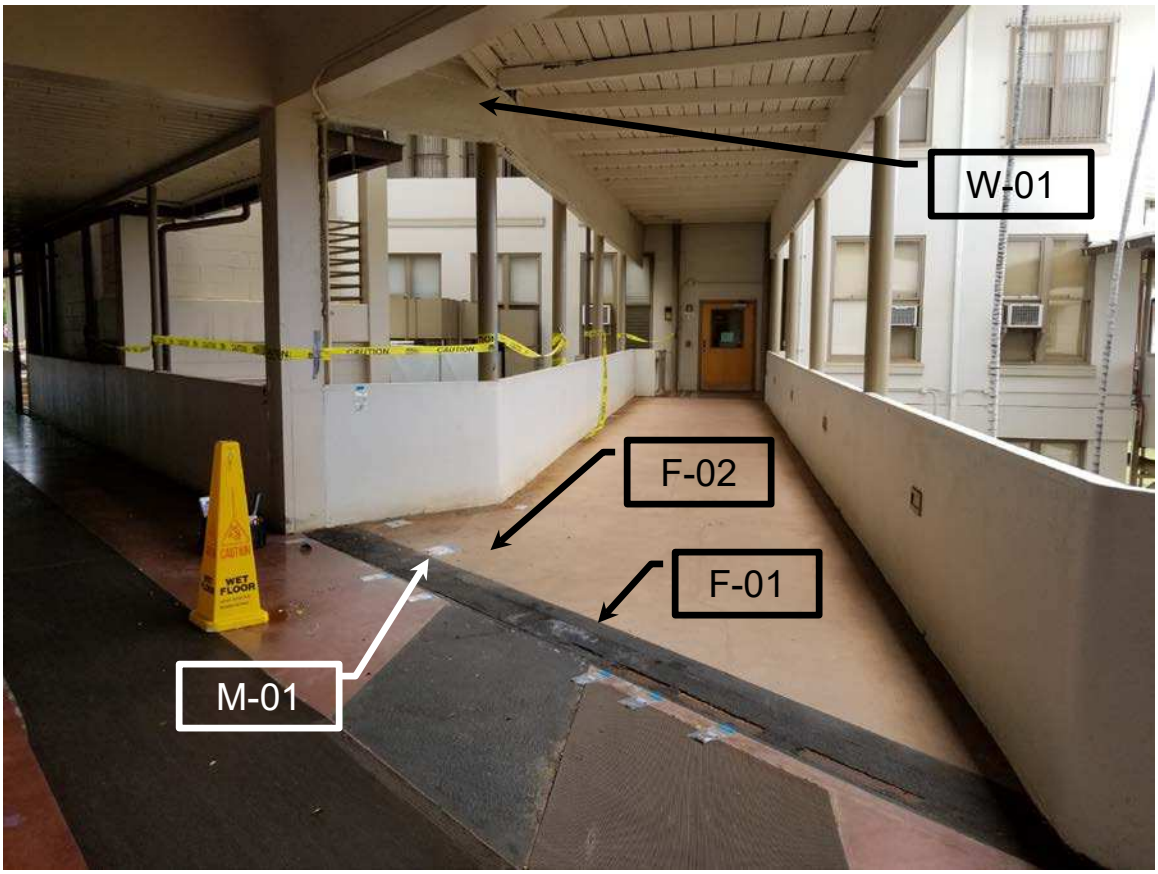
Sample Number	Material Location	Component	Substrate	Substrate Condition	Paint Color	Paint Condition	Lead Result (% by weight)	Lead Result (mg/kg)
LH-W165-L1	*Walkway 165*	*floor*	*concrete*	*good*	*Light brown*	*intact*	*0.034*	*340*
LH-W165-L2	*“*	*lower wall*	*plaster*	*good*	*Off-white*	*intact*	*0.012*	*120*
LH-W165-L3	*“*	*floor*	*textured non-skid coating*	*good*	*Black*	*fair*	*0.008*	*80*
LH-W165-L4	“	upper wall	plaster	poor	Off-white	intact	ND (<0.006)	ND (<60)
LH-W165-L5	*“*	*column*	*concrete*	*fair*	*Beige*	*poor*	*0.012*	*120*
LH-W165-L6	*“*	*posts between upper and lower walls*	*metal*	*fair*	*Dark brown*	*fair*	*0.14*	*1,400*

Notes:
LH = Leahi Hospital, W = Walkway
L = (suspected) lead
ND = lead was not detected above (the laboratory reporting limit)
Lead-Containing Paint (LCP) = lead content greater than laboratory reporting limit, but less than 0.5% by weight or 5,000 mg/kg
Lead-Based Paint (LBP) = lead content equal to or greater than 0.5% by weight or 5,000 mg/kg

APPENDIX A

Site Photographs

Walkway 165, Leahi Hospital, Honolulu, Oahu, Hawaii (February 15, 2019)



Approximate
Bulk (Asbestos) Sample Locations

Walkway 165, Leahi Hospital, Honolulu, Oahu, Hawaii (February 15, 2019)

Photo 1 – Non-ACM LH-W165-F-01A

Photo 2 – Non-ACM LH-W165-F-02B and F-02A

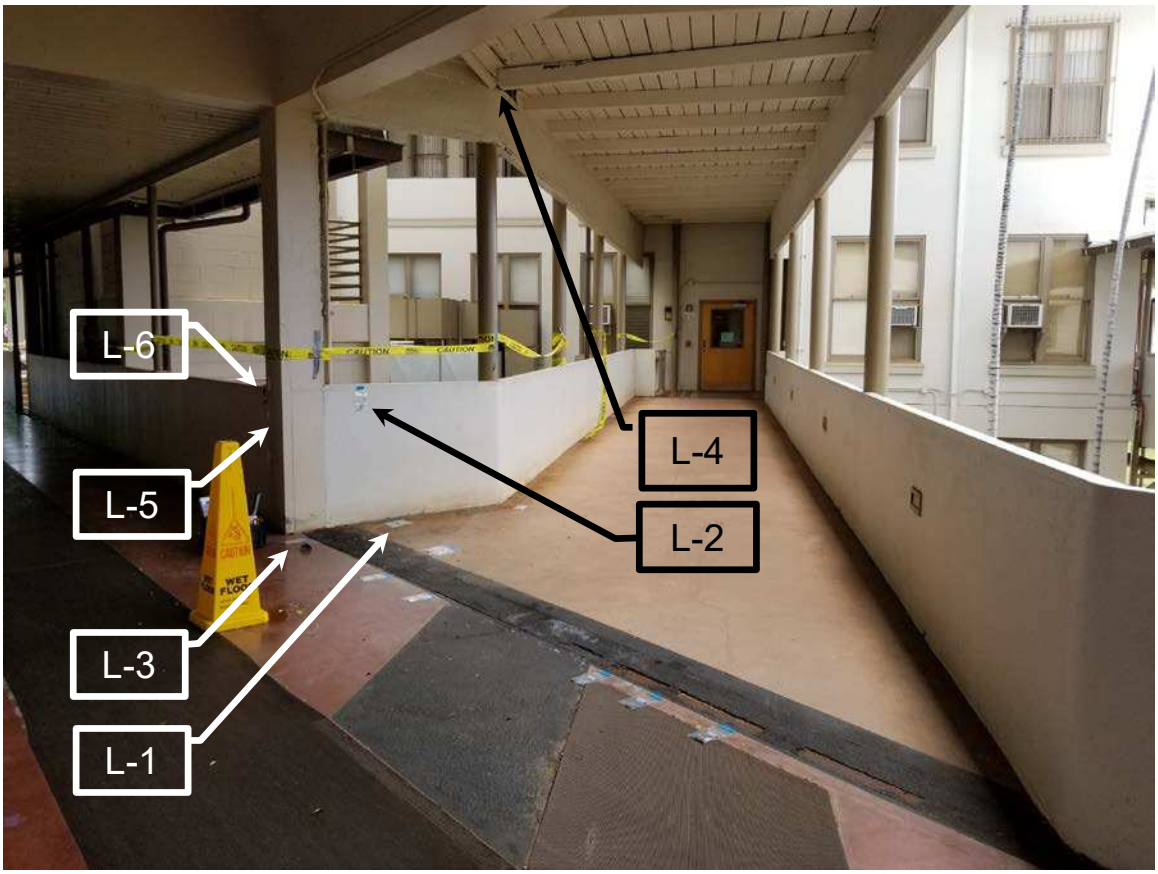
Photo 3 – Non-ACM LH-W165-W-01A and W-01B

Photo 4 – Non-ACM LH-W165-W-02A and W-02C

Photo 5 – Non-ACM LH-W165-M-01A (on right)

Photo 6 – Non-ACM LH-W165-M-01C

Walkway 165, Leahi Hospital, Honolulu, Oahu, Hawaii (February 15, 2019)



Approximate Paint Chip (Lead) Sample Locations

Walkway 165, Leahi Hospital, Honolulu, Oahu, Hawaii (February 15, 2019)

Photo 7 – LCP LH-W165-L1

Photo 8 – LCP LH-W165-L2

Photo 9 – LCP LH-W165-L3

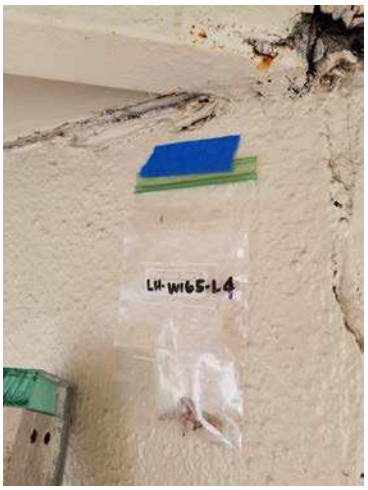


Photo 10 – Non-Lead LH-W165-L4

Photo 11 – LCP LH-W165-L5

Photo 12 – LCP LH-W165-L6

APPENDIX B

Bulk (Asbestos) Sample
Analytical Laboratory Report

Forensic Analytical LABORATORIES

Final Report

Bulk Asbestos Analysis

(EPA Method 40CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93-116, Visual Area Estimation)

Element Environmental, LLC
Bernice Balete
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

Client ID: L1617
Report Number: B273320
Date Received: 02/20/19
Date Analyzed: 02/27/19
Date Printed: 02/27/19
First Reported: 02/27/19

Job ID/Site: Pending, Leahi Hospital Walkway 165, Honolulu, Oahu, Hawaii

FALI Job ID: L1617
Total Samples Submitted: 15
Total Samples Analyzed: 15

Date(s) Collected: 02/15/2019

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
LH-W165-F-01A	51210344						
Layer: Black Coating with Stones			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
LH-W165-F-01B	51210345						
Layer: Black Coating with Stones			**ND**				
Layer: Grey Cementitious Material			**ND**				
Layer: Beige Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
LH-W165-F-01C	51210346						
Layer: Black Coating with Stones			**ND**				
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
LH-W165-F-02A	51210347						
Layer: Off-White Non-Fibrous Material			**ND**				
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
LH-W165-F-02B	51210348						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
LH-W165-F-02C	51210349						
Layer: Off-White Non-Fibrous Material			**ND**				
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
LH-W165-W-01A	51210350						
Layer: Grey Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

2959 Pacific Commerce Drive, Rancho Dominguez, CA 90221 / Telephone: (310) 763-2374 (888) 813-9417 / Fax: (310) 763-8684

Report Number: B273320
Client Name: Element Environmental, LLC **Date Printed:** 02/27/19

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
LH-W165-W-01B	51210351						
Layer: Grey Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
LH-W165-W-01C	51210352						
Layer: Grey Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
LH-W165-W-02A	51210353						
Layer: Paint/Coating			**ND**				
Layer: Black Non-Fibrous Material			**ND**				
Layer: Red-Brown Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Fibrous Glass (Trace)		**Asbestos (ND)**					
LH-W165-W-02B	51210354						
Layer: Paint/Coating			**ND**				
Layer: Red-Brown Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Fibrous Glass (Trace)		**Asbestos (ND)**					
LH-W165-W-02C	51210355						
Layer: Paint/Coating			**ND**				
Layer: Black Non-Fibrous Material			**ND**				
Layer: Red-Brown Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Fibrous Glass (Trace)		**Asbestos (ND)**					
LH-W165-M-01A	51210356						
Layer: Paint/Coating			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
LH-W165-M-01B	51210357						
Layer: Paint/Coating			**ND**				
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
LH-W165-M-01C	51210358						
Layer: Paint/Coating			**ND**				
Layer: Black Coating with Stones			**ND**				
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

2959 Pacific Commerce Drive, Rancho Dominguez, CA 90221 / Telephone: (310) 763-2374 (888) 813-9417 / Fax: (310) 763-8684

Report Number: B273320

Client Name: Element Environmental, LLC **Date Printed:** 02/27/19

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer

Tiffani Ludd, Laboratory Supervisor, Rancho Dominguez Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Forensic Analytical LABORATORIES

Analysis Request Form (COC)

Client Name & Address: Element Environmental, LLC 98-030 Hekaha Street, Uni 9 Aiea, Hawaii 96701	Client No.: L1617
Contact: Bernice Balete	Phone: (808) 389-4792
E-mail: bbalete@e2hi.com	
Site Name: Leahi Hospital Walkway 165	
Site Location: Honolulu, Oahu, Hawaii	
PO / Job#: PENDING	Date: 2/15/2019
Turn Around Time: Same Day / 1Day / 2Day / 3Day / 4Day / 5Day	
☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer	
☒ PLM: ☒ Standard / ☐ Point Count 400 - 1000 / ☐ CARB 435	
☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402 ☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield ☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight % ☐ TEM Microvac: ☐ Qual / ☐ D5755(str/area) / ☐ D5756(str/mass)	
☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot ☐ Particle Identification (TEM LAB) ☐ Special Project	
☐ Metals Analysis Matrix: Method: Analytes:	
Comments: **Page 1 of 2**	☐ Silica in Air ☐ w/Gravimetry ☐ Quartz Only

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
LH-W165-F-01A	2/15/19	Black textured non-skid floor coating	A P C				
LH-W165-F-01B	2/15/19	Black texturedn on-skid floor coating	A P C				
LH-W165-F-01C	2/15/19	Black textured non-skid floor coating	A P C				
LH-W165-F-02A	2/15/19	Concrete floor	A P C				
LH-W165-F-02B	2/15/19	Concrete floor	A P C				
LH-W165-F-02C	2/15/19	Concrete floor	A P C				
LH-W165-W-01A	2/15/19	Plaster upper wall	A P C				
LH-W165-W-01B	2/15/19	Plaster upper wall	A P C				
LH-W165-W-01C	2/15/19	Plaster upper wall	A P C				
LH-W165-W-02A	2/15/19	possible Upper wall crack sealant	A P C				

Sampled By: Bernice Balete Date/Time: 2/15/2019 Shipped Via: ☒ Fed Ex ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished By: Bernice Balete Date / Time: 2/19/2019 @ 1200	Relinquished By: Date / Time:	Relinquished By: Date / Time:
Received By: FLS Date / Time: 02-20-19 10:10 Condition Acceptable? ☒ Yes ☐ No	Received By: Date / Time: Condition Acceptable? ☐ Yes ☐ No	Received By: Date / Time: Condition Acceptable? ☐ Yes ☐ No

Forensic Analytical LABORATORIES

Analysis Request Form (COC)

Client Name & Address: Element Environmental, LLC 98-030 Hekaha Street, Uni 9 Aiea, Hawaii 96701	Client No.: L1617
PO / Job#: PENDING	Date: 2/15/2019
Turn Around Time: Same Day / 1Day / 2Day / 3Day / 4Day / 5Day	
☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer	
☒ PLM: ☒ Standard / ☐ Point Count 400 - 1000 / ☐ CARB 435	
Contact: Bernice Balete	Phone: (808) 389-4792
☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402 ☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield ☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight % ☐ TEM Microvac: ☐ Qual / ☐ D5755(str/area) / ☐ D5756(str/mass)	
E-mail: bbalete@e2hi.com	
Site Name: Leahi Hospital Walkway 165	☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot ☐ Particle Identification (TEM LAB) ☐ Special Project
Site Location: Honolulu, Oahu, Hawaii	☐ Metals Analysis Matrix: Method: Analytes:
Comments: **Page 2 of 2**	☐ Silica in Air ☐ w/Gravimetry ☐ Quartz Only

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
LH-W165-W-02B	2/15/19	possible Upper wall crack sealant	A P C				
LH-W165-W-02C	2/15/19	possible Upper wall crack sealant	A P C				
LH-W165-M-01A	2/15/19	Floor joint compound	A P C				
LH-W165-M-01B	2/15/19	Floor joint compound	A P C				
LH-W165-M-01C	2/15/19	Floor crack sealant	A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Sampled By: Bernice Balete Date/Time: 2/15/2019 Shipped Via: ☒ Fed Ex ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished By: Bernice Balete Date / Time: 2/19/2019 @ 1200	Relinquished By: Date / Time:	Relinquished By: Date / Time:
Received By: FIE Date / Time: 02-20-19 10:10 Condition Acceptable? ☐ Yes ☐ No	Received By: Date / Time: Condition Acceptable? ☐ Yes ☐ No	Received By: Date / Time: Condition Acceptable? ☐ Yes ☐ No

APPENDIX C

Paint Chip (Lead) Sample
Analytical Laboratory Report

Forensic Analytical LABORATORIES

Final Report

Metals Analysis of Paints

(AIHA-LAP, LLC Accreditation, Lab ID #101629)

Element Environmental, LLC
Bernice Balete
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

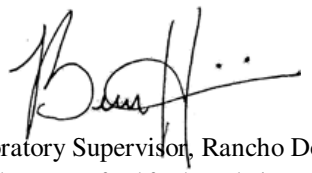
Client ID: L1617
Report Number: M207856
Date Received: 02/20/19
Date Analyzed: 02/27/19
Date Printed: 02/27/19
First Reported: 02/27/19

Job ID / Site: PENDING; Leahi Hospital Walkway 165, Honolulu, Oahu, Hawaii
Date(s) Collected: 02/15/19

FALI Job ID: L1617
Total Samples Submitted: 6
Total Samples Analyzed: 6

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
LH-W165-L1	LM165956	Pb	0.034	wt%	0.008	EPA 3050B/7000B
LH-W165-L2	LM165957	Pb	0.012	wt%	0.006	EPA 3050B/7000B
LH-W165-L3	LM165958	Pb	0.008	wt%	0.007	EPA 3050B/7000B
LH-W165-L4	LM165959	Pb	< 0.006	wt%	0.006	EPA 3050B/7000B
LH-W165-L5	LM165960	Pb	0.012	wt%	0.007	EPA 3050B/7000B
LH-W165-L6	LM165961	Pb	0.14	wt%	0.007	EPA 3050B/7000B

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.



Beatriz Hinojosa, Laboratory Supervisor, Rancho Dominguez Laboratory

2959 Pacific Commerce Drive, Rancho Dominguez, CA 90221 / Telephone: (310) 763-2374 (888) 813-9417 / Fax: (310) 763-8684

Forensic Analytical LABORATORIES

Analysis Request Form (COC)

Client Name & Address: Element Environmental, LLC 98-030 Hekaha Street, Uni 9 Aiea, Hawaii 96701	Client No.: L1617
PO / Job#: PENDING	Date: 2/15/2019
Turn Around Time: Same Day / 1Day / 2Day / 3Day / 4Day / 5Day	
☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer	
☐ PLM: ☐ Standard / ☐ Point Count 400 - 1000 / ☐ CARB 435	
Contact: Bernice Balete	Phone: (808) 389-4792
E-mail: bbalete@e2hi.com	☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402 ☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield ☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight % ☐ TEM Microvac: ☐ Qual / ☐ D5755(str/area) / ☐ D5756(str/mass)
Site Name: Leahi Hospital Walkway 165	☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot ☐ Particle Identification (TEM LAB) ☐ Special Project
Site Location: Honolulu, Oahu, Hawaii	☒ Metals Analysis Matrix: Paint Chip Method: EPA 3050B/7000B Analytes: Lead
Comments: **Page 1 of 1**	☐ Silica in Air ☐ w/Gravimetry ☐ Quartz Only

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
LH-W165-L1	2/15/19	Light brown concrete floor	A P C				
LH-W165-L2	2/15/19	Off-white lower wall	A P C				
LH-W165-L3	2/15/19	Black textured non-skid floor coating	A P C				
LH-W165-L4	2/15/19	Off-white upper wall	A P C				
LH-W165-L5	2/15/19	Beige concrete column	A P C				
LH-W165-L6	2/15/19	Dark brown metal posts between upper and lower walls	A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Sampled By: Bernice Balete Date/Time: 2/15/2019 Shipped Via: ☒ Fed Ex ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished By: Bernice Balete Date / Time: 2/19/2019 @ 1200	Relinquished By: Date / Time:	Relinquished By: Date / Time:
Received By: FE Date / Time: 02-20-19 10:10 Condition Acceptable? ☐ Yes ☐ No	Received By: Date / Time: Condition Acceptable? ☐ Yes ☐ No	Received By: Date / Time: Condition Acceptable? ☐ Yes ☐ No

Forensic Analytical Laboratories may subcontract client samples to other FAL locations to meet client requests.

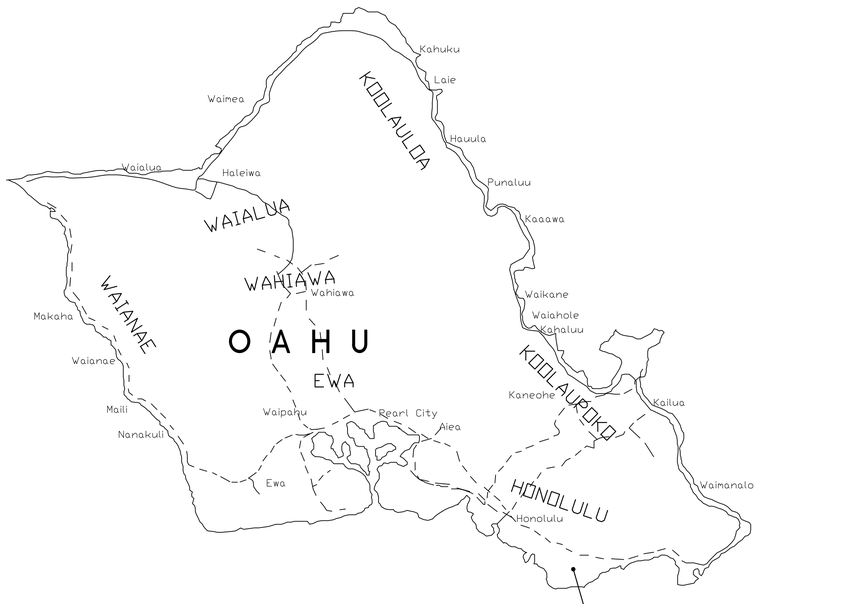
San Francisco Office: 3777 Depot Road, Suite 409, Hayward, CA 94545-2761 • Phone: 510/887-8828 • 800/827-3274
Los Angeles Office: 2959 Pacific Commerce Drive, Rancho Dominguez, CA 90221 • Phone: 310/763-2374 • 888/813-9417
Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, NV 89119 • Phone: 702/784-0040

LEAHI HOSPITAL SUSPENDED WALKWAY REPAIRS

3675 KILAUEA AVENUE
HONOLULU, HAWAII 96816

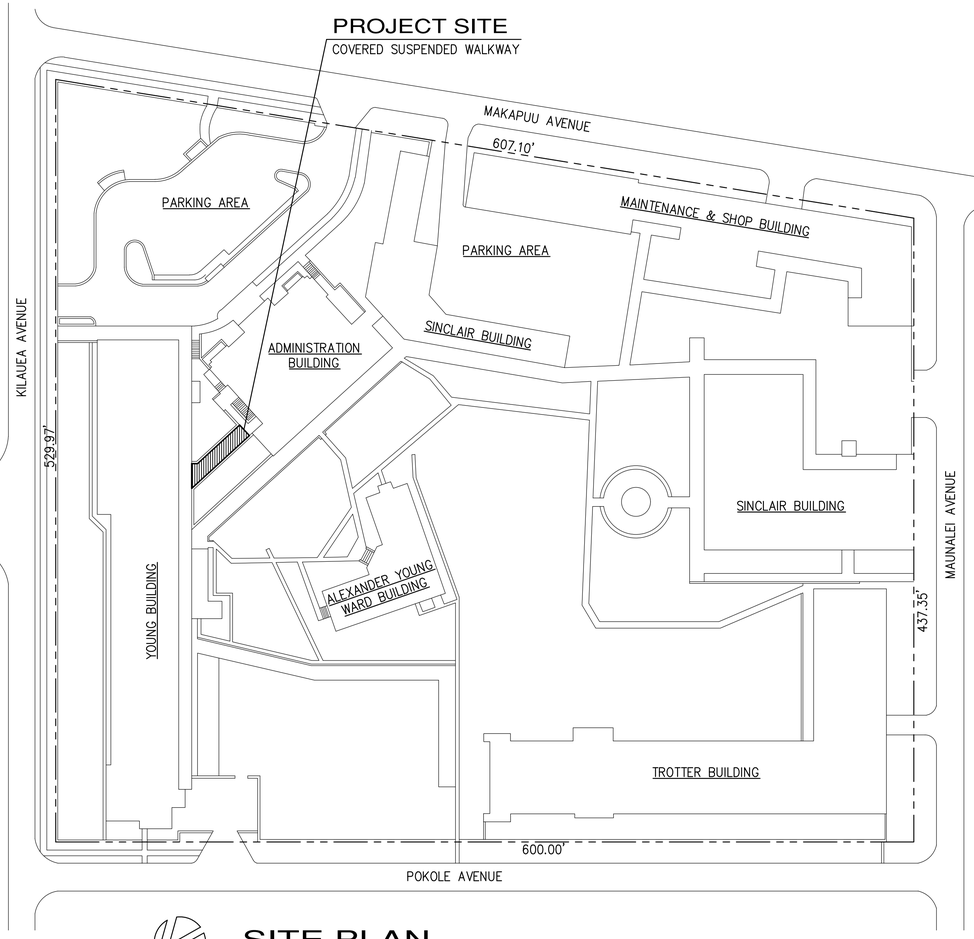
TMK: 3-2-031:001

INDEX TO DRAWINGS	
SHEET NO.	TITLE
T-1	TITLE SHEET, INDEX TO DRAWINGS, LOCATION MAP, VICINITY MAP AND SITE PLAN
S-1	GENERAL NOTES
S-2	FLOOR PLANS
S-3	SECOND FLOOR PARTIAL FRAMING PLAN
S-4	SECTIONS
W-1	PAINTING & WATERPROOFING NOTES AND DETAIL



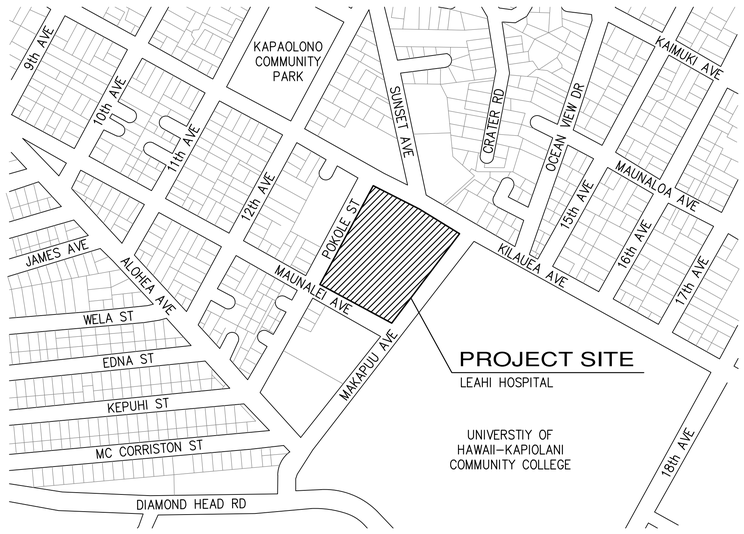
NORTH

LOCATION MAP
NOT TO SCALE



NORTH

SITE PLAN
NOT TO SCALE



NORTH

VICINITY MAP
NOT TO SCALE

MKE ASSOCIATES LLC
Structural Engineers

Aiea Commercial Center
Suite 205
99-205 Moanalua Road
Aiea, HI 96701

Phone: (808) 488-7579
Fax: (808) 488-7818
E-Mail: mke@mkellc.com

GLENN H. MIYASATO
LICENSED PROFESSIONAL ENGINEER
No. 8121-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION
EXP 4-30-20

Date	Revision

Project Title
LEAHI HOSPITAL SUSPENDED WALKWAY REPAIRS
3675 KILAUEA AVENUE
HONOLULU, HI 96816
TMK: 3-2-031:001

Sheet Title
TITLE SHEET, INDEX TO DRAWINGS, LOCATION MAP, VICINITY MAP AND SITE PLAN

Date	DEC 2019
Scale	AS NOTED
Project No.	2332
Designed	GM
Drawn	DL
Checked	GM

Sheet
T-1
Sheet 1 of 6 Sheets

Plotted: Dec 13, 2019 - 3:56pm

GENERAL NOTES:

1. THE PURPOSE OF THIS PROJECT IS TO REPAIR CORRODED WALKWAY FRAMING. THE WORK OF THIS PROJECT DOES NOT CHANGE OR AFFECT OCCUPANCY, USE, PARKING, LAND-USE (INCLUDING FLOOR AREA AND OPEN SPACE), EGRESS, AND FIRE-PROTECTION.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE LAND USE ORDINANCE OF THE CITY AND COUNTY OF HONOLULU AND THE INTERNATIONAL BUILDING CODE (IBC) WITH LOCAL AMENDMENTS.
3. SHOULD ANYTHING CONTAINED IN THE DRAWINGS OR SPECIFICATIONS BE AT VARIANCE WITH THE ABOVE CODES AND ORDINANCES, THE ENGINEER SHALL BE NOTIFIED IN WRITING PRIOR TO COMMENCEMENT OF THE WORK.
4. THE STRUCTURE WILL REMAIN IN USE DURING THE WORK.
5. MAINTAIN EGRESS CORRIDORS AND PATHS, (INCLUDING STAIRWAYS) AT ALL TIMES.
6. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER.
7. ALL CONTRACTORS SHALL BE FULLY LICENSED AND INSURED FOR THE WORK THEY PERFORM, AS REQUIRED BY LEAHI HOSPITAL, AND BY STATUTE.
8. ALL CONTRACTORS WORKING ON THE PROJECT SHALL THOROUGHLY EXAMINE DRAWINGS AND SPECIFICATIONS AND EXISTING CONDITIONS. SUBMIT QUESTIONS AND/OR REQUESTS FOR CLARIFICATION PRIOR TO COMMENCEMENT OF THE WORK. CLAIMS BASED ON LACK OF UNDERSTANDING OF DRAWINGS AND SPECIFICATIONS AFTER COMMENCEMENT OF THE WORK WILL NOT BE HONORED.
9. WHERE SHOWN, WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. ALL DIMENSIONS SHALL BE VERIFIED AT SITE.
10. ALL CONTRACTORS SHALL PROVIDE ALL LABOR AND EQUIPMENT AS REQUIRED FOR COMPLETION OF THE WORK AS SHOWN.
11. ALL CONTRACTORS SHALL SUPPLY ADEQUATE SUPERVISION OF THEIR WORK AT ALL TIMES.
12. NO EXTRA WORK SHALL BE PERFORMED, OR ADDITIONAL CHARGES MADE UNLESS PRIOR WRITTEN AUTHORIZATION IS OBTAINED FROM THE OWNER.
13. IT IS THE RESPONSIBILITY OF ALL CONTRACTORS TO COORDINATE THEIR WORK WITH BUILDING MANAGEMENT AND OTHERS. CLAIMS OF INTERFERENCE SHALL NOT BE HONORED.
14. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO COVER A COMPLETE WORK WITHOUT GIVING EVERY DETAIL. ANY ITEM OR ASSEMBLY CALLED FOR IN EITHER DRAWINGS OR SPECIFICATIONS, OR GENERALLY RECOGNIZED AS NECESSARY FOR BEST RESULTS, SHALL BE INCLUDED IN THE CONTRACTORS PROPOSAL AND THE FINISHED WORK.
15. ANY AND ALL QUESTIONS REGARDING PROJECT SCOPE OR DETAILS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORK.
16. SUBMIT SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND MOCK-UPS AS NOTED OR SPECIFIED, AND AS REQUIRED AND REQUESTED BY THE ENGINEER.
17. PREMISES SHALL BE KEPT CLEAN AND NEAT AT ALL TIMES. ADEQUATE TRASH AND DEBRIS STORAGE FACILITIES SHALL BE CONSTANTLY MAINTAINED BY THE CONTRACTOR, AND THE JOB SITE COMPLETELY CLEANED AT REGULAR INTERVALS OF NO GREATER THAN ONE WEEK.

STRUCTURAL NOTES:

1. WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE BUILDING CODE OF THE CITY AND COUNTY OF HONOLULU (AMENDED IBC, 2006 EDITION). HOWEVER, WHERE REFERENCE IS MADE TO PERFORMANCE CONFORMING TO OTHER STANDARDS THE MORE STRINGENT SHALL APPLY.
2. THE CONTRACTOR SHALL COMPARE ALL THE CONTRACT DOCUMENTS WITH EACH OTHER AND REPORT IN WRITING TO THE ARCHITECT ALL INCONSISTENCIES AND OMISSIONS.
3. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND VERIFY FIELD CONDITIONS AND SHALL COMPARE SUCH FIELD MEASUREMENTS AND CONDITIONS WITH THE DRAWINGS BEFORE COMMENCING WORK. REPORT IN WRITING TO THE ARCHITECT ALL INCONSISTENCIES AND OMISSIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR METHODS OF CONSTRUCTION, WORKMANSHIP AND JOB SAFETY. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING AS REQUIRED FOR STABILITY OF STRUCTURAL MEMBERS AND SYSTEMS.
6. CONSTRUCTION LOADING SHALL NOT EXCEED DESIGN LIVE LOAD UNLESS SPECIAL SHORING IS PROVIDED. ALLOWABLE LOADS SHALL BE REDUCED IN AREAS WHERE THE STRUCTURE HAS NOT ATTAINED FULL DESIGN STRENGTH.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE ADJACENT PROPERTIES, STRUCTURES, STREETS AND UTILITIES DURING THE CONSTRUCTION PERIOD.
8. DETAILS NOTED AS TYPICAL ON THE STRUCTURAL DRAWINGS SHALL APPLY IN ALL CONDITIONS UNLESS SPECIFICALLY SHOWN OR NOTED.
9. THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY, AND ENVIRONMENTAL QUALITY.
10. ACCESS TO SITE, MATERIAL/EQUIPMENT STORAGE AREAS, USE IF PARKING SPACES, AND CONSTRUCTION TRAFFIC WILL BE IN ACCORDANCE WITH OWNER'S INSTRUCTIONS.
11. ANY NECESSARY TEMPORARY CLOSURE OF SELECTED PORTIONS OF THE WALKWAYS SHALL BE COORDINATED WITH THE OWNER PRIOR TO PERFORMANCE OF THE WORK, SO AS TO MINIMIZE THE IMPACT TO OCCUPANTS. THE CONTRACTOR SHALL PROVIDE SHIELDING OR COVERING OF WELDING OPERATIONS AS NECESSARY TO PROTECT BUILDING OCCUPANTS.

SPECIAL INSPECTION:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT SPECIAL INSPECTION OF PORTIONS OF THE WORK, AS REQUIRED BY THE BUILDING CODE OF THE CITY AND COUNTY OF HONOLULU, BE MADE AT THE APPROPRIATE TIME. THE CONTRACTOR SHALL GIVE TIMELY NOTICE OF WHEN AND WHERE INSPECTIONS ARE TO BE MADE AND PROVIDE ACCESS FOR THE INSPECTOR. THE CONTRACTOR SHALL CORRECT DEFECTIVE WORK AT NO ADDITIONAL COST TO THE OWNER AND PAY FOR RE-INSPECTION.
2. THE FOLLOWING STRUCTURAL WORK REQUIRES SPECIAL INSPECTION:
   a. BOLTS INSTALLED IN CONCRETE
   b. STRUCTURAL WELDING

CONCRETE:

1. CONCRETE CONSTRUCTION SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE ACI 318-05.
2. [CONCRETE SHALL BE REGULAR WEIGHT HARD ROCK CONCRETE AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.]
3. MAXIMUM WATER TO CEMENTITIOUS MATERIALS RATIO SHALL BE 0.40.
4. ALL INSERTS, ANCHOR BOLTS, PLATES, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE HOT-DIPPED GALVANIZED UNLESS OTHERWISE NOTED.
5. REINFORCING BARS, ANCHOR BOLTS, INSERTS, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE SECURED IN POSITION PRIOR TO PLACEMENT OF CONCRETE.
6. NON-SHRINK GROUT SHALL BE A PREMIXED NON-METALLIC FORMULA, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 1 DAY AND 5,000 PSI IN 28 DAYS.

STRUCTURAL STEEL:

1. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION, THIRTEENTH EDITION.
2. STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE NOTED.
3. COLD-FORMED HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500, GRADE C OR ASTM A1085.
4. HEADED ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 36, GALVANIZED.
5. EPOXY SHALL BE SIMPSON SET XP BY SIMPSON STRONG-TIE.
6. WELDS AND WELDING PROCEDURES SHALL CONFORM TO THE STRUCTURAL WELDING CODE AWS D1.1 OF THE AMERICAN WELDING SOCIETY.
7. WELDING SHALL BE PERFORMED BY WELDERS PREQUALIFIED FOR WELDING PROCEDURES TO BE USED.
8. WELDING ELECTRODES SHALL BE E70XX.
9. STEEL SHALL BE HOT-DIPPED GALVANIZED.
10. GALVANIZING REPAIR PAINT SHALL CONFORM WITH ASTM A780.

ENVIRONMENTAL NOTES:

1. ENVIRONMENTAL SAMPLING RESULTS ARE CONTAINED IN THE LETTER REPORT, LIMITED ASBESTOS AND LEAD PAINT SURVEY, LEAHI HOSPITAL WALKWAY REPAIRS PROJECT, HONOLULU, OAHU, HAWAII, DATED JULY 2019, PREPARED BY ELEMENT ENVIRONMENTAL, LLC.
2. ALL WORK ASSOCIATED WITH THE LEAD PAINT ACTIVITIES SHALL COMPLY WITH SPECIFICATION SECTION 13282 – LEAD-CONTAINING PAINT CONTROL MEASURES, AND OTHER PERTINENT SECTIONS, PROVIDED IN THE SPECIFICATION PACKAGE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ABATEMENT, HANDLING, RECYCLING, AND/OR DISPOSAL OF ANY OTHER SUSPECT HAZARDOUS MATERIALS NOT SAMPLED DUE TO INACCESSIBILITY OR HIDDEN FROM VIEW AND SHALL BE CHARGED TO THE FORCE ACCOUNT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WASTE DISPOSAL APPROVAL FROM THE LANDFILL PRIOR TO START OF WORK.

MKE ASSOCIATES LLC
Structural Engineers

Aiea Commercial Center
Suite 205
99-205 Moanalua Road
Aiea, HI 96701

Phone: (808) 488-7579
Fax: (808) 488-7818
E-Mail: mke@mkellc.com

GLENN H. MIYASATO
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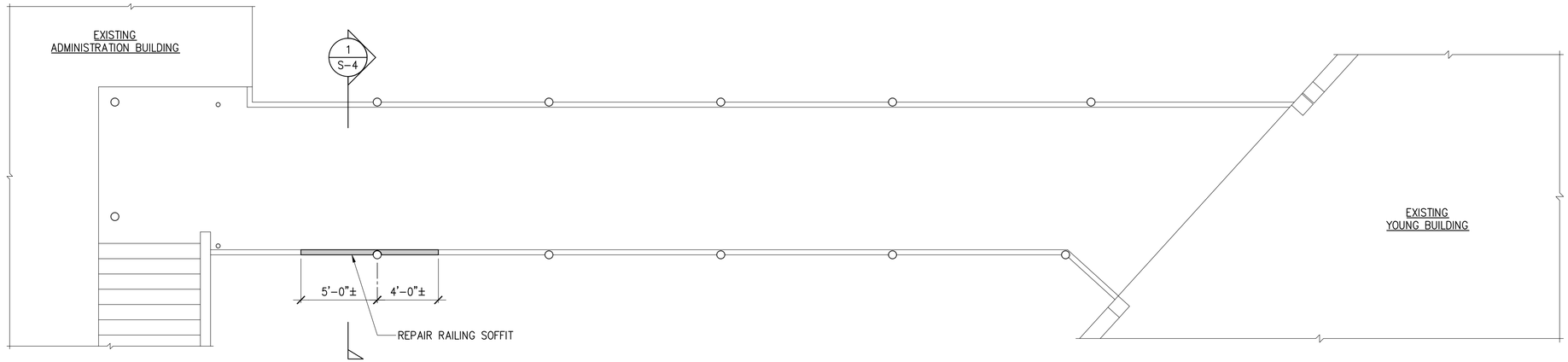
3675 KILAUEA AVENUE
HONOLULU, HI 96816
TMK: 3-2-031:001

Sheet Title
GENERAL NOTES

Date	DEC 2019
Scale	AS NOTED
Project No.	2332
Designed	GM
Drawn	DL
Checked	GM

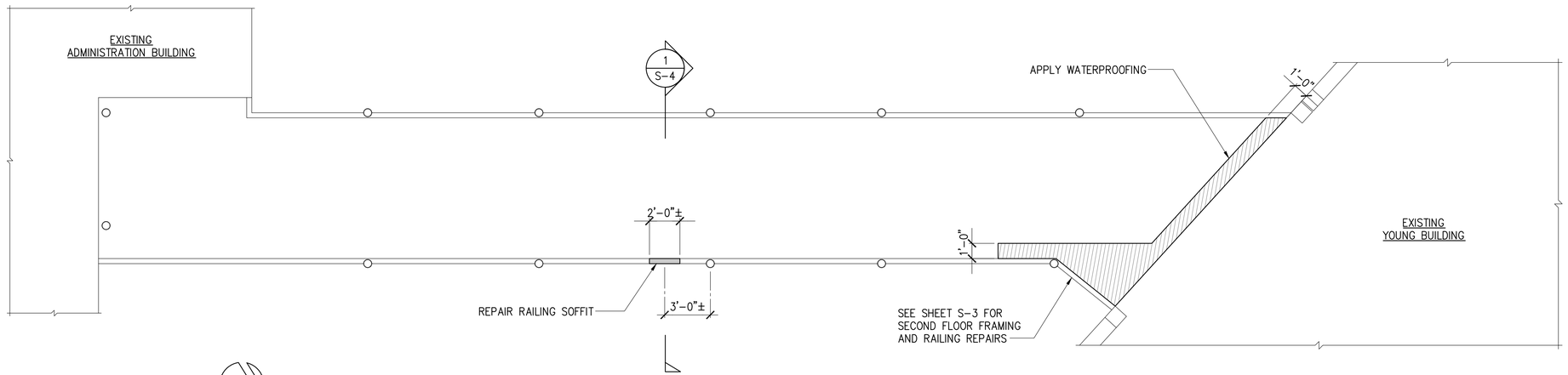
Sheet
S-1



FIRST FLOOR PLAN

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

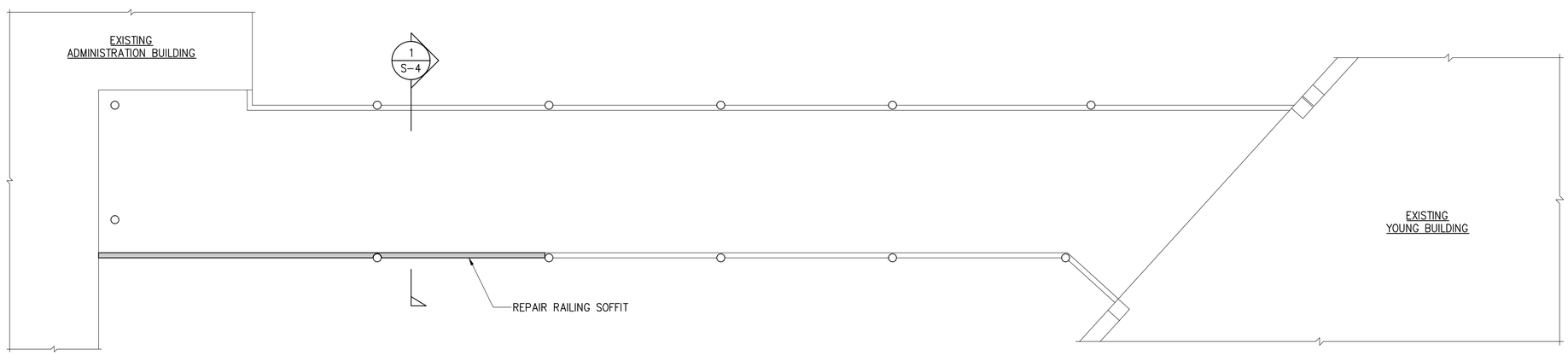
NORTH



SECOND FLOOR PLAN

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

NORTH



THIRD FLOOR PLAN

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

NORTH

Plotted: Dec 13, 2019 - 4:03pm

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EXP 4-30-20

Date	Revision

Project Title
LEAHI HOSPITAL SUSPENDED WALKWAY REPAIRS
3675 KILAUEA AVENUE
HONOLULU, HI 96816
TMK: 3-2-031:001

Sheet Title
FLOOR PLANS

Date	DEC 2019
Scale	AS NOTED
Project No.	2332
Designed	GM
Drawn	DL
Checked	GM

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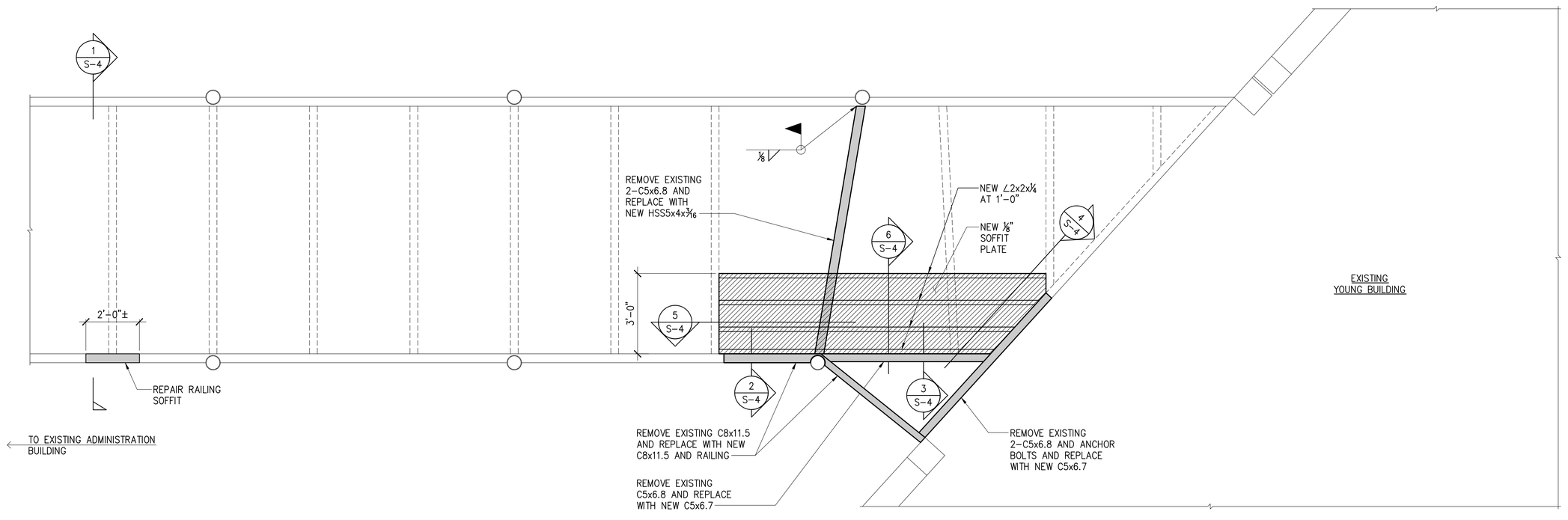

SECOND FLOOR PARTIAL FRAMING PLAN

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

NORTH

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3675 KILAUEA AVENUE
HONOLULU, HI 96816
TMK: 3-2-031:001

Sheet Title
SECOND FLOOR PARTIAL FRAMING PLAN

Date	DEC 2019
Scale	AS NOTED
Project No.	2332
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Drawn	DL
Checked	GM

Sheet
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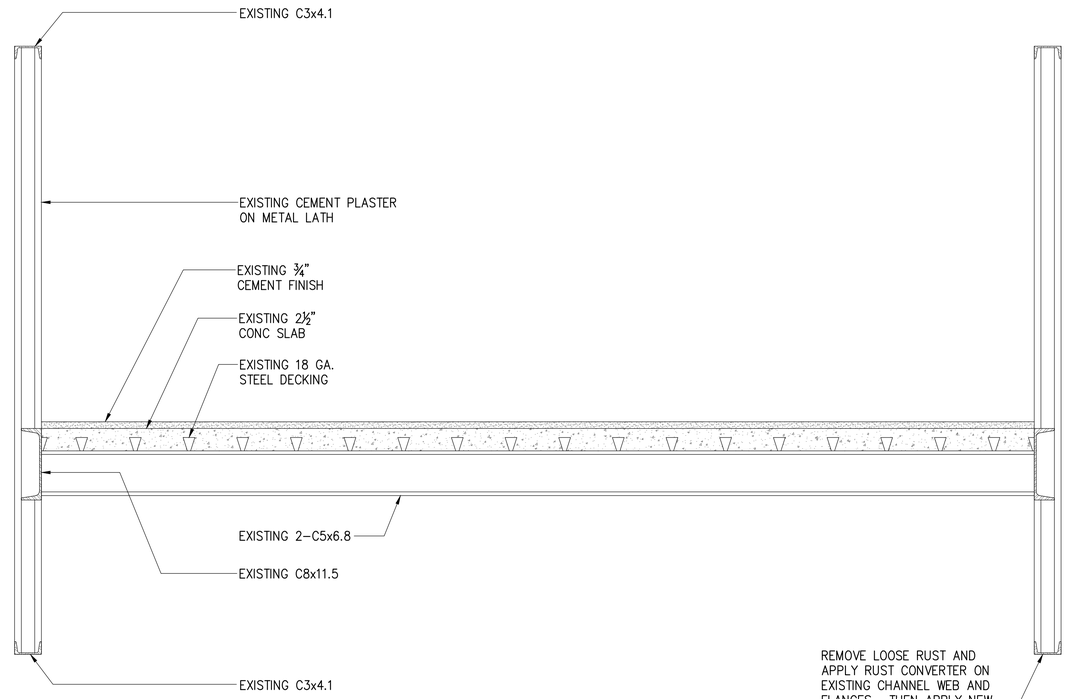
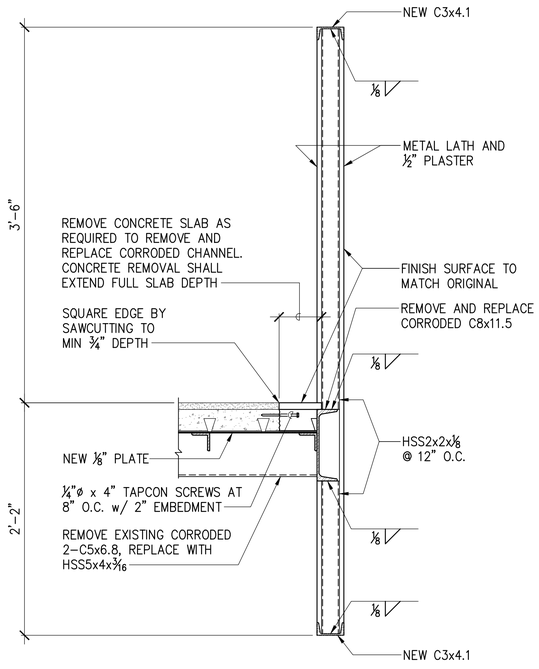
Sheet 4 of 6 Sheets

Plotted: Dec 13, 2019 - 4:54pm



1 S–4 TYPICAL RAILING SOFFIT REPAIR SECTION
SCALE: 1–1/2" = 1'–0"



2 S–4 TYPICAL RAILING REPLACEMENT SECTION
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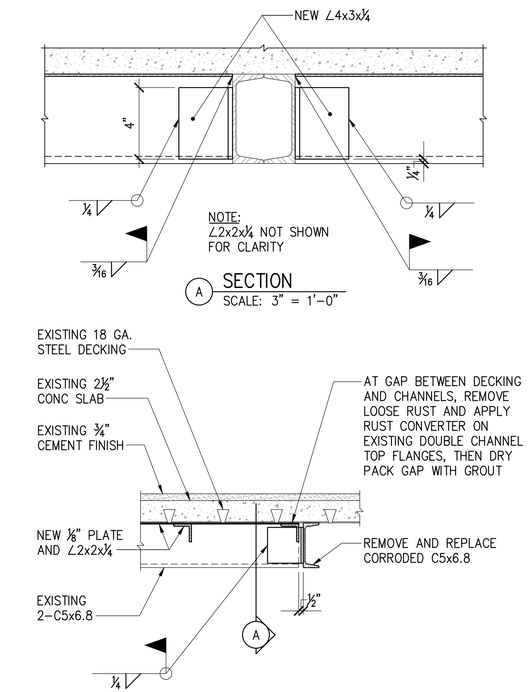
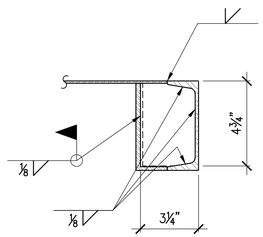
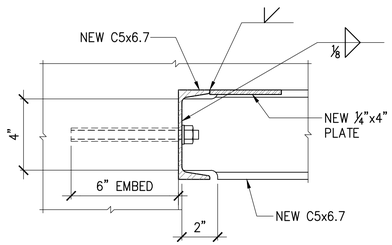


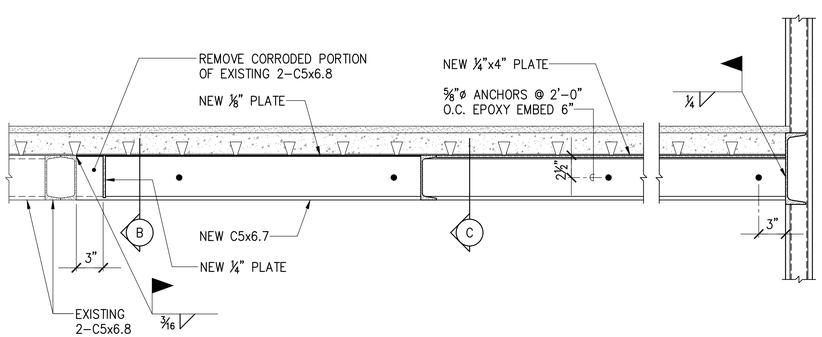
3 S–4 SECTION
SCALE: 1–1/2" = 1'–0"



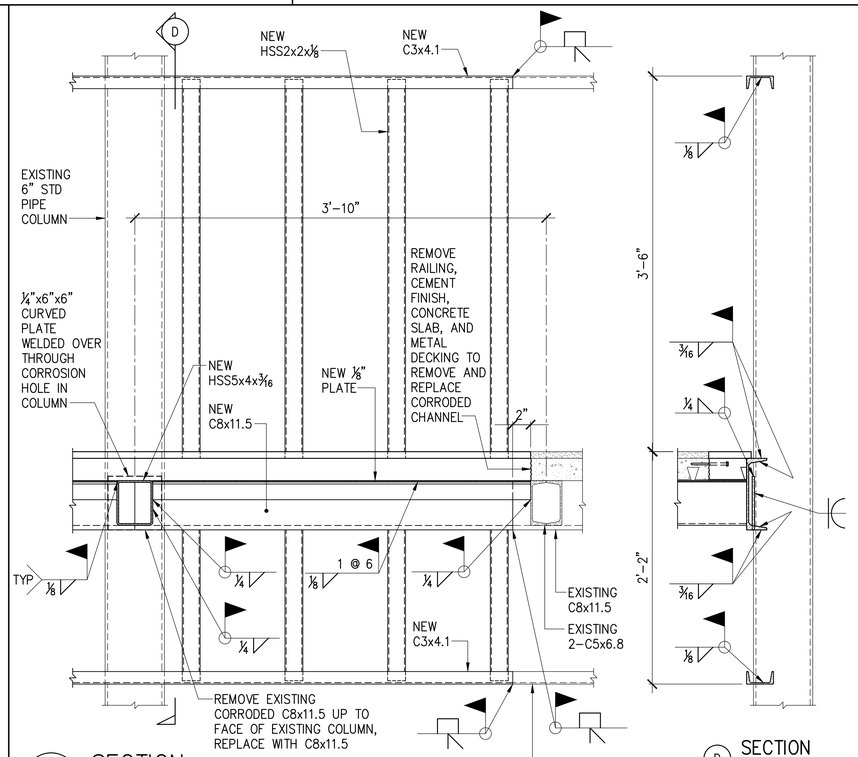
B SECTION
SCALE: 3" = 1'–0"



C SECTION
SCALE: 3" = 1'–0"

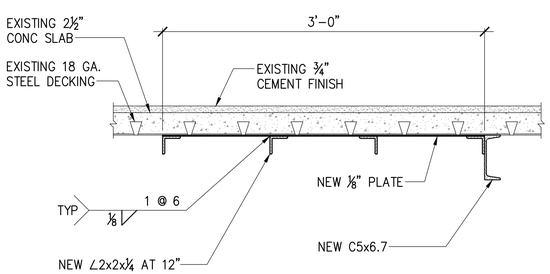


4 S–4 SECTION
SCALE: 1–1/2" = 1'–0"



5 S–4 SECTION
SCALE: 1–1/2" = 1'–0"

NOTE:
METAL LATH AND PLASTER NOT SHOWN FOR CLARITY.



6 S–4 METAL DECK REPAIR SECTION
SCALE: 1–1/2" = 1'–0"

Plotted: Dec 13, 2019 - 4:04pm

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Date	Revision

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3675 KILAUEA AVENUE
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TMK: 3–2–031:001

Sheet Title
SECTIONS

Date	DEC 2019
Scale	AS NOTED
Project No.	2332
Designed	GM
Drawn	DL
Checked	GM

Sheet
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PAINTING:

1. MATERIALS

   A. 100% ACRYLIC LATEX PAINT FINISHES: PROVIDE SHERWIN–WILLIAMS CO. SUPER PAINT EXTERIOR LATEX OR APPROVED EQUAL.

2. PREPARATION AND APPLICATION

   A. METAL LATH AND CEMENT PLASTER RAILING AND CORROSION REPAIRS SHALL BE REPAINTED AS FOLLOWS. PAINT SHALL LAP UNDER WATERPROOF COATING MINIMUM 2 IN. OR AS NOTED IN THE DRAWINGS.

      1. COLORS AND GLOSS OF FINISH COATS SHALL MATCH EXISTING COLORS OF SIMILAR EXISTING FACE.

      2. COATING MANUFACTURER'S RECOMMENDATIONS SHALL BE FOLLOWED FOR CLEANING, SURFACE PREPARATION, AND COATING OF ALL SURFACES.

      3. ALL SURFACES TO BE COATED SHALL BE PROPERLY PREPARED PRIOR TO COATING.

      4. SURFACES TO BE COATED MUST BE DRY, CLEAN, FREE OF OIL, GREASE, DUST, WAX, SOAPS, POWDERY RESIDUE, FORM RELEASE AGENTS, CURING COMPONENTS, LAITANCE, AND OTHER FOREIGN MATTER AND BE STRUCTURALLY SOUND. REMOVE MORTAR SPLATTER, MILL SCALE, AND RUST. ROUND OFF WELDS AND SHARP EDGES AND REMOVE WELD SPLATTER.

      5. ALL COATINGS BY BRUSH, ROLLER, OR OTHER APPLICATORS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

      6. THE PRIME COAT SHALL BE APPLIED ON THE SAME DAY THAT THE SURFACE IS PREPARED. IT MAY TAKE MORE THAN A SINGLE APPLICATION TO OBTAIN THE REQUIRED THICKNESS. IF A COAT REQUIRES MORE THAN A SINGLE APPLICATION, IT SHALL BE DONE NO LATER THAN THE FOLLOWING DAY.

      7. THE TIME INTERVAL BETWEEN EACH COAT SHALL BE NO MORE THAN 24 HOURS OR AS RECOMMENDED BY THE MANUFACTURER. FOR INTERVALS EXCEEDING 24 HOURS, ALL SURFACES SHALL BE RINSED WITH FRESH WATER. EACH COAT SHALL BE A LIGHTER COLOR THAN THE LATER COAT TO BE COATED UPON IT.

      8. FINISH WORK SHALL BE UNIFORM AND OF APPROVED COLOR. THE FINISH SHALL COMPLETELY COVER, BE SMOOTH AND FREE FROM RUNS, SAGS, DRIPS, WAVES, LAPS, OR BRUSH MARKS. EDGES OF COATING ADJOINING OTHER SURFACES OF MATERIALS SHALL BE SHARP AND CLEAN WITHOUT OVERLAPPING.

      9. COATING SHALL BE ALLOWED TO CURE COMPLETELY. ANY MARRED SURFACES OR DAMAGES TO THE COATING FINISH SHALL BE CORRECTED BY PROPER PREPARATION AND RECOATING.

      10. ALL METHODS AND PROCEDURES SHALL COMPLY WITH OSHA AND HIOSH REQUIREMENTS AND BE APPROVED BY THE ENGINEER.

      11. ALL COATING SHALL BE CLEANED OFF ANY PORTION OF THE SURROUNDING ITEMS WHERE COATING HAS SPLASHED OR BEEN SPILLED.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ABATEMENT, HANDLING, RECYCLING, AND/OR DISPOSAL OF ANY OTHER SUSPECT HAZARDOUS MATERIALS NOT SAMPLED DUE TO INACCESSIBILITY OR HIDDEN FROM VIEW AND SHALL BE CHARGED TO THE FORCE ACCOUNT.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WASTE DISPOSAL APPROVAL FROM THE LANDFILL PRIOR TO START OF WORK.

WATERPROOFING:

1. MATERIALS

   A. AC TECH MOISTURE VAPOR REDUCTION MATERIALS

      1. AC TECH 2170 100% SOLIDS, PLURAL–COMPONENT "MOISTURE VAPOR REDUCTION" EPOXY.

      2. CRACK AND JOINT FILLER: AC TECH 2170 EPOXY.

      3. FILLERS: SILICA FLOUR OR CABOSIL.

   B. NEOGARD PEDESTRIAN TRAFFIC COATING MATERIALS

      1. PRIMER: 70714/70715 100% SOLIDS PLURAL–COMPONENT "CLEAR" EPOXY.

      2. REINFORCING FABRIC: 86220 STICH–BOND POLYESTER FABRIC OR EQUAL.

      3. SEALANT: 70991, SIKA 1A, NP–1 OR OTHER APPROVED URETHANE SEALANT.

      4. AGGREGATE: 7992 (16/30 MESH) SILICA (QUARTZ) SAND.

      5. BASE COAT: FC7500/FC7960 PLURAL–COMPONENT URETHANE COATING.

      6. WEAR COAT: FC7510/FC7961 PLURAL–COMPONENT URETHANE COATING.

      7. TOPCOAT: FC7530/FC7963 PLURAL–COMPONENT ALIPHATIC URETHANE COATING. (TINTABLE CUSTOM COLORS)

   C. MISCELLANEOUS MATERIALS SUCH AS CLEANING AGENTS, ADHESIVES, REINFORCING FABRIC, BACKER ROD, DECK DRAINS, ETC., SHALL BE COMPATIBLE WITH THE SPECIFIED PEDESTRIAN TRAFFIC COATING SYSTEM.

2. PREPARATION

   A. THE AREAS OF THE CONCRETE TOP SURFACE NOTED ON THE FLOOR PLANS SHALL BE WATERPROOFED. WATERPROOFING SHALL LAP OVER ADJACENT REPAINTED STEEL AT THE EDGE OF THE CONCRETE SURFACES A MINIMUM OF 2" OR AS NOTED IN THE DRAWINGS.

   B. EXISTING COATING: COMPLETELY REMOVE ALL EXISTING HORIZONTAL DECK SURFACE COATINGS DOWN TO BARE CONCRETE BY MECHANICAL METHODS. THE USE OF CHEMICAL STRIPPERS IS NOT ALLOWED.

   C. LAPS TO STEEL SURFACES: WHERE EXISTING COATINGS ARE IN PLACE ON STEEL SURFACES TO BE LAPPED, SUCH COATINGS WILL REMAIN IN–PLACE PROVIDED THE COATINGS ARE SOUND AND EXHIBIT SUFFICIENT BOND TO THE UNDERLYING SUBSTRATE.

   D. SHOT–BLASTING: MECHANICALLY PREPARE HORIZONTAL DECK SURFACE BY "MANDATORY" SHOT–BLASTING TO INDUSTRY STANDARD SURFACE TEXTURE (ICRI'S CSP 4) WITHOUT CAUSING ADDITIONAL SURFACE DEFECTS IN SUBSTRATE. WHERE SHOT–BLASTING IS NOT ACHIEVABLE (PERIMETERS, ETC...), MECHANICALLY PREPARE SURFACE BY MEANS OF POWER DIAMOND GRINDING TO MEET PROPER CSP PROFILE. PROPER CLEANING PROCEDURES SHOULD BE FOLLOWED TO ENSURE PROPER BONDING OF THE DECK COATING.

   E. CRACK REPAIR:

      1. CRACKS < 1/16" WIDTH: FILL ALL NON–MOVING CRACKS LESS THAN 1/16" WITH AC TECH 2170 EPOXY, MIXED WITH SILICA FLOUR OR CABOSIL TO FORM A PASTE. THE MIX RATIO IS ONE PART AC TECH 2170 EPOXY TO 3–4 PARTS SILICA FLOUR OR CABOSIL BY VOLUME. USING A TROWEL, STRIKE MIXED EPOXY OVER CRACK TO FILL. SCRAPE OFF EXCESS EPOXY.

      2. CRACKS 1/16" WIDTH OR GREATER: ROUT CRACK APPROXIMATELY 3/8" (WIDTH/DEPTH) AND FILL WITH AC TECH 2170 EPOXY, MIXED WITH SILICA FLOUR OR CABOSIL. THE MIX RATIO IS ONE PART AC TECH 2170 EPOXY TO 3–4 PARTS SILICA FLOUR OR CABOSIL BY VOLUME. USING A TROWEL, STRIKE MIXED EPOXY INTO ROUTED CRACK TO FILL. SCRAPE OFF EXCESS EPOXY. DETAIL SEALED CRACKS WITH THOROUGHLY MIXED FC7500/FC7960 BASE COAT MATERIAL A DISTANCE OF 2" ON EACH SIDE OF CRACK TO YIELD A TOTAL THICKNESS OF 30 DRY MILS.

   F. CONTROL JOINTS: SEAL CONTROL JOINTS EQUAL TO OR LESS THAN 1" IN WIDTH WITH URETHANE SEALANT. DEPENDING ON THE WIDTH TO DEPTH RATIO OF THE JOINT, BACKING MATERIAL AND A BOND BREAKER MAY BE REQUIRED. INSTALL SEALANTS IN ACCORDANCE WITH ASTM C 1193 AND MANUFACTURER'S INSTRUCTIONS. DETAIL SEALED JOINTS WITH THOROUGHLY MIXED FC7500/FC7960 BASE COAT MATERIAL A DISTANCE OF 2" ON EACH SIDE OF JOINT TO YIELD A TOTAL THICKNESS OF 30 DRY MILS.

   G. PERIMETER JOINTS: SEAL ALL PERIMETERS, TRANSITIONS, AND CHANGES IN SURFACE PLANE WITH URETHANE SEALANT. APPLY A GENEROUS BEAD OF SEALANT AND TOOL TO ACHIEVE A CONCAVE CANT. TOOLED CAULK BEAD SHOULD MEASURE AN APPROXIMATE 1–1/4" WIDTH X 1/4" DEPTH AT ARC RADIUS. DETAIL SEALED JOINTS WITH THOROUGHLY MIXED FC7500/FC7960 BASE COAT MATERIAL A DISTANCE OF 2" ON EACH SIDE OF JOINT TO YIELD A TOTAL THICKNESS OF 30 DRY MILS.

   H. REINFORCING FABRIC: INSTALL 86220 REINFORCING FABRIC ONLY WHERE A FIELD CONDITION DEEMS NECESSARY AND/OR WHERE REQUIRED BY THE MANUFACTURER PRIOR TO THE APPLICATION OF BASE COAT.

   I. SURFACE CONDITION: SURFACE CONDITION SHALL BE CLEAN AND DRY PRIOR TO COATING.

3. APPLICATION

   A. COMPLY WITH MANUFACTURER'S INSTRUCTIONS FOR MIXING PROCEDURES. FACTORS THAT AFFECT DRY FILM THICKNESS: VOLUME OF SOLIDS, THINNING, SURFACE PROFILE, APPLICATION TECHNIQUE AND EQUIPMENT, OVERSPRAY, SQUEEGEE, BRUSH AND ROLLER WET OUT, CONTAINER RESIDUE, SPILLS AND OTHER WASTE ARE AMONG THE MANY FACTORS THAT AFFECT THE AMOUNT OF WET COATING REQUIRED TO YIELD PROPER DRY FILM THICKNESS. TO ENSURE THAT SPECIFIED DRY FILM THICKNESS IS ACHIEVED, USE A WET MIL GAUGE AND GRID LAYOUT TO VERIFY ACTUAL THICKNESS OF WET COATING APPLIED, ADJUSTING AS NEEDED FOR THOSE FACTORS WHICH DIRECTLY AFFECT THE DRY FILM BUILD.

   B. AC TECH 2170 "MOISTURE VAPOR REDUCTION" EPOXY:

      1. THOROUGHLY MIX AC TECH 2170 EPOXY AND APPLY AT AN APPROXIMATE SPREAD RATE OF 75 SF/GAL (1.33 GAL/100 SF OR 21 WET MILS) TO YIELD 21 DRY MILS TO ALL PROPERLY PREPARED CONCRETE SURFACES. WITHIN 24 HOURS, APPLY NEOGARD SYSTEM PRIMER COAT. IF SUBSEQUENT NEOGARD PRIMER CANNOT BE APPLIED WITHIN 24 HOURS, INSPECT SURFACE FOR CONTAMINANTS, CLEAN SURFACE AS NECESSARY, AND RE–APPLY.

   C. NEOGARD "PEDAGARD FC ALIPHATIC":

      1. PRIMER: THOROUGHLY MIX 70714/70715 100% "CLEAR" EPOXY MATERIAL AND APPLY AT AN APPROXIMATE SPREAD RATE OF 200 SF/GAL (0.5 GAL/100 SF OR 8 WET MILS) TO YIELD 8 DRY MILS. EXTEND PRIMER UP VERTICAL WALL TURN–UPS, CURBS, ETC... TO MEET EXISTING DEMARCATION. SUBSEQUENT BASE COAT MUST BE APPLIED WITHIN 24 HOURS. IF BASE COAT CANNOT BE APPLIED WITHIN 24 HOURS, INSPECT SURFACE FOR CONTAMINANTS, CLEAN SURFACE AS NECESSARY, AND RE–PRIME.

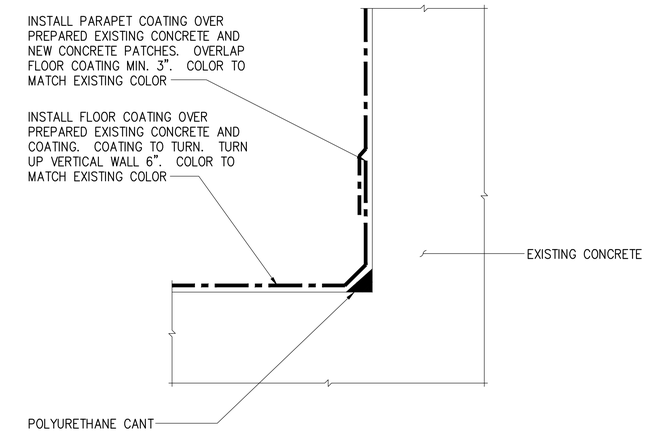
      2. BASE COAT: THOROUGHLY MIX FC7500/FC7960 BASE COAT MATERIAL AND APPLY AT AN APPROXIMATE SPREAD RATE OF 88 SF/GAL (1.13 GAL/100 SF OR 18 WET MILS), TO YIELD 18 DRY MILS. EXTEND BASE COAT OVER CRACKS AND CONTROL JOINTS WHICH HAVE RECEIVED DETAIL TREATMENT.

      3. WEAR COAT: THOROUGHLY MIX FC7510/FC7961 WEAR COAT MATERIAL AND APPLY AT AN APPROXIMATE SPREAD RATE OF 200 SF/GAL (0.5 GAL/100 SF OR 8 WET MILS), TO YIELD 8 DRY MILS, AND IMMEDIATELY BROADCAST AGGREGATE, EVENLY DISTRIBUTED, INTO WET COATING AT AN APPROXIMATE RATE OF 10 LBS/100 SF. WHEN DRY, REMOVE EXCESS AGGREGATE.

      4. TOPCOAT: THOROUGHLY MIX FC7530/FC7963 TOPCOAT MATERIAL AND APPLY AT AN APPROXIMATE SPREAD RATE OF 175 SF/GAL (0.57 GAL/100 SF OR 9 WET MILS), TO YIELD 9 DRY MILS.

      5. PEDAGARD FC ALIPHATIC SYSTEM COATING THICKNESS YIELDS AN AVERAGE 35 DRY MILS EXCLUSIVE OF PRIMER AND AGGREGATE

      6. AFTER COMPLETION OF APPLICATION, DO NOT ALLOW TRAFFIC ON COATED SURFACES FOR A PERIOD OF AT LEAST 24 HOURS AT 75°F AND 50% R.H., OR UNTIL COMPLETELY CURED.



1 / W-1 VERTICAL TRANSITION
NOT TO SCALE

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Sheet Title
PAINTING & WATERPROOFING NOTES AND DETAIL

Date	DEC 2019
Scale	AS NOTED
Project No.	2332
Designed	GM
Drawn	DL
Checked	GM

Sheet
W-1
Sheet 6 of 6 Sheets

Plotted: Dec 13, 2019 - 4:02pm