LEAHI HOSPITAL

HAWAII HEALTH SYSTEMS CORPORATION

3675 Kilauea Avenue ■ Honolulu, Hawaii 96816 ■ Telephone: (808) 733-8000

May 20, 2024

TO: Interested Bidders

FROM: Scott Kawai
Contracts Department

SUBJECT: Addendum No. 1
IFB No. 23L-0421 Leahi Hospital Renovation of Adult Day Health

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The items listed hereinafter are hereby made a part of the contract for the above project and shall the work, taking precedence over previously issued Plans and Specifications governing the items mentioned:

- 1.1 IFB TIMETABLE AS FOLLOWS
  - Closing Date for Receipt of Bids is **May 30, 2024, at 2:00 p.m. Hawaii Standard Time.**
  - All bids must be received by HHSC by 2:00 p.m.

- Please see attached for response to RFI dated Thursday, May 9, 2024.

END OF ADDENDUM NO. 1

INVITATION FOR BIDS
for
LEAHI HOSPITAL
RENOVATION OF ADULT DAY HEALTH
3675 Kilauea Ave., Honolulu, HI 96816

23L-0421

ADDENDUM NO. 1

MAY 17, 2024

The items listed hereinafter are hereby made a part of the contract for the above project and shall govern the work, taking precedence over previously issued plans and specifications governing the items mentioned:

A. SPECIFICATIONS

1. Section 01100 – SUMMARY
   Replace Paragraph 1.01 A. as follows:
   "Project Identification: The work shall generally consist of demolition of existing offices and the addition of two new bathrooms and a conference room. Demolition work shall include, but not be limited to, demolition of existing stud walls, ceilings, doors, windows, millwork, flooring, mechanical equipment, plumbing fixtures, and electrical devices. New work shall include, but note be limited to, installation of new gyp board walls, ceilings, doors, windows, direct applied finish systems, resilient flooring, ceramic tiling, painting, toilet partitions and accessories, plumbing fixtures, mechanical equipment, electrical devices and miscellaneous related work."

2. Section 01715 – EXISTING CONDITIONS
   Insert attached Attachment "Limited Inspection Report for Asbestos and Lead dated March 2016", pages 1-43.

3. Section 03540 – CAST UNDERLAYMENT
   Delete section in its entirety.

4. Section 08810 – GLAZING
   Delete section in its entirety.

5. Section 08520 – ALUMINUM WINDOWS
   Insert attached Section 08520 – ALUMINUM WINDOWS, pages 1-4.

6. Section 09300 – TILING
   Revise Paragraph 2.01 B. 2. as follows:
   Replace "2 inches by 2 inches" with "1 inch by 1 inch".

7. Section 09300 – TILING
   Replace Paragraph 2.02 B. as follows:
   "Thresholds: 2 inches (51 mm) and 4 inches (101.6 mm) wide by full width of wall

or frame opening; beveled edge as indicated; without holes, cracks, or open seams.

1. Thickness: As indicated on Drawings.
2. Material: Marble, honed finish.
3. Color and Pattern: As selected by Architect."

8. Section 13282 – LEAD PAINT CONTROL MEASURES
Insert attached Section 13282 – LEAD PAINT CONTROL MEASURES, pages 1-12.

9. Section 13289 – LEAD TESTING AND MONITORING
Insert attached Section 13289 – LEAD TESTING AND MONITORING, pages 1-5.

10. Section 15400 – PLUMBING
Delete section in its entirety replace with the attached 15400 – PLUMBING, pages 1-11.

11. Section 15800 – AIR CONDITIONING AND VENTILATION
Delete section in its entirety replace with the attached 15800 – AIR CONDITIONING AND VENTILATION, pages 1-17.

B. DRAWINGS

1. NEW DRAWINGS: The following full sized drawing sheets are issued to be included in the previously issued drawing set. See attached drawings identified as delta A1, dated 5/15/24.

Drawing Group	Drawing No.	Description
ARCHITECTURAL	A-602	WINDOW SCHEDULE, TYPES AND DETAILS
MECHANICAL	M-104	SANITARY PIPING DIAGRAM
MECHANICAL	M-105	WATER PIPING DIAGRAM
MECHANICAL	M-106	REFRIGERANT PIPING DIAGRAM
MECHANICAL	M-107	DETAILED DRAWING
MECHANICAL	M-108	DETAILED DRAWING

2. REVISED DRAWINGS: The following previously issued full sized drawing sheets are revised and reissued. These revised drawings supersede the previously issued drawings with the same sheet number. See attached drawings identified as delta A1, dated 5/15/24.

Drawing Group	Drawing No.	Description
GENERAL	001	PROJECT TITLE, VICINITY MAP, LOCATION MAP, APPROVALS
GENERAL	G-001	INDEX OF DRAWINGS
GENERAL	G-002	ARCHITECTURAL GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS
ARCHITECTURAL	A-001	OVERALL BUILDING FLOOR PLAN
ARCHITECTURAL	AD101	DEMOLITION FLOOR PLAN, DEMOLITION REFLECTED CEILING PLAN
ARCHITECTURAL	A-101	BATHROOM FLOOR PLAN

ARCHITECTURAL	A-102	BATHROOM REFLECTED CEILING PLAN
ARCHITECTURAL	A-201	TYPICAL ACCESSORY MOUNTING INFORMATION, INTERIOR ELEVATIONS
ARCHITECTURAL	A-202	INTERIOR ELEVATOINS
ARCHITECTURAL	A-510	PARTITION TYPES
ARCHITECTURAL	A-511	PARTITION TYPES AND DETAILS
ARCHITECTURAL	A-512	PARTITION DETAILS
ARCHITECTURAL	A-601	DOOR SCHEDULE AND TYPES, MATERIAL INDEX, ROOM FINISH AND SIGNAGE TYPES AND SCHEDULE, DOOR DETAILS
ARCHITECTURAL	AF101	FLOOR FINISH PLAN
MECHANICAL	M000	GENERAL NOTES
MECHANICAL	M-101	NEW PLUMBING PLAN
MECHANICAL	M-102	NEW MECHANICAL PLAN
MECHANICAL	M-103	NEW FIRE SPRINKLER PLAN
MECHANICAL	M-109	MECHANICAL SCHEDULE
ELECTRICAL	E101	NEW LIGHTING PLAN
ELECTRICAL	E102	NEW POWER AND SIGNAL PLAN

C. CLARIFICATIONS

The following questions were received in writing concerning clarifications to the contract documents. Clarifications will be addressed in amendment.

1. Question: Plan A-201 shows window infill at Conference room 101 & Men's 102. Please advise what material we need to use for the window infill/ if there is any detail to follow.

   Answer: Details have been added to the drawings for wall infills.

2. Question: Plan A-201 shows a wall infill at women's 103. Please advise what material we need to use for the window infill/ if there is any detail to follow.

   Answer: Details have been added to the drawings for wall infills.

3. Question: Spec 03540 Cast Underlayment is for self leveling flooring underlayment. Please confirm we are to include this for the conference room.

   Answer: Section has been deleted; however, a moisture barrier equivalent to Sika MB will be required under the resilient flooring in the conference room. Additional information regarding moisture barrier to be issued as a PCD.

4. Question: The selected floor tile, Daltile Keystones 2x2 DK21 Wheat Blend is made to order. Daltile is saying the production time is up to 10-12 weeks production time plus 4-5 weeks shipping to Honolulu. Please verify if this tile selection is still desired.

   Answer: Tile selection has been revised to 1x1. Daltile confirmed this size is locally stocked.

5. Question: Locations of window film WF-1 are not indicated on the plans. Please verify which windows are to receive the film.

Answer: WF-1 no longer required. Frosted glazing will be included with new windows.

6. Question: We are requesting to substitute window film WF-1 with 3M Fasara Milky White Milano. See attached specification sheet.

   Answer: See response to Question 5.

7. Question: The remarks for the FCUs on sheet M-109 say to provide isolation mounts. However, the supplier says that Mitsubishi does not recommend isolation mounts and will not supply them. Can the requirement for isolation mounts be removed.

   Answer: We defer to the manufacturer's recommendation and take no exception if not requiring isolation mounts for FCU.s

8. Question: Is there a building permit for this project? If there is, please confirm that the Contractor is responsible for paying the fee.

   Answer: No permit will be required.

9. Question: Specs state a 2" marble threshold, but on the plan details, the threshold is wider than 2". Please clarify.

   Answer: Entry door to have 4" marble threshold.

10. Question: In regard to Q9, there is another marble threshold for the shower, can you please clarify size of that on as well?

    Answer: Shower to have 2" marble threshold.

11. Question: Can you please clarify the type of bullnose wanted for the wainscot cap, window sills and wall corners? Surface bullnose or radius bullnose.

    Answer: Radius bullnose.

12. Question: Also, regarding the window, will the tile wrap into the jambs and head as well or just the sill?

    Answer: Tile to be wrapped into the jambs, no tile to be wrapped at the head.

13. Question: The specification calls for LLumar Glacier Frost film. Please advise to where this film is required.

    Answer: See response to Question 5.

14. Question: Please provide luminaire schedule ,circuits ,wiring and controls for lighting.

    Answer: See revised drawing sheets.

15. Question: Please provide staging area for Contractor.

Answer: The staging area will be assigned by the hospital maintenance at the Pre-Construction meeting.

16. Question: Please confirm if permits (building, noise, etc.) will be required.

    Answer: No permits will be required.

END OF ADDENDUM NO. 1

EXECUTIVE SUMMARY

ENVIROQUEST, INC. (EQI) was retained by Pacific Architects, Inc. to conduct a limited hazardous material inspection of the Leahi Hospital, 3675 Kilauea Avenue, Honolulu, Hawaii. The inspection was conducted on March 9, 2016.

The objective of the inspection was to determine the location of asbestos-containing materials (ACMs) and lead-based paints (LBPs) which may be disturbed by the window replacement work.

The listed areas were included in our inspection:

- Young building, basement, 1st, 2nd, 3rd, 4th and 5th floor windows
- Administration building, basement, 1st and 2nd floor windows
- Atherton building, basement, 1st, 2nd and 3rd floor windows
- Trotter building, basement and 1st floor windows

Asbestos Containing Material

Based on the laboratory analytical results from this inspection, the listed material was identified as asbestos-containing material.

Material	Location	Condition
Caulking	Young building, all metal and wood window system scheduled for replacement (frame/wall seams)	Good
Caulking	Young building, all glass door system scheduled for replacement (frame/wall seams)	Good
Caulking	Administration building, all metal and wood window systems scheduled for replacement (frame/wall seams)	Good
Glazing	Administration building, all wood window systems, scheduled for replacement (frame/glass seams)	Damaged
Caulking	Atherton building, all metal and wood window systems scheduled for replacement (frame/wall seams)	Good
Glazing	Atherton building, all wood window systems, scheduled for replacement (frame/glass seams)	Damaged

The National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 61 Part M, defines asbestos containing materials as those which contain greater than 1% asbestos. The identified ACM must be removed prior to the renovation activity. All removal must be completed by a certified asbestos abatement contractor under controlled conditions in accordance with United States Environmental Protection Agency (EPA) and Hawaii Department of Health (HDOH) regulations. Work should also be monitored by an independent industrial hygiene professional.

Lead-Based Paint

Based on the laboratory analytical results from this inspection, the listed building components were painted or coated with LBP or lead coatings.

Color	Location	Condition
Tan and brown	Young building, wood window screens	Poor to Fair
Beige, light brown and brown	Young building, wood windows	Poor to Fair
Brown	Administration building, wood windows	Poor to Fair
White	Administration building, concrete walls and window sills	Poor to Fair
Off-white (light blue)	Atherton building, concrete walls and window sills	Poor to Fair
White and brown	Atherton building, wood windows	Poor to Fair
Brown	Trotter building, wood windows	Poor to Fair

United States Environmental Protection Agency (EPA) defines lead-based paint as paint or other coatings containing lead equal to, or in excess of, 0.5% by weight. Also note that lead at concentrations below the EPA guideline was detected various other paint/coating (see Table 2). The contractor's employees removing or disturbing the painted material also must be informed that it contains lead and must have received training under Occupational Safety and Health Administration (OSHA) 29 CFR 1926.62 *Lead*. If any other untested paints are disturbed, they should be assumed to contain lead.

If the painted components containing the lead are scheduled for demolition, composite samples of the expected building waste generated should be collected for *Toxicity Characteristic Leaching Procedure* (TCLP) analysis to determine the waste disposal characterization. *Hawaii Administrative Rules, Title 11, Department of Health, Chapter 261, Hazardous Waste Management* allows a maximum concentration of lead contaminant by TCLP at 5.0 mg/L. TCLP results exceeding the 5.0 mg/L threshold requires the material to be disposed of as hazardous waste. Results below this threshold allow for the materials to be disposed of as construction debris. Note that painted metal components are exempt from TCLP testing and hazardous waste disposal if recycled.

1.0 INTRODUCTION

This report presents the results of the limited hazardous material inspection of the Leahi Hospital, 3675 Kilauea Avenue, Honolulu, Hawaii. The inspection was conducted on March 9, 2016.

The objective of the inspection was to determine the location of asbestos-containing materials (ACMs) and lead-based paints (LBPs) which may be disturbed by the window replacement work.

The listed areas were included in our inspection:

- Young building, basement, 1st, 2nd, 3rd, 4th and 5th floor windows
- Administration building, basement, 1st and 2nd floor windows
- Atherton building, basement, 1st, 2nd and 3rd floor windows
- Trotter building, basement and 1st floor windows

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2.0 ASBESTOS

Eighty-four samples were collected from suspect asbestos-containing materials. The samples were collected by HDOH accredited Asbestos Building Inspector, Mr. Daniel Lewis (HIASB-0724).

2.1 Methodology

Prior to sampling, EQI visually surveyed the project areas for suspect asbestos-containing materials and homogeneous areas (areas that have uniform color, texture, and appearance). Suspect materials were divided into friable and non-friable materials and placed in one of the following EPA categories:

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

Sampling methodology followed the general guidelines for bulk asbestos sampling as presented in Section 40, Part 763 (AHERA), of the Code of Federal Regulations (CFR), and Hawaii Administrative Rules (HAR) 11-501 and 11-502.

2.2 Results

Samples were submitted to Forensic Analytical in Rancho Dominguez, California. The samples were analyzed by polarized-light microscopy (PLM), using EPA Method 600/R-93-116, Visual Area Estimation.

Forensic Analytical is accredited for bulk asbestos analysis through successful participation in the US Department of Commerce, National Institute of Standards and Technologies (NIST), and National Voluntary Laboratory Accreditation Program (NVLAP). The laboratory is currently registered to provide asbestos laboratory services in the State of Hawaii under Title 11 of the HAR, Chapter 504.

Based on the laboratory analytical report, the caulking and the glazing materials were identified as ACM. The NESHAP, 40 CFR 61 Part M, defines asbestos containing materials as those which contain greater than 1% asbestos. In accordance with NESHAP requirements, samples consisting of distinct layers of materials were analyzed and reported separately by the laboratory.

A summary of the homogeneous materials is presented in Table 1. The laboratory analytical report and chain of custody forms are included in Appendix 1.

TABLE 1
Asbestos Homogeneous Material Summary

Homogeneous Material	ACM[1] (Y/N)	Location	Sample ID	Friable (Y/N)	Est Qty (ACM) (ft^2)	Condition[2]
Black caulking	**Y**	**Young building, 5th floor, metal window/wall seams**	**8703-01A 8703-02A 8703-03A**	**N**	**Not Quantified**	**G**
Black caulking	**Y**	**Young building, 5th floor, metal window/wall seams**	**8703-04A 8703-05A 8703-06A**	**N**	**Not Quantified**	**G**
Brown caulking	**Y**	**Young building, 5th floor, metal door/wall seam**	**8703-07A 8703-08A 8703-09A**	**N**	**Not Quantified**	**G**
Brown caulking	**Y**	**Young building, 5th floor, wood window/wall seams**	**8703-10A 8703-11A 8703-12A**	**N**	**Not Quantified**	**G**
Tan glazing	N	Young building, 5th floor, window, glass glazing	8703-13A 8703-14A 8703-15A	Y	--	D
Brown caulking	**Y**	**Young building, 4th floor, wood window/wall seams**	**8703-16A 8703-17A 8703-18A**	**N**	**Not Quantified**	**G**
Tan glazing	N	Young building, 4th floor, wood window, glass glazing	8703-19A 8703-20A 8703-21A	Y	--	D
White caulking	Y	Young building, 3rd floor, window/wall seams	8703-22A 8703-23A 8703-24A	N	--	G
Tan glazing	N	Young building, 3rd floor, wood window, glass glazing	8703-25A 8703-26A 8703-27A	Y	--	D
Plaster wall	N	Young building, 3rd floor, perimeter window walls	8703-28A 8703-29A 8703-30A	N	--	D
Brown caulking	**Y**	**Young building, 2nd floor, wood window/wall seams**	**8703-31A 8703-32A 8703-33A**	**N**	**Not Quantified**	**G**

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

TABLE 1
Asbestos Homogeneous Material Summary

Homogeneous Material	ACM[1] (Y/N)	Location	Sample ID	Friable (Y/N)	Est Qty (ACM) (ft^2)	Condition[2]
Tan glazing	N	Young building, 2nd floor, wood window, glass glazing	8703-34A 8703-35A 8703-36A	Y	--	D
Black caulking	**Y**	**Young building, 1st floor, metal window/wall seams**	**8703-37A 8703-38A 8703-39A**	**N**	**Not Quantified**	**G**
Brown caulking	**Y**	**Young building, 1st floor, wood window/wall seams**	**8703-40A 8703-41A 8703-42A**	**N**	**Not Quantified**	**G**
Tan glazing	N	Young building, 1st floor, wood window, glass glazing	8703-43A 8703-44A 8703-45A	Y	--	D
Brown caulking	**Y**	**Young building, basement, wood window/wall seams**	**8703-46A 8703-47A 8703-48A**	**N**	**Not Quantified**	**D**
Tan glazing	N	Young building, basement, wood window, glass glazing	8703-49A 8703-50A 8703-51A	Y	--	G
Brown caulking	**Y**	**Administration building, 1st floor, wood window/wall seams**	**8703-52A 8703-53A 8703-54A**	**N**	**Not Quantified**	**G**
Gray glazing	**Y**	**Administration building, 1st floor, wood window, glass glazing**	**8703-55A 8703-56A 8703-57A**	**Y**	**Not Quantified**	**D**
Brown caulking	N	Administration building, 2nd floor, wood window/wall seams	8703-58A 8703-59A 8703-60A	N	--	G
Gray glazing	**Y**	**Administration building, 2nd floor, wood window, glass glazing**	**8703-61A 8703-62A 8703-63A**	**Y**	**Not Quantified**	**D**
Gray/brown caulking	**Y**	**Atherton building, 3rd floor, metal window/wall seams**	**8703-64A 8703-65A 8703-66A**	**N**	**Not Quantified**	**G**

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

TABLE 1
Asbestos Homogeneous Material Summary

Homogeneous Material	ACM[1] (Y/N)	Location	Sample ID	Friable (Y/N)	Est Qty (ACM) (ft^2)	Condition[2]
Off-white glazing	N	Atherton building, 2nd floor, wood window, glass glazing	8703-67A 8703-68A 8703-69A	Y	--	D
Brown caulking	**Y**	**Atherton building, 2nd floor, wood window/wall seams**	**8703-70A 8703-71A 8703-72A**	**N**	**Not Quantified**	**G**
White caulking	N	Atherton building, basement, window/wall seams	8703-73A 8703-74A 8703-75A	N	--	G
Gray glazing	**Y**	**Atherton building, basement , wood window, glass glazing**	8703-76A 8703-77A 8703-78A	**Y**	**Not Quantified**	D
Plaster/coating	N	Trotter building, 1st floor, wood window/wall seams	8703-79A 8703-80A 8703-81A	N	--	G
Tan glazing	N	Trotter building, basement, wood window, glass glazing	8703-82A 8703-83A 8703-84A	N	--	D

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

3.0 LEAD

Twenty four paint chip samples were collected from painted or coated materials. The samples were collected by HDOH accredited Lead Inspector, Mr. David Leigh (PB-0294).

3.1 Methodology

Prior to sampling, EQI visually surveyed the project areas for painted building components. Our sampling methodology generally followed the "Guidelines for the Evaluation and Control of Lead-Based Paint Hazard in Housing" published by the Department of Housing and Urban Development (HUD) in 1995.

The paint chip samples were collected using a hand chisel and then placed into a single plastic bag which was sealed and labeled. The samples were then placed into another sealed bag for storage. Sampling equipment was cleaned between each sampling to avoid cross-contamination between samples.

Samples were submitted to Forensic Analytical in Rancho Dominguez, California. The samples were analyzed in accordance with EPA Method 3050B/7420 Lead, Atomic Absorption, Direct Aspiration. Forensic Analytical is accredited for lead analysis through successful participation in the American Industrial Hygiene Association's (AIHA) Environmental Lead Laboratory Accreditation Program (ELLAP).

3.2 Results

Based on the laboratory analytical report, 12 out of twenty four samples exceeded the EPA threshold of 0.5% lead by weight. The EPA defines lead-based paint as paint or other coatings containing lead equal to, or in excess of, 0.5 percent lead by weight.

A summary of lead paint is presented in Table 2. The laboratory analytical report and chain of custody forms are included in Appendix 2.

TABLE 2
Lead Paint Summary

Paint Color	Int/Ext	LBP_1 (Y/N)	LCP_2 (Y/N)	Paint Location	Sample ID	$Condition_{3,4}$
Beige	Int	N	N	Young building, concrete walls/window sills	8703-01L	Fair
Beige	Ext	N	Y	Young building, concrete wall at the windows	8703-02L	Fair
Tan/brown	**Ext**	**Y**	**N**	**Young building, wood window screen**	**8703-03L**	**Fair**
White/green	Int	N	Y	Young building, wood window	8703-04L	Fair
Beige/brown	**Int/Ext**	**Y**	**N**	**Young building, wood windows**	**8703-05L**	**Fair**
Brown	**Ext**	**Y**	**N**	**Young building, wood window screen**	8703-06L	**Fair**
Beige/brown	Int/Ext	N	N	Young building, wood windows	8703-07L	Fair
Light brown	**Int/Ext**	**Y**	**N**	**Young building, wood windows**	**8703-08L**	**Fair**
Beige	Ext	N	N	Young building, concrete wall at the windows	8703-09L	Fair
Brown	**Int/Ext**	**Y**	**N**	**Administration building, wood windows**	**8703-10L**	**Fair**
Light brown	Ext	N	Y	Administration building, concrete window sills	8703-11L	Fair
White	Int	N	N	Administration building, wood windows	8703-12L	Fair
White	**Ext**	**Y**	**N**	**Administration building, concrete wall/window sill**	**8703-13L**	**Fair**
Light blue	**Ext**	**Y**	**N**	**Atherton building, concrete wall and window sills**	**8703-14L**	**Fair**
Beige	Ext	N	Y	Atherton building, concrete window sills	8703-15L, 20L	Fair
Off-white	Ext	N	N	Atherton building, concrete window sills	8703-16L	Fair
White	**Int**	**Y**	**N**	**Atherton building, wood windows**	**8703-17L**	**Fair**
Brown	**Ext**	**Y**	**N**	**Atherton building, wood windows**	**8703-18L, 19L**	**Poor**
Brown	**Ext**	**Y**	**N**	**Trotter building, wood windows**	**8703-21L, 23L**	**Fair**
Beige	Ext	N	Y	Trotter building, concrete wall and window sills	8703-22L, 24L	Fair

1. LBP = >0.5% lead by weight
2. LCP = >0% but <0.5% lead by weight
3. Exterior: Intact – Entire surface is intact; Fair - $\leq$ 10ft^2; Poor - >10 ft^2
4. Interior: Intact – Entire surface is intact; Fair - $\leq$ 2ft^2 or $\leq$ 10%; Poor - >2 ft^2 or >10

4.0 CONCLUSION

4.1 Asbestos

Based on the laboratory analytical results from this inspection, the listed material was identified as asbestos-containing material.

Material	Location	Condition
Caulking	Young building, all metal and wood window system scheduled for replacement (frame/wall seams)	Good
Caulking	Young building, all glass door system scheduled for replacement (frame/wall seams)	Good
Caulking	Administration building, all metal and wood window systems scheduled for replacement (frame/wall seams)	Good
Glazing	Administration building, all wood window systems, scheduled for replacement (frame/glass seams)	Damaged
Caulking	Atherton building, all metal and wood window systems scheduled for replacement (frame/wall seams)	Good
Glazing	Atherton building, all wood window systems, scheduled for replacement (frame/glass seams)	Damaged

The NESHAP, 40 CFR 61 Part M, defines asbestos containing materials as those which contain greater than 1% asbestos. The identified ACM must be removed prior to the renovation activity. All removal must be completed by a certified asbestos abatement contractor under controlled conditions in accordance with EPA and HDOH regulations. Work should also be monitored by an independent industrial hygiene professional.

4.2 Lead-Based Paint

Based on the laboratory analytical results from this inspection, the listed building components were painted or coated with LBP or lead coatings.

Color	Location	Condition
Tan and brown	Young building, wood window screens	Poor to Fair
Beige, light brown and brown	Young building, wood windows	Poor to Fair
Brown	Administration building, wood windows	Poor to Fair
White	Administration building, concrete walls and window sills	Poor to Fair
Off-white (light blue)	Atherton building, concrete walls and window sills	Poor to Fair
White and brown	Atherton building, wood windows	Poor to Fair
Brown	Trotter building, wood windows	Poor to Fair

EPA defines lead-based paint as paint or other coatings containing lead equal to, or in excess of, 0.5% by weight. Also note that lead at concentrations below the EPA guideline was detected various other paint/coating (see Table 2). The contractor's employees removing or disturbing the painted material also must be informed that it contains lead and must have received training under OSHA 29 CFR 1926.62 *Lead*. If any other untested paints are disturbed, they should be assumed to contain lead.

If the painted components containing the lead are scheduled for demolition, composite samples of the expected building waste generated should be collected for TCLP analysis to determine the waste disposal characterization. *Hawaii Administrative Rules, Title 11, Department of Health, Chapter 261, Hazardous Waste Management* allows a maximum concentration of lead contaminant by TCLP at 5.0 mg/L. TCLP results exceeding the 5.0 mg/L threshold requires the material to be disposed of as hazardous waste. Results below this threshold allow for the materials to be disposed of as construction debris. Note that painted metal components are exempt from TCLP testing and hazardous waste disposal if recycled.

5.0 LIMITATIONS

The information set forth is based solely on the agreed upon scope of services, on personal observation, laboratory data, and information provided by Pacific Architects, Inc.

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

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

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

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

David Leigh

David Leigh
Certified Industrial Hygienist

Asbestos
Laboratory Analytical Report

Appendix 1

Forensic Analytical LABORATORIES

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

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

Client ID: 7104
Report Number: B217994
Date Received: 03/11/16
Date Analyzed: 03/16/16
Date Printed: 03/16/16
First Reported: 03/16/16

Job ID/Site: 8703; Leahi Hospital window replacement

Date(s) Collected: 03/09/2016

FALI Job ID: 7104
Total Samples Submitted: 84
Total Samples Analyzed: 61

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
8703-01A	50978725						
Layer: Black Putty		Chrysotile	**3 %**				
Total Composite Values of Fibrous Components: **Asbestos (3%)**							
Cellulose (Trace) Synthetic (3 %)							
8703-02A	50978726						
Comment: Sample not analyzed due to prior positive result in series.							
8703-03A	50978727						
Comment: Sample not analyzed due to prior positive result in series.							
8703-04A	50978728						
Layer: Black Putty		Chrysotile	**3 %**				
Total Composite Values of Fibrous Components: **Asbestos (3%)**							
Cellulose (Trace) Synthetic (3 %)							
8703-05A	50978729						
Comment: Sample not analyzed due to prior positive result in series.							
8703-06A	50978730						
Comment: Sample not analyzed due to prior positive result in series.							
8703-07A	50978731						
Layer: Brown Putty		Chrysotile	**3 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (3%)**							
Cellulose (Trace) Talc (7 %)							
8703-08A	50978732						
Comment: Sample not analyzed due to prior positive result in series.							
8703-09A	50978733						
Comment: Sample not analyzed due to prior positive result in series.							
8703-10A	50978734						
Layer: Brown Putty		Chrysotile	**3 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: **Asbestos (3%)**							
Cellulose (Trace) Talc (7 %)							
8703-11A	50978735						
Comment: Sample not analyzed due to prior positive result in series.							

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Report Number: B217994
Client Name: EnviroQuest, Inc. **Date Printed:** 03/16/16

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
8703-12A	50978736						
Comment: Sample not analyzed due to prior positive result in series.							
8703-13A	50978737						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-14A	50978738						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-15A	50978739						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-16A	50978740						
Layer: Brown Putty		Chrysotile	**3 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Talc (7 %)		**Asbestos (2%)**					
8703-17A	50978741						
Comment: Sample not analyzed due to prior positive result in series.							
8703-18A	50978742						
Comment: Sample not analyzed due to prior positive result in series.							
8703-19A	50978743						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-20A	50978744						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-21A	50978745						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
8703-22A	50978746						
Layer: White/Clear Puttys			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-23A	50978747						
Layer: White/Clear Puttys			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-24A	50978748						
Layer: White/Clear Puttys			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-25A	50978749						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-26A	50978750						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-27A	50978751						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-28A	50978752						
Layer: Beige Plaster			**ND**				
Layer: White Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-29A	50978753						
Layer: Beige Plaster			**ND**				
Layer: White Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
8703-30A	50978754						
Layer: Beige Plaster			**ND**				
Layer: White Plaster			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-31A	50978755						
Layer: Brown Putty		Chrysotile	**3 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Talc (3 %)		**Asbestos (2%)**					
8703-32A	50978756						
Comment: Sample not analyzed due to prior positive result in series.							
8703-33A	50978757						
Comment: Sample not analyzed due to prior positive result in series.							
8703-34A	50978758						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-35A	50978759						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-36A	50978760						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-37A	50978761						
Layer: Black Putty		Chrysotile	**3 %**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Synthetic (3 %)		**Asbestos (3%)**					
8703-38A	50978762						
Comment: Sample not analyzed due to prior positive result in series.							
8703-39A	50978763						
Comment: Sample not analyzed due to prior positive result in series.							
8703-40A	50978764						
Layer: Brown Putty		Chrysotile	**3 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Talc (3 %)		**Asbestos (2%)**					

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
8703-41A	50978765						
Comment: Sample not analyzed due to prior positive result in series.							
8703-42A	50978766						
Comment: Sample not analyzed due to prior positive result in series.							
8703-43A	50978767						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-44A	50978768						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-45A	50978769						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-46A	50978770						
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-47A	50978771						
Layer: Brown Putty		Chrysotile	**3 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace) Talc (3 %)		**Asbestos (Trace)**					
Comment: This comment applies to the Brown Putty only: Due to small sample size, this result may not be repeatable.							
8703-48A	50978772						
Comment: Sample not analyzed due to prior positive result in series.							
8703-49A	50978773						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-50A	50978774						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

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Report Number: B217994
Client Name: EnviroQuest, Inc. **Date Printed:** 03/16/16

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
8703-51A	50978775						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
8703-52A	50978776						
Layer: Brown Putty		Chrysotile	**3 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (2%)**					
Cellulose (Trace) Talc (7 %)							
8703-53A	50978777						
Comment: Sample not analyzed due to prior positive result in series.							
8703-54A	50978778						
Comment: Sample not analyzed due to prior positive result in series.							
8703-55A	50978779						
Layer: Grey Putty		Chrysotile	**Trace**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (Trace) Talc (Trace)							
8703-56A	50978780						
Layer: Grey Putty		Chrysotile	**Trace**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (Trace) Talc (Trace)							
8703-57A	50978781						
Layer: Grey Putty		Chrysotile	**Trace**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (Trace) Talc (Trace)							
8703-58A	50978782						
Layer: Dark Brown Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
8703-59A	50978783						
Layer: Dark Brown Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
8703-60A	50978784						
Layer: Dark Brown Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							

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Report Number: B217994
Client Name: EnviroQuest, Inc. **Date Printed:** 03/16/16

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
8703-61A	50978785						
Layer: Grey Putty		Chrysotile	**Trace**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (Trace) Talc (Trace)							
8703-62A	50978786						
Layer: Grey Putty		Chrysotile	**Trace**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (Trace) Talc (Trace)							
8703-63A	50978787						
Layer: Grey Putty		Chrysotile	**Trace**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (Trace) Talc (Trace)							
8703-64A	50978788						
Layer: Grey Semi-Fibrous Material		Chrysotile	**7 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (7%)**					
Cellulose (Trace)							
8703-65A	50978789						
Comment: Sample not analyzed due to prior positive result in series.							
8703-66A	50978790						
Comment: Sample not analyzed due to prior positive result in series.							
8703-67A	50978791						
Layer: Off-White Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
8703-68A	50978792						
Layer: Off-White Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
8703-69A	50978793						
Layer: Off-White Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
8703-70A	50978794						
Layer: Brown Putty		Chrysotile	**3 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (3%)**					
Cellulose (Trace) Talc (7 %)							

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Report Number: B217994
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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
8703-71A	50978795						
Comment: Sample not analyzed due to prior positive result in series.							
8703-72A	50978796						
Comment: Sample not analyzed due to prior positive result in series.							
8703-73A	50978797						
Layer: White Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-74A	50978798						
Layer: White Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-75A	50978799						
Layer: White Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-76A	50978800						
Layer: Grey Putty		Chrysotile	**Trace**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (Trace)**					
8703-77A	50978801						
Layer: Grey Putty		Chrysotile	**Trace**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (Trace)**					
8703-78A	50978802						
Layer: Grey Putty		Chrysotile	**Trace**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (Trace)**					
8703-79A	50978803						
Layer: Grey Plaster			**ND**				
Layer: Paint/Coating			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-80A	50978804						
Layer: Grey Plaster			**ND**				
Layer: Paint/Coating			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

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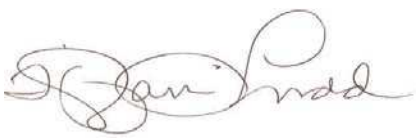
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
8703-81A	50978805						
Layer: Grey Plaster			**ND**				
Layer: Paint/Coating			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-82A	50978806						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-83A	50978807						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
8703-84A	50978808						
Layer: Tan Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					



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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EnviroQuest

PLM DATA SHEET

Project No.: 8N03 Project Name: Leahy hospital window replacement Date: 3/9/16

Page: 1 of 10

Material Description: black rubbery window caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
8N03-01A	5th floor, perimeter window, A Young build		
02A	" , int window		
03A	" " perimeter window		
	Int Side		

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

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

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

Material Description: black caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
8N03-04A	Young build, perimeter window, ext side, 5th flr		
05A	" " " " " "		
06A	" " " " " "		

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

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

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

Sampled By: D Lewis *DOH Cert No:* Delivered to Lab By:	Relinquished By/Date/Time: 3/10/16 Received By/Date/Time: FE 11:05A 3/11/16	Relinquished By/Date/Time: Received By/Date/Time:

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

Surfacing	<1,000 ft² = 3 Samples	1,000 – 5,000 ft² = 5 Samples	>5,000 ft² = 7 Samples
TSI	Minimum of 3 Samples (Run) UNLESS	<6 In. or ft² = 1 Sample	Minimum of 3 Samples (Elbow & 'T')
Misc.	Minimum of 3 Samples (*Hawaii*)		

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

98-029 Hekaha Street, Suite 21, Aiea, HI 96701 Phone: (808) 486-5881 Fax: (808) 486-5889 E-mail: eqi@enviroquestinc.com
6-15-17 Kamitsuruma, Minami-ku, Sagamihara-shi, Kanagawa-ken Japan 252-0302 Phone: (042) 851-5675

EnviroQuest

PLM DATA SHEET

Project No.: 3N03 Project Name: Leahi hospital window replacement Date: 3/9/16

Material Description: tan/brown caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3N03-09A	Young, 5th, door caulking, galv door		
09B	" " " "		
09C	" " " "		

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

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

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

Material Description: tan brown caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3N03-10A	Young building, 5th fl, wood WF		
11A	" " " "		
12A	" " " "		

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

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

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

Material Description: brown caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3N03 13A	Young build, 5th fl, wood WF/ glass glazing		
14A	" " " "		
15A	" " " "		

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

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

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

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PLM DATA SHEET

Project No.: 3N03 Project Name: Leahi hospital window replacemt Date: 3/9/16

Page: 3 of 10

Material Description: tan/brown caulk — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3N03-16A	Young, 4th floor, wood window F/ wall caulk		
17A	" " " "		
18A	" " " "		
	perimeter original wood walls		

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

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

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

Material Description: tan/brown caulk — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3N03-19A	Young, 4th, wood window F/ glass seams		
20A	" " " "		
21A	" " " "		

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

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

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

Material Description: tan caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3N03-22A	Young, 3rd, perimeter window F/ wall seam		
23A	" " " "		
24A	" " " "		

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

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

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

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PLM DATA SHEET

Project No.: 3N03 Project Name: Leahi hospital window replacement Date: 3/a/16

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Material Description: Caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3N03-25A	Young, 3rd fl, perimeter wood window (glass glazing)		
26A	" " " " "		
27A	" " " " "		

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

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

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

Material Description: plaster — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3N03-28A	~~Too~~ Young, 3rd perimeter wall under window		
29A	" " " " "		
30A	" " " " "		

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

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

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

Material Description: Caulking — Friable / ~~Non-friable~~

Sample No.	Location	% Asb.	Asb. Type
3N03-31A	Young, 2nd, perimeter wood w/ wall		
32A	" " " " "		
33A	" " " " "		

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

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

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

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PLM DATA SHEET

Project No.: 8N03 Project Name: Leahi hospital window replacement Date: 3/9/18

Material Description: Caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
8N03-34A	Young, 2nd, perimeter wood WF/ glass seam		
35A	" " " "		
36A	" " " "		

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

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

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

Material Description: black non-rubbery caulk — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
8N03-37A	Young, 1st perimeter galvanized WF/ wall		
38A	" " " "		
39A	" " " "		

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

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

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

Material Description: Caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
8N03-40A	Young, 1st perim WF/ wall		
41A	" " " "		
42A	" " " "		

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

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

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

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PLM DATA SHEET

Project No.: 8103 Project Name: Leahi hospital window replacement Date: 3/4/11

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Material Description: Caulking

Friable / ~~Non-friable~~

Sample No.	Location	% Asb.	Asb. Type
8103-43A	Young, LR perimeter wood w/ glass seam		
44A	" " " "		
45A	" " " "		

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

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

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

Material Description: caulking

Friable / ~~Non-friable~~

Sample No.	Location	% Asb.	Asb. Type
8103 46A	Young, basement - Perimeter wood w/ wall		
47A	" " " " " "		
48A	" " " " " "		

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

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

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

Material Description: Caulking

Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
8103-49A	Young, basement - perimeter w/ WF / glass		
50A	" " " " " " "		
51A	" " " " " " "		

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

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

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

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PLM DATA SHEET

Project No.: 3703 Project Name: Leahi Hospital replace windows Date: 3/9/17

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Material Description: caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3703-52A	Admin, 1st, perimeter WF/wall		
53A	" " "		
54A	" " "		

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

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

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

Material Description: caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3703-55A	Admin, 1st perimeter WF/glass		
56A	" " "		
57A	" " "		

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

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

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

Material Description: caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3703-58A	Admin 2nd, perimeter WF/wall		
59A	" " "		
60A	" " "		

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

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

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

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PLM DATA SHEET

Project No.: 3803 Project Name: Leahi hospital Date: 3/9/11

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Material Description: Caulking — Friable / Non-friable (circle one)

Sample No.	Location	% Asb.	Asb. Type
3803-61A	Admin, 2nd, perimeter WF/glass		
62A	" " " "		
63A	" " " "		

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

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

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

Material Description: Caulking — Friable / Non-friable (circle one)

Sample No.	Location	% Asb.	Asb. Type
3803-64A	~~Atherton~~ Admin, 3rd fl, unpainted mid WF/wall caulk		
65A	" " " "		
66A	" " " "		

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

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

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

Material Description: Caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3803-67A	Atherton, 2nd floor, WWF/glass		
68A	" " " "		
69A	" " " "		

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

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

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

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PLM DATA SHEET

Project No.: 3N03 Project Name: Leahi hospital Date: 3/6/16

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Material Description: caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3N03-N0A	Atherton, 2nd floor, perimeter WF/glass wall		
N1A	" " " "		
N2A	" " " "		

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

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

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

Material Description: caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3N03-N3A	Atherton, basement, perimeter WF/wall		
N4A	" " " "		
N5A	" " " "		

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

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

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

Material Description: caulking — Friable / Non-friable

Sample No.	Location	% Asb.	Asb. Type
3N03-N6A	Atherton, basement, perimeter WF/glass		
N7A	" " " "		
N8A	" " " "		

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

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

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

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PLM DATA SHEET

Project No.: 8903 Project Name: Leahi Hospital Date: 3/9/16

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Material Description: Caulking			Friable Non-friable
Sample No.	Location	% Asb.	Asb. Type
79A	Trotter build - perimeter WF / wall		
80A	" " " "		
81A	" " " "		
	no - glass seam glaze		

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

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

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

Material Description:			Friable Non-friable
Sample No.	Location	% Asb.	Asb. Type
82A	Trotter build, basement, perimeter WF / glass		
83A	" " " "		
84A	" " " "		
	NO wall/WF caulk		
	a rubber -		

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

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

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

Material Description:			Friable Non-friable
Sample No.	Location	% Asb.	Asb. Type

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

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

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

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6-15-17 Kamitsuruma, Minami-ku, Sagamihara-shi, Kanagawa-ken 252-0302 Japan Phone: (042) 851-5675

Lead
Laboratory Analytical Report

Appendix 2

Forensic Analytical LABORATORIES

Metals Analysis of Paints

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

Client ID: 7104
Report Number: M169942
Date Received: 03/11/16
Date Analyzed: 03/16/16
Date Printed: 03/16/16
First Reported: 03/16/16

Job ID / Site: 8703; Leahi Hospital - window replacement
Date(s) Collected: 03/09/16

FALI Job ID: 7104
Total Samples Submitted: 24
Total Samples Analyzed: 24

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
8703-01L	LM121324	Pb	< 0.009	wt%	0.009	EPA 3050B/7420
8703-02L	LM121325	Pb	0.007	wt%	0.006	EPA 3050B/7420
8703-03L	LM121326	Pb	3.5	wt%	0.3	EPA 3050B/7420
8703-04L	LM121327	Pb	0.45	wt%	0.03	EPA 3050B/7420
8703-05L	LM121328	Pb	1.5	wt%	0.2	EPA 3050B/7420
8703-06L	LM121329	Pb	1.3	wt%	0.2	EPA 3050B/7420
8703-07L	LM121330	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
8703-08L	LM121331	Pb	0.97	wt%	0.06	EPA 3050B/7420
8703-09L	LM121332	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
8703-10L	LM121333	Pb	1.3	wt%	0.06	EPA 3050B/7420
8703-11L	LM121334	Pb	0.081	wt%	0.007	EPA 3050B/7420
8703-12L	LM121335	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
8703-13L	LM121336	Pb	0.62	wt%	0.03	EPA 3050B/7420
8703-14L	LM121337	Pb	0.94	wt%	0.06	EPA 3050B/7420
8703-15L	LM121338	Pb	0.0027	wt%	0.0006	EPA 3050B/7420
8703-16L	LM121339	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
8703-17L	LM121340	Pb	2.0	wt%	0.2	EPA 3050B/7420
8703-18L	LM121341	Pb	5.5	wt%	0.4	EPA 3050B/7420
8703-19L	LM121342	Pb	8.8	wt%	0.7	EPA 3050B/7420
8703-20L	LM121343	Pb	0.12	wt%	0.006	EPA 3050B/7420
8703-21L	LM121344	Pb	14	wt%	0.6	EPA 3050B/7420
8703-22L	LM121345	Pb	0.36	wt%	0.03	EPA 3050B/7420
8703-23L	LM121346	Pb	11	wt%	0.6	EPA 3050B/7420
8703-24L	LM121347	Pb	0.21	wt%	0.02	EPA 3050B/7420

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

Forensic Analytical LABORATORIES

Metals Analysis of Paints

EnviroQuest, Inc.
Steve Tanaka
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Date(s) Collected: 03/09/16

FALI Job ID: 7104
Total Samples Submitted: 24
Total Samples Analyzed: 24

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference

* 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

EnviroQuest

MISCELLANEOUS BULK DATA SHEET

Project Name: Leahi hospital- window replacement

Location: "

Page: 1

Date: 3/9/16

Project No.: 8703

Turnaround Time: ☐<12 Hrs ☐24 Hrs ☐48 Hrs ☒3 Days ☐5 Days ☐Other:

Analysis:
- ☐TCLP Lead
- ☐TCLP RCRA 8
- ☒Total Lead
- ☐Micro ID (spore)
- ☐ _____
- ☐ _____

Sampling Media:
- ☐Bulk ☐Tape ☐Wipe
- ☐Soil ☐Vacuum ☐ _____
- ☐Swab ☐Water ☐ _____

	Sample #	Building	Int/ Ext	Flr.	Room	Component	Substrate	Color	% of Waste Stream	Area / Vol	Result
1	8703-01L	Young build,				beige concrete wall/ window sill,		5th floor			
2	02L	"		5th floor,		ext concrete wall at window,		beige			
3	03L	"		"		tan/ brown window wood screen		ext			
4	04L	"		"		white/ green wood windo (Int)					
5	05L	Young build,				beige/ brown wood window system (Int and ext)					
6	06L	Young,		3rd flor		ext brown wood window screen					
7	07L	"		"		beige and brown perimeter wood windows					

Sampled By:	Relinquished By/Date/Time: 3/10/10	Relinquished By/Date/Time	Analyzed By
Delivered to Lab By:	Received By/Date/Time: 11:05A Carrillo FE 3/11/16	Received By/Date/Time	Date Analyzed

SEND ALL CORRESPONDENCE TO: _____ ☐FAX: 808.486.5889 ☐E-mail: eqi@enviroquestinc.com

98-029 Hekaha Street, Suite 21, Aiea, HI 96701 Phone: (808) 486-5881 Fax: (808) 486-5889 E-mail: eqi@enviroquestinc.com

EnviroQuest

MISCELLANEOUS BULK DATA SHEET

Project Name: Leahi hospital - window replacement

Location: "

Page: 2

Date: 3/9/16

Project No.: 3907

Turnaround Time: ☐<12 Hrs ☐24 Hrs ☐48 Hrs ☒5 Days ☐5 Days ☐Other:

Analysis:
- ☐TCLP Lead
- ☐TCLP RCRA 8
- ☐Total Lead
- ☐Micro ID (spore)
- ☐ _____
- ☐ _____

Sampling Media:
- ☐Bulk ☐Tape ☐Wipe
- ☐Soil ☐Vacuum ☐ _____
- ☐Swab ☐Water ☐ _____

	Sample #	Building	Int/ Ext	Flr.	Room	Component	Substrate	Color	% of Waste Stream	Area / Vol	Result
1	3907-01L	Tower Admin	, 2nd	,	1L	brown	windows				
2	02L	"	"	"	below	concrete wall	below window				
3	10L	Admin,	LSh	brown	wood	window syst					
4	11L	"	"	"	1t brown	concrete	window sill				
5	12L	Admin 2nd,		white	wood	window system	Int - Same all floor.				
6	13L	" 3rd	,	white	concrete	wall	window sill				
7	14L	Atherton 3rd floor,		1t blue	concrete	w s	and wall below window				

Sampled By:	Relinquished By/Date/Time: 3/10/16
Delivered to Lab By:	Received By/Date/Time: Camille Fbs 3/11/16 11:05 Am
Relinquished By/Date/Time:	Analyzed By:
Received By/Date/Time:	Date Analyzed:

SEND ALL CORRESPONDENCE TO: _____ ☐FAX: 808.486.5889 ☐E-mail: eqi@enviroquestinc.com

EnviroQuest

MISCELLANEOUS BULK DATA SHEET

Project Name: Leahi hospital – window replacement

Location:

Page: 3

Date: 3/9/16

Project No.: 3h07

Turnaround Time: ☐<12 Hrs ☐24 Hrs ☐48 Hrs ☒3 Days ☐5 Days ☐Other:

Analysis:
- ☐TCLP Lead
- ☐TCLP RCRA 8
- ☒Total Lead
- ☐Micro ID (spore)
- ☐ _____
- ☐ _____

Sampling Media:
- ☐Bulk ☐Tape ☐Wipe
- ☐Soil ☐Vacuum ☐ _____
- ☐Swab ☐Water ☐ _____

	Sample #	Building	Int/ Ext	Flr.	Room	Component	Substrate	Color	% of Waste Stream	Area / Vol	Result
1	3h03-05L	Atherton, 3rd bdrm ceiling WS									
2	16L	" 3rd, " " " off-white									
3	17L	Atherton, 2nd Int wht w WF									
4	18L	" " ext Brown w WF (por									
5	19L	Atherton, Basem, ext brown w WF									
6	20L ~~20L~~	" " " ext bdrm ceiling WS									
7	21L	Trotter, 1st floor – brown w WF									

Sampled By:	Relinquished By/Date/Time: 3/10/16	Relinquished By/Date/Time	Analyzed By
Delivered to Lab By:	Received By/Date/Time: Camille Fite 3/10/16 11:05 AM	Received By/Date/Time	Date Analyzed

SEND ALL CORRESPONDENCE TO: _____ ☐FAX: 808.486.5889 ☐E-mail: eqi@enviroquestinc.com

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MISCELLANEOUS BULK DATA SHEET

Project Name: Leahi Hospital - window replacement

Location:

Page: 4

Date: 3/9/16

Project No.: 8703

Turnaround Time: ☐<12 Hrs ☐24 Hrs ☐48 Hrs ☐3 Days ☐5 Days ☐Other:

Analysis:
- ☐TCLP Lead
- ☐TCLP RCRA 8
- ☑Total Lead
- ☐Micro ID (spore)

Sampling Media:
- ☐Bulk ☐Tape ☐Wipe
- ☐Soil ☐Vacuum
- ☐Swab ☐Water

	Sample #	Building	Int/Ext	Flr.	Room	Component	Substrate	Color	% of Waste Stream	Area / Vol	Result
1	8703 22L	Trotter	1st			beige concrete wall sill below window					
2	23L	" "	basement			" wall below WF					
3	24L	" "	"			beige concrete WS/wall below window					
4											
5											
6											
7											

Sampled By: [signature]	Relinquished By/Date/Time: [signature] 3/10/16	Relinquished By/Date/Time	Analyzed By
Delivered to Lab By:	Received By/Date/Time: [signature] HE 3/11/16 11:05am	Received By/Date/Time	Date Analyzed

SEND ALL CORRESPONDENCE TO: ☐FAX: 808.486.5889 ☐E-mail: eqi@enviroquestinc.com

Photographs

Appendix 3

Photo #1: Young building. Metal windows with asbestos containing caulking.

Photo #2: Young building. Metal windows with asbestos containing caulking.

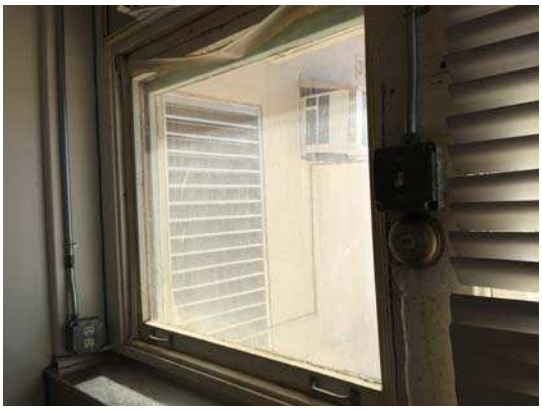


Photo #3: Young building. Wood windows with asbestos containing caulking.

Photo #4: Young building. Wood windows with non-asbestos containing glazing (interior of the frame).

Photo #5: Young building. Wood windows with asbestos containing caulking.

Photo #6: Young building. Wood windows with asbestos containing caulking.

EnviroQuest

PHOTOGRAPHIC LOG
WINDOW REPLACEMENT PROJECT
LEAHI HOSPITAL

Photo #7: Atherton building. Metal windows with asbestos containing caulking.

Photo #8: Atherton building. Wood windows with asbestos containing caulking.

Photo #9: Atherton building. Wood windows with asbestos containing caulking.

Photo #10: Atherton building. Wood windows with asbestos containing glazing (interior of the frame).

Photo #11: Administration building. Windows with asbestos containing caulking.

Photo #12: Atherton building. Wood windows with asbestos containing glazing (interior of the frame).

Photo #13: Administration building. Wood windows with asbestos containing caulking and glazing (interior of the frame).

Photo #14: Trotter building. Wood windows with non-asbestos containing caulking.

Photo #15: Trotter building. Wood windows with non-asbestos containing caulking.

Photo #16: Trotter building. Metal windows with non-asbestos containing caulking.

DIVISION 8 – DOORS AND WINDOWS

SECTION 08520 - ALUMINUM WINDOWS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS: Furnish all labor, materials, tools and equipment necessary to complete all removal work and surface preparation work as specified herein.

1.02 QUALITY ASSURANCE

A. Qualifications of manufacturers: Use products produced by manufacturers regularly engaged in manufacture of aluminum projected windows of this type for a minimum of 5 years.

B. Qualification of workmen thoroughly trained and experienced in the necessary crafts and methods needed for proper performance of the work of this Section.

C. Performance:

1. AAMA Certified: AAMA/NWWDA, 101/I.S.2-08, "C" Commercial.

2. AAMA/WDMA 101/I.S.2/A440-08; ASTM E 283, Air .10 cfm/sf.; ASTM E 331.ASTM 547, Water 12.0 psf.

1.03 SUBMITTALS

A. Shop Drawings: Submit shop drawings for the Architect's review and do not fabricate prior to acceptance. Include calculations and certification on shop drawings stating that assemblies conform to local code requirements including wind loads and are designed to withstand all anticipated thermal expansion and contraction movements.

B. Tests: Test reports by independent testing laboratory verifying specified performance.

C. Samples: Submit samples of finishes including hardware to the Architect for acceptance.

1.04 PRODUCT HANDLING

A. Protection: Protect the materials of this section before, during and after installation. Protect the installed work and materials of all other trades.

B. Replacement: In the event of damage, immediately make all repairs and replacements necessary.

1.05 WARRANTY

A. Contractor shall warrant the installation to be installed securely per manufacturer's instructions and recommendations and shall remain weather-tight for a period of 2-years from the date of project acceptance.

B. Manufacturer's Warranty: Manufacturer agrees to repair or replace aluminum windows that fail in materials or workmanship within the specified warranty period.

1. Failures include, but are not limited to the following:

a. Failure to meet performance requirements.

b. Structural failures include excessive deflection, water leakage, condensation, and air infiltration.

c. Faulty operation of movable sash.

d. Deterioration of materials and finishes beyond normal weathering.

e. Failure of insulating glass.

2. Warranty Period:

a. Window: 10-years from date of project acceptance.

b. Glazing Units: 10-years from date of project acceptance.

c. Aluminum Finish: 10-years from date of project acceptance.

d. The surety shall not be held liable beyond 2-years from the date of project acceptance.

PART 2- PRODUCTS

2.01 MATERIALS

A. The products specified below are manufactured by EFCO to establish the minimal material, quality and performance requirements. The products of the other manufacturers are acceptable provided they meet or exceed the requirements of the specified product.

B. Fixed/Casement Windows: Projecting windows shall be Series 2700, dual glazed, combination fixed/outward projecting, w/ screens.

C. Sliding Windows: Sliding windows shall be Series 3550, dual glazed, high performance sliding windows, w/ screens.

D. Screens: Furnish windows manufacturer's standard aluminum roll-formed screen frame and glass fiber screen cloth. Frame color shall match window.

E. Finish: All windows shall be dark bronze anodized finish.

F. Glazing:

1. Glazing shall be Solarban 70XL solar control low-E tempered safety glazing, each face of dual glazing. 1/4" tempered safety Solar ban 70 on Cllr + 1/2" AS + 1/4" tempered safety Cllr.

2. Fixed spandrel transom or panels, where indicated, shall be 1" aluminum clad panels over high density tempered hardboard with Kynar finish. Color shall be selected by the Architect from manufacturer's full line of standard color selections.

PART 3 - EXECUTION

3.01 SURFACE CONDITION

A. Examine the substrate and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Install windows as indicated on the drawings, square, plumb, and in true alignment. Surfaces shall be free from dents, buckles, dimples, or other defects.

B. Anchor frames and other items securely to continuous construction to result in a rigid installation and in accord with required safety factors. Where anchorage involves other work, provide setting drawings for proper installation.

C. Install hardware and adjust for proper operation. Seal metal to metal joints to prevent the entrance of water except at joints where frame members are designed to drain water to the exterior.

D. At juncture between frames and adjacent materials, seal entire perimeter on both sides. Use sealant and backing material as specified in Section 07900 SEALANTS.

E. Protection of Contact Surfaces: Protect dissimilar metals or with compatible materials such as concrete and other cementitious materials by painting contact surface with bituminous paint before installation or isolate with non-absorptive tape or gasket.

F. Expansion and Contraction: Install aluminum work so as to avoid objectionable distortion or overstress of parts and fastenings resulting from thermal expansion and contraction.

G. Glazing: Determine glass size and edge clearances by measuring actual openings. Set glass on glazing blocks to equally support full glass height and prevent any give or fracture.

3.03 PROTECTION

A. After erection adequately protect by masking with light motor oil, Vaseline or other accepted covering on all exposed parts of the work and finish, protecting against damage from grinding and polishing machines and/or plaster, lime, cement, acid or other harmful substances.

3.04 CLEANING

A. After completion of all other work in the vicinity of the aluminum window frames, remove all masking, oil, Vaseline and other covering used to protect the work and thoroughly clean the aluminum surfaces with soap and plain water or a petroleum product such as white gasoline, kerosene or distillant. Do not use abrasive cleaning agents.

END OF SECTION

SECTION 13282 - LEAD PAINT CONTROL MEASURES

PART 1 - GENERAL

1.01 SUMMARY

A. In performing the handling of building components with lead paint, all possible safeguards, precautions and protective measures shall be utilized to prevent exposure of any individual to lead particulates.

1.02 DESCRIPTION OF WORK:

A. Furnish all labor, materials and equipment necessary to carry out the safe removal, clean-up, proper handling, transportation and disposal of existing paint with lead and building components with lead paint with all applicable laws and regulations concerning lead, including all incidental and pertinent operations. The lead work shall generally include:

1. Incidental disturbance of lead paint during the renovation activities as identified in the Inspection Report.

2. Selective demolition, removal and disposal of building components coated with lead paint as identified in the Inspection Report.

3. Spot removal and disposal of intact paint with lead to allow for the safe new work and/or renovation/demolition work as identified in the Inspection Report.

4. The Contracator shall assume any untested paint to contain lead.

B. The Contractor shall inform his employees, Subcontractors and all other persons performing work in this project, that painted surfaces within the project areas of the building contain lead. The Contractor, his employees, Subcontractors, etc. shall initiate and maintain all programs necessary to execute the work in accordance with the contract documents, federal, state and local laws, codes, rules and regulations.

C. The Contractor shall be responsible for ensuring that all work generating lead paint containing debris conforms to the following applicable federal, state and local laws, codes, rules and regulations.

1. Occupational Safety and Health Administration (OSHA); Hawaii Occupational Safety and Health (HIOSH) standards and rules.

2. Environmental Protection Agency (EPA), Toxic Substance Control Act (TSCA), 40 CFR Part 745, Lead, Requirements for Lead-Containing Paint Activities in Target Housing and Child Occupied Facilities.

3. Environmental Protection Agency (EPA), Resource Conservation and Recovery Act (RCRA) of 1976, amended in 1980 and 1984.

D. The Contractor shall be responsible for initiating and maintaining all safety precautions and programs necessary to keep the work place safe for his employees and Subcontractors; and ready for safe use of the work area and building by the buildings occupants.

1.03 COORDINATION WITH OTHER SECTIONS: The Contractor shall coordinate all of his lead disturbance activities with the State's representative, General Contractor and the Qualified Consultant.

1.04 CONTRACTOR RESPONSIBILITIES: The Contractor acknowledges that he alone is responsible for the instruction and for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard. Contractor shall comply with all requirements of 29 CFR 1926.62. The Contractor shall also be responsible for complying with all applicable EPA regulations in regards to lead-containing materials.

A. Respirators: Use appropriate respirators and filters which meet all requirements of OSHA 29 CFR 1926.62.

B. Protective Clothing: Use appropriate personal protective clothing (disposable suits, eye protection, gloves, etc.) as required by OSHA 29 CFR 1926.62.

1.05 GENERAL REQUIREMENTS

A. The work specified herein shall include the handling of components painted or coated with lead paint, transportation and disposal procedures as required of lead containing materials by persons with at least Training in accordance with OSHA 29 CFR 1926.62. This work must be performed in compliance with all applicable federal, state, and local regulations and be performed by workers who are capable of and willing to perform the work of this contract.

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 removal, transportation and disposal of lead materials.

1. The most recent edition of any relevant regulation, standard, document or code shall be in effect.

C. Specific Statutory and Regulatory Requirements:

1. Title 29, Code of Federal Regulations, section 1926.62, entitled "Lead Exposure in Construction; Interim Final Rule".

2. Department of Labor and Industrial Relations: State of Hawaii, Occupational Safety and Health Standards; Title 12, Subtitle 8, Chapter 148.1, (also known as chapter 12-148.1, Hawaii Administrative Rules, entitled "Lead Exposure in Construction".

3. Title 29 Code of Federal Regulations Part 1910.134, Respiratory Protection.

4. Federal Register: Vol. 54, No. 131; Tuesday, July 11, 1989. Department of Labor, Occupational Safety and Health Administration; 29 CFR Parts 1910, 1915, 1917, and 1918; Occupational Exposure to Lead; Statement of Reasons; Final Rule.

5. Title 40 Code of Federal Regulations Part 61, National Emissions Standards for Hazardous Air Pollutants

6. Title 40 Code of Federal Regulations Part 745, Lead; Requirements for Lead-Based Paint Activities in Target Housing and Child Occupied Facilities; Final Rule

7. Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.

1.06 DEFINITIONS

A. 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. Lead: 30 micrograms per cubic meter of air.

B. Air Monitoring: The process of measuring the content of a specific, known, volume of air in a stated period of time. For this project, NIOSH 7082 method for lead monitoring.

C. Authorized Visitor: The Architect and/or Leahi Hospital Representative, Contractor hired Qualified Consultant, their representatives, air monitoring personnel, or a representative of any regulatory or other agency having jurisdiction over the project.

D. Competent Person: One who is qualified to identify existing and predictable lead hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

E. Contaminated Area: An area where unwanted toxic or harmful substances exists.

F. HEPA Filter: A High Efficiency Particulate Absolute filter capable of trapping and retaining 99.97% of particulates greater than 0.3 micron in length.

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

H. Permissible Exposure Limit (PEL): The employer shall ensure that no employee is exposed to concentrations greater than the PEL as determined from an 8-hour time weighted average. Lead: 50 micrograms per cubic meter.

I. 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 an employee.

J. Qualified Consultant: Consultant hired by the Contracting Officer who will perform air monitoring and inspection during removal work and shall have the authority to initiate engineering controls. The Qualified Consultant will be accredited as a State of Hawaii Department of Health accredited Lead Supervisor.

1.07 ABBREVIATIONS

A. CFR - Code of Federal Regulations

B. HIOSH - Department of Occupational Safety and Health, Department of Labor and Industrial Relations, State of Hawaii

C. EPA - U.S. Environmental Protection Agency

D. NIOSH - National Institute for Occupational Safety and Health

E. OSHA - Occupational Safety and Health Administration

F. NESHAP - National Emissions Standards for Hazardous Air Pollutants

G. LP - Lead Paint

H. TCLP - Toxicity Characteristic Leaching Procedure

1.08 SUBMITTALS PRIOR TO WORK: Final payment will not be made until copies of all submittals have been furnished to and accepted by the Contracting Officer. Submit a completed and compiled electronic submittal package no later than 10 work days from the notice of award unless otherwise specified in this section. The submittal package will include the items listed below.

A. Detailed Work Plan: The Contractor shall submit a project work plan for the lead paint disturbance work. The Plan shall be prepared by the State of Hawaii accredited lead supervisor. The Contractor shall also provide detailed information concerning:

1. Preparation of the work area

2. Personal protective equipment including respiratory protection and protective clothing.

3. Employees who will participate in the project: include documentation of experience, documented proof of lead removal training based on 29 CFR 1926.62 and/or the proposed EPA Model Accreditation for Lead-based Paint Removal Work Training, in addition to any current EPA regulatory requirements, and assigned responsibilities during the project.

4. Decontamination procedures for the personnel who may be exposed to lead paint.

5. Lead paint treatment, handling and disposal methods and procedures to be used.

6. Required air monitoring procedures and sampling protocols.

7. Procedures for final cleanup.

8. A sequence of work and performance schedule in coordination with other trades.

9. Emergency procedures.

B. Shop Drawings: Submit shop drawings for the following items as a minimum:

1. Descriptions of any equipment to be employed not discussed in this section.

2. Security provisions, if any, in and around the project area.

3. Outline of work procedures to be employed.

4. Location of the waste storage area.

5. Staging of the work, the sequence

6. Entrances and exits to the work place

7. Location and construction of worker decontamination units

C. Notices: The Contractor shall obtain a Generator's EPA Identification number (if necessary) for the lead-containing waste material generated from the project that is determined to be hazardous.

D. Insurance: Proof of insurance for Workman’s Compensation and General Liability which covers asbestos, lead, and pollution.

E. Manufacturer's Data: Copies of manufacturer's specifications, installation instructions and field test procedures for each material and all equipment related to lead handling and abatement and include other data as may be required to show compliance with these specifications and proposed uses.

F. Documentation for Instructions:

1. Submit documentation satisfactory to the Contracting Officer that the Contractor's employees, including foremen, supervisors, and any other company personnel or agents who will be exposed to airborne lead dust or who shall be responsible for any aspects of the lead paint removal work activities, have received training in accordance with this specification, 29 CFR 1926.62, (OSHA Lead Awareness or the EPA Model Accreditation for Lead-based Paint Removal Work Training) and any current EPA regulatory requirements.

2. Submit to the Contracting Officer a written respiratory protection program meeting the requirements of 29 CFR 1910.134 documentation that all employees using respirators have received training, and documentation of respirator fit-testing for all Contractor employees and agents who will enter the work area wearing negative pressure respirators. The Contractor shall be solely responsible for his employee's personal protection.

G. Documentation From Physician: Before exposure to lead dust or fumes, the Contractor shall provide workers with a comprehensive medical examination as required by 29 CFR 1926.62, or whichever is stricter. This examination will not be required if adequate records show the employees have been examined as required by the aforementioned regulations within the last year.

H. Respirators: Submit document NIOSH approvals for all respiratory protective devices used on site. Include manufacturer certification of HEPA filtration capabilities for all cartridges and filters.

I. Emergency Planning Procedures:

1. The Contractor shall submit an emergency evacuation plan for the Contrating Officer’s acceptance prior to the commencement of work. This plan shall 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.

2. Emergency Response and Evacuation: The Contractor shall provide and document training in emergency response and evacuation procedures to all workers entering the work area.

J. Waste Disposal and Landfill Requirements: Contractor shall separate lead paint chips and debris from non-hazardous waste materials such as

used plastics, disposable tools, etc. Contractor shall clean all bulk lead-containing debris and waste from non-hazardous plastic, tools, suits, etc. prior to disposal.

1. If Toxic Characteristic Leaching Procedure (TCLP) test results of the containers of waste material are below the EPA limit the lead-containing waste materials (paint chips, contaminated materials, etc.) shall be disposed of at a landfill approved for such purposes. The Contractor shall submit to the Architect and/or HHSC Representative, documentation that the lead-containing waste material removed from the work area has been accepted by the landfill Owner.

2. If the TCLP test results are above the EPA limit or if materials are identified as hazardous waste, the lead-containing waste materials shall be disposed of at an EPA approved facility capable of accepting such hazardous waste.

3. The Contractor shall submit to the Architect and/or Leahi Hospital Representative, documentation that disposal of the lead-containing waste material at the selected landfill is approved by the State of Hawaii, or the EPA approved mainland facility for hazardous lead-containing waste material.

1.09 SUBMITTAL AFTER WORK IS COMPLETED: At the completion of the work, one complete and compiled electronic final report shall be prepared by the Contractor for acceptance by the Contracting Officer. The report shall be submitted and shall include the items listed below.

A. The project name, Contractor, EPA waste generator number, work duration, material removed, respiratory protection employed, waste manifest signed by the Contractor, waste transporter, and ladnfill operator, and total quantity of waste, TCLP lead reports, employee exposure air sample results, and results of the most current PAT round results for the laboratory conducting the employee exposure air sample analysis.

B. Certification of the Contractor's employees.

C. Visitor/Worker Entry Log: The daily log of all personnel including the Contractor's employees and agents who enter the work area while lead removal operations are in progress, until final clearance is received from the Competent Person. The log shall contain the listed information as a minimum and shall be certified by the Competent Person.

1. Date of visit/worker entry

2. Visitor/Worker's name, employer, business address and telephone number

3. Time of entry and exit from work area

4. Purpose of visit

5. Type of protective clothing and respirator worn

6. Certificate of release signed and filed with the contractor

D. Clearance certifications received from the Competent Person.

E. Certification Statement: A statement signed by Contractor that all lead work and disposal was completed in compliance with this specification, Federal and State regulations, and the approved Work Plan.

PART 2 – PRODUCTS

2.01 TOOLS AND EQUIPMENT

A. General: Provide and fabricate suitable tools for the lead-containing paint disturbance procedures.

B. Air Purification Equipment: High Efficiency Particulate Absolute (HEPA) filtration systems.

C. Other tools and equipment as necessary.

2.02 PERSONNEL PROTECTION REQUIREMENTS

A. The Contractor acknowledges he alone is responsible for instruction and for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard.

B. Provide workers with sufficient sets of disposable protective full body clothing consisting of material impenetrable by lead-containing paint chips and of the proper size for each individual to accommodate movement without tearing. Such clothing shall consist of full body coveralls, footwear, gloves and headgear. Provide hard hats as required by applicable safety regulations. Disposable clothing shall not be allowed to accumulate and shall be disposed of as lead contaminated waste. Protective clothing shall be worn by all personnel within the work area from the start of the removal to final visual clearance.

C. Insulated non-skid rubber boots or an accepted equivalent shall be required for all individuals entering the work area. Protective full body clothing without elastic at sleeves and legs shall require separate elastic or taped protection to seal the opening. Visitors shall be provided full body protective clothing.

D. All electrical systems used for lead-containing paint disturbance operations shall as a minimum be protected with "Ground Fault Circuit Interrupters" selected and installed in strict accordance with the manufacturer's instructions, the National Electric Code and all other pertinent codes.

E. Additional safety equipment (e.g. hardhats meeting the requirements of ANSI Z-89.1-2014, eye protection meeting the requirements of ANSI Z87.1-2020, safety shoes meeting the requirements of ASTM F2413-18, disposable PVC gloves), as necessary, shall be provided to all workers and authorized visitors.

PART 3 - EXECUTION

3.01 POTENTIAL LEAD HAZARD

A. The disturbance or dislocation of painted with lead materials may cause lead-containing 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 job site of the seriousness of the hazard and of proper work and protective procedures which must be followed.

B. 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-containing materials, 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.

3.02 WORK AREA PREPARATION:

A. Protect occupants, and surrounding area from possible contamination: Inform occupants of the removal work involving lead.

B. Treatment of Surfaces: During disturbance work, acceptable industry standard dust control methods shall be used to control dust (such as wetting items to be disturbed, by misting; provide dust screens; remove items in large, whole pieces; avoid crushing and pulverizing removal methods; encapsulate material prior to disturbace; use amended water; and containerize wet waste material). Prevent contamination spreading to the surrounding public and residential area.

C. Install 6-mil poly sheeting on all ground surfaces below all potential paint dirsturbance areas. The sheeting shall be extend a minimum of 10 feet out from below the materials being removed.

D. Paint Removal: If cutting of any lead coated materials is required, remove the paint first, using manual methods, to the extent necessary to allow for the cutting of the material. Cuts shall not be performed through painted materials.

E. Barriers: Standard barriers such as construction warning tape, fencing, etc. shall be used to prevent the general public access on to the work

site. Seal any penetrations to the affected work area with 6 mil polyethylene plastic sheeting and duct tape.

F. NESHAP Compliance: Compliance with the requirements of EPA's NESHAP regulation is required for this project. Proper notification of the renovation of the building to the Department of Health shall be the Contractor's responsibility.

G. Ensure that all personnel working on site during the removal work are properly trained and protected as required by law.

3.03 CLEANUP AND TESTING

A. Post-work visual clearance will be conducted by the Qualified Consultant.

B. All non-hazardous waste shall be removed from the site by the completion of the project. The Contractor, in the presence of the Qualified Consultant, shall collect representative samples of the waste stream for TCLP lead analysis. All hazardous waste shall be removed from the site to an EPA approved disposal facility within 90 days of the removal work.

C. Clean Up and Testing: Wet clean and HEPA vacuum clean surfaces and surrounding ground within the lead control 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. When the removal operation has been completed, the area will be cleaned of all visible lead paint contamination by vacuuming with a High Efficiency Particulate Absolute (HEPA) filtered vacuum cleaner followed by wet mopping where applicable. The Qualified Consultant will visually inspect the affected surfaces for residual lead paint chips and accumulated dust. The Contractor shall reclean areas showing dust or residual paint chips. If recleaning is required, the process will be repeated until the visual clearance is given by the Qualified Consultant. Do not remove the lead control area or roped-off perimeter and warning signs prior to the receipt of the Qualified Consultant's lead clearance certification.

3.04 TRANSPORTATION AND DISPOSAL

A. Disposal of Hazardous Waste and Non-hazardous Waste: Contractor shall separate potentially non-hazardous waste material (i.e. plastic sheeting, disposable protective suits, etc.) from hazardous waste material prior to testing. All other debris, scraps, waste materials, rubbish and trash contaminated with lead paint and contaminated dust from the immediate work area and place in UN approved (49 CFR 178) and appropriately labeled containers and store on site for TCLP lead testing. The Contractor shall be responsible for collecting and paying of all TCLP testing.

1. Local waste landfill facilities do not accept any RCRA hazardous waste. All hazardous waste must be disposed of at an EPA approved mainland U.S. RCRA hazardous waste disposal facility. Hazardous waste must be disposed of within 90 days of the waste being created.

2. 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.

B. Disposal of Non-Hazardous Painted Construction Debris (TCLP for Lead Not Exceeding EPA Limits): Remove non-hazardous lead waste including, debris, scraps, waste materials, rubbish, and trash from the site and disposed of at a landfill approved for disposal.

C. The Contractor shall submit disposal manifest and receipts showing acceptance of all waste material by the approved waste disposal site to the Qualified Consultant. The shipping papers shall include a chain-of-custody form and include names and addresses of the Facility Owner, the Contractor, and the Landfill Operator and information on the type and number of waste containers.

3.05 CLEARANCE CRITERIA:

A. Visual clearance of the work area will be performed by the Qualified Consultant. Any additional clearance inspection initiated by the Contractor or required due to failure of the first set of clearance inspection, shall be at the Contractor's expense.

3.06 TESTING AND AIR MONITORING

A. The Qualified Consultant shall have the authority to instigate engineering controls during the project.

B. Testing, daily area (environmental) air monitoring and final clearance inspections shall be provided by the Qualified Consultant, for the purpose of:

1. Verifying compliance with the specifications and the applicable regulations listed in this Section;

2. Ensuring that the documentation required by these specifications and by law is collected and reported to the Contracting Officer;

3. Instigating engineering control during the project.

3.07 CONTRACTOR RESPONSIBILITIES

A. The Contractor shall be responsible for all TCLP lead testing and alaysis.

B. The Contractor shall be responsible for his employees' personnel protection, personal air monitoring and necessary records as required by OSHA, Hawaii State Law and all other applicable laws and as required in these specifications. The Contractor shall provide all required documentation to the government. Contractor shall collect daily personal air samples on at least 25% of the personnel performing removal work with the most exposure for the duration of the project.

3.08 MONITORING RESULTS

A. Airborne lead levels in areas adjacent to the work area or in any part of the work site impacted by the removal activities shall not exceed 30 micrograms per cubic meter of air.

B. If the above ambient concentrations and/or the PEL's are exceeded, the Contractor shall cease all work immediately in any work area causing or contributing to such a condition. The Contractor shall take remedial action (e.g. misting with more water, encapsulation, provide dust screens, etc.) to reduce concentrations to acceptable levels.

C. The Contractor is solely responsible for monitoring his personnel in compliance with all OSHA and HIOSH requirements.

END OF SECTION

SECTION 13289 - LEAD TESTING AND AIR MONITORING

PART 1 - GENERAL

1.01 SUMMARY

A. In performing this project, all possible safeguards, precautions, and protective measures should be utilized to prevent exposure of any individual to lead.

1. These specifications are based upon procedures and standards derived from U.S. regulatory agencies (EPA, OSHA, NIOSH) and the Hawaii State Department of Health as well as from industry and sound industrial hygiene practice. They must be followed to ensure that no measurable amounts of contaminants are released to the uncontrolled work and public areas.

B. Testing, daily area air monitoring and visual inspections shall be provided by the Qualified Consultant hired by the Contracting Officer for the purpose of:

1. Verifying compliance with the specifications and the applicable regulations listed in SECTION 13282 - LEAD PAINT CONTROL MEASURES.

2. Ensuring that the Contracting Officer legally required documentation is collected.

3. Providing engineering control during the project.

1.02 DEFINITIONS

A. Action Level (AL): Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of thirty micrograms per cubic meter of air (30 $\mu g/m^3$) calculated as an 8-hour time-weighted average (TWA).

B. Building Representative: The person or persons designated by the users of the building to act on their behalf.

C. Contractor: The Construction firm engaged to remove and dispose of the materials painted/coated with lead.

D. Qualified Consultant: Consultant hired by the Contracting Officer who will perform air monitoring and inspection during abatement work and shall have the authority to initiate engineering controls. The Qualified Consultant will be accredited as a State of Hawaii Department of Health accredited Lead Supervisor.

E. Engineering Controls: Measures other than respiratory and other personal protection or administrative controls that are implemented at the worksite to contain, control, and/or otherwise reduce exposure to lead-contaminated dust and debris usually in the occupational health setting. The measures include process and product substitution, isolation, and ventilation. The term may be used in the occupational health setting in order to prevent workers' exposures to lead; it can also be used in other lead hazard control settings, such as preventing residents' exposure.

F. Project Designer: The person or firm, certified by the DOH, State of Hawaii, who prepared the plans and specifications to remove and dispose of the lead-containing materials.

G. Project Manager: The State representative responsible for administering the construction contract and ensuring that the work of the Contractor is conducted according to the contract documents and in compliance with applicable laws, regulations, ordinance, etc.

H. Project Monitor: A member of the construction management team who enters the work area to set up the air monitoring device and then collects the various air samples to be sent to the laboratory for analysis.

1.03 COORDINATION WITH OTHER SECTIONS

Coordinate with the Contracting Officer's Consultant/Project Monitor for the testing and monitoring requirements included in Section 13282 - LEAD PAINT CONTROL MEASURES and all applicable Federal, State, and local regulations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 CONTRACTOR'S RESPONSIBILITIES

A. The Contractor shall be responsible for providing the daily personal air monitoring and necessary records for all the Contractor's employees for the duration of the project as required by OSHA (29 CFR 1926.62), and all other applicable laws.

B. The Contractor shall obtain the OSHA required reports for personnel air monitoring as part of the contract.

C. The Contractor shall be responsible for daily personal air samples that shall be collected on at least 25% of the Contractor's personnel performing removal work on similar tasks and for the duration of the project. Submit within 5 working days to the Contracting Officer.

D. The Contractor is solely responsible for protecting his workers, other personnel, and the public from any of his work activities at the work site regardless of the testing and monitoring conducted by the Contracting Officer.

E. Monitoring information developed by the Qualified Consultants activities while under contract with the Contracting Officer shall be for the use of the Contracting Officer. The information will be available and offered to the Contractor when developed, but not thereafter, and shall not waive the Contractor's obligations stated elsewhere in this section.

F. Air monitoring and testing which becomes necessary to follow up on the work by the Contractor which is rejected as not conforming to the requirements shall be the responsibility of the Contracting Officer. However, the full cost of such additional monitoring and testing shall be borne by the Contractor and shall be deducted from the final contract payment.

G. Personal air monitoring that becomes part of the Consultant's scope of work shall be accommodated by the Contractor.

H. Prior to disposal of lead contaminated wastewater, one wastewater (as applicable) sample shall be collected by the Contractor, to determine whether it can be disposed of as non-hazardous waste or with an EPA approved hazardous waste disposal facility as hazardous waste. Contractor shall obtain and submit to the Contracting Officer, a permit to conduct such disposal into the sanitary sewer system prior to disposal. Disposal of all wastewater suspected of being contaminated with lead in the storm drain system is prohibited. Wastewater, no matter what its lead content, shall not be dumped on the ground. Contractor is ultimately responsible for and shall include in his bid the cost to properly dispose of all waste, hazardous or non-hazardous. Submit a copy of the permit to the Contracting Officer.

I. Perform lead Toxic Characteristic Leaching Procedure (TCLP) metals testing on all solid waste debris contaminated with lead (except for painted scrap metal), in accordance with 40 CFR Part 261 “Identification and Listing of Hazardous Waste”. Painted metal debris shall be separated from the rest of the lead- contaminated waste and disposed of as scrap metal at a metal recycler (when disposed of as scrap metal, TCLP testing is not required). The TCLP testing shall be used to determine whether waste is hazardous or non-hazardous prior to disposal. Dispose of lead-contaminated debris as hazardous waste if the waste is determined to be hazardous by the TCLP testing. If the TCLP testing indicates that the waste is non- hazardous, the Contractor shall dispose of the waste as non-hazardous, construction waste.

3.02 AIR MONITORING AND INSPECTIONAL SERVICES

A. Duties of the Qualified Consultant:

1. Photographic Record of Project: Record the lead abatement project with representative photos to the Contracting Officer. All photos shall become the property of the Contracting Officer and are to be accompanied by a detailed log.

2. Project Log: Maintain daily field reports detailing all key activities during abatement and make a submittal of summary project activities to the project designer and the Contracting Officer's Project Manager. Incorporate the contents of the daily field reports with other project data into a final project report.

3. Visual Inspection of all Containment Areas: Perform regular inspection of all containment areas. Conduct inspections during the actual work performance of the Contractor to document the work practices employed by the Contractor and conduct visual clearances to verify that all materials scheduled for abatement were removed and the area was properly cleaned. Submit clearances to the Contracting Officer.

B. Air Monitoring: The State's Qualified Consultant shall perform the following activities associated with this portion of the project:

1. Laboratory on-site personnel air monitoring (if not provided by the Contractor) as required by OSHA and HIOSH, and the project specifications.

2. Laboratory analysis for lead-in-air using NIOSH 7082 or OSHA method.

3. Monitoring of decontamination procedures at site entry/exit.

4. Monitoring of containment maintenance by visual and instrumental inspection.

5. Interface with project inspectors, building representatives, representatives of regulatory agencies, and project designers during site visits.

6. Ensure that proper respiratory protection is utilized by all persons at the project site.

7. Relay to the Contracting Officer's Project Manager any discrepancies in Contractor's action with provisions of project specifications.

8. Act quickly in case of emergencies with appropriate response.

3.03 LABORATORY ANALYSIS

All personal air samples collected by the Contractor shall be analyzed by an AIHA certified laboratory for the analysis being requested. All laboratories shall be registered with the Hawaii Department of Health.

3.04 DAILY TESTING RECORDS

At the conclusion of every day's testing the Contracting Officer's Qualified Consultant/Project Monitor shall provide copies of all testing and monitoring records to the State.

END OF SECTION

SECTION 15400 - PLUMBING

PART 1 - GENERAL

1.01 SUMMARY

A. Plumbing work to include installation of new plumbing fixtures and equipment (including associated plumbing line, supports, accessories, etc.) as indicated in plans and specifications.

1.02 SUBMITTALS

A. Submit in accordance with Section 01330 - Submittal Procedures.

B. Equipment Submittal: Before beginning work, submit for review certified literature showing dimensions of equipment, a list indicating manufacturer and model of fixtures and trim, and a list indicating all materials and items that are of a different manufacturer or model than those specified.

C. Shop Drawings: After review of equipment, submit for review dimensioned installation shop drawings to scale showing details where space requirements present problems, proposed departures from the Contract Documents due to field conditions, and requirements for the concrete work, access panels, inserts in slabs, and openings in structure.

D. As-Built Drawings: Record changes from the contract drawings of all concealed piping. Indicate location of isolating valves and items requiring maintenance or inspection. Dimension underground piping from a visible point on structure. Indicate invert and slope of drainage piping at sufficient location so that the invert can be calculated for any point in the system. Submit field posted as-built drawings for review as required by Section 01770 - Closeout Procedures.

E. Certificates: The Contracting Officer shall have the right to require a written certificate, dated and signed by a responsible employee of this Contractor, evidencing the performance of any portion of the work, or any testing; as a condition precedent to the acceptance of any work or the result of any test. Whenever a regulatory agency performs inspections or tests of any portion of the work, a certificate shall be furnished by the Contractor that the inspection or test was satisfactorily passed.

F. Warranty: Submit warranty as noted under item entitled “WARRANTY” below.

1.03 QUALITY ASSURANCE

A. Comply with all the requirements of the City and County of Honolulu, State of Hawaii.

B. Obtain and pay for all fees, permits, licenses, assessments, connection charges and inspections required for this work.

C. Products of the following manufacturers are acceptable.

D. Comply with the recommendations and requirements of the Codes and Standards listed hereinafter in addition to detailed requirements of this specification. In the event of conflicting requirements, this specification shall prevail.

1. American Society for Testing and Materials (ASTM) Publications:

A74	Cast Iron Soil Pipe and Fittings
B53	Pipe, Steel, Black and Hot-Dipped Zinc Coated Welded and Seamless
B88	Seamless Copper Water Tube
B306	Copper Drainage Tube (DWV)
C564	Rubber Gaskets for Cast Iron Soil Pipe and Fittings

2. American National Standards Institute Publications (ANSI):

B16.18	Cast Copper Alloy Solder-Joint Pressure Fittings
B16.22	Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
B16.23	Cast Copper Alloy Solder Joint Drainage Fittings-DWV
B16.26	Cast Copper Alloy Fittings for Flared Copper Tubes
C1	National Electrical Code
C2	National Electrical Safety Code

3. Cast-Iron Soil Pipe Institute Publication (CISPI):

Standard No. 301	Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications
Standard No. 310	Couplings Joint for Use in Connection with Hubless Cast Iron Soil Pipe and Fitting
Pamphlet	Installation Suggestions for “No Hub” Pipe 100

Fittings

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Furnish new equipment, fixtures, materials and accessories bearing the manufacturer's identification. Coordinate deliveries to avoid interference or construction delays. Protect products during delivery, storage, installation, and the remainder of the construction period after installation.

1.05 WARRANTY

A. All work in this Section shall be guaranteed by the Contractor for a period of one year from the date of project acceptance as a whole. Should any fixture or material fail within this period, this Contractor shall be responsible for all damage to any part of the premises caused by the failure and shall repair or replace the defects at no cost to the Hospital.

PART 2 - PRODUCTS

2.01 PLUMBING FIXTURES

A. Provide chrome plated all brass faucets, flush valves, angle stops, tube risers, chrome plated P-traps, escutcheons and cover plates. Provide connecting fittings, china bolt caps, wall support brackets as required. Furnish masonry and concrete contractor with wall sleeves and inserts required for fixture installation. All valves bronze and brass with chrome plating. All sinks and lavatories shall have 1.5 gpm cold water flow restrictors. All water closets shall be maximum 1.28 gallons per flush. All urinals shall be maximum 1.0 gallons per flush. Provide access panels as required for servicing of flush valves, valves, etc. Mount accessible flush valve on wider side of stall. Provide brass closet bolts, nuts, washer, plastic bolt caps, escutcheon plates and water closet flange/seal for all water closets. Toilet seats shall be white, open front, elongated type. P-trap guard, offset drain guard and angle stop covers shall be white in color. P-trap guard shall be Tru-bro E-Z fit or equal. All sinks shall have cleanouts on traps.

1. Accessible Lavatory (ALAV): Kohler K-2007 Kingston lavatory, 21-1/4" by 18-1/8", white vitreous china, wall mount, one 1-1/4" diameter holes, 4-inch centers, front overflow and backsplash. Provide Smith 0700E concealed arm carrier with wall bracket and floor support. Kohler K-7131-A-CP offset drain with perforated grate and 1-1/4-inch tailpiece. Provide concealed arm floor mounted support. Provide with Elkay Single Hole Concealed Deck Metered Lavatory Faucet with Cast Fixed Spout Push Button Handle Chrome, model LK654. Faucet is made of Chrome-plated Brass material, with a Ceramic Disc valve. Faucet requires 1 faucet holes. Faucet requires 1 faucet hole. Install in accordance with ADAAG 2010 section 606 requirements.

2. Accessible Roll-in Shower (ASH): Ceramic tile shower floor and walls, laticrete hydroban waterproofing system. Provide Laticrete Hydroban drain with drain grate, 2" I.P.S. drain outlet, 5" x 5" stainless steel grate/strainer. Provide Kohler K-TS15601-4 "Coralais" shower mixing valve faucet, assembly less (without) tub spout, ADA-compliant single lever handle, Kohler K-8304-KS concealed type pressure balancing valve with screwdriver stops, anti-scalding mixing valve, with all metal construction & polished chrome finish. Shower spray shall deliver water that is 120 F maximum. Provide with Kohler K-22178-G "Purist" ADA hand-held shower with with a non-positive shut-off, 1.75-gpm multifunction handshower, 60" metal hose, vacuum breaker, wall elbow, and 30" slide bar with adjustable height hand shower mount. Slide bar shall be installed so as not to obstruct use of shower stall grab bars. Install in accordance with ADAAG 2010 section 608 requirements.

3. Accessible Water Closet (AWC): Kohler model K-84325-0 Kingston Ultra, vitreous china, 13-1/4" height bowl, 1.28 gallon per flush, wall mounted rear spud with excellent bowl rinse, 10" x 7" water surface, 1-7/8" fully glazed trapway, elongated bowl, floor mounted support model Smith 0410 or approved equal, white vitreous China. Provide Kohler K-4670-SA commercial elongated toilet seat and open-front toilet set with antimicrobial agent inhibits growth of odor-causing bacteria, mold, and mildew. Provide Sloan model Royal 111-1.28 or approved equal with royal exposed manual water closet flushometer, single flush, 1.28 gallon per flush, polished chrome finish, and fixture connection top spud. Valve operating pressure shall between 15 to 80 psi. Mounted height not more than 12". Install in accordance with ADAAG 2010 section 604 requirements.

B. Maintenance Tools: Provide 2 sets of maintenance tools per building, including range adjustment tool, strap wrench, and hex wrench provided by the factory.

2.02 EQUIPMENT

A. Requirements of the manufacturer's equipment that is a component of a system provided under this work is included with the system's specification hereinafter. Capacities and characteristics of the equipment are indicated on the drawings. See electrical drawings for voltage and phase requirements of all equipment furnished under this work.

2.03 PIPE AND FITTINGS

A. Sanitary Waste and Vent Pipes, Below Grade: Service weight cast-iron soil pipe, ASTM A74, with dual tight gaskets, or no-hub cast-iron soil pipe conforming to CISPI 301 with MG couplings.

B. Below grade piping within building in sizes 6-inches and smaller may be hubless cast iron sanitary system with MG mechanical cast iron couplings or accepted equivalent, conforming to Cast Iron Soil Pipe Institute's Standard 301-72. Stainless steel couplings are unacceptable. Each assembled coupling shall bear the following clearly identifiable markings: the manufacturer, the size, and the letters UPC, indicating conformance with the Uniform Plumbing Code. Install couplings per manufacturer's written instructions and tighten nuts or bolts heads alternately and gradually to manufacturer's specifications using an accurate torque wrench.

C. Sanitary Waste and Vent Pipes, Above Grade: Above grade cast iron soil, waste and vent piping in enclosed pipe shafts, concealed ceiling spaces, or enclosed under floor spaces may be No-Hub systems, Tyler No-Hub pipe and fittings or equal, conform to Cast Iron Soil Pipe Institute Standard 301-82 with Cast Iron Soil Pipe Institute Standard 310 coupling joint.

D. Water Pipes, Below Grade: Type "K" seamless rigid copper tubing conforming to ASTM B88 with wrought copper solder type fittings conforming to ANSI B16.22 or ANSI B16.18. Joints shall be brazed with a silver alloy filler metal. Submit 5 copies of certificates stating that solder and fluxes used are lead-free.

E. Water Pipes, Above Grade: Above ground piping shall be Type “L” seamless rigid copper tubing conforming to ASTM B88 with wrought copper or cast copper alloy solder type fittings conforming to ANSI B16.22 or ANSI B16.18. Solder shall be 95-5 tin-antimony. Submit 5 copies of certificates stating that solder and fluxes used are lead-free.

2.04 VALVES

A. Ball Valves, 1/2-inch to 2-inch: Bronze construction, 2-piece body, 600-psi WOG, full-port, insulated quarter-turn handle, double O-ring stem seals, blowout-proof stem, PTFE seats.

B. Check Valves: bronze body, swing type, renewable disc, screwed cap and ends, 125 psi SWP.

C. Strainer: Y-strainers for lines 2-inches and smaller, bronze body, 20 mesh stainless steel screen, screwed ends, hose end valve, 300 psi WOG.

D. Unions: Provide unions at all equipment and accessory locations and at screwed valves. Provide dielectric unions at lines of dissimilar metals. EPCO Model FX or accepted equivalent.

2.05 PLUMBING SYSTEM SPECIALTIES

A. All drains and floor cleanouts with flashing flange and strainers maximum 1/4" openings, tops shall be matching nickel/bronze cleanout covers.

B. Cleanout: Josam 58480 series, coated cast iron, spigot connection, bronze threaded plug.

C. P-traps installed below floor: Deep-seal P-trap.

2.04 PIPING INSULATION

A. All insulation material applied to the exterior surface of metal pipes shall have flame spread of not more than 25 and a smoke development rating of not more than 50 when tested as a composite installation, including insulation, facing material, tapes, and adhesives as normally applied.

B. Hot water pipe insulation shall AP Armaflex insulation, Armacell or substitute. Closed cell structure, built-in vapor retarder. Provide air drying contact adhesive for joining seams and butt joints of the Armaflex insulation. Insulation thickness: 1-inch minimum. Installation in accordance with manufacturer's latest recommendations. Seal all joints with insulation manufacturer's approved adhesive.

C. On pipe insulation exposed to weather or subject to damage, apply 1 mil embossed aluminum jacket with 2-inch overlap at longitudinal and circumferential joints, secured in place with 3/4 inch x 0.015 gauge aluminum on 18 inch centers. Apply humped aluminum ells or fabricated 16 mil aluminum to fittings and band in place.

PART 3 - EXECUTION

3.01 PREPARATION

A. Visit the worksite and become fully aware of all existing conditions. Investigate the Contract Documents and make proper provisions to avoid interference or construction delays. Determine the exact route of each pipe. Make offsets and changes in direction required to maintain proper head room and pitch or to accommodate the structure and the work of other trades. Furnish other trades with information to properly locate and size openings in the structure required for this work. Furnish anchor bolts, sleeves, inserts, and supports required for this work.

3.02 INSTALLATION AND REQUIREMENTS

A. Perform work using personnel skilled in the trade involved. Provide competent supervision. Furnish new equipment, fixtures, materials, and accessories bearing the manufacturer’s identification and conforming to recognized commercial standards. Provide all extra materials and labor for a complete operable system at no extra cost to the Hospital. Installation shall be in accordance with manufacturer's recommendations.

3.03 FIXTURE INSTALLATION

A. Set fixtures in an approved workmanlike manner. Point up all edges against building structure with white grout. Provide adequate supports for wall-mounted fixtures. Provide supplies for all waterlines to fixtures, except those using flush valves; Brass-Craft or equivalent, compression joint type with chromium plated brass escutcheon and cover tube, loose-key angle stop valve, and drawn copper tube riser. Provide chromium plated brass P-trap, waste fittings, escutcheon and cover tube, loose key angle stop valve, and drawn copper tube riser. Provide chromium plated brass P-trap, waste fittings, and escutcheon as required for fixture. Exposed metal including pipe shall be polished chromium plated.

3.04 PIPING INSTALLATION

A. Conform to the requirements of the Uniform Plumbing code. Inspect all piping inside and outside. Remove interior obstructions and ream out pipe ends. Tool markings on polished fittings are not acceptable. Cut pipe accurately so that it can be worked into place without springing or forcing. Install pipes parallel to the wall of the structure and plumb. Make changes in direction with fittings. Bushings are not permitted. Install valves with stems above horizontal. Provide proper support and adequate provisions for expansion, contraction, slope, and anchorage. Provide dielectric unions where copper tubing connects to steel pipe. Wrap pipe or tubing with 1/4-inch thick felt and secure with tape where it contacts other materials. Have piping tested, inspected, and approved before it is furred in, buried, or otherwise hidden. Provide standard weight galvanized steel pipe sleeves where water pipes pass through structure, sufficiently large to provide 1/4-inch clearance around pipe. Caulk watertight around pipes passing through sleeves. Wrap pipe with polyethylene tape where it passes through sleeve and where it contacts concrete or masonry. Grout with fireproof material around all pipe penetrations through slabs and walls for full length of penetrations. Provide chrome-plate brass escutcheons, set tight on the pipe and to the wall where pipes are exposed in finished areas. Provide clamping collar to membrane flange where pipe or drains penetrate waterproof membrane. Perform all welding using qualified welders in accordance with American National Standards Institute’s Code B31.1 and American Welding Society Standard B3.0.

3.05 PIPING SYSTEM SUPPORTS

A. Pipe Supports: Support underground piping on firm soil along its entire length. Where rocks are encountered, have trench excavated to minimum overdepth of 4-inches and backfilled with granular moist earth, thoroughly tamped. Materials used for backfilling over piping shall be granular earth, free from debris and stones. The Contracting Officer’s representative may reject any materials which he considers unsuitable for fill. Provide a minimum of one foot of cover for all pipes. Support steel and copper pipe at maximum spacing of 6-feet for pipes 1-1/2-inches and smaller, 10-feet for pipes 2-inches through 4-inches.

B. Pipe Hangers: Steel clevis hanger with adjustable hanger rod; 3/8" for pipe 2" and smaller, 1/2" for pipe 2-1/2" through 3-1/2" and 5/8" for pipe 4" and larger. Groups of lines may be supported from steel channel pipe clamp.

3.06 DRAINAGE, WASTE AND PIPE SYSTEMS

A. Slope drain lines at 1/4-inches per foot unless otherwise indicated. On roof vents and where other drains occur above the ground floor, provide clamping device with drain. Provide a 4-pound lead flashing sheet extending 8-inches out around drain body and secure with clamp device. On vents through roof, extend vent flashing 8-inches out all around base of vent, extend collar up vent and turn in at top. Install hubless cast-iron and neoprene gasketed no-hub coupling below grade. MG stainless steel clamps and cast-iron no-hub couplings shall be installed in accordance with manufacturer's written instructions. Cleanout to grade shall be encased in concrete, flush with finished grade.

3.07 WATER PIPING SYSTEM

A. Secure each water line where it penetrates partitions to serve fixtures, hose bibs, and similar items. Wrap all lines passing through concrete with polyethylene tape. Install unions or flanges at all valves, equipment, and system specialties. Set hose bibs 18-inches above finished grade unless otherwise indicated. Install dielectric unions at connections of copper and ferrous pipes.

B. Provide water hammer arrester on all cold water lines serving fixtures using flush valves sized in accordance with the PDI Standards WH201 for the total number of fixture units connected to the branch line. Install arrester between last 2 fixtures served or as shown. Provide access panel for concealed arresters.

C. Provide all hose bibbs with non-adjustable vacuum breakers and square head cock.

3.08 STANDARDIZED PIPE IDENTIFICATION SYSTEM

A. Use an arrow marker with each pipe content marker, the arrow shall always point away from the pipe marker and in the direction of the flow.

B. If flow can be in both directions, use a double headed arrow marker.

C. Apply pipe marker and arrow marker at every point of pipe entry or exit where line goes through wall.

D. Apply pipe marker and arrow marker on each riser and "T" joint.

E. Apply pipe marker and arrow marker every 20-feet on long continuous lines.

F. Apply markers on the 2 lower quarters of the pipe and where view is unobstructed.

G. Arrow markers shall be 4-inches long minimum, and pipe content marker lettering shall be block-style lettering, all caps, with size minimum 1-1/2-inches in height. All identifications shall be contrasting color against the background, i.e. black lettering against white pipe insulation.

3.09 TESTING AND ADJUSTING

A. All work shall be completely installed and tested as required by this Section and the applicable plumbing ordinances, and proven leak tight before inspection is required. Providing all required equipment and labor to make the test and repeating the tests to the satisfaction of those making the inspection is within the scope of this Section of the specifications. Any work concealed without the required test and approval shall be uncovered and tested at the Contractor's expense.

B. Procedure:

1. Soil, Waste and Vent Piping: Filled with water to the highest point in each system, and left filled for 8 hours with no noticeable change in water level; after approval, remove the test plugs and flush the line.

2. Water Piping: At 150 psi and left for an 8 hour period without loss of pressure; and left under line pressure for the balance of the construction period.

3. Plumbing Fixtures: Filled with water and checked for leaks and/or retarded flow.

4. All Valves: Adjusted and balanced to provide for the proper operation of the various systems. After disinfecting, strainer screens shall be removed, cleaned, and reinstalled.

3.10 DISINFECTING

A. All domestic cold and hot water lines shall be thoroughly flushed and drained after installation. Sterilization shall be accomplished by opening taps at the end of all branches and slowly filling the system adding liquid chlorine, or hypochlorite solution, to the water until water flowing from all branches indicates not less than 50 P.P.M. residual chlorine; the system shall be allowed to stand for not less than 8 hours, with all valves opened and closed several times during this period; then drained and thoroughly flushed until all traces of chlorine are eliminated (less than 0.2 P.P.M.). Certificate shall be submitted to the Contracting Officer. The Contractor shall be responsible for the proper disposal of chlorinated water to

safeguard public health and environment in accordance with applicable Department of Health requirements.

3.11 FIELD QUALITY CONTROL

A. Test plumbing systems in accordance with the Uniform Plumbing Code. Perform tests in the presence of, and to the satisfaction of inspectors having jurisdiction over the work. Ask for final inspection by the Engineer after tests, adjustments and balancing has been performed.

1. Test drainage systems in accordance with Section 318 of the Plumbing Code.

2. Hydrostatically test the domestic water piping system at 100 psi for 2 hours. Inspect the entire system while under pressure and correct all deficiencies.

3. Test equipment to demonstrate its operation and compliance with the specification.

3.12 SPARE-PARTS

A. After approval of materials and equipment and 2 months prior to the project acceptance date, the Contractor shall furnish a complete list of parts and supplies with current source of supply.

3.13 TESTING AND INSPECTION

A. Contractor shall furnish all equipment for tests and any required retests and pay for all cost of repairing any damage resulting from such tests. Contractor shall adjust systems until they are approved. Tests shall be performed in the presence of, and to the satisfaction of, an inspector of the official agency involved.

B. Sanitary and water piping shall be tested in accordance with the Plumbing Code. Sanitary drains shall be tested with a minimum of 10 feet of water for 15 minutes. Water piping shall be tested. Valves shall be rated for at least 200 psi working pressure.

C. Defective Work: If inspection of tests show defects, such defective work or material shall be replaced and inspection and tests repeated. Repairs to piping shall be made with new material. No caulking of screwed joints or holes will be accepted. Installation shall be repaired by skilled mechanics of the trade involved at no extra expense to the Hospital.

D. Protection to Fixtures, Materials and Equipment: Pipe openings shall be closed with caps or plugs during installation. Fixtures and equipment shall be tightly covered and protected against dirt, water and chemical or mechanical injury. Upon completion of all work, the fixtures, materials and equipment shall be thoroughly cleaned, repainted, adjusted and operated.

E. Chlorination: Domestic water lines shall be sterilized with chlorine before acceptance of work. Sterilize water system for 24 hours with 100 ppm chlorine introduced into the lines in an approved manner. Dosage of chlorine shall not be less than 50 ppm. After a contact period of not less than eight (8) hours, the system shall be flushed with clean water until the residual chlorine content is not greater than 0.2 ppm. All valves in the lines being sterilized shall be opened and closed several times during the contact period. A certificate shall be furnished to the Engineer evidencing proper performance of sterilizations.

3.14 PIPE PENETRATION

A. Where pipes penetrate fire rated walls and floors, the space between the pipe and pipe sleeve shall be sealed with fireproof sealant.

B. Installation shall be in accordance with manufacturers' instructions.

3.15 CLEANING AND ADJUSTING

A. At the completion of the work, all parts of the installation shall be thoroughly cleaned. Equipment, fixtures, pipe valves, and fittings shall be cleaned of grease and metal cuttings, and sludge that may have accumulated by operation of the system for testing. Any stoppage or discoloration or other damage to parts of the building, its finish, or furnishing, due to the Contractors failure to properly clean the piping system shall be repaired by the Contractor without cost to the Hospital. Touch up with matching paint all damaged factory finishes.

END OF PLUMBING

SECTION 15800 - AIR CONDITIONING AND VENTILATION

PART 1 - GENERAL

1.01 SUMMARY

A. This section shall apply to all phases of work indicated in contract drawings, or required to provide for a complete installation of mechanical systems included in this project.

1.02 DESCRIPTION OF WORK

A. This section covers the furnishings, fabrication, delivery and installation of the air conditioning system complete, including but not limited to the following:

1. DX Split System Air Conditioning Units.

2. Modulating Dampers.

3. Sheetmetal and flex duct.

4. Air filters.

5. Condensate drain and refrigerant piping.

6. Corrosion Coating.

7. Controls.

8. Adjusting, balancing and testing.

9. Operating and maintenance instructions.

10. Manufacturer’s literature, shop drawings and record drawings.

11. Exhaust fan.

12. Supply fan.

13. Air devices.

14. Insulation.

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

A. All power wiring including disconnects and wiring to all motor specified in Division 16 - Electrical.

1.04 QUALITY ASSURANCE

A. Comply with all the requirements of the County of Honolulu and State of

Hawaii.

B. Obtain and pay for all fees, permits, licenses, assessments, and inspections required for this work.

C. Substitutions of another manufacturer's product specified hereinafter and for items with "acceptable equal" after the brand name requires approval. Substitutions are not allowed prior to award.

D. All applicable codes, regulations and ordinances of public bodies having jurisdiction and considered a part of these specifications; all work installed and materials provided must comply with the current edition of such codes, regulations and ordinances.

1.05 SUBMITTALS

A. Submit in accordance with Section 01330 - Submittal Procedures.

B. Equipment Submittals: Before beginning work, submit for review manufacturer's certified literature showing ratings and dimensions of equipment and of a list indicating all materials and items that are of a different manufacturer or model than those specified. Include equipment wiring diagrams.

1. Submittals Shall Include the Following Items:

a. DX split system.

b. Exhaust fans and supply fan with sound data.

c. Insulation.

d. Air devices, flex duct and duct accessories with sound data.

e. Control wiring, devices and diagrams.

f. Corrosion protection.

g. Adjusting, balancing and testing.

h. Operating and maintenance instructions.

i. Manufacturer's literature, shop drawings and record drawings.

2. Submittals Shall Include the Following as a Minimum:

a. System design information sheet.

b. Description of system operation.

c. Electrical power and control wiring diagram.

d. Catalog information on control components.

e. Fan performance

C. Shop Drawings: After review of equipment, submit for review dimensioned installation shop drawings to scale showing details where space requirement prevents problems; proposed departures from the Contract Documents due to field conditions, requirements for concrete work, access panels, inserts in slabs, and openings in structure.

D. As-Built Drawings: Record changes from the contract drawings of all concealed piping, ductwork and equipment. Indicate location of isolating valves, dampers, and items requiring maintenance or inspection. Submit As-Built Drawings for review prior to final inspection.

E. Certificates: The Contracting Officer will have the right to require a written certificate, dated and signed by a responsible employee of the Contractor, evidencing the performance of any portion of the work, or any testing; as a condition precedent to the acceptance of any work or the result of any test. Whenever a regulatory agency performs in sections or tests of any portion of the work, a certificate shall be furnished by the Contractor that the inspection or test was satisfactorily passed.

F. Mechanical Equipment List: Submit the mechanical equipment list for all Contractor furnished pieces of mechanical equipment, using the form found at the end of this section. Contractor to submit the completed form (with all new air conditioning equipment listed) upon completion or final acceptance of the project.

G. Testing and Balancing Report: After installation, the new system shall be tested, balanced and adjusted. Submit 4 copies of the testing and balancing report to the Contracting Officer for review and approval prior to the final acceptance of the project.

H. Guarantee: Submit Guarantee as noted under item entitled “GUARANTEE” hereinbelow.

I. Maintenance Service Contract: Submit Maintenance Service Contract as noted under the item entitled “ONE YEAR MAINTENANCE SERVICE CONTRACT” hereinbelow.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Furnish new equipment, material, and accessories bearing the manufacturer’s identification. Coordinate deliveries to avoid interferences or construction delays. Protect products during delivery, storage, installation and the remainder of the construction period after installation.

1.07 OMISSIONS

A. It is the intent of the plans and specifications to provide a complete

installation. Should there be omissions, the Contractor shall call the attention of the Contracting Officer to such omissions in 14 days advance of the date of bid opening so the necessary corrections can be made.

1.08 GUARANTEE

A. Contractor and installer shall guarantee and certify in writing all work in this section for a period of one year after 30 days of trouble-free operation from the date of project acceptance by the Contracting Officer. Replacement of lost refrigerant and correction of undue noise or vibration is included on the guarantee. Contractor shall be responsible for all damages to any part of the premises during equipment installation work under this section. Normal maintenance requirements are not included in this guarantee. Should any equipment or material fail due to the faulty workmanship or materials within this period replace or repair that item at no cost to the State.

PART 2 - PRODUCTS

2.01 EQUIPMENT

A. Capacities and characteristics of equipment are indicated on the drawings. See electrical drawing for all voltage and phase requirements of all equipment furnished under this work. Provide combination magnetic across-the-line starter, control voltage transformer and circuit breaker for each motor of mechanical equipment unless the equipment is factory-wired to a single power connection or unless otherwise indicated hereinafter. Exterior starters shall be NEMA 4X waterproof type enclosure. Provide disconnect switch for all mechanical equipment. All steel surfaces shall be hot-dipped galvanized. All steel exposed to weather shall be hot-dipped galvanized and shall have an additional two coats of zinc rich rust-proof paint. Provide vibration isolators as indicated hereinafter.

B. Exhaust Fan (EF-1 & EF-2): Greenheck SP-A model or approved equal. Ceiling mounted exhaust fans shall be of the direct drive type. The fan housing shall be constructed of heavy gauge galvanized steel. The duct collar shall include a backdraft damper. The stainless steel grille shall be constructed of high-impact polystyrene and attached to the housing with hidden attachment screws. The access for wiring shall be external. The disconnect switch shall be wired from fan motor to junction box installed within motor compartment. The motor shall be mounted on vibration isolators. The fan wheel shall be of the forward-curved centrifugal type, constructed of calcium carbonate filled polypropylene and dynamically balanced. All fans shall bear the AMCA Certified Ratings program AMCA Sound and Air Performance Seal and shall be UL/cUL Listed.

C. DX Split System:

1. Four-Way Ceiling Cassette Style Fan Coil Unit (FCU-1, FCU-2, and FCU-3): The ceiling-recessed indoor unit shall be factory assembled, wired and run tested. Contained within the unit shall be all factory wiring, piping, electronic modulating linear expansion device, control circuit board and fan motor. The unit shall have a

self-diagnostic function, 3-minute time delay mechanism, an auto restart function, an emergency operation function, a test run switch, and the ability to adjust airflow patterns for different ceiling heights. Indoor unit and refrigerant pipes shall be charged with dehydrated air before shipment from the factory. The unit shall be suitable for use in plenums in accordance with UL1995 ed 4. Unit shall be Mitsubishi Electric or approved equal.

2. Air Cooled Condensing Unit (ACCU-1, ACCU-2, and ACCU-3): HVAC outdoor unit shall be a variable speed inverter-driven compressor, direct expansion (DX), Heat Pump engineered system. The VRF system shall consist of a single frame outdoor unit, interconnecting piping, multiple indoor units (ducted, non-ducted or mixed combinations), onboard, self-contained, stand-alone communication and controls. The outdoor unit shall be of galvanized steel with a weather and corrosion resistant enamel finish. Direct drive, variable speed, axial flow fan. The motor shall be variable speed, direct current, with permanently lubricated bearings. The coil shall be aluminum fins mechanically bonded to copper tubing. The aluminum fin shall have factory applied corrosion resistant Blue Fin coating and be tested per ASTM B-117 standard. The heat pump system will be available in 208/230V, 60Hz, 1 phase. Provide kWh meter for energy monitoring and connection to pulse input controller. Unit shall be Mitsubishi Electric or approved equal. Provide with mounting stand system manufactured of 11-gauge square steel tubing with thermally fused polyester powder coat finish that meets ASTM D3451-06 standards. Provide in compliance with ASCE 7 overturning safety requirements. Provide complete with galvanized mounting hardware.

3. Controls: Provide Mitsubishi PAR-40MAAU for ceiling cassette fan coil unit.

D. Supply Air Fan (SF-1): Fantech FG series or approved equal. Provide with speed control and mounting clamps. Supply fan shall be of centrifugal, direct driven type. Fan housing shall be constructed of heavy gauge galvanized sheet metal. Motor shall be a permanently sealed self-lubricating ball bearing type. Motor shall be equipped with automatic reset thermal overload protection. Motorized impeller shall be both statically and dynamically balanced as one integral unit to provide for vibration free performance. Provide supply fan with Fantech FB 6 Inline Filter Box MERV-13.

2.02 CONTROLS

A. Fan Coil Unit Thermostats: Space thermostats shall have adjustable set points. All thermostats shall have key locking, clear plastic tamperproof covers which do not affect their performance. Setback temperature control will raise the setpoint to 85 F, 10 minutes after the last occupant leaves the room. Manual On/Auto-Off is preferred. Auto-Off is to be programmable. Setback temperature shall be: 75 F Occupied; 85 F Unoccupied; M-F 7:00

AM – 4:00 PM.

B. Time-Clocks: All time clocks shall be 7-day programmable, 24-hour with 10-hour capacitance backup with manual bypass. The time clock/ controls system shall be programmable and operational without an auxiliary computer.

C. Wiring and Accessories: Provide all required interconnecting wiring to complete the system. All control wiring shall be routed in rigid metal conduits. Paint new metal conduits and accessories when installed exposed in occupied rooms. Provide transformers as required. Electrical work shall comply with local codes and the electrical section of this specification.

D. Motor Starters: Horsepower rated manual or magnetic starters shall be provided as indicated. Starters shall conform to NEMA ICS and shall have thermal overload protection and other appurtenances necessary and as indicated. Provide voltage-phase protection and restart relay devices to protect equipment and to restart after power outage problem.

2.03 SPECIAL WIRING

A. All control circuits extending to remote control devices, thermostats, etc., will be 120 volts maximum.

B. Any wiring not shown and required for air conditioning to properly connect equipment, including connections to special safety control or apparatus not shown, shall be included under this section.

2.04 DUCTWORK

A. All supply and transfer ductwork shall be galvanized metal installed of gauges and with bracing and joints all in accordance with latest edition of ASHRAE Guide and SMACNA Duct Construction Standards.

B. All exhaust ductwork shall be 304 stainless steel installed of gauges and with bracing and joints all in accordance with latest edition of ASHRAE Guide and SMACNA Duct Construction Standards.

C. The thickness of the sheetmetal and size and spacing of the stiffeners used shall be in accordance with the requirements for the latest edition of the ASHRAE Guide and Data Book. Connections to plenum shall be airtight.

D. Provide hinged, gasketed, tool-less access panel for filter assembly, fan, and A/C unit mixed air plenum for coil cleaning access.

E. Turning Vanes and Extractors: Factory-fabricated and factory-or-field-assembled units consisting of curved double thickness turning vanes for uniform air distribution and change of direction with minimum turbulence and pressure loss. Fabrication shall be in accordance with applicable SMACNA Publications.

F. Flexible connections: Neoprene coated glass fabric weighing approximately 30 ounces per square yard.

G. Supports: Galvanized steel straps or hanger rods in accordance with SMACNA Duct Construction Standards.

H. Birdscreens: Two by two mesh, 0.063-inch diameter aluminum wire or .031-inch diameter stainless steel wire, with frame.

I. Flexible Ducts: Polyester core with galvanized wire helix and 1-1/2 inch thick, 3/4 lb. density fiberglass insulation with flame resistant vapor barrier, UL approved. Flexible ducts not to exceed 6 feet in length and must be supported to maintain laminar flow. Flexible ducts tied in with medium pressure system shall be rated and constructed for medium pressure applications.

J. Silicone Sealant: Single component, ready to use, gun grade, silicone elastomer. Sealant shall be listed by independent test agency such as UL, FM or OPL and be tested to and pass the criteria of ASTME814 Through-Penetration Fire Test Standard and ASTME1966 Fire Test Joint Standard, 3M 1000N/S Silicone Sealants.

K. Duct Penetrations through Walls: Pack annular space between duct and wall with a fire seal of asbestos rope, mineral wool, or similar non-combustible material. Seal with silicone sealant or caulking.

L. Air Filters: Disposable type, 2" thick conforming to Underwriter's Laboratories (UL) Publication 900, Class 1 or Class 2, filter efficiency shall be 30% based atmospheric dust spot efficiency based on ASHRAE test method 52-92.

M. Fittings: Vaned elbows, take-offs, branch connections, transitions, volume dampers, and flexible connections shall comply with SMACNA standards. Dampers shall be opposed blade type with locking quadrant. Provide turning vanes in all elbows and where indicated.

2.05 PIPING

A. Refrigerant Piping:

1. Material and dimensional requirements for field assembled ACR refrigerant piping, valves, fittings, and accessories shall conform to ANSI B9.1 and ANSI B31.5, except as hereinafter specified. Refrigerant piping shall be hard drawn seamless copper tubing.

2. Fittings, Copper Tubing: Cast brass or wrought copper, brazed joint type, ANSI B16.18 OR B16.22.

3. Solder shall be silver brazing, BCuP-5 15% silver, above 1100 degrees F melting point.

4. Pipe hangers and supports shall conform to MSS SP-69 and MSS

SP-58 except as indicated otherwise.

B. Condensate Drain: Condensate drain piping shall be Schedule 40 PVC pipe and drainage pattern fitting with solvent welded joints. Provide seal trap at connections to unit. Provide cleanout at every change in direction of the condensate piping.

2.06 INSULATION

A. General: Insulation, adhesives, coatings, and accessories shall have surface burning characteristics as determined by ASTM E84 and UL 723, not to exceed 25 for flame spread and 50 for smoke developed.

B. Refrigerant Piping:

1. Exterior, aboveground: Self-sealing, pre-formed, high density closed cell polyolefin. Thickness to be selected from manufacturer's literature based upon pipe temperature and ambient condition.

2. Interior: Armaflex closed-cell elastomeric insulation. Thickness to be selected from manufacturer's literature based upon pipe temperature and ambient condition. When thickness required exceeds 2", multiple layer insulation shall be furnished.

3. Exterior insulation and interior exposed up to 7 feet above the floor shall be additionally wrapped with sheet aluminum 0.016-inch thick, fabricated neatly and secured to insulation with ½" aluminum bands and wing seals.

C. Condensate Piping: Armaflex closed-cell elastomeric insulation, 1/2" nominal thickness.

2.07 VIBRATION ISOLATION

A. Unless otherwise noted on drawings, all mechanical equipment shall be mounted on vibration isolators to prevent transmission of vibration and mechanically transmitted sound to building structure. Vibration isolator shall be selected in accordance with weight distribution to produce reasonably uniform deflection. Deflection shall be minimum of 1-inch for air handling units and air-cooled condensing units. Isolator frames shall be galvanized with spring neoprene coated.

2.08 VOLUME DAMPERS

A. Manual volume dampers shall be installed where shown and as required for air balancing. Dampers shall be opposed blade type, galvanized or aluminum, with flanged frame for duct mounting, two gauges heavier than the duct in which they are installed. Provide hat channel standouts for use with duct wrap insulation and locking quadrants.

B. Backdraft Damper: Provide spring-loaded backdraft damper, galvanized steel.

2.09 PIPE HANGERS AND SUPPORTS

A. All hangers, supports, bolts, nuts, washers, and accessories shall be galvanized unless otherwise specified.

B. Drilled-in Threaded Inserts: Where supports in beams and joists are required after concrete has been poured, Philips “Redhead” Drilled-In Threaded Inserts shall be provided, installed in accordance with manufacturer’s recommendations.

C. Provide adjustable hangers, saddles, inserts, brackets, rolls, clamps, supplementary steel, etc., as required for proper support of all pipe lines. Hangers shall be designed to allow for expansion and contraction of pipe lines and shall be of adequate size to permit covering to run continuously through hangers. Piping at coils shall be supported independently so that no weight will be supported by the equipment. Coordinate location of hangers with light fixtures as shown on electrical drawings. Hangers provided under other sections shall not be used for support of piping or equipment provided under this section unless permission is granted in writing by the Contracting Officer. Hangers shall be of manufacture and type specified, or equivalent products. Manufactured by B-Line, PHD, Superstrut or approved equal.

D. Pipe support spacing and hanger rod size shall conform to the following table:

Pipe Size	Spacing	Pipe Support Pipe Size	Rod Diameter
All size	Not over 6'-0"	Up to 2"	3/8"

E. Supplementary Steel: Provide all necessary supplemental structural steel for proper support or attachment of hangers. Steel shall be hot dipped galvanized.

F. Single Hangers: Support single pipe runs as follows:

1. Pipe 3-1/2” and Smaller: Split ring type hanger; Grinnell Fig. 104.

2. Trapeze type hanger shall be used to provide necessary clearances.

G. Insulation shields shall be Fig. 127 or equivalent field fabricated.

H. Pipes connected to equipment supported with vibration isolator shall be supported with spring isolators having a minimum static deflection equal to vibration isolator supporting the equipment but need not exceed 1-1/2” static deflection.

1. Pipes 1-1/2” and smaller within ten feet run from the equipment connections shall be supported with spring isolators.

2.10 PIPE HANGERS AND SUPPORTS

A. Manufacturer: Barber Colman, Titus, Metal-Aire, Kreuger, Anemostat, Airlume, Carnes or pre-approved equal.

B. Construction: Aluminum construction "off white" color for face plates, frames and grilles; except as noted.

1. Transfer Grille: Fixed blade type, 45-degree angle, 3/4-inch blade spacing with opposed blade volume control damper. OBVDs shall be aluminum.

2.11 CORROSION PROTECTION (ACCUs only)

A. Exterior Finned Tube Heat Exchangers and Condensing Unit Coils:

1. Condenser finned tube coils shall be protected with a protective coating. Surface metal preparation shall include degreasing and etching or phosphatizing by immersion.

2. The coating shall withstand and show no sign of attack after 4,000 hours of salt spray test (ASTM B117) and acidic salt spray test (ASTM G85).

3. The coating shall be Aluminum Polyurethane similar to Blygold "PoluAl XT" and shall be applied by a manufacturer qualified applicator. Applicator shall provide a minimum, limited, 3-year warranty on parts and labor. HVAC equipment manufacturer applied coatings will be considered in lieu of Blygold provided the manufacturer applied coatings meet or exceed the performance specified above.

B. Cabinet and Exterior Surfaces:

1. Unit cabinet shall be coated with epoxy or polysiloxane similar to Ameron PSX 700 Engineered Siloxane. Surface metal preparation shall include degreasing and etching. HVAC equipment manufacturer applied coatings will be considered in lieu of PSX 700 provided the manufacturer applied coatings meet or exceed the PSX 700's performance.

2. The coating shall be applied to all interior and exterior surfaces until a total of 6-8 mils D.F.T. is achieved. Coating shall be applied in strict accordance with the coating manufacturer's recommendations.

3. After the coating has totally cured, the equipment shall be assembled using care not to damage the coating during assembly. Fasteners shall be stainless steel with bonderized rubber washers attached. Any touch up required shall be performed in accordance with the manufacturer's recommendations.

C. Applicator: The coating shall be performed by a manufacturer qualified and

experienced applicator. All damaged coatings shall be repaired by manufacturer qualified and experienced applicators. The name and associated qualifications of individual(s) who will perform coating repairs shall be submitted for all coatings.

2.12 PIPE SLEEVES

A. Provide where pipe passes through walls and partitions. Secure sleeves in proper position and location during construction. Provide sleeves of sufficient length to pass through entire thickness of walls and partitions. Provide not less than 0.25 inch space between exterior of pipe or pipe insulation and interior of sleeve. Firmly pack space with an approved fire stop material in rated walls and partitions, and install in accordance with the manufacturer's recommendations. Space between pipe and sleeves (both ends) shall be sealed in accordance with Section 07920 – Sealants.

B. Sleeves in masonry and concrete walls shall be ASTM A53, Schedule 40 or Standard Weight, hot-dip galvanized steel pipe.

C. Sleeves in partitions and other than masonry and concrete walls shall be hot-dip galvanized steel sheet having a nominal weight of not less than 0.90 ounces per square foot.

D. No cutting or drilling of any structural members will be permitted without the approval of the Design-Build Contractor.

PART 3 - EXECUTION

3.01 CORPERATION WITH OTHER TRADES AND CONFLICT IN WORK

A. Contractor shall examine all drawings of proposed work and coordinate his work with other trades. Work conflicts shall be brought to the attention of the Contracting Officer and work rearranged or modified in accordance with his decision.

B. If changes in indicated locations or arrangements of work are required, they shall be made by Contractor without additional charge to the State.

3.02 EQUIPMENT INSTALLATION

A. All equipment shall be installed as per manufacturer’s recommendations, with adequate clearances provided for servicing and as required by applicable codes.

B. Necessary supports shall be provided for equipment, appurtenances and pipe, as required. These include frames or supports for air conditioners, and other similar type items requiring supports.

3.03 WORKMANSHIP AND FABRICATION

A. Ductwork:

1. Fabricate all ductwork and related work to highest industry standards and recommendations of ASHRAE. Seal all ductwork airtight.

2. Sides and tops of ductwork shall be cross broken. Long seams shall be Pittsburgh lock groove, hammered flat or double seamed. Ducts shall also have supplemental stiffening as required to prevent drumming and to provide structurally sound assembly. Seal ducts air tight with approved duct sealer.

3. Duct turns in all square elbows shall be accomplished by using pre-fabricated turning vanes such as Tuttle & Bailey "Ducturn." Double thickness turning vanes in ducts deeper than 16-inches may be used in lieu of "Ducturn" provided prior approval of design is given by the Contracting Officer.

4. Ducts shall be supported at joints every 6-feet or less with steel hanger straps one-inch wide and made of material not lighter than 18 gauge riveted to seams unless indicated otherwise. Bolts or sheet metal screws may be used to fasten straps to ductwork provided prior approval is given by the Contracting Officer.

3.04 VIBRATION ISOLATION

A. Vibration transmission from all reciprocating and/or rotating equipment such as compressor and centrifugal fan shall be effectively isolated, by use of vibration mountings or hangers. Mounting and hanger sizes shall be determined by the manufacturer to assure adequate deflection and vibration isolation, and shall be installed in accordance with manufacturer's recommendations to provide not less than 90 percent isolation efficiency.

3.05 CLEANING AND ADJUSTING

A. Equipment shall be wiped clean, with all traces of oil, dust, dirt, or paint spots removed. Bearings shall be properly lubricated with oil or grease as recommended by the manufacturer. All control valves and other miscellaneous equipment requiring adjustment shall be adjusted to setting indicated or directed. Fans shall be adjusted to the speed indicated by the manufacturer to meet specified conditions. Temporary filters shall be provided for all fans that are operated during construction, and after all construction dirt has been removed from the building, new filters shall be installed.

B. Condensate drain line shall be leak tested. No leaks are allowed at any joints.

3.06 TESTING AND BALANCING SYSTEMS

A. See Section 15950 - Testing, Adjusting And Balancing for testing and balancing requirements.

3.07 FIELD INSTRUCTIONS

A. Upon completion of the work and at a time designated, the services of one or more qualified personnel shall be provided by the Contractor for a period of not less than two days to instruct the representative of the Contracting Officer and school personnel in the operation of the air conditioning system and the maintenance and troubleshooting training to State Maintenance Personnel. These field instructions shall cover all the items contained in the bound instructions.

3.08 ONE YEAR MAINTENANCE SERVICE CONTRACT

A. In addition to the Guarantee on materials and workmanship, the Contractor shall submit 8 copies of the Maintenance Service Contract, countersigned by the General Contractor that will validate said Guarantee. The Guarantee and maintenance service shall extend for a period of one year commencing after 30 consecutive days of trouble-free operation after the Project Acceptance Date or the air conditioning equipment acceptance date, if earlier than the Project Acceptance Date, and shall include all labor, materials, equipment and parts necessary to service the complete system, in accordance with the attached Schedule of Maintenance Service so as to assure proper operation and function of the system. All costs for the periodic maintenance, including emergency calls, shall be borne by the Contractor. This maintenance period and the Guaranty period shall run concurrently (same start and end dates). The maintenance of the equipment shall start within one month of equipment start-up and continue until the end of the Project Maintenance Service Contact period.

B. However, should the Contractor default on the Maintenance Service Contract and must restart or complete the service, then the warranty period shall also be extended to match the revised maintenance service period.

C. Trouble-free operation is defined as the non-disabling condition or a non-recurring failure or disruption.

1. The system shall be free of all discrepancies, contamination and debris that require correction in excess to those described for the monthly service that is included in the Schedule of Maintenance.

2. The system is maintaining operational conditions and other parameters as measured during acceptance tests.

D. The installer shall include a listing of the following items along with the Maintenance Service Contract:

1. Name of the servicing Contractor.

2. Air conditioning system acceptance date.

3. Service contract expiration date.

4. Monthly inspection schedule for maintenance period.

5. Itemized listing of the equipment covered under the service contract,

including a description of the equipment identified, its model and serial number(s), and manufacturer's name(s), and the quantity of each size and type of equipment.

E. The Maintenance Service Contract shall be submitted along with the Operations and Maintenance Manual on/or before the Project Acceptance Date.

F. Maintenance Log: Keep a separate log, recording all maintenance calls to the project, including at least the following information:

Name of person making service call.
Leahi Hospital Air Conditioning and Ventilation
Renovation Adult Day Health Project
Date of call, time in and out from project.
Nature of call; if emergency, who contacted service company.
Equipment gauge and temperature readings, ambient temperature.
Maintenance checklist.

G. In addition, submit written reports of maintenance or trouble calls performed within 7 days to HHSC. Submit reports on the attached form or facsimile.

H. Schedule of Maintenance Services: Periodic maintenance shall conform to the following schedule, with at least the following basic services:

1. Fan Coil Unit

a. Monthly Service

1) Clean and clear all drip pans and flush all related condensate drain lines with nitrogen. (Contractor may be liable for water damage due to clogged drains). Install pan tablets if necessary to control algae.

2) Change all disposable air filters at least once a mount; use Farr 30/30 or equal.

3) Wash permanent type filters with an approved detergent and spray coat with an approved filter treatment solution. Replace deteriorated permanent type filters which cannot be cleaned.

4) Lubricate and oil all fan and motor bearings and connections of dampers and vanes.

5) Operate equipment to check for proper operation, unusual noise and vibration; adjust or repair all equipment and controls as required; clean-up all equipment.

6) Check time clock for proper operation and time

settings.

7) Certify performance of monthly service and that all discrepancies are reported and corrected.

b. Annual Service

1) Adjust alignment of bearings and sheaves; lubricate fan and motor bearings. Replace worn or noisy bearings or sheaves.

2) Clean all cooling coils of dirt accumulation using nitrogen, high pressure air/water, steam, or chemical coil cleaner solution.

3) Check pressure and temperature differential across cooling coils and log readings. Clean strainers, check vents and drain lines on cooling coils.

4) Clean fresh air intake grilles and dampers and repair or replace deteriorated bird screens.

5) Clean all fan wheels and interior and exterior of equipment housings.

6) Secure all loose housing, seal leaks and touch-up paint after cleaning all rust.

7) Check and calibrate all pneumatic and/or electric temperature controls.

8) Certify performance of annual service and correct and report all discrepancies.

2. Air Cooled Condensing Unit

a. Monthly Service

1) Perform tasks of Fan Coil Unit.

2) Check compressor oil level and refrigerant sight glass; add oil as needed and change filter/drier if moisture indicated.

3) Check refrigerant system for leads, unusual noise and vibration and record suction, discharge and oil pressures in maintenance log book and correct all deficiencies.

b. Annual Service

1) Perform tasks of Fan Coil Unit.

2) Check compressor coupling alignment; lubricate or replace noisy bearings.

3) Clean condenser coils with compressed air, nitrogen, water, steam or chemical coil cleaning solution.

4) Test compressor crankcase oil and replace if contaminated or submit oil test results. Clean or replace strainer and oil filter (open compressor).

5) Test and check system response at various cooling load conditions for proper operation, record settings, adjust as required. Re-calibrate all safeties, capacity and temperature controls to proper settings.

6) Check and clean all unit housings (inside and outside and components), seal leaks and remove rust from exterior components and touch-up paint.

7) Megger compressor motor and submit report and recommendation; check starter, relays, and control contacts and electrical connections for tightness and clean as required.

3. Supply and Exhaust Fan

a. Monthly Service

1) Check motor controlled and backdraft dampers for proper operation; lubricate linkage for free movement.

2) Lubricate fan motors and bearings.

3) Check belt wear and tension; adjust or replace as needed.

4) Check sheaves for wear, replace as needed.

5) Check fan collar, bearings and shaft for wear, repair or replace as needed.

6) Certify performance of quarterly fan maintenance service and correct and report all discrepancies.

b. Annual Service

1) Check and clean all fan wheels and housings of dust, dirt, and grease.

2) Remove and wash all dampers and repair or replace deteriorated bird screens.

3) Certify performance of semi-annual fan maintenance service and correct and report all discrepancies.

3.09 WORK SCHEDULE

A. All maintenance work shall be performed between the hours of 7:30 a.m. and 4:00 p.m., on normal working days, Monday through Friday.

3.10 TROUBLE CALLS

A. Emergency service and repairs required between regular service calls shall be rendered within 24 hours, including holidays in the event of equipment becoming inoperative resulting in the loss of cooling. Respond to emergency calls within 4 hours of notification.

3.11 CLEANUP AND WORK PRACTICES

A. The Contractor shall keep the job site free of debris, litter, discarded parts, etc. and shall clean all oil drippings during the daily progress of work. The Contractor shall remove all tools, parts, and equipment from the service areas upon completion of the work.

B. The Contractor shall exercise caution during the progress of his maintenance and repair work to prevent damage to the ceilings, roofing, and other building structure. The Contractor shall restore all damages caused by his negligence to its original condition at his own expense.

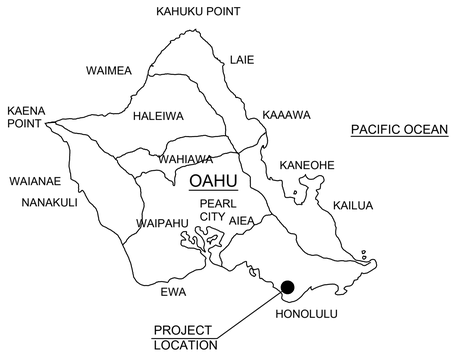
END OF AIR CONDITIONING AND VENTILATION

LEAHI HOSPITAL - RENOVATION OF ADULT DAY HEALTH

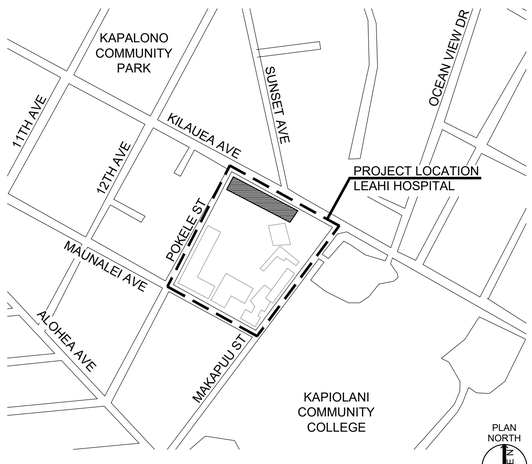
3675 KILAUEA AVENUE, HONOLULU, HI 96816

T.M.K.: 3-2-031:001

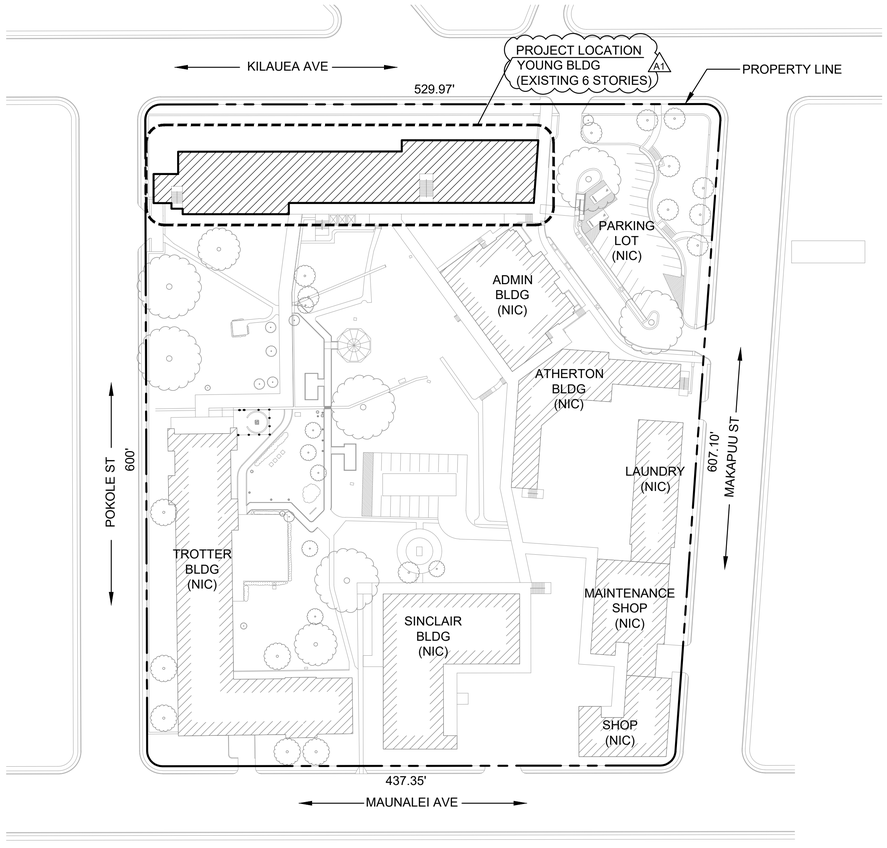
ISLAND MAP (NTS)



LOCATION MAP (NTS)



VICINITY MAP (NTS)



DESIGN TEAM

ARCHITECT:
INK ARCH, LLC
650 IWILEI ROAD #288
HONOLULU, HI 96817

MECHANICAL/PLUMBING:
MECHANICAL ENTERPRISES, INC
501 SUMNER ST #503
HONOLULU, HI 96817

ELECTRICAL:
ALBERT CHONG ASSOC
1117 KAPAHULU AVE
HONOLULU, HI 96816

PROJECT DESCRIPTION

THE WORK SHALL GENERALLY CONSIST OF DEMOLITION OF EXISTING OFFICES AND THE ADDITION OF TWO NEW BATHROOMS AND A CONFERENCE ROOM.

DEMOLITION WORK SHALL INCLUDE BUT IS NOT LIMITED TO: DEMOLITION OF EXISTING STUD WALLS, CEILINGS, DOORS, MILLWORK, FLOORING, PLUMBING FIXTURES, AND ELECTRICAL DEVICES.

NEW WORK SHALL INCLUDE, BUT NOT LIMITED TO: INSTALLATION OF NEW GYP BOARD WALLS, CEILINGS, DOORS, RESILIENT FLOORING, CERAMIC TILING, PAINTING, TOILET PARTITIONS AND ACCESSORIES, PLUMBING FIXTURES, ELECTRICAL DEVICES AND MISCELLANEOUS RELATED WORK.

A1

NOTES:
1. FIRST FLOOR WINDOW IMPROVEMENTS ARE BY OTHERS. REFER TO "LEAHI HOSPITAL - REPLACE FIRST FLOOR WINDOWS IN YOUNG BUILDING" PROJECT
2. CONTRACTOR MUST COORDINATE WITH THE OWNER'S REPRESENTATIVE FOR PHASING BETWEEN THIS PROJECT AND THE WORK FOR WINDOW IMPROVEMENTS

PROJECT SUBMITTAL

BID SET

APRIL 2024

INK ARCHITECTS

INK ARCH LLC
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Revisions:

No.	Description	Date
A1	ADDENDUM 1	5-15-24

Project Title:

LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816
T.M.K.: 3-2-031:001

SCOTT R.J. HARADA
LICENSED PROFESSIONAL ARCHITECT
No. 14637
HAWAII, U.S.A.

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

SIGNATURE
EXP. DATE: 04/30/26

Sheet Title:

TITLE SHEET

Project Phase:

-

Date:

-

Sheet No.:

001

INDEX TO DRAWINGS

COUNT	SHEET	DESCRIPTION
		TITLE
1	001	PROJECT TITLE, VICINITY MAP, LOCATION MAP, APPROVALS
2	G-001	INDEX OF DRAWINGS
3	G-002	ARCHITECTURAL GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS
		ARCHITECTURAL
4	A-001	OVERALL BUILDING FLOOR PLAN
5	AD101	DEMOLITION FLOOR PLAN, DEMOLITION REFLECTED CEILING PLAN
6	A-101	BATHROOM FLOOR PLAN
7	A-102	BATHROOM REFLECTED CEILING PLAN
8	A-201	TYPICAL ACCESSORY MOUNTING INFORMATION, INTERIOR ELEVATIONS
9	A-202	INTERIOR ELEVATIONS
10	A-510	PARTITION TYPES
11	A-511	PARTITION TYPES AND DETAILS
12	A-512	PARTITION DETAILS
13	A-601	DOOR SCHEDULE AND TYPES, MATERIAL INDEX, ROOM FINISH AND SIGNAGE TYPES AND SCHEDULE, DOOR DETAILS
A1 14	A-602	WINDOW SCHEDULE, TYPES AND DETAILS
15	AF101	FINISH FLOOR PLAN
		MECHANICAL
16	M000	GENERAL NOTES
17	MD101	DEMOLITION PLUMBING AND MECHANICAL PLAN
18	M-101	NEW PLUMBING PLAN
19	M-102	NEW MECHANICAL PLAN
20	M-103	NEW FIRE SPRINKLER PLAN
A1 21	M-104	SANITARY PIPING DIAGRAM
22	M-105	WATER PIPING DIAGRAM
A1 23	M-106	REFRIGERANT PIPING DIAGRAM
24	M-107	DETAILED DRAWING
25	M-108	DETAILED DRAWING
26	M-109	MECHANICAL SCHEDULE
		ELECTRICAL
27	E000	ELECTRICAL SYMBOLS LIST AND FIRE ALARM NOTES
28	E001	OVERALL ELECTRICAL PLAN
29	ED01	LIGHTING DEMOLITION PLAN
30	ED02	POWER AND SIGNAL DEMOLITION PLAN
31	E101	NEW LIGHTING PLAN
32	E102	NEW POWER AND SIGNAL PLAN
33	E103	PARTIAL NEW BASEMENT POWER PLAN

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INDEX TO DRAWINGS

Project Phase:

-

Date:

-

Sheet No.:

G-001

ARCHITECTURAL GENERAL NOTES

THE FOLLOWING UNDERLINED TERMS AS USED HEREIN SHALL BE DEFINED AS:

- THE OWNER: HAWAII HEALTH SYSTEMS CORPORATION (HHSC)
- THE OWNER'S REPRESENTATIVE: HHSC REPRESENTATIVE
- THE ARCHITECT: INK ARCH, LLC

1. LAWS AND ORDINANCES: AS USED HEREIN SHALL MEAN ALL COUNTY, STATE, AND NATIONAL CODES, ORDINANCES, STANDARDS, RULES, AND REGULATIONS OF ANY NATURE WHICH ARE PERTINENT TO, OR REGULATORY OVER, THE WORK COVERED BY THE CONTRACT DOCUMENTS OF THIS PROJECT. ALL CONTRACTORS SHALL COMPLY FULLY WITH ALL APPLICABLE LAWS AND ORDINANCES. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT BUILDING CODE AND THE LATEST STATE OF HAWAII AMENDMENTS OR THE RESPECTIVE CITY AND/OR COUNTY AMENDMENTS BY EACH AGENCY HAVING JURISDICTION OF THE PROJECT.

2. CONFLICT: IN THE CASE OF ANY CONFLICT WHEREIN THE METHODS, OR STANDARDS OF INSTALLATION, OR THE SPECIFIED MATERIALS ARE NOT IN COMPLIANCE WITH THE REQUIREMENTS OF THE LAWS OR ORDINANCES, THE LAWS OR ORDINANCES SHALL GOVERN. IN THE CASE OF A DISCREPANCY IN THE DRAWINGS OR SPECIFICATIONS, BUT NOT DIRECTLY RELATED TO THE PROVISIONS, CODES, OR ORDINANCES, THE CONTRACTOR SHALL 1) PROVIDE THE BETTER QUALITY, OR GREATER QUANTITY OF WORK, OR 2) COMPLY WITH THE MORE STRINGENT REQUIREMENT IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION, OR 3) REQUEST IN WRITING ADDITIONAL CLARIFICATION OR INFORMATION. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ALL CONFLICTS IN WRITING.

3. CONDITIONS OF THE WORK: THE INFORMATION INDICATED ON THE DRAWINGS IS BASED ON LIMITED FIELD INVESTIGATION AND ON THE AVAILABLE RESOURCES AT THE TIME OF DOCUMENT PREPARATION. AS A RESULT, THE ACCURACY AND COMPLETENESS OF THE INFORMATION IS NOT GUARANTEED ON DATE OF COMMENCEMENT OF CONSTRUCTION. THEREFORE, THE CONTRACTOR SHALL VERIFY THE DIMENSIONS SHOWN ON THE DRAWINGS WITH ACTUAL FIELD MEASUREMENTS, EXAMINE THE JOB SITE, VERIFY ALL FIELD CONDITIONS AND PERTINENT DIMENSIONS PRIOR TO PREPARING LAYOUTS, SUBMITTALS, SHOP DRAWINGS, AND/OR ORDERING ANY MATERIAL, AND PROVIDE THE LABOR AND MATERIALS REQUIRED TO COMPLETE THE REQUIRED WORK.

4. WORKMANSHIP: ALL WORK SHALL BE PERFORMED IN A PROFESSIONAL MANNER. WORKMANSHIP SHALL BE REPRESENTATIVE OF THE BEST HAWAII INDUSTRY STANDARD OF THE RESPECTIVE TRADES. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING PRIOR TO THE COMMENCEMENT OF WORK, IF THERE ARE ANY DIMENSIONAL DISCREPANCIES, OR IF THERE ARE ANY CONDITIONS THAT EXIST WHICH MAY PREVENT THE CONTRACTOR'S WORKMANSHIP AND PERFORMANCE OF WORK PER CONTRACT DOCUMENTS, AND/OR OF ANY AND ALL ADDITIONAL WORK THAT MAY BE REQUIRED AS A RESULT OF THE OBSERVED CONDITIONS.

5. OMISSIONS: OMISSIONS OF DRAWINGS, OR SPECIFICATIONS, OR THE OMISSIONS OF DETAILS OF WORK WHICH ARE MANIFESTLY NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, AND/OR WHICH ARE PER HAWAII INDUSTRY STANDARD CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMITTED, OR INCORRECTLY DESCRIBED DETAILS OF THE WORK, BUT SHALL BE PERFORMED AS IF FULLY AND CORRECTLY SET FORTH AND DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR UPON DISCOVERY OF OMISSION SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE VERBALLY OF SUCH OMISSIONS AND PROVIDE A WRITTEN STATEMENT OF THE OMISSIONS WITHIN (2) WORKING DAYS OF VERBAL NOTIFICATION.

6. INTENT OF THE DRAWINGS: THE DRAWINGS ARE INTENDED TO DEFINE AND ESTABLISH THE PHYSICAL REQUIREMENTS OF THE PROJECT, I.E., THE DESIGN, LOCATIONS AND DIMENSIONS OF THE WORK, BASED ON RECOGNIZED STANDARDS EVEN IF NOT ACTUALLY SHOWN, BUT REASONABLY INFERRED. THE CONTRACTOR SHALL REVIEW AND VERIFY THE INFORMATION ON ALL DRAWINGS WITHIN A REASONABLE TIME BEFORE PERFORMING ANY WORK AND UPON DISCOVERY OF ANY OMISSION AND/OR CONFLICT IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING OF ANY OMISSIONS, CONFLICTS AND DISCREPANCIES. THE CONTRACTOR SHALL COORDINATE THE WORK OF ALL SUBCONTRACTORS/TRADES TO ACHIEVE THE DESIGN INTENT AND SPECIFIED REQUIREMENTS AND IS RESPONSIBLE TO COMPLETE ANY AND ALL WORK ASSOCIATED WITH SUCH COORDINATION.

7. TEMPORARY PROTECTION: THE CONTRACTOR SHALL ERECT AND MAINTAIN A TEMPORARY SAFETY BARRICADE A MINIMUM OF 5'-0" OUTSIDE THE PROJECT AREA AS APPLICABLE TO COMPLETELY ENCOMPASS THE PROJECT AREA TO PROTECT THE OCCUPANTS AND THE PUBLIC. THE BARRICADE SHALL REMAIN DURING THE DURATION OF THE PROJECT OR UNTIL APPROVAL IS GIVEN BY THE OWNER'S REPRESENTATIVE FOR ITS REMOVAL. A DESIGNATED STAGING AREA WILL BE ALLOWED AT THE PROJECT SITE AS INDICATED ON THE DRAWINGS. STAGING AREA SHALL BE USED FOR MATERIALS, DUMPSTER, HEAVY EQUIPMENT, LIFT, ETC. THE CONTRACTOR SHALL ERECT CONSTRUCTION FENCING AROUND THEIR DESIGNATED STAGING AREA TO PREVENT UNAUTHORIZED PERSONS FROM ENTERING. ANY EXTERIOR BARRICADES AND FENCING SHALL BE LOCATED AS REQUIRED AND IN SUCH A MANNER AS TO MAINTAIN AT ALL TIMES ALL REQUIRED FIRE LANES AND FIRE EXITS FROM THE PROJECT BUILDING/SITE AS WELL AS ADJACENT OCCUPIED BUILDINGS DURING THE CONSTRUCTION CONTRACT PERIOD.

8. COMPLETION OF THE WORK: THE CONTRACTOR SHALL IN THE EXECUTION OF WORK BY ALL TRADES, PERFORM ANY AND ALL CUTTING, PATCHING, REPAIRING, RESTORING AND THE LIKE NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR SHALL RESTORE ANY DAMAGED OR AFFECTED SURFACES RESULTING FROM THE WORK OF THIS CONTRACT TO THEIR ORIGINAL CONDITION AND FINISH TO THE SATISFACTION OF THE OWNER. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO SAFETY PRECAUTIONS, FASTENERS, ANCHORAGES, ETC. UNLESS NOTED OTHERWISE.

9. PERMITS: THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS REQUIRED.

10. RECORD DRAWINGS: THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A SET OF "AS-BUILT" DRAWINGS OF HIS WORK.

11. DIMENSIONS: UNLESS OTHERWISE NOTED IN THE CONSTRUCTION DOCUMENTS, ALL DIMENSIONS ARE TAKEN TO THE FACE OF FINISH CONSTRUCTION. WRITTEN DIMENSIONS PREVAIL. DO NOT SCALE DRAWINGS UNLESS GRAPHIC SCALE IS PROVIDED ON THE SPECIFIC DRAWING. SHOULD DIMENSIONAL DISCREPANCIES BE FOUND, CONTACT THE OWNER'S REPRESENTATIVE IMMEDIATELY FOR CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK.

12. CLEAN UP: THE CONTRACTOR SHALL CLEAN AND REMOVE ALL TRASH, DIRT, DEBRIS, AND SPILLAGE ARISING FROM THE WORK AREA DAILY TO THE SATISFACTION OF THE OWNER AND THE ARCHITECT, INCLUDING BUT NOT LIMITED TO: CLEANING OF DIRT, PUTTY, PAINT, OVERSPRAY, DUST, ETC. FROM FLOORS, WORK AREAS, COUNTER TOPS, DOOR AND WINDOW FACES AND FRAMES.

13. SAFE OPERATIONS: THE CONTRACTOR SHALL ENSURE THAT ANY AND ALL CONSTRUCTION ACTIVITIES DO NOT IMPACT OR INTERFERE WITH NORMAL OR SAFE OPERATIONS AT THE PROJECT SITE. THE CONTRACTOR SHALL TAKE ALL SAFETY PRECAUTIONS NECESSARY TO PROTECT THE BUILDING OCCUPANTS AND THE PUBLIC THROUGHOUT THE DURATION OF THIS PROJECT.

14. PREVENT DAMAGE: THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO EXISTING AND COMPLETED STRUCTURES/LANDSCAPING/SITE IMPROVEMENTS OF THIS PROJECTS AS WELL AS ON ADJACENT PROPERTY(IES) TO THAT OF THIS CONTRACTED WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR LABOR/MATERIAL COSTS OF ANY DAMAGES TO ANY CONSTRUCTED WORK AND/OR EXISTING STRUCTURES/LANDSCAPING/SITE IMPROVEMENTS CAUSED BY HIS OPERATIONS.

15. DO NOT BLOCK EXITS: THE CONTRACTOR SHALL NOT BLOCK OR OBSTRUCT ANY FIRE LANES AND FIRE EXIT WAYS DURING THE EXECUTION OF WORK THROUGHOUT THIS PROJECT DURING THE CONSTRUCTION CONTRACT PERIOD.

16. SOUND AND NOISE CONTROL: THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE OWNER'S REPRESENTATIVE ALL WORK THAT WILL GENERATE EXCESSIVE NOISE WHICH MAY DISRUPT NORMAL OPERATING ACTIVITIES.

17. MATERIAL DISPOSAL: UNLESS NOTED IN THE DRAWINGS OR SPECIFICATIONS, MATERIALS RESULTING FROM THE DEMOLITION WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS OR AS SPECIFIED.

18. DEFINITIONS:
    a) "FURNISH" MEANS "FURNISH ONLY". MATERIALS OR ITEMS TO BE FURNISHED SHALL BE NEW AND CONSIGNED TO THE CONTRACTOR AND DELIVERED TO THE SITE.
    b) "INSTALL" MEANS "INSTALL ONLY" FURNISHED MATERIALS OR ITEMS. SUCH MATERIALS OR ITEMS SHALL BE RECEIVED AT THE SITE, UNLOADED, STORED, PROTECTED, AND INSTALLED IN PLACE, INCLUDING FINAL CONNECTION, UNLESS SUCH WORK IS SPECIFICALLY EXCLUDED.
    c) "PROVIDE" MEANS "FURNISH AND INSTALL" COMPLETE, IN PLACE AND READY FOR USE, INCLUDING FINAL CONNECTIONS. ALL WORK SHOWN IN THE DRAWINGS SHALL BE UNDERSTOOD AS "PROVIDE" WHETHER NOTES INDICATING "PROVIDE" ARE INDICATED OR NOT.
    d) WORDS "CONTRACTOR SHALL" ARE IMPLIED AND SHALL BE SO UNDERSTOOD WHEREVER A DIRECTION IS STATED IN IMPERATIVE MOOD AND DIRECTION "PROVIDE" IS USED.
    e) UNLESS SPECIFICALLY STATED AS "EXISTING", ALL MATERIALS SHALL BE NEW IN ALL CASES WHEN MATERIAL NOTES ARE ADDED TO DRAWINGS. USES OF "FURNISH" AND "PROVIDE" AUTOMATICALLY MEAN "NEW" UNLESS SPECIFICALLY STATED AS "EXISTING".

19. PRE-CONSTRUCTION ASSESSMENT: BEFORE STARTING ANY WORK ON ANY EXISTING CONSTRUCTION THE CONTRACTOR SHALL MAKE A THOROUGH AND COMPLETE INVESTIGATION OF ANY RECIPIENT SURFACES AND DETERMINE THEIR SUITABILITY TO RECEIVE REQUIRED ADDITIONAL CONSTRUCTION AND FINISHES. THE CONTRACTOR SHALL MAKE WHATEVER REPAIRS AND CONDITIONING REQUIRED TO PROPERLY PREPARE SUCH SURFACES.

20. EXISTING UTILITIES: PRIOR TO COMMENCING ANY CONSTRUCTION THE CONTRACTOR SHALL COORDINATE AND VERIFY THE LOCATIONS OF ALL UNDERGROUND OR OVERHEAD UTILITY LINES WITH THE OWNER'S REPRESENTATIVE TO AVOID CONFLICTS AND/OR SHUT DOWN DURING ALL STAGES OF CONSTRUCTION.

21. SUBCONTRACTORS: THE USE OF UNLICENSED CONTRACTORS IS STRICTLY PROHIBITED. THE CONTRACTOR IS RESPONSIBLE TO THE OWNER FOR ACTIONS OF THE CONTRACTOR'S EMPLOYEES, SUBCONTRACTORS AND THEIR AGENTS AND EMPLOYEES, AND OTHER PERSONS PERFORMING ANY PORTIONS OF WORK UNDER CONTRACT WITH THE CONTRACTOR.

22. HAZARDOUS MATERIALS: HAZARDOUS MATERIAL ABATEMENT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AS INDICATED IN THE DRAWINGS AND/OR SPECIFICATIONS. BURNING OF ANY DEBRIS IS NOT PERMITTED. EXPLOSIVES ARE NOT ALLOWED.

23. WOOD: ALL NEW WOOD SHALL BE TERMITE TREATED. ALL PAINT ON WOOD SURFACES SHALL CONTAIN A MILDEWCIDE ADDITIVE. PROVIDE WRITTEN CERTIFICATION OF TERMITE TREATMENT.

24. DISSIMILAR METAL PROTECTION: THE CONTRACTOR SHALL PROVIDE DISSIMILAR METAL PROTECTION.

25. MECHANICAL AND ELECTRICAL ITEMS: ALL NEW EXPOSED MECHANICAL AND ELECTRICAL PIPING, CONDUITS, DUCTWORK, SUPPORTS AND RELATED FITTINGS, AND FASTENERS ARE TO BE PAINTED THE SAME COLOR/SHEEN AS THE COLOR/SHEEN OF THE SURFACE IT IS ATTACHED TO UNLESS OTHERWISE NOTED.

26. PAINTING: PAINT ALL NEW WORK THAT IS COMPLETED AND LEFT EXPOSED TO VIEW, UNLESS OTHERWISE NOTED. PAINT PRODUCT(S) SHALL BE COMPATIBLE TO THE SUBSTRATE OR SURFACE IT IS APPLIED TO AND SHALL RECEIVE THE PROPER SURFACE PREPARATION AND COATINGS AS RECOMMENDED BY THE PAINT MANUFACTURER. THE CONTRACTOR SHALL CONFIRM WITH THE ARCHITECT ALL FINISH PAINT COLOR AND SHEEN SELECTION(S).

27. SHORING WORK: THE CONTRACTOR SHALL PROPERLY SHORE ANY AND ALL BUILDING WALLS, CEILINGS AND ANY OTHER COMPONENTS AFFECTED BY THE WORK AS REQUIRED TO MAINTAIN A SAFE, STABLE AND STRUCTURALLY SOUND STRUCTURE.

28. PROTECTION OF PROPERTY DURING WORK: THE CONTRACTOR SHALL PROVIDE AND MAINTAIN A WATERPROOF AND SECURE COVERING FOR ANY AND ALL BUILDING COMPONENTS EXPOSED TO WEATHER, THEFT, OR VANDALISM AFTER THE REMOVAL OF ANY EXTERIOR BUILDING COMPONENT INCLUDING BUT NOT LIMITED TO ROOFING, EXTERIOR WALLS, FLOORS, SIDING, WINDOWS, DOORS ETC.

29. BUILDING USER'S STORED ITEMS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE 24-HOUR PROTECTION OF ALL BUILDING USERS' ITEMS LEFT INSIDE THE BUILDING BY THE USER FOR THE DURATION OF THE CONSTRUCTION CONTRACT PERIOD. CONTRACTOR TO REQUEST AN ITEMIZED LIST OF ANY USERS' ITEMS TO BE LEFT WITHIN THE PROJECT BUILDING AND SITE AREAS THAT CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTION FROM THE FOLLOWING BUT NOT LIMITED TO LOSS AND OR DAMAGE RELATED TO THEFT, FIRE, WATER, CLIMATE, FINISH, FORM/FUNCTION ETC.

30. SHEET METAL WORK: FLASHING SHALL BE PROPERLY INSTALLED IN ACCORDANCE WITH THE LATEST SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA) GUIDELINES/MANUAL.

31. TILE WORK: ALL CERAMIC, PORCELAIN, STONE AND GLASS TILE WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST TILE COUNCIL OF NORTH AMERICA (TCNA) HANDBOOK.

32. COMPATIBILITY OF MATERIALS: ENSURE COMPATIBILITY OF MATERIALS AND SYSTEMS UNLESS A SINGLE SOURCE MANUFACTURER OF MULTI COMPONENT SYSTEMS (I.E BUT NOT LIMITED TO WATERPROOFING, ROOFING, ETC.) IS USED.

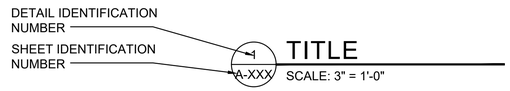
33. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING IN WRITING FROM THE RESPECTIVE MANUFACTURER'S TECHNICAL DIRECTOR ON MANUFACTURER'S LETTERHEAD THAT THEIR RESPECTIVE PRODUCTS ARE COMPATIBLE TO EACH OTHER AND THEIR RESPECTIVE WARRANTIES WILL BE HONORED WHENEVER AND WHEREVER THE CONTRACTOR USES PRODUCTS THAT ARE APPLIED TO ANOTHER MANUFACTURER'S PRODUCT AND/OR BUILT UP ON A SUBSTRATE.

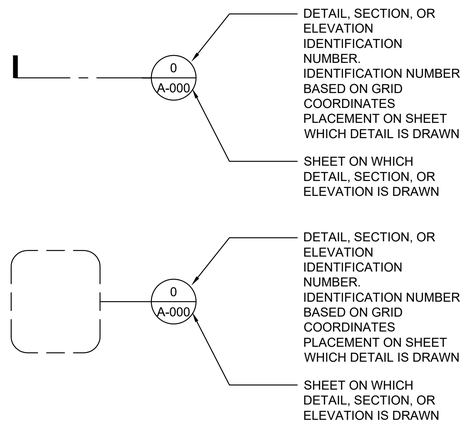
18. "EXISTING" VERSUS "NEW" WORK : ALL BUILDING, AND DETAIL COMPONENTS, SHOWN ON THESE DRAWINGS SHALL BE UNDERSTOOD AS "NEW" UNLESS PREFIXED BY THE WORD "EXISTING". IN THE EVENT THE CONTRACTOR DISCOVERS CONFLICTING INFORMATION, THE CONTRACTOR SHALL IMMEDIATELY SUBMIT IN WRITING, A FORMAL REQUEST FOR INFORMATION ("RFI") TO THE ARCHITECT FOR A RESOLUTION TO THE

ARCHITECTURAL ABBREVIATIONS

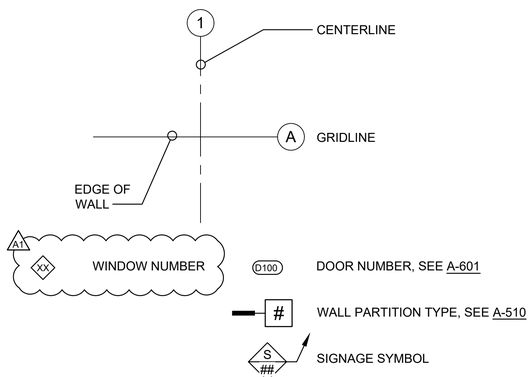
ACT	ACOUSTICAL CEILING TILE	INT	INTERIOR		
ADMIN	ADMINISTRATION	LAV	LAVATORY		
AFF	AWAY FROM FLOOR	LVT	LUXURY VINYL TILE		
A-LAV	ACCESSIBLE LAVATORY	MAX	MAXIMUM		
AVE	AVENUE	MECH	MECHANICAL		
A-WC	ACCESSIBLE WATER CLOSET	MIN	MINIMUM		
		MR	MIRROR		
BD	BOARD	N	NORTH		
BLDG	BUILDING	NIC	NOT IN CONTRACT		
		NTS	NOT TO SCALE		
CLR	CLEAR				
CONC	CONCRETE	PLUMB	PLUMBING	UCERA	UNIVERSITY CLINICAL, EDUCATION AND RESEARCH ASSOCIATES
		PT/OT	PHYSICAL THERAPY /OCCUPATIONAL THERAPY		
DAFS	DIRECT-APPLIED FINISHED SYSTEM	PTD	PAPER TOWEL DISPENSER		
DR	DRIVE	PTWR	PAPER TOWEL WASTE RECEPTACLE		
DWG	DRAWING				
		RB	ROBE HOOK	W/	WITH
ELEC	ELECTRICAL	REC	RECREATIONAL	WC	WATER CLOSET
EQ	EQUAL				
EXT	EXTERIOR	SD	SOAP DISPENSER	WR	WATER RESISTANT
		SH	SHOWER HEAD		
FCU	FAN COIL UNIT	SND	SANITARY NAPKIN DISPOSER		
FD	FLOOR DRAIN	ST	STREET		
FIN	FINISH				
		TPD	TOILET PAPER DISPENSER		
GB	GRAB BAR	TSCD	TOILET SEAT COVER DISPENSER		
GYP BD	GYPSUM BOARD	TYP	TYPICAL		
HW	HARDWARE				

ARCHITECTURAL SYMBOLS





SYMBOL FOR DETAIL DRAWING



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Revisions:

No.	Description	Date
A1	ADDENDUM 1	5-15-24

Project Title:

LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
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EXP. DATE: 04/30/26

Sheet Title:

ARCHITECTURAL GENERAL NOTES, ARCHITECTURAL ABBREVIATIONS, ARCHITECTURAL SYMBOLS

Project Phase:

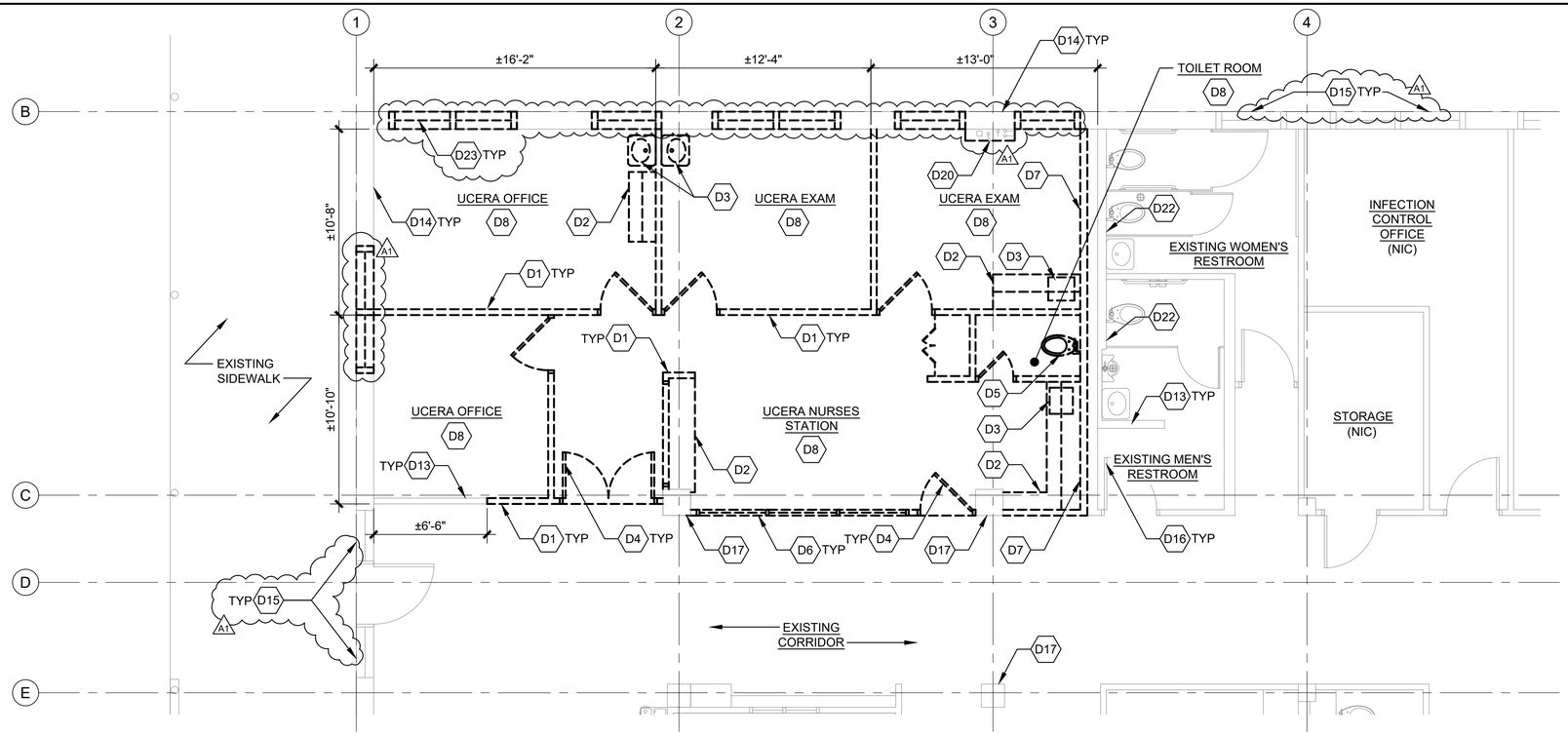
-

Date:

-

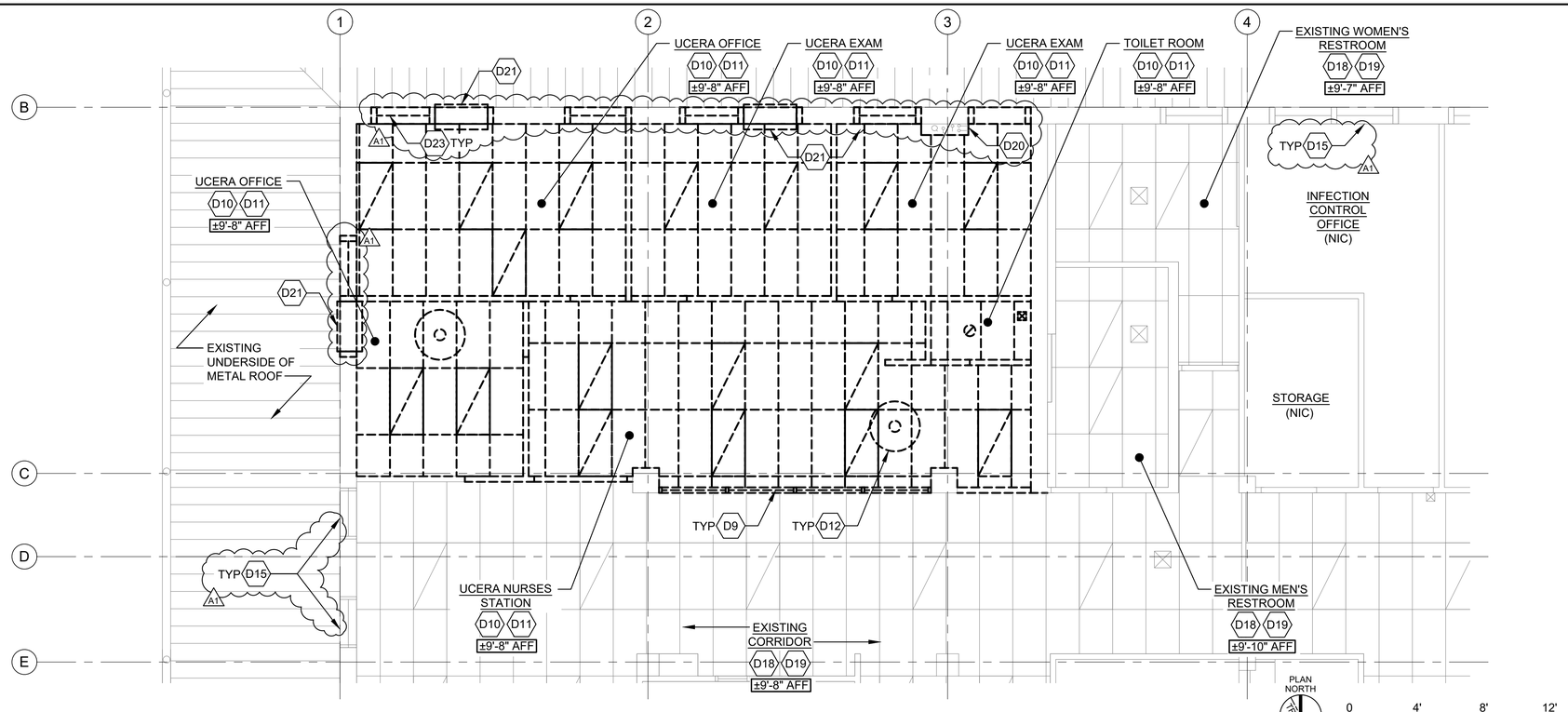
Sheet No.:

G-002



1 AD101 DEMOLITION FLOOR PLAN

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



2 AD101 DEMOLITION REFLECTED CEILING PLAN

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

SHEET KEYNOTES

D1. DEMOLISH AND REMOVE EXISTING WALL PARTITION, COMPLETE (A1)

D2. DEMOLISH AND REMOVE EXISTING COUNTER AND CABINETS, COMPLETE

D3. DEMOLISH AND REMOVE EXISTING SINK

D4. DEMOLISH AND REMOVE EXISTING WOOD DOOR, FRAME, AND THRESHOLD, COMPLETE

D5. DEMOLISH AND REMOVE EXISTING TOILET

D6. DEMOLISH AND REMOVE EXISTING WOOD WINDOWS, COMPLETE

D7. DEMOLISH AND REMOVE EXISTING GYP BOARD AND METAL STUDS AT EXISTING UCERA EXAM AND NURSES STATION

D8. DEMOLISH AND REMOVE EXISTING WOOD FLOORING DOWN TO EXISTING CONCRETE SUBSTRATE

D9. DEMOLISH AND REMOVE EXISTING METAL TRANSOM WINDOWS, COMPLETE

D10. DEMOLISH AND REMOVE EXISTING ACT, GRID, AND WIRES, COMPLETE (A1)

D11. DEMOLISH AND REMOVE EXISTING LIGHTS

D12. DEMOLISH AND REMOVE EXISTING CEILING FAN

D13. EXISTING PARTITION TO REMAIN

D14. EXISTING EXTERIOR CONCRETE WALL TO REMAIN

D15. EXISTING WINDOW TO REMAIN

D16. EXISTING DOOR TO REMAIN

D17. EXISTING CONCRETE COLUMN TO REMAIN

D18. EXISTING ACT TO REMAIN

D19. EXISTING LIGHTS TO REMAIN

D20. DEMOLISH AND REMOVE EXISTING GYP BD ONLY. EXISTING METAL STUDS AND PIPING TO REMAIN

D21. DEMOLISH AND REMOVE EXISTING WINDOW AC UNIT, SEE MECH DWGS

D22. EXISTING GYP BD, METAL STUDS, AND PLUMBING TO REMAIN AT EXISTING WOMEN'S AND MEN'S RESTROOM (A1)

D23. DEMOLISH AND REMOVE EXISTING WINDOW, COMPLETE.

LEGEND

- EXISTING LIGHTS TO BE DEMOLISHED
- EXISTING LIGHT TO REMAIN
- EXISTING CEILING FAN TO BE DEMOLISHED
- EXISTING MECHANICAL REGISTER TO REMAIN
- EXISTING MECHANICAL REGISTER TO BE DEMOLISHED
- EXISTING ACOUSTICAL TILES TO BE DEMOLISHED
- EXISTING ACOUSTICAL TILES TO REMAIN

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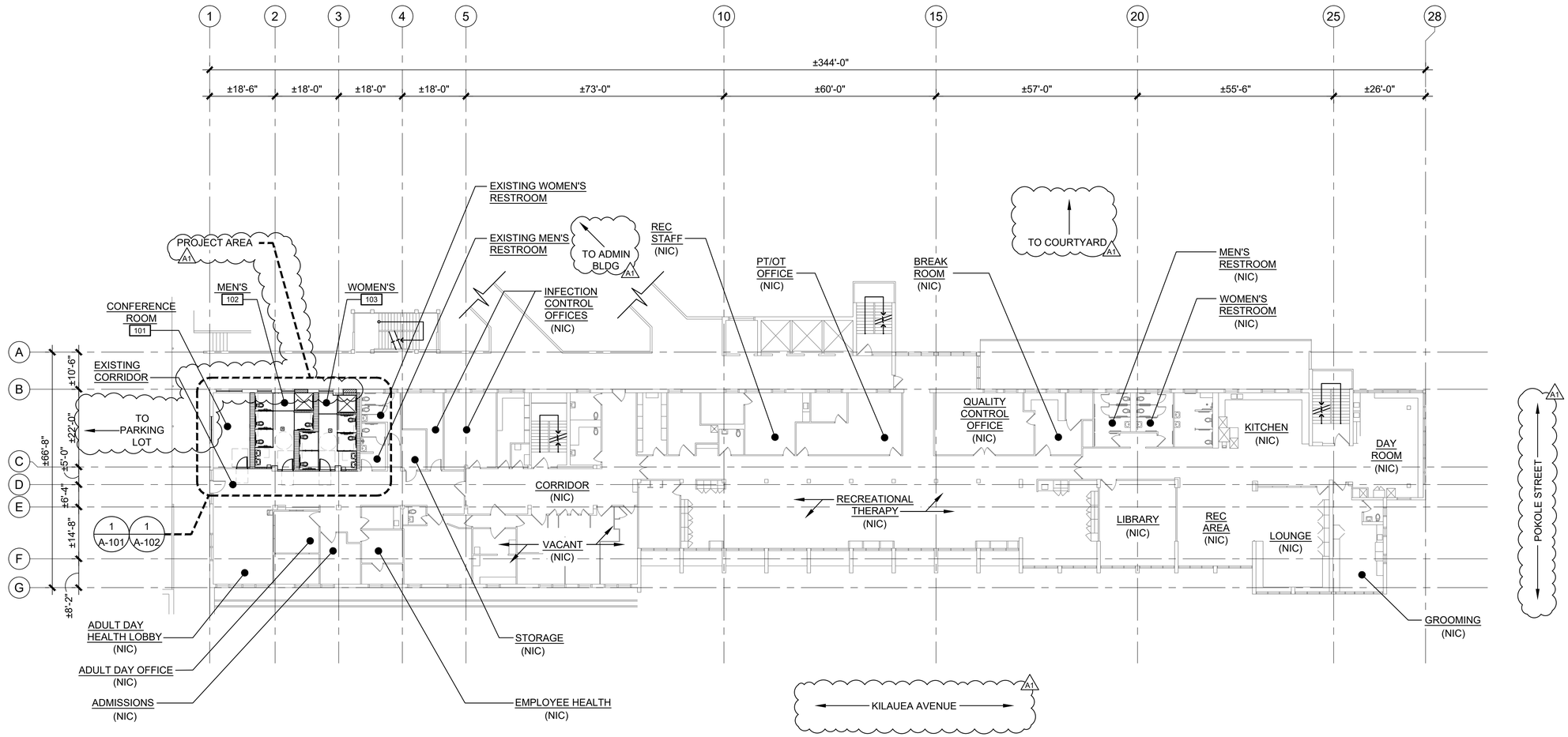
DEMOLITION FLOOR PLAN, DEMOLITION REFLECTED CEILING PLAN

Project Phase:
-

Date:
-

Sheet No.:

AD101



1 OVERALL BUILDING FLOOR PLAN
A-001 SCALE: 1/16" = 1'-0"

PLAN NORTH
TRUE N

0 8' 16' 24' 32' 40' 48'
SCALE: 1/16" = 1'-0"

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OVERALL BUILDING FLOOR PLAN

Project Phase:
-

Date:
-

Sheet No.:

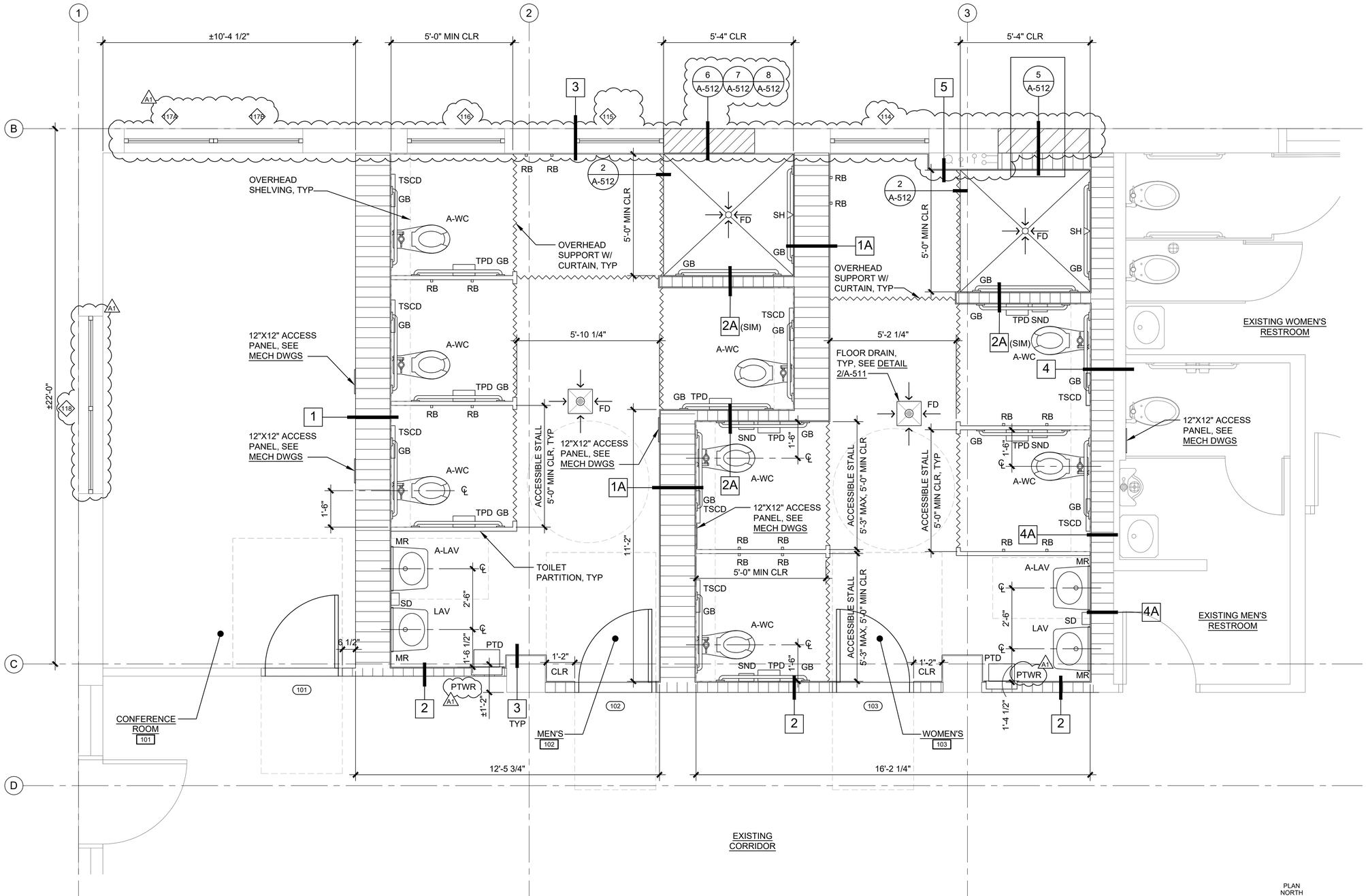
A-001

LEGEND

- GYP BOARD WALL W/ CERAMIC TILE (WHERE OCCURS)
- DOOR AS SCHEDULED
- EXISTING PARTITION WALL
- EXISTING EXTERIOR CONCRETE WALL
- EXISTING CONC COLUMN
- EXISTING WINDOWS
- EXISTING DOOR
- EXTERIOR WALL INFILL (A1)
- # WALL PARTITION TYPE

GENERAL NOTES

1. ALL DIMENSIONS SHOWN ARE TO FINISHED FACE OF WALL UNLESS OTHERWISE NOTED



1 A-101 — ENLARGED BATHROOM FLOOR PLAN

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

PLAN NORTH (TRUE N)

0 1' 2' 3' 4' 5' 6'

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

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BATHROOM FLOOR PLAN

Project Phase:

-

Date:

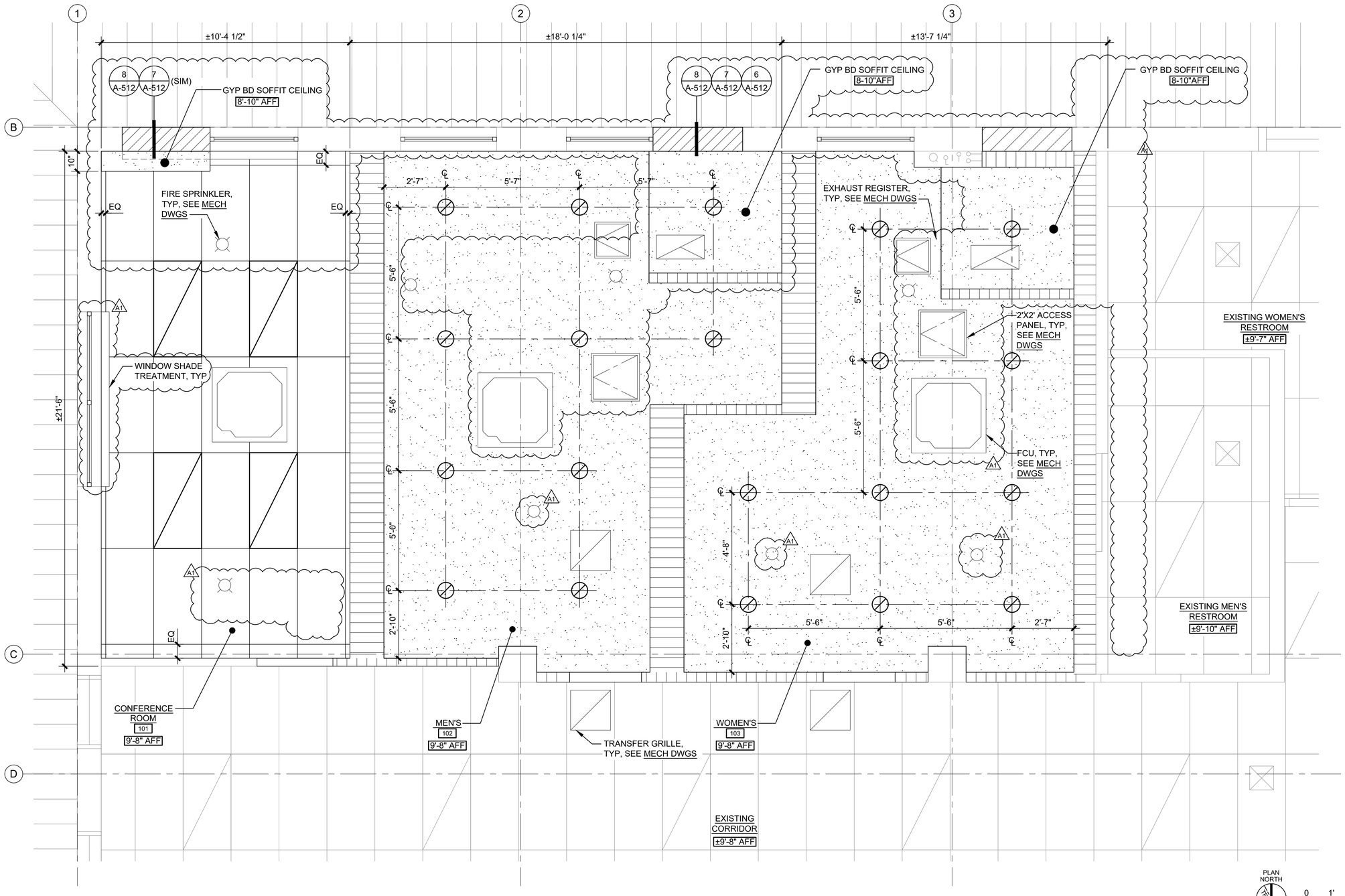
-

Sheet No.:

A-101

LEGEND

- SUSPENDED ACOUSTICAL CEILING TILE
- GYP BOARD CEILING
- LIGHTS, SEE ELEC DWGS
- EXISTING ACOUSTICAL CEILING TILE
- EXISTING LIGHTS
- EXISTING UNDERSIDE OF METAL ROOF
- ACCESS PANEL
- ACCESS PANEL
- FIRE SPRINKLER, SEE MECH DWGS



1 A-102 ENLARGED REFLECTED CEILING PLAN

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

PLAN NORTH (TRUE N)

0 1' 2' 3' 4' 5' 6'

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

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BATHROOM REFLECTED CEILING PLAN

Project Phase:

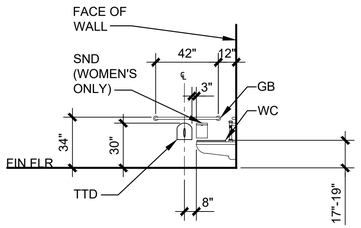
-

Date:

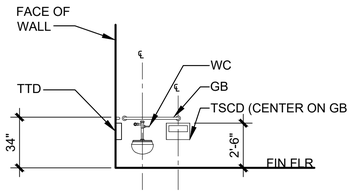
-

Sheet No.:

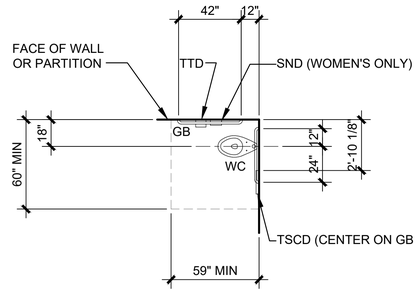
A-102



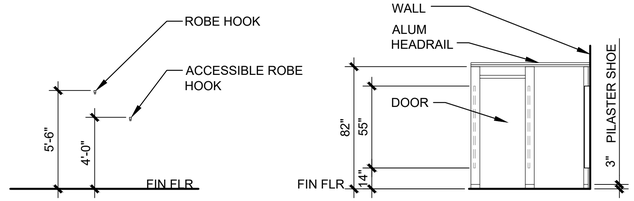
ACCESSIBLE STALL SIDE ELEVATION



ACCESSIBLE STALL FRONT ELEVATION



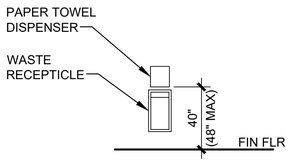
ACCESSIBLE STALL PLAN



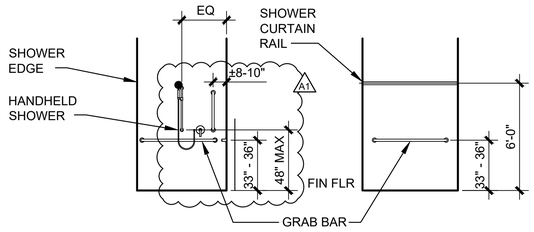
INSTALLATION LOCATION: CENTER ROBE HOOKS HORIZONTALLY ON INTERIOR SIDE OF TOILET PARTITION. FOR SHOWER ROOM INSTALLATION SEE ELEVATIONS

ROBE HOOK ELEVATION

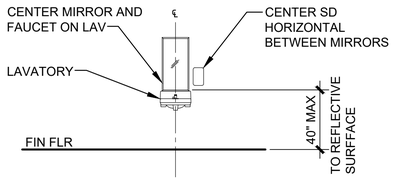
TOILET PARTITION FRONT ELEVATION



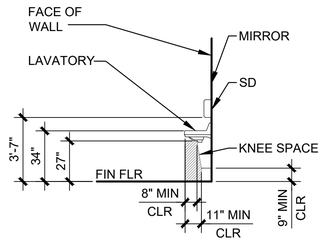
PAPER TOWEL DISPENSER ELEVATION AND PAPER TOWEL DISPENSER / WASTE RECEPTACLE ELEVATION



ACCESSIBLE SHOWER COMPARTMENT ELEVATIONS AND PLAN



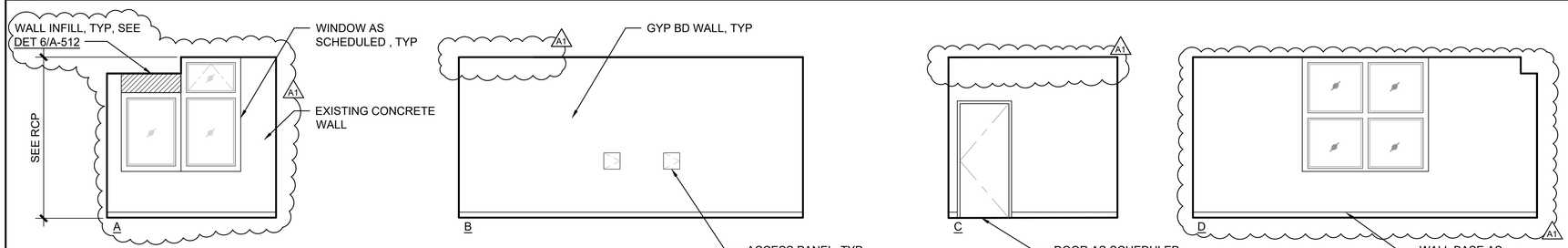
ACCESSIBLE LAVATORY FRONT ELEVATION



ACCESSIBLE LAVATORY SIDE ELEVATION

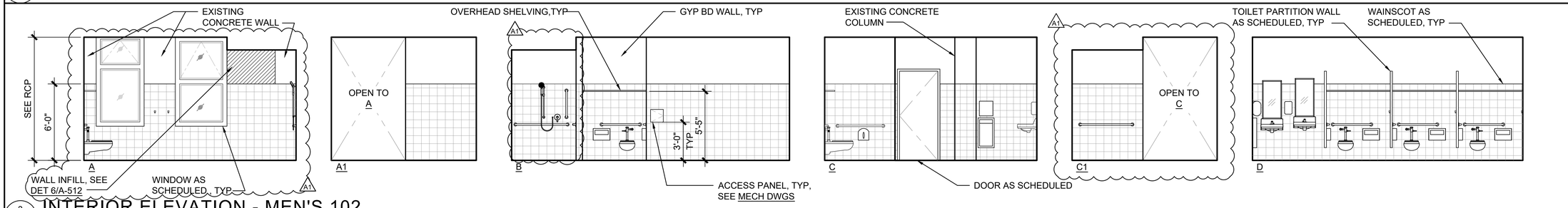
1 A-201 TOILET FIXTURES AND ACCESSORY MOUNTING HEIGHTS

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



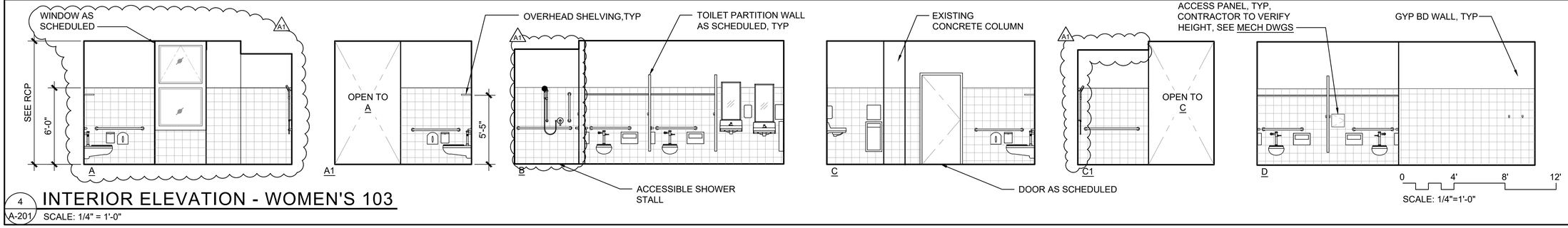
2 A-201 INTERIOR ELEVATION - CONFERENCE ROOM 101

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



3 A-201 INTERIOR ELEVATION - MEN'S 102

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



4 A-201 INTERIOR ELEVATION - WOMEN'S 103

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

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TYPICAL ACCESSORY MOUNTING INFORMATION, INTERIOR ELEVATIONS

Project Phase:
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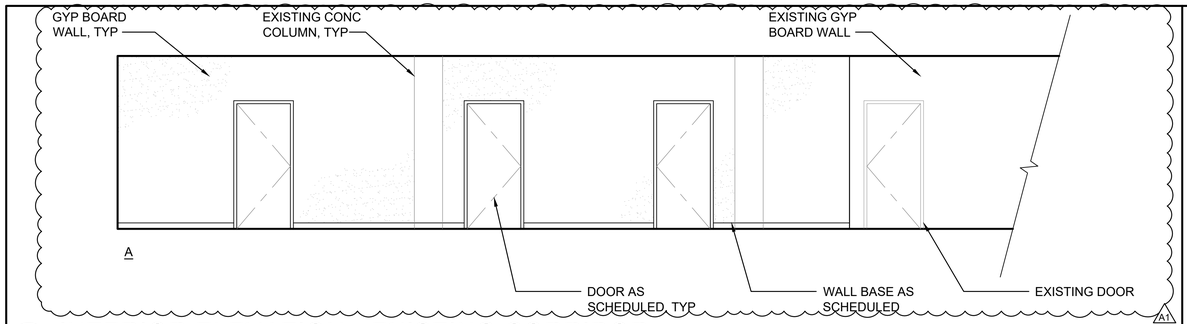
Date:
-

Sheet No.:

A-201

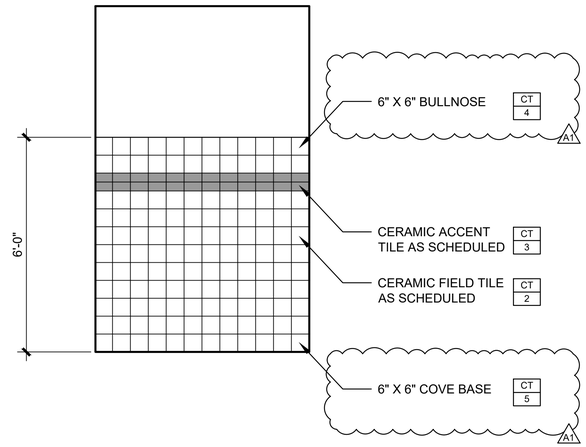


1 A-202 INTERIOR ELEVATION - EXISTING CORRIDOR

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

2 A-202 INTERIOR ELEVATION - EXISTING MEN'S RESTROOM

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



3 A-202 ENLARGED TILE ELEVATION

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

0 1' 2' 3' 4' 5' 6'

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

0 4' 8' 12'

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

INK ARCHITECTS

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

Revisions:

No.	Description	Date
A1	ADDENDUM 1	5-15-24

Project Title:

LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816
T.M.K.: 3-2-031:001

SCOTT R.J. HARADA
LICENSED PROFESSIONAL ARCHITECT
No. 14637
HAWAII, U.S.A.

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SIGNATURE
EXP. DATE: 04/30/26

Sheet Title:

INTERIOR ELEVATIONS

Project Phase:

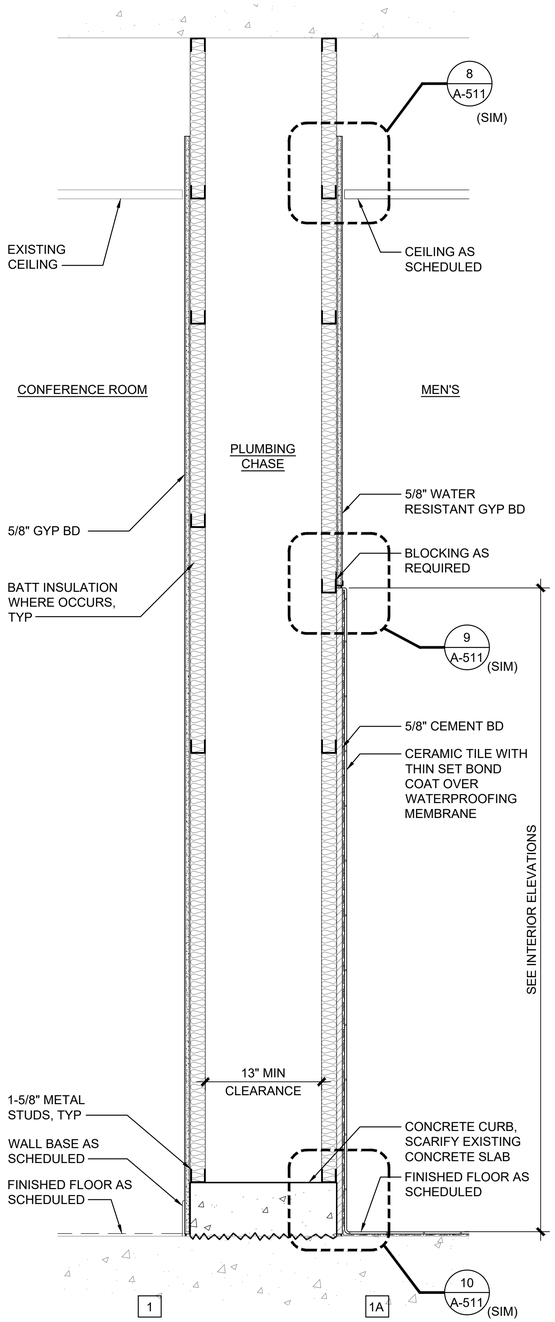
-

Date:

-

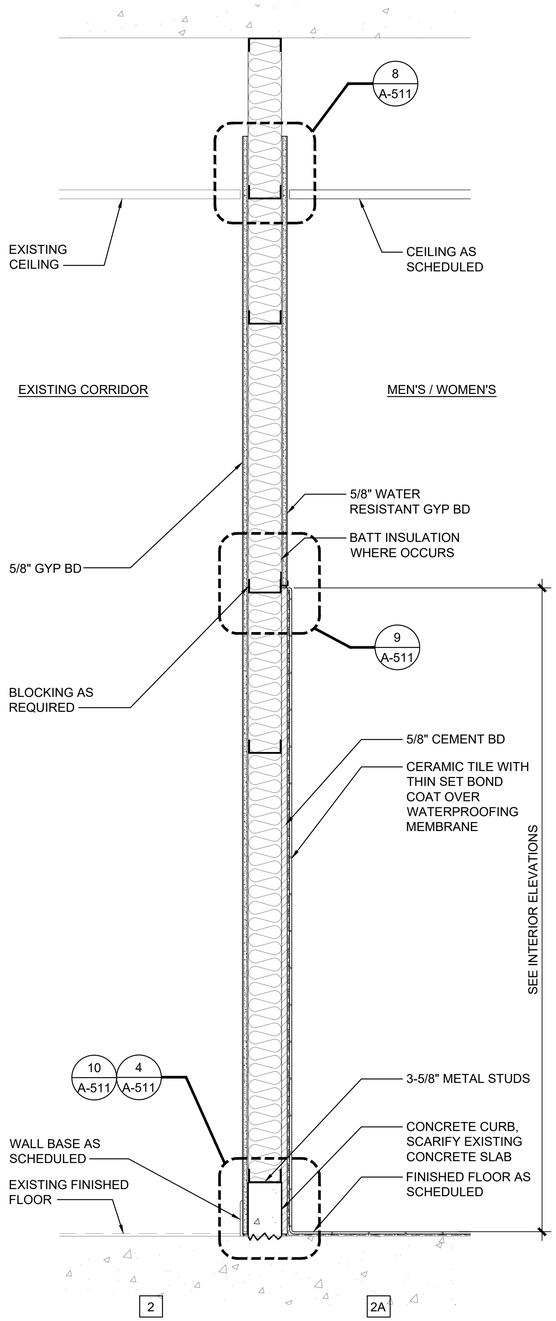
Sheet No.:

A-202



NON RATED FULL HEIGHT CHASE WALL W/ WAINSCOT ON ONE SIDE

NON RATED FULL HEIGHT CHASE WALL W/ WAINSCOT ON BOTH SIDES

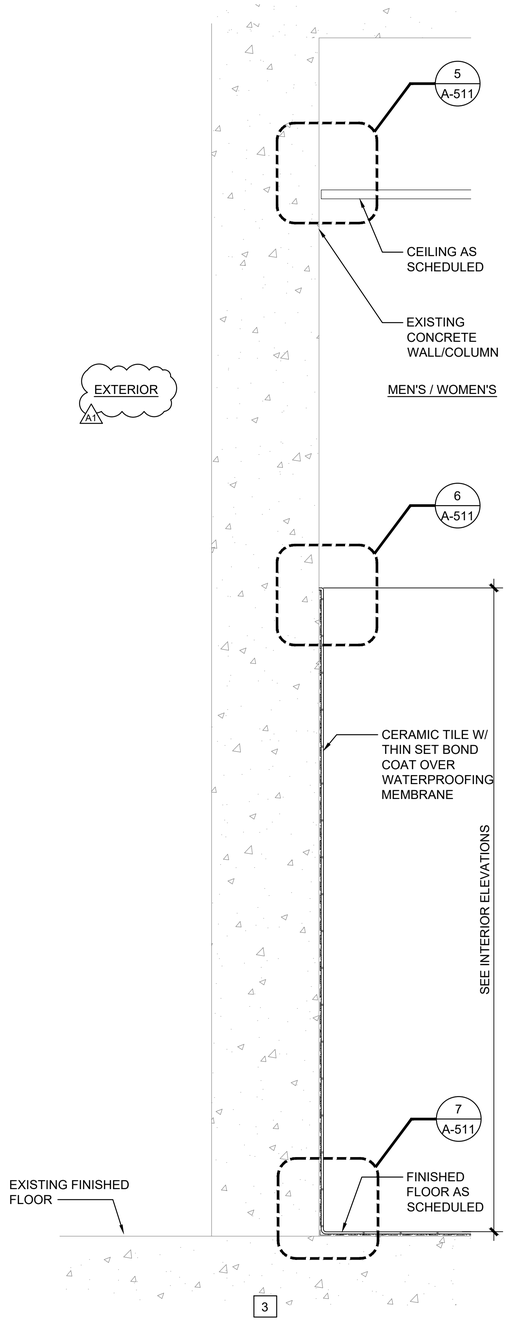


NON RATED FULL HEIGHT PARTITION WALL W/ WAINSCOT ON ONE SIDE

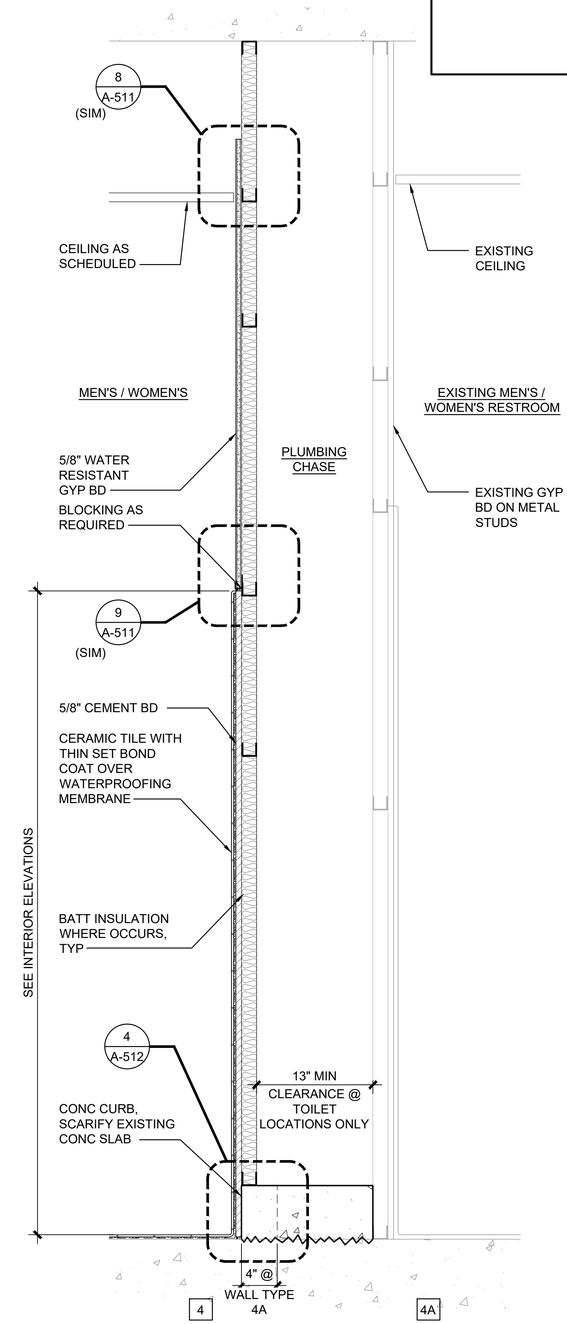
NON RATED FULL HEIGHT PARTITION WALL W/ WAINSCOT ON BOTH SIDES

EXTERIOR

A1



EXISTING CONCRETE WALL / COLUMN W/ WAINSCOT



NON RATED FULL HEIGHT PARTITION W/ WAINSCOT ON ONE SIDE

NON RATED FULL HEIGHT PARTITION W/ WAINSCOT ON ONE SIDE - NO MIN CLEARANCE

0 1' 2'

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

1 / A-510 WALL PARTITIONS

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

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Sheet Title:

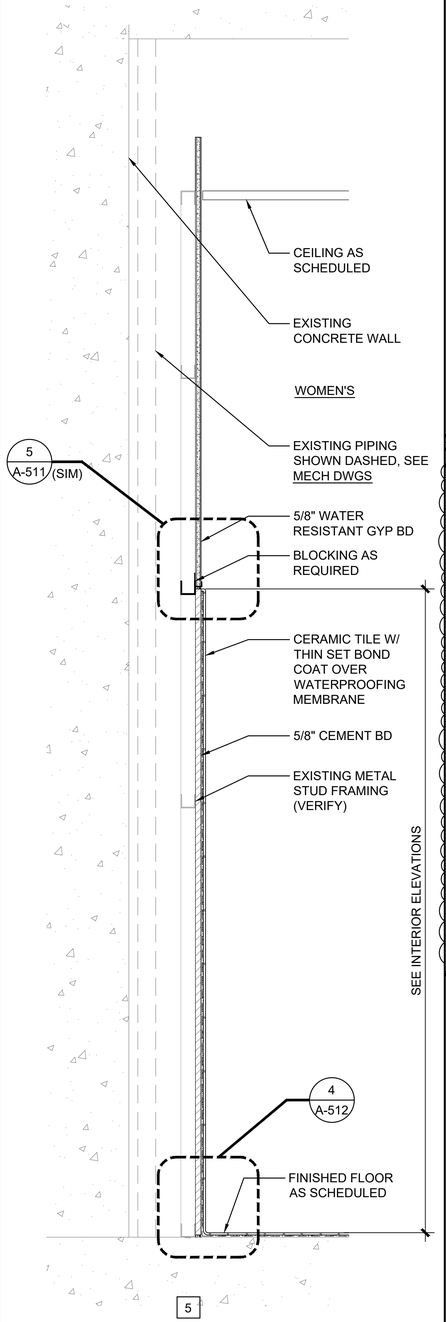
PARTITION TYPES

Project Phase:
-

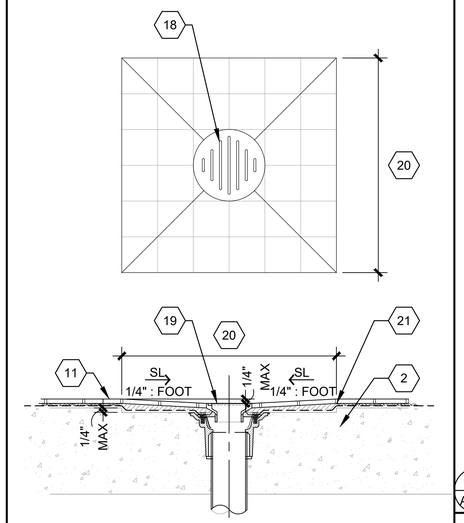
Date:
-

Sheet No.:

A-510



1 A-511 **WALL PARTITIONS**
SCALE: 1-1/2" = 1'-0"

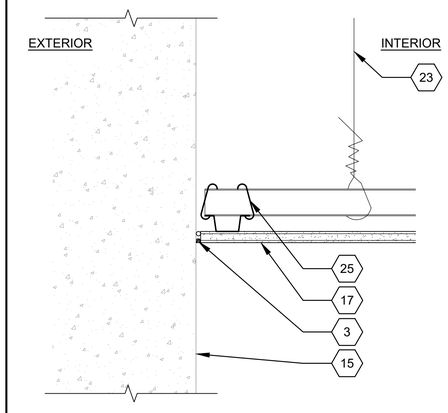


2 A-511 **FLOOR DRAIN**
SCALE: 3" = 1'-0"

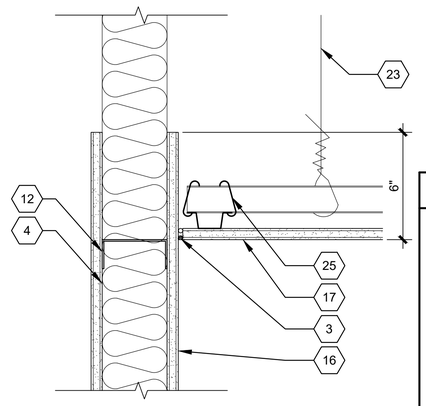
NOT USED

A1

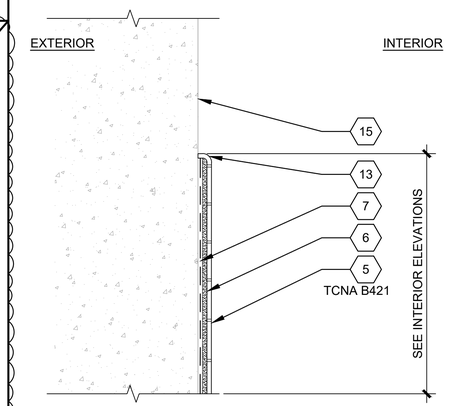
4 A-511 **FLOOR CURB DETAIL @ SHOWER**
SCALE: 3" = 1'-0"



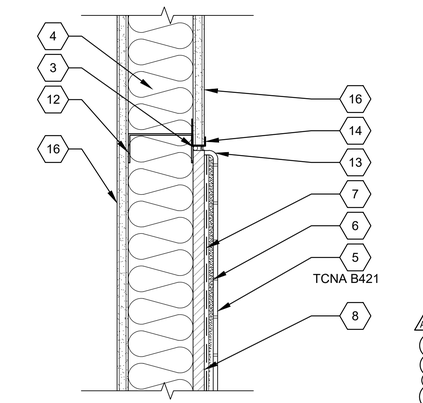
5 A-511 **CEILING DETAIL**
SCALE: 3" = 1'-0"



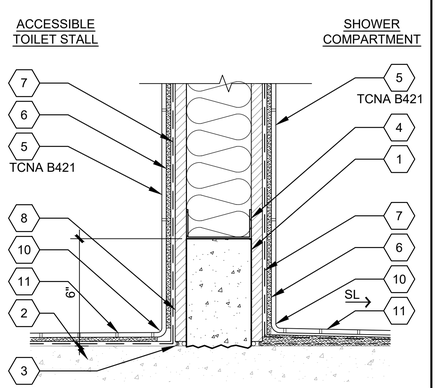
8 A-511 **CEILING DETAIL**
SCALE: 3" = 1'-0"



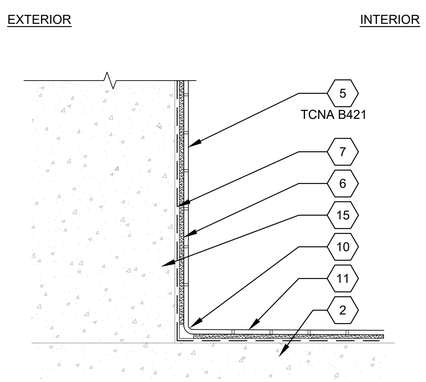
6 A-511 **WAINSCOT DETAIL**
SCALE: 3" = 1'-0"



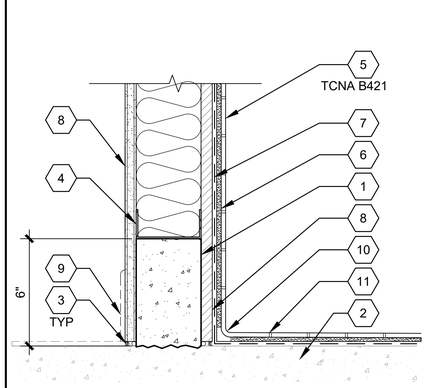
9 A-511 **WAINSCOT DETAIL**
SCALE: 3" = 1'-0"



4 A-511 **FLOOR CURB DETAIL @ SHOWER**
SCALE: 3" = 1'-0"



7 A-511 **CERAMIC TILE FLOOR DETAIL**
SCALE: 3" = 1'-0"



10 A-511 **FLOOR CURB DETAIL**
SCALE: 3" = 1'-0"

SHEET KEYNOTES

1. CONCRETE CURB
2. EXISTING CONCRETE FLOOR SLAB
3. CONTINUOUS SEALANT W/ BACKER ROD
4. METAL STUDS, FRAME AS REQUIRED
5. CERAMIC TILE AS SCHEDULED
6. THIN SET BOND COAT
7. WATERPROOFING MEMBRANE
8. 5/8" CEMENT BOARD
9. WALL BASE AS SCHEDULED
10. COVE BASE AS SCHEDULED
11. FINISH FLOOR AS SCHEDULED
12. BLOCKING AS REQUIRED
13. BULLNOSE TILE AS SCHEDULED
14. CONTINUOUS METAL "J" TRIM
15. EXISTING CONCRETE WALL
16. 5/8" WATER RESISTANT GYP BOARD
17. CEILING AS SCHEDULED
18. FLOOR DRAIN, SEE MECH DWGS
19. FLOOR DRAIN STRAINER AND FLOOR DRAIN BODY, SEE MECH DWGS
20. 1'-0" SQUARE (REMOVE PORTION OF EXISTING CONC SLAB TO RECESSED FLOOR DRAIN)
21. SLOPED MORTAR FILL
22. NOT USED
23. HANGAR WIRE @ 4'-0" MAX, AS REQUIRED
24. NOT USED
25. SECURE FRAMING TO SUSPENDED FURRING CHANNELS

A1

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

0 3" 6" 9" 1'
SCALE: 3"=1'-0"

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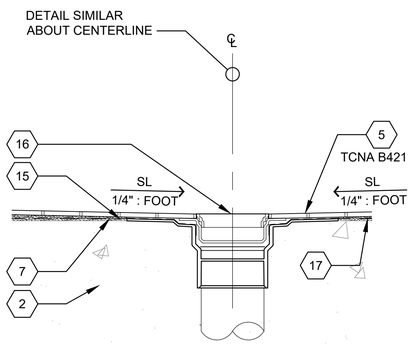
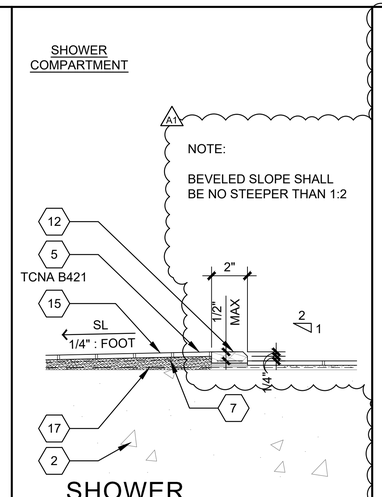
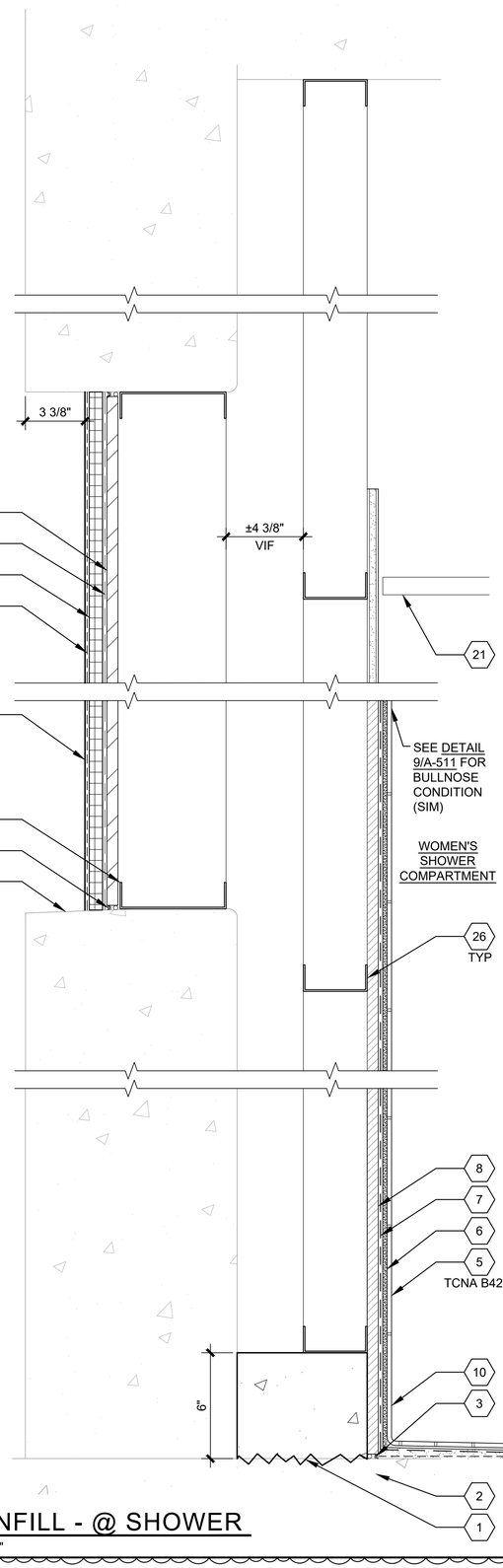
A-511



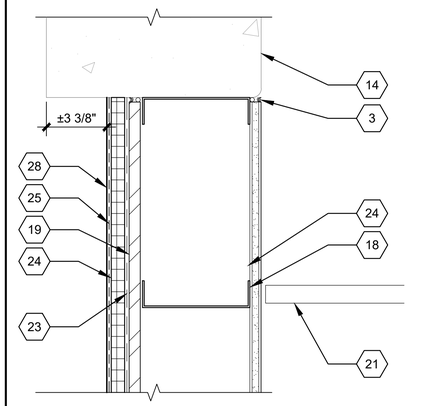
1 A-512 **SHOWER DRAIN DETAIL**
SCALE: 3" = 1'-0"



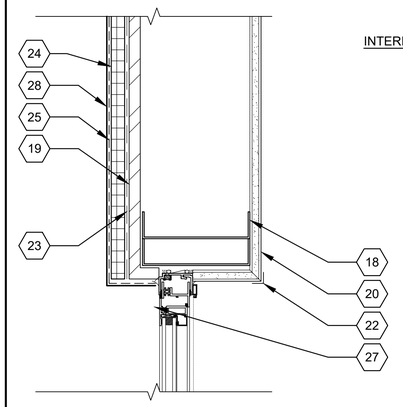
2 A-512 **SHOWER THRESHOLD DETAIL**
SCALE: 3" = 1'-0"



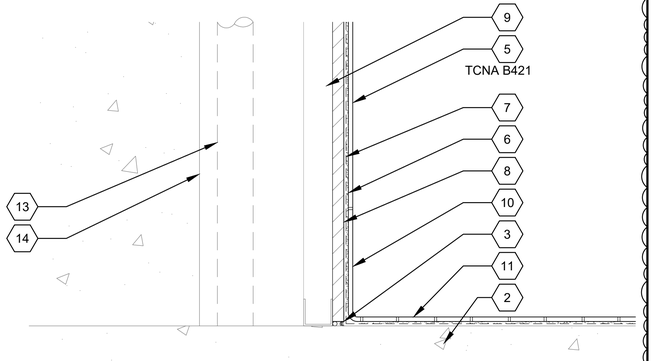
5 A-511 **WALL INFILL - @ SHOWER**
SCALE: 3" = 1'-0"



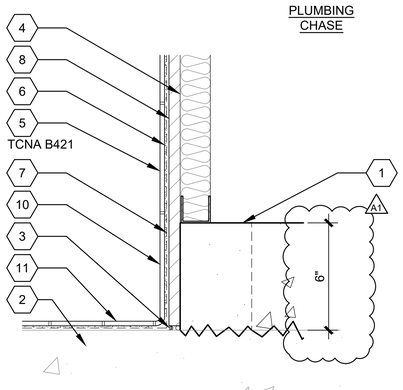
6 A-511 **WALL INFILL - HEAD**
SCALE: 3" = 1'-0"



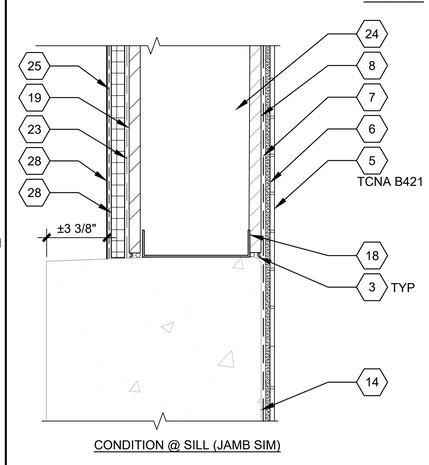
7 A-511 **WALL INFILL - JAMB @ WINDOW**
SCALE: 3" = 1'-0"



3 A-512 **BASE DETAIL @ EXISTING PIPING**
SCALE: 3" = 1'-0"



4 A-512 **FLOOR CURB DETAIL**
SCALE: 3" = 1'-0"



CONDITION @ SILL (JAMB SIM)

8 A-511 **WALL INFILL - SILL**
SCALE: 3" = 1'-0"

SHEET KEYNOTES

1. CONCRETE CURB
2. EXISTING CONCRETE FLOOR SLAB
3. CONTINUOUS SEALANT W/ BACKER ROD
4. 1-5/8" METAL STUD, FRAME AS REQUIRED
5. CERAMIC TILE AS SCHEDULED
6. THIN SET BOND COAT
7. WATERPROOFING MEMBRANE
8. 5/8" CEMENT BOARD
9. EXISTING METAL STUD FRAMING (VERIFY IN FIELD)
10. COVE BASE AS SCHEDULED
11. FINISH FLOOR AS SCHEDULED
12. MARBLE THRESHOLD SET IN BED OF SEALANT
13. EXISTING PIPING SHOWN DASHED
14. EXISTING CONCRETE WALL
15. SLOPED MORTAR BED
16. FLOOR DRAIN, SEE MECH DWGS
17. MORTAR BED BOND COAT
18. 6" METAL STUDS, FRAME AS REQUIRED
19. 5/8" EXTERIOR SHEATHING
20. 5/8" WATER RESISTANT GYP BOARD
21. CEILING AS SCHEDULED
22. CORNER BEAD
23. WATER RESISTIVE BARRIER
24. RIGID INSULATION BOARD
25. METAL LATH
26. 3-5/8" METAL STUDS, FRAME AS REQUIRED
27. WINDOW AS SCHEDULED
28. DIRECT APPLIED BASE AND FINISH COAT, (SENERGY PLATINUM CI STUCCO, OR APPROVED EQUAL) PAINT TO MATCH EXISTING EXTERIOR SURFACE

0 3" 6" 9" 1'
SCALE: 3"=1'-0"

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PARTITION DETAILS

Project Phase:
-

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-

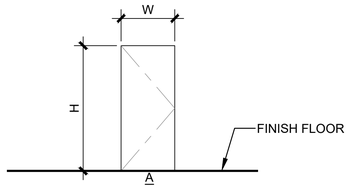
Sheet No.:

A-512

DOOR SCHEDULE

INT/ EXT	DOOR NUMBER	TYPE	DOOR		FRAME		SIZE			DETAILS (A-601 THIS SHEET)			HW GROUP	FIRE RATING	REMARKS
			MATERIAL	FIN	MATERIAL	FIN	WIDTH	HEIGHT	THICKNESS	HEAD	JAMB	THRESHOLD			
INT	101	A	SC WD	PL-1	MET	PT-2	3'-0"	7'-0"	1 3/4"	4	3, 4	1	001	0	-
INT	102	A	SC WD	PL-1	MET	PT-2	3'-0"	7'-0"	1 3/4"	4	3	2	002	0	-
INT	103	A	SC WD	PL-1	MET	PT-2	3'-0"	7'-0"	1 3/4"	4	3	2	003	0	-

DOOR TYPES



SOLID CORE WOOD
FLUSH PANEL

MATERIAL INDEX

CODE	MATERIAL	MANUFACTURER	MODEL/SIZE	COLOR	LOCATIONS	REMARKS
ACT-1	ACOUSTIC CEILING TILE	ARMSTRONG	ULTIMA BEVELED TEGULAR 2'X4'	WHITE	CONFERENCE ROOM	PRELUDE 15/16" SUSPENSION SYSTEM
CT-1	CERAMIC TILE	DALTILE	KEYSTONES 1"X1" A1	WHEAT BLEND	FLOOR	GT-1
CT-2	CERAMIC TILE	DALTILE	COLORWHEEL CLASSIC 6"X6"	WHITE 0100	WALL (FIELD) A1	GT-2
CT-3	CERAMIC TILE	DALTILE	COLORWHEEL CLASSIC 3"X6"	MATTE SUEDE GRAY 0782	WALL ACCENT	GT-2
CT-4	CERAMIC TILE	DALTILE	COLORWHEEL CLASSIC 6"X6"	WHITE 0100	BULLNOSE A1	GT-2
CT-5	CERAMIC TILE	DALTILE	COLORWHEEL CLASSIC 6"X6"	WHITE 0100	COVE BASE	GT-2
GT-1	EPOXY GROUT	MAPEI	KERAPOXY	PEARL GRAY 19	FLOOR	-
GT-2	EPOXY GROUT	MAPEI	KERAPOXY	COBBLESTONE 103	WALL	-
PT-1	PAINT	SHERWIN WILLIAMS	SEE SPEC	MATCH EXISTING	WALL	SEMI-GLOSS
PT-2	PAINT	SHERWIN WILLIAMS	SEE SPEC	MATCH EXISTING	DOOR FRAMES	SEMI-GLOSS
PT-3	PAINT	SHERWIN WILLIAMS	SEE SPEC	MATCH WALL COLOR	CEILING	EGG-SHELL
PL-1	PLASTIC LAMINATE	WILSONART	SEE SPEC	FUSION MAPLE 7909	DOORS	MATTE FINISH
RF-1	RESILENT FLOORING	METROFLOR	INCEPTION 200	SUNSET APPLE HAWIN 20008	CONFERENCE ROOM	-
TP-1	TOILET PARTITIONS	SCRANTON	HINY HIDERS	CONCRETE	-	
WB-1	WALL BASE	FLEXCO	WALLFLOWERS 4" RUBBER WALL BASE	MATCH EXISTING	HALLWAY	-
WB-2	WALL BASE	FLEXCO	WALLFLOWERS 4" RUBBER WALL BASE	DARK BEIGE 037	CONFERENCE ROOM	-
WT-1	WINDOW TREATMENT	MECHO SHADE	MECHO/5	CORNSILK 1102	CONFERENCE ROOM	RECESSED POCKET IN CEILING A1

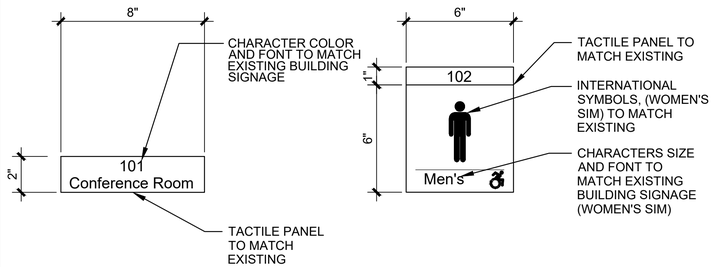
ROOM FINISH SCHEDULE

ROOM #	ROOM NAME	WALLS						CEILING	CEILING FINISH	WINDOWS	REMARKS
		FLOOR	BASE	A	B	C	D				
101	CONFERENCE ROOM	RF-1	WB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	-	WT-1	-
102	MEN'S	CT-1	CT-1	PT-1/CT-2	PT-1/CT-2	PT-1/CT-2	PT-1/CT-2	GYP BD	PT-3	-	-
103	WOMEN'S	CT-1	CT-1	PT-1/CT-2	PT-1/CT-2	PT-1/CT-2	PT-1/CT-2	GYP BD	PT-3	- A1	-

SIGNAGE SCHEDULE

SIGN NO.	ROOM NO.	SIGN TYPE	MOUNTING LOCATION	SIGN TEXT	REMARKS
01	101	A	LEFT SIDE OF DOOR	CONFERENCE ROOM	MATCH EXISTING
02	102	B	RIGHT SIDE EOF DOOR	MEN'S	MATCH EXISTING
03	103	C	LEFT SIDE OF DOOR	WOMENS	MATCH EXISTING

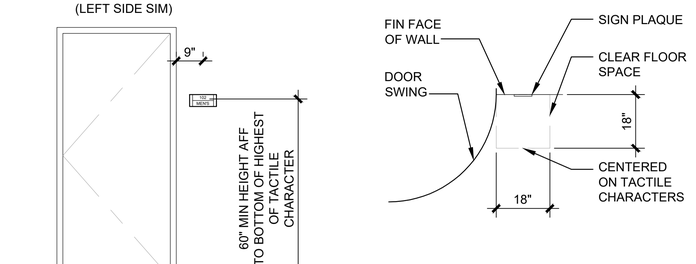
SIGNAGE TYPES



SIGN TYPE A
NTS

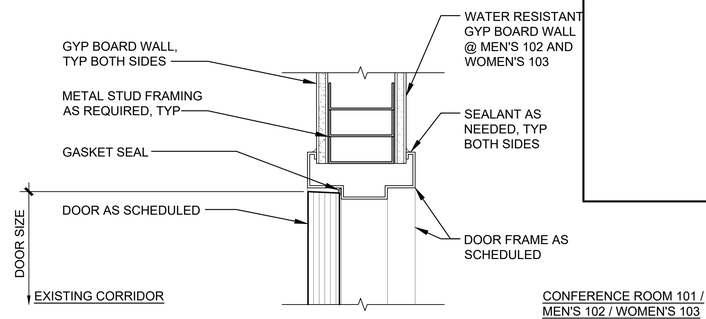
SIGN TYPE B (C SIM)
NTS

TYPICAL MOUNTING HEIGHTS

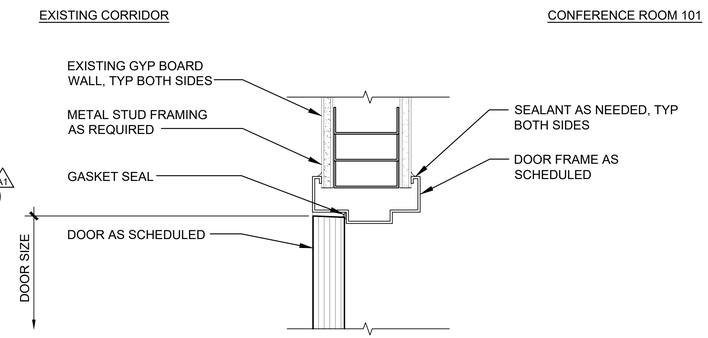


ELEVATION
NTS

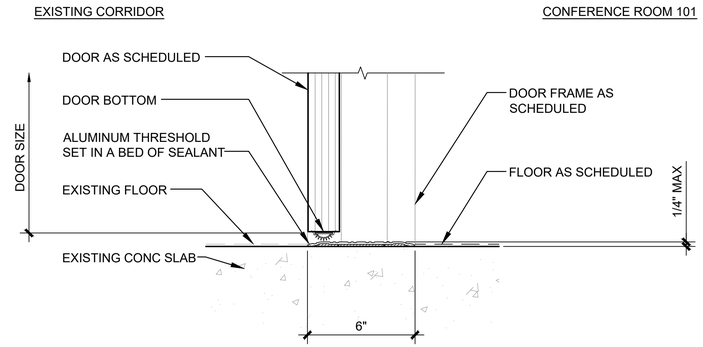
PLAN
NTS



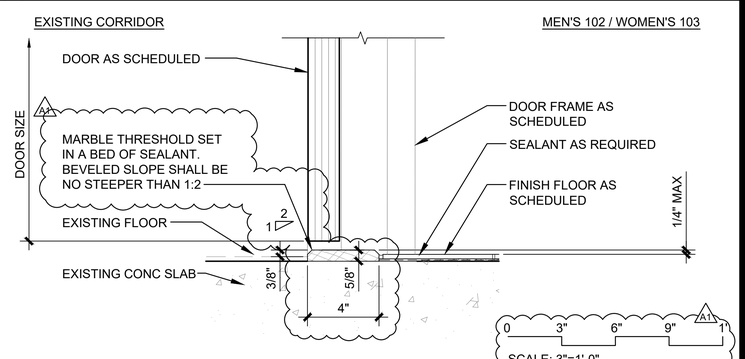
4 A-601 DOOR DETAIL - HEAD/JAMB (SIM)
SCALE: 3" = 1'-0"



3 A-601 DOOR DETAIL - JAMB @ EXISTING GYP BD WALL
SCALE: 3" = 1'-0"



2 A-601 DOOR DETAIL - THRESHOLD
SCALE: 3" = 1'-0"



1 A-601 DOOR DETAIL - THRESHOLD
SCALE: 3" = 1'-0"

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A1	ADDENDUM 1	5-15-24

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LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816
T.M.K.: 3-2-031:001

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EXP. DATE: 04/30/26

Sheet Title:

DOOR AND SIGNAGE SCHEDULE AND TYPES, MATERIAL INDEX, ROOM FINISH SCHEDULE, TYPICAL MOUNTING HEIGHTS, DOOR DETAILS

Project Phase:

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Date:

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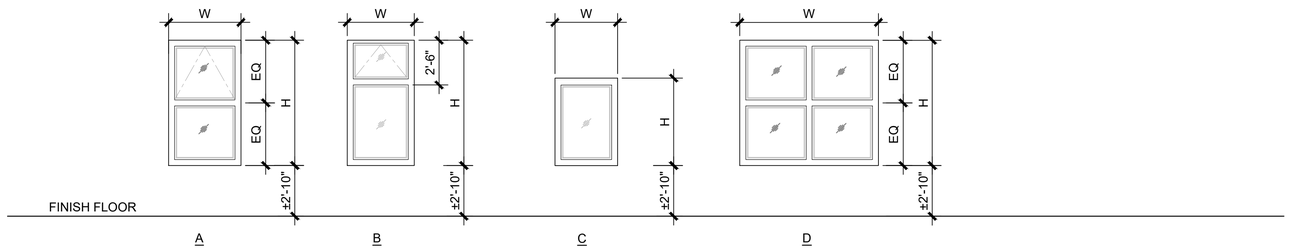
Sheet No.:

A-601

WINDOW SCHEDULE

ROOM #	WINDOW #	TYPE	SIZE (ROUGH OPENING)		MATERIAL		DETAIL NUMBER				REMARKS
			WIDTH	HEIGHT	FRAME	GLAZING	HEAD	JAMB	MULLION	SILL	
103	114	A	±4'-0"	±7'-0"	ALUM	FROSTED	4/A-602	1/A-602, 5/A-602	-	3/A-602	-
102	115	A	±4'-0"	±7'-0"	ALUM	FROSTED	4/A-602	7/A-511, 5/A-602	-	3/A-602	-
102	116	B	±4'-0"	±7'-0"	ALUM	FROSTED	4/A-602	1/A-602, 5/A-602	2/A-602	3/A-602	-
101	117A	C	±3'-8"	±4'-10"	ALUM	CLEAR	6/A-511	1/A-602	2/A-602	3/A-602	-
101	117B	B	±3'-8"	±7'-0"	ALUM	CLEAR	4/A-602	1/A-602 , 5/A-602	2/A-602	3/A-602	-
101	118	D	±7'-4"	±7'-0"	ALUM	CLEAR	1/A-602	1/A-602	2/A-602	3/A-602	-

WINDOW TYPES



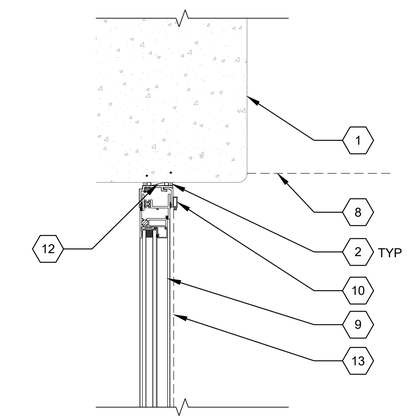
A — FIXED GLASS W/ OPERABLE WINDOW

B — FIXED GLASS W/ OPERABLE WINDOW

C — SINGLE FIXED GLASS WINDOW

D — FIXED GLASS WINDOW

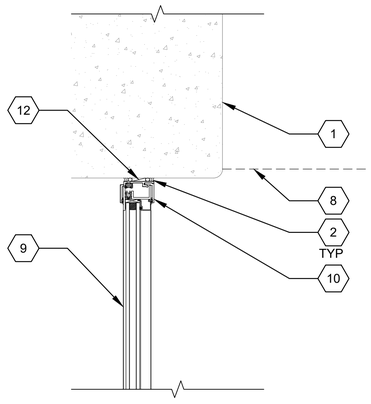
EXTERIOR INTERIOR



WINDOW HEAD - FIXED (JAMB SIM)

1 A-602 SCALE: 3" = 1'-0"

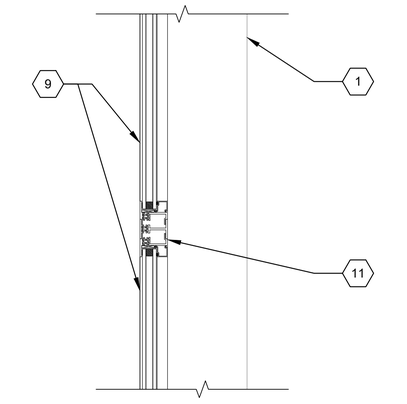
EXTERIOR INTERIOR



WINDOW HEAD - OPERABLE

4 A-602 SCALE: 3" = 1'-0"

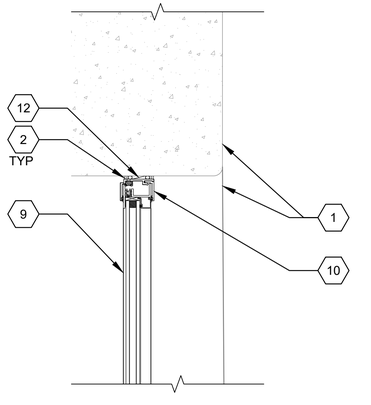
EXTERIOR INTERIOR



WINDOW MULLION - FIXED

2 A-602 SCALE: 3" = 1'-0"

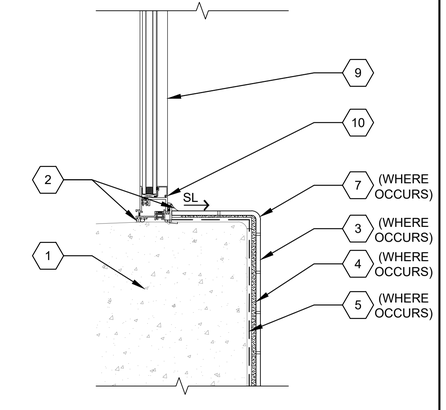
EXTERIOR INTERIOR



WINDOW JAMB - OPERABLE

5 A-602 SCALE: 3" = 1'-0"

EXTERIOR INTERIOR



WINDOW SILL

3 A-602 SCALE: 3" = 1'-0"

SHEET KEYNOTES

1. EXISTING CONCRETE WALL
2. CONTINUOUS SEALANT W/ BACKER ROD
3. CERAMIC TILE AS SCHEDULED
4. THIN SET BOND COAT
5. WATERPROOFING MEMBRANE
6. COVE BASE AS SCHEDULED
7. BULLNOSE TILE AS SCHEDULED
8. CEILING AS SCHEDULED
9. WINDOW AS SCHEDULED
10. WINDOW FRAME AS SCHEDULED
11. WINDOW MULLION
12. SHIM AS REQUIRED
13. REMOVABLE INSECT SCREEN

0 3" 6" 9" 1'

SCALE: 3"=1'-0"

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WINDOW SCHEDULE, TYPES AND DETAILS

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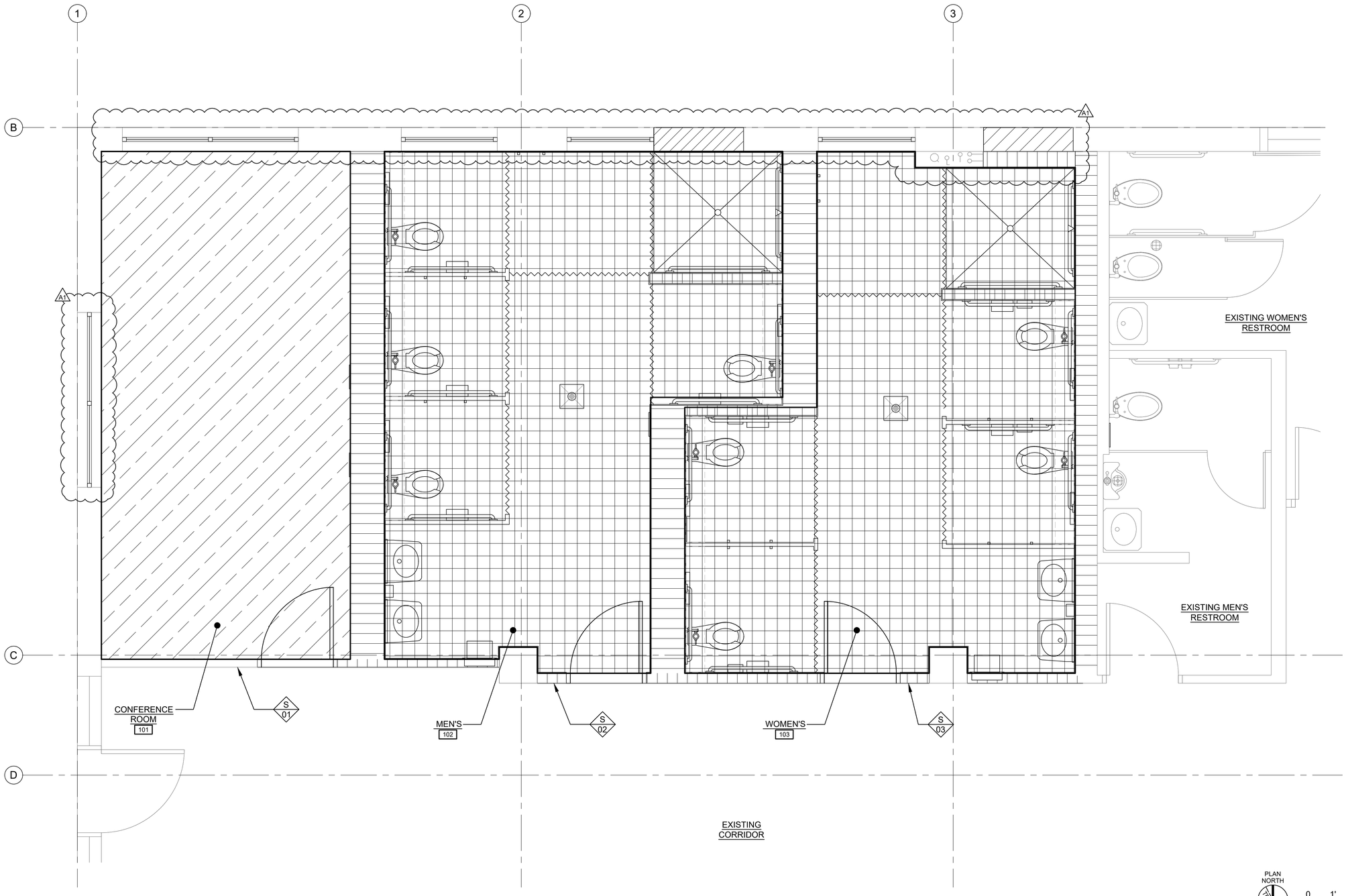
A-602 A1

LEGEND

- GYP BOARD WALL W/ CERAMIC TILE (WHERE OCCURS)
- CERAMIC TILE FLOORING CT 01
- LVT FLOORING LVT 01
- EXISTING EXTERIOR CONCRETE WALL
- EXISTING CONCRETE COLUMN
- SIGNAGE TAG/NUMBER S #

GENERAL NOTES

1. PRIOR TO AND AFTER INSTALLATION / APPLICATION OF FINISH FLOORING SYSTEMS, THE GENERAL CONTRACTOR SHALL CONDUCT AND PERFORM WATER TEST(S) OF THE FLOORING TO ENSURE POSITIVE FLOW TOWARDS RESPECTIVE DRAINS, AND SHALL ENSURE NO PUDDLING OR DAM CONDITIONS OCCUR, TO THE COMPLETE SATISFACTION OF THE OWNER'S REPRESENTATIVE AND ARCHITECT. (A1)
2. PROVIDE POSITIVE SLOPES (2% MAX) TO ALL RESPECTIVE FLOOR DRAINS FOR ENTIRE FINISHED FLOORINGS SYSTEM SURFACE.
3. PREPARE EXISTING FLOOR SLAB AS REQUIRED FOR THE INSTALLATION OF FLOORING AS SCHEDULED, INCLUDING BUT NOT LIMITED TO LEVELNESS, FLATNESS, HIGH AND LOW SPOTS, GOUGES, CRACKS, AND EXCESS MOISTURE CONTENT.



PLAN NORTH (TRUE N)

0 1' 2' 3' 4' 5' 6'

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

1 AF101 FINISH FLOOR PLAN

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

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FINISH FLOOR PLAN

Project Phase:

-

Date:

-

Sheet No.:

AF101

GENERAL NOTES:

1. CONFORM TO ALL REQUIREMENTS OF THE 2018 IBC, 2021 UPC, 2018 IECC, AND 2018 NFPA 1 CODES OF THE CITY AND COUNTY OF HONOLULU, STATE OF HAWAII HEALTH REGULATIONS, FIRE DEPARTMENT REGULATIONS, MANUFACTURER'S RECOMMENDATIONS AND OTHER APPLICABLE REGULATIONS.
2. EXAMINE ALL PROJECT PLANS AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS AND THE EXTENT OF REMOVAL, RELOCATION AND/OR NEW WORK PRIOR TO BIDDING. NOTIFY AND COORDINATE WITH THE ENGINEER FOR ANY MAJOR DEVIATIONS OR DISCREPANCIES DISCOVERED IN THE PLANS AND SPECIFICATIONS DUE TO UNFORESEEN OR VARYING FIELD CONDITIONS.
3. INSTALLATION SHALL BE GUARANTEED TO BE FREE FROM DEFECTS FOR ONE YEAR FROM FINAL DATE OF ACCEPTANCE OF THE PROJECT AS A WHOLE.
4. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS PRIOR TO BID AND CONSTRUCTION
5. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING LINE SIZES, CONDITIONS, AND INVERTS PRIOR TO BID AND CONSTRUCTION.
6. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO COVER THE COMPLETE INSTALLATION OF SYSTEMS TO FUNCTION AS DESCRIBED AND SPECIFIED. THE OMISSION OF REFERENCE TO ANY NECESSARY ITEM OF LABOR OR MATERIAL SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH LABOR AND MATERIAL AT NO ADDITIONAL COST TO THE OWNER.
7. PAY FOR ALL PERMITS AND APPLICATIONS.
8. CAULK ALL PENETRATIONS WATERTIGHT. PROVIDE ALL CUTTING, PATCHING, AND RESTORING OF EXISTING SURFACES TO MATCH ORIGINAL SURFACE FINISHES. REPAIR ANY DAMAGE TO EXISTING CONSTRUCTION RESULTING FROM THE INSTALLATION OF MECHANICAL ITEMS. THE AREAS REPAIRED SHALL MATCH THE EXISTING ADJACENT SURFACES IN TEXTURE AND COLOR.
9. PREPARE SIX (6) SETS OF SHOP DRAWINGS SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF WORK. NO REPRODUCTIONS OF ANY KIND OF THE CONTRACT DOCUMENTS SHALL BE ACCEPTABLE AS SHOP DRAWINGS. PROVIDE ONE SET OF REPRODUCIBLE AS-BUILT DRAWINGS SHOWING THE ACTUAL INSTALLED CONDITIONS AND SUBMIT TO THE OWNERS UPON COMPLETION OF WORK.
10. ALL EQUIPMENT AND FIXTURES SHALL BE CAPABLE OF FITTING INTO THE SPACES ALLOTTED WHILE MEETING THE MANUFACTURER'S RECOMMENDED ACCESS REQUIREMENTS. REVIEW ALL SPACES WHERE EQUIPMENT AND FIXTURES ARE TO BE INSTALLED PRIOR TO ORDERING OF ITEMS AND NOTIFY THE ARCHITECT/ENGINEER OF ANY INADEQUATE CLEARANCES OR CONDITIONS THAT WILL PREVENT THE PROPER INSTALLATION, MAINTENANCE,AND OPERATION OF THE EQUIPMENT AND FIXTURES.
11. DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT SHOW EVERY EXACT DETAIL OF PIPING AND DUCTWORK. PROVIDE OFFSETS AS NECESSARY TO AVOID LOCAL OBSTRUCTIONS OR INTERFERENCES WITH OTHER TRADES. REVIEW ALL PIPING AND DUCT RUNS PRIOR TO FABRICATION AND IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER OF ANY INTERFERENCES AND/OR LACK OF ADEQUATE CLEARANCES.
12. SHOULD PROJECT CONDITIONS REQUIRE REARRANGEMENT OF WORK, MARK SUCH CHANGES ON THE AS-BUILT DRAWINGS. IF THESE CHANGES REQUIRE ALTERNATE METHODS TO THOSE APPROVED BY THE CONTRACT DOCUMENTS, SUBMIT SHOP DRAWINGS SHOWING THE PROPOSED ALTERNATE METHODS TO THE ARCHITECT/ENGINEER FOR REVIEW/APPROVAL PRIOR TO PROCEEDING WITH WORK.
13. COORDINATE ALL WORK WHICH WILL AFFECT AREAS WITH BUILDING SUPERVISOR. SCHEDULE OFF-HOUR WORK WHEN REQUIRED TO MINIMIZE DISRUPTIONS.
14. COORDINATE ALL SWITCH, THERMOSTAT, ETC. LOCATIONS WITH USER/ENGINEER PRIOR TO INSTALLATION TO AVOID INTERFERENCES WITH PAINTING, BULLETIN BOARDS, FURNITURE, ETC. ANY ITEM NOT PROPERLY COORDINATED SHALL BE RELOCATED AT NO ADDITIONAL COST TO THE OWNER.
15. ALL STEEL SHALL BE HOT DIPPED GALVANIZED. GALVANIZED STEEL EXPOSED TO WEATHER SHALL HAVE WEATHER PROOF PAINT TO MATCH SURFACES. PROVIDE TWO EXTRA COATS OF EPOXY PAINT.
16. ALL ELECTRICAL AND CONTROL WIRING SHALL BE IN CONDUIT. PROVIDE GALVANIZED STEEL PIPE CONDUIT FOR EXPOSED TO WEATHER CONDUIT.
17. ALL DUCT DIMENSIONS SHOWN ARE NET DIMENSIONS.
18. PROVIDE DUCTWORK REDUCER FITTINGS AT AIR DEVICE CONNECTIONS AS REQUIRED.
19. PROVIDE OPPOSED BLADE VOLUME DAMPERS AND STAINLESS STEEL BIRDSCREENS FOR ALL OUTSIDE AIR DUCTS.
20. ALL SWITCHES, TIMECLOCKS, THERMOSTATS, AND CONTROL ITEMS SHALL BE ADA ACCESSIBLE AND SHALL BE MOUNTED AT 44" AFF AS PER ADA REQUIREMENTS OR ACCORDING TO OWNER'S INSTRUCTIONS.
21. PROVIDE REBALANCING DURING ONE YEAR GUARANTEE PERIOD TO SATISFY USER'S REQUIREMENTS. CONTRACTOR SHALL PROVIDE TEST AND BALANCING REPORTS.
22. COORDINATE ALL WORK WITH OTHER TRADES TO AVOID INTERFERENCES AND DELAYS.
23. EXISTING PLUMBING/STORM DRAIN/CONDUITS SHALL BE REHUNG/REROUTED AS REQUIRED TO ACCOMMODATE NEW HVAC EQUIPMENT AND DUCTWORK. VERIFY ALL WASTE AND WATER INVERTS, LOCATIONS, SIZES, AND CONDITIONS OF PIPING.
24. ALL HVAC DUCTWORK SHALL HAVE EITHER TURNING VANES OR RADIUS ELBOWS AT EACH BEND OR ELBOW WHETHER SHOWN ON THE DRAWINGS OR NOT.
25. SEISMICALLY BRACE ALL EQUIPMENT, PIPING, AND DUCTWORK IN ACCORDANCE WITH THE CURRENT BUILDING CODE AND THERE RESPECTIVE SEISMIC ZONE LOCATIONS.
26. PROVIDE ACCESS PANELS FOR ALL ITEMS UNDER THIS SECTION REQUIRING SERVICING, INSPECTION, MAINTENANCE, AND ADJUSTMENT.
27. PROVIDE ESCUTCHEON PLATES AT ALL EXPOSED WALL PENETRATIONS IN FINISHED AREAS, EXTERIOR WALL, ETC.
28. AFTER CONNECTION OF NEW FIXTURES TO WASTE, CLEANOUT/SNAKE EXISTING LINES FOR PROPER OPERATION.
29. ALL PENETRATIONS THRU EXISTING WALLS, FOUNDATIONS, AND FLOOR SLABS SHALL BE IN TOTAL COMPLIANCE WITH ARCHITECTURAL/STRUCTURAL PROCEDURES AND DRAWINGS.
30. ALL PENETRATIONS THRU RATED WALLS AND CEILINGS SHALL BE EQUIPPED WITH APPROVED FIRE STOPPING AND OR FIRE & SMOKE DAMPERS.
31. DRAWING FILES WILL NOT BE AVAILABLE TO CONTRACTORS FOR SHOP DRAWINGS OR ANY OTHER PURPOSE.
32. PROVIDE ISOLATION VALVES ON PIPING BRANCH LINES AND VOLUME DAMPERS ON DUCTWORK BRANCH LINES WHETHER SHOWN ON THE DRAWINGS OR NOT.
33. CONTRACTOR SHALL SCHEDULE, TAG, AND LABEL ALL VALVES AND PIPING. ALL PIPING SHALL ALSO BE LABELED WITH DIRECTION OF FLOW.
34. ALL EXTERIOR NUTS, BOLTS, AND SCREWS, WASHERS, FASTENERS, SUPPORTS STRAPS, ETC. SHALL BE TYP 304 STAINLESS STEEL.
35. PRE TAB REPORT SHALL BE PERFORMED BEFORE START OF WORK ON THE EXISTING SYSTEM SERVING THE SPACE. POST TAB REPORT SHALL BE PERFORMED AFTER WORK IS COMPLETED ON THE SYSTEM SERVING THE SPACE TO ACCOMMODATE NEW WORK.
36. PROVIDE DIELECTRIC UNIONS OR SEPARATIONS AT ALL DISSIMILAR METALS. PROVIDE UNIONS AFTER ALL SHUTOFF VALVES.

MECHANICAL LEGEND

SYMBOL	ABBRV.	DESCRIPTION	SYMBOL	ABBRV.	DESCRIPTION
GENERAL			HVAC		
	AFF	ABOVE FINISHED FLOOR		AP	ACCESS PANEL
⌐	CAP	CAPPED		ACCU	AIR COOLED CONDENSING UNIT
	CLG	CEILING	BDD	BDD	BACKDRAFT DAMPER
	CONC	CONCRETE	— CD —	CD	CONDENSATE
	CONT	CONTINUE		CFM	CUBIC FEET PER MINUTE
	DEMO	DEMOLITION		DT	DUCT
	ø	DIAMETER		EXH	EXHAUST
	DN	DOWN		EA	EXHAUST AIR
(E)	EXIST	EXISTING (TO REMAIN)		EF	EXHAUST FAN
	FLR	FLOOR		EAR	EXHAUST AIR REGISTER
	MIN	MINIMUM		FCU	FAN COIL UNIT
(N)		NEW			FLEX DUCTWORK
	NTS	NOT TO SCALE		OBVD	OPPOSED BLADE VOLUME DAMPER
	POC	POINT OF CONNECTION		OA	OUTSIDE AIR
	POR	POINT OF REMOVAL	—RL—	RL	REFRIGERANT LIQUID
(RE)		RELOCATE	—RS—	RS	REFRIGERANT SUCTION
(R)		REMOVE		SC	SERVICE CLEARANCE
	TERM	TERMINATED		SF	SUPPLY FAN
	TYP	TYPICAL		TSTAT	THERMOSTAT
	W/	WITH		TG	TRANSFER GRILLE
PLUMBING				TV	TURNING VANE
	ALAV	ACCESSIBLE LAVATORY		WAC	WINDOW AIR CONDITIONED
	ASH	ACCESSIBLE SHOWER	FIRE PROTECTION		
	AWC	ACCESSIBLE WATER CLOSET			CONCEALED PENDANT TYPE FIRE SPRINKLER HEAD
—⊣	CO	CLEANOUT		FE	FIRE EXTINGUISHER
— · —	CW	COLD WATER		FS	FIRE SPRINKLER
	FD	FLOOR DRAIN			PENDANT TYPE FIRE SPRINKLER HEAD
	FNL DR	FUNNEL DRAIN			
	GPD	GALLONS PER DAY			
	GPF	GALLONS PER FLUSH			
	GPM	GALLONS PER MINUTE			
	EWH	ELECTRIC WATER HEATER			
	HS	HAND SINK			
— · · —	HW	HOT WATER			
	INSUL	INSULATION			
	LAV	LAVATORY			
———	S	SANITARY			
	SK	SINK			
⋈	SOV	SHUT OFF VALVE			
	TP	TRAP PRIMER			
	UR	URINAL			
— — —	V	VENT			
—⊣	WCO	WALL CLEANOUT			
	WC	WATER CLOSET			
	WHA	WATER HAMMER ARRESTOR			

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GENERAL NOTES

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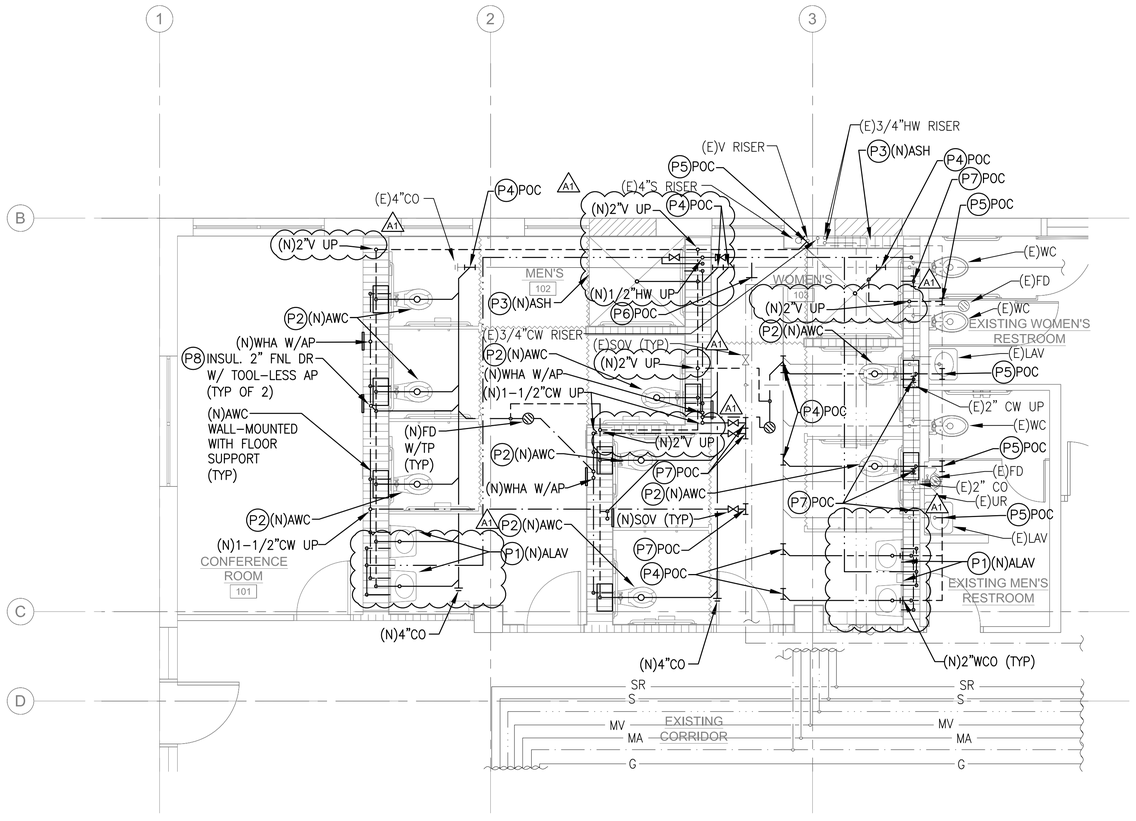

1 M-101 NEW PLUMBING PLAN

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

PLUMBING GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE WITH BUILDING MANAGER THAT ALL EXISTING CW/HW/S/V RISERS SERVING UPPER AND LOWER FLOOR DOES NOT INTERFERE OTHER BUSINESS HOURS AND OPERATIONS. CONTRACTOR TO FIELD VERIFY.

PLUMBING NEW WORK NOTES:

P1 PROVIDE AND INSTALL NEW WALL HUNG LAVATORY WITH DECK-MOUNTED METERED FAUCET INCLUDING ASSOCIATED CW/HW/S/V PIPING, FLOOR MOUNTED SUPPORT, AND ASSOCIATED ACCESSORIES AS REQUIRED. INSTALL IN ACCORDANCE WITH ADAAG 606 GUIDELINES. PROVIDE HW INSULATION IN ACCORDANCE IECC TABLE C403.11.3. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P2 PROVIDE AND INSTALL NEW AWC COMPLETE WITH ASSOCIATED CW/S/V PIPING, MANUAL FLUSHOMETER, WALL MOUNTED WITH FLOOR MOUNTED SUPPORT, AND ASSOCIATED ACCESSORIES AS REQUIRED. INSTALL IN ACCORDANCE WITH ADAAG 604 GUIDELINES. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P3 PROVIDE AND INSTALL NEW SHOWER COMPLETE WITH ASSOCIATED CW/HW/S/V PIPING AND ASSOCIATED ACCESSORIES AS REQUIRED. PROVIDE HW INSULATION IN ACCORDANCE IECC TABLE C403.11.3. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P4 CUT/CONNECT NEW SANITARY PIPING TO EXISTING SANITARY PIPING AS INDICATED. MODIFIED EXISTING SANITARY PIPING AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P5 CUT/CONNECT NEW VENT PIPING TO EXISTING VENT PIPING AS INDICATED. MODIFIED EXISTING VENT PIPING AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P6 CUT/CONNECT NEW HW PIPING TO EXISTING HW PIPING AS INDICATED. MODIFIED EXISTING HW PIPING AS REQUIRED. PROVIDE HW INSULATION IN ACCORDANCE IECC TABLE C403.11.3. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P7 CUT/CONNECT NEW CW PIPING TO EXISTING CW PIPING AS INDICATED. MODIFIED EXISTING CW PIPING AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

P8 PROVIDE AND INSTALL NEW INSULATED FUNNEL DRAIN WITH TOOL-LESS ACCESS PANEL AND ASSOCIATED ACCESSORIES AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH EXISTING.

PLAN NORTH

0 4' 8' 12'

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

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NEW PLUMBING PLAN

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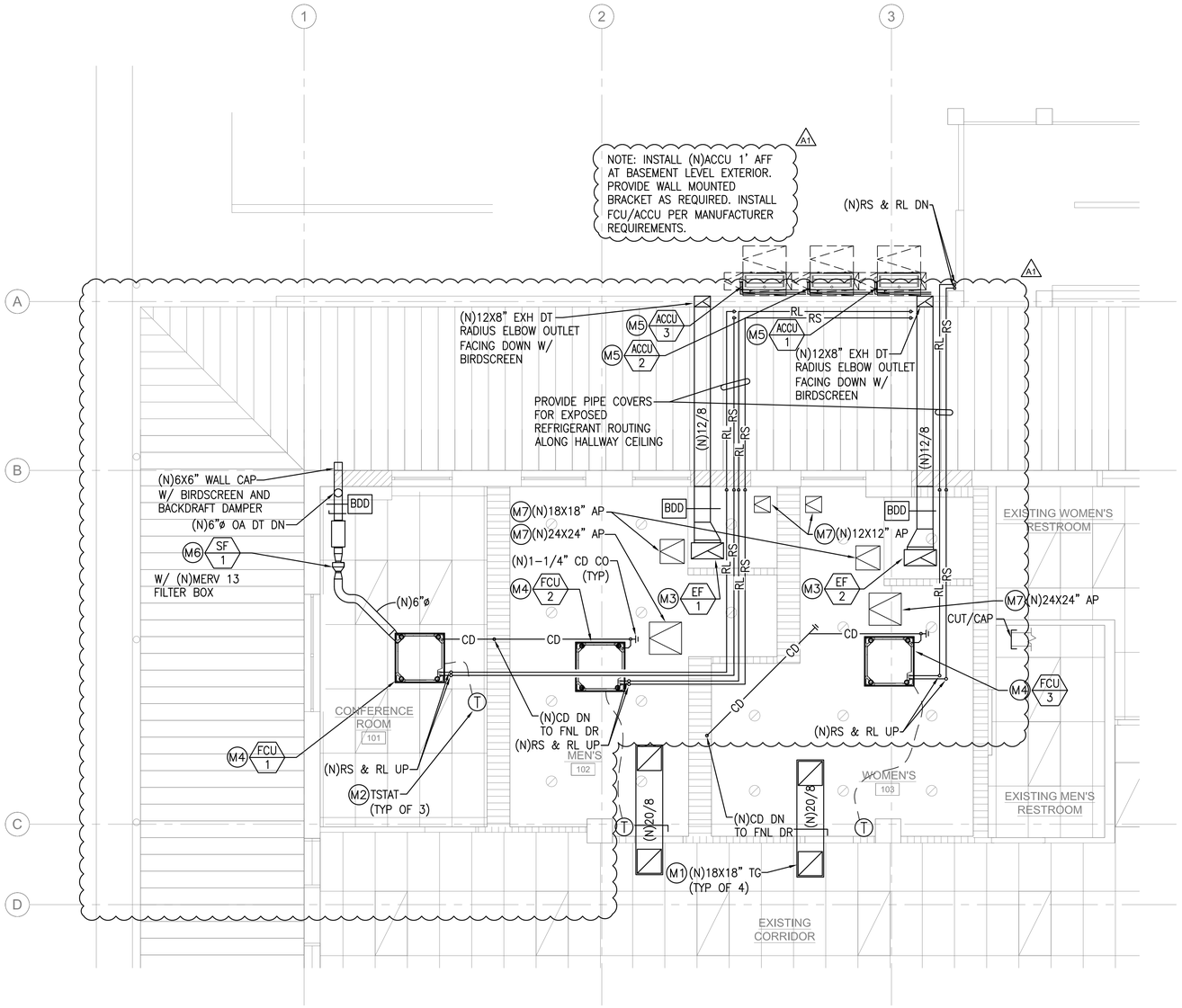
M-101



1 M-102 NEW MECHANICAL PLAN
SCALE: 1/4"= 1'-0" AT FIRST FLOOR

GENERAL MECHANICAL NOTES:

1. CONTRACTOR SHALL SCHEDULE/PROVIDE A POST TAB REPORT OF THE ENTIRE SPACE, AFTER NEW WORK IS COMPLETED TO REDISTRIBUTE/REBALANCE THE AFFECTED SPACES AND AIR DEVICES, RESPECTIVELY.

2. CONTRACTOR SHALL NOT INSTALL ELECTRICAL LINES, CONDENSATE LINE, AND REFRIGERANT LINES UNDER EQUIPMENT SHOWN FOR FUTURE REMOVAL AND SERVING REQUIREMENTS.

MECHANICAL WORK NOTES:

M1 PROVIDE AND INSTALL TRANSFER GRILLE, DUCTWORK, AND OPPOSED VOLUME DAMPER AT LOCATION SHOWN. PROVIDE ASSOCIATED ACCESSORIES AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE A1

M2 PROVIDE TSTAT WITH CONTROL WIRING AND CONDUIT TO FCU AT LOCATION SHOWN. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.

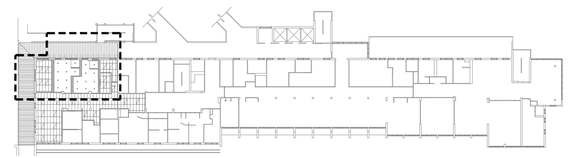
M3 PROVIDE AND INSTALL NEW EXHAUST FAN WITH BACKDRAFT DAMPER, ELECTRICAL CONDUIT, AND ASSOCIATED ACCESSORIES AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.

M4 PROVIDE AND INSTALL FAN COIL UNIT AND REFRIGERANT PIPING, CONDENSATE PIPING, CEILING SUSPENDED SUPPORTS, REFRIGERANT PIPE COVERS FOR EXPOSED REFRIGERANT LINES OF THE BUILDING EXTERIOR, ELECTRICAL CONNECTION, ETC. AS SHOWN. ROUTE CONDENSATE LINE AS HIGH AS POSSIBLE TO FUNNEL DRAIN AS SHOWN. ROUTE REFRIGERANT AS HIGH AS POSSIBLE TO THE OUTDOOR CONDENSING UNIT. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.

M5 PROVIDE AND INSTALL ACCU COMPLETE WITH WALL MOUNTED BRACKET AND ASSOCIATED ACCESSORIES AS REQUIRED. PROVIDE REFRIGERANT PIPING, PIPE COVER, AND SERVICE CLEARANCE AS SHOWN. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.

M6 PROVIDE AND INSTALL NEW SUPPLY FAN WITH BACKDRAFT DAMPER, ELECTRICAL CONDUIT, AND ASSOCIATED ACCESSORIES AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.

M7 PROVIDE AND INSTALL ACCESS PANEL COMPLETE AND ASSOCIATED ACCESSORIES AS REQUIRED. CONTRACTOR TO FIELD VERIFY. PATCH/REPAIR TO MATCH ADJACENT SURFACE.



2 M-102 KEYPLAN
NOT TO SCALE AT FIRST FLOOR

A1

PLAN NORTH

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

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Revisions:

No.	Description	Date
A1	ADDENDUM 1	5-15-24

Project Title:

LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816
T.M.K.: 3-2-031:001

ROSS R. TANAKA LICENSED PROFESSIONAL ENGINEER No. 9301-M HAWAII, U.S.A.

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

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EXP. DATE: 04/30/26

Sheet Title:

NEW MECHANICAL PLAN

Project Phase:

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Date:

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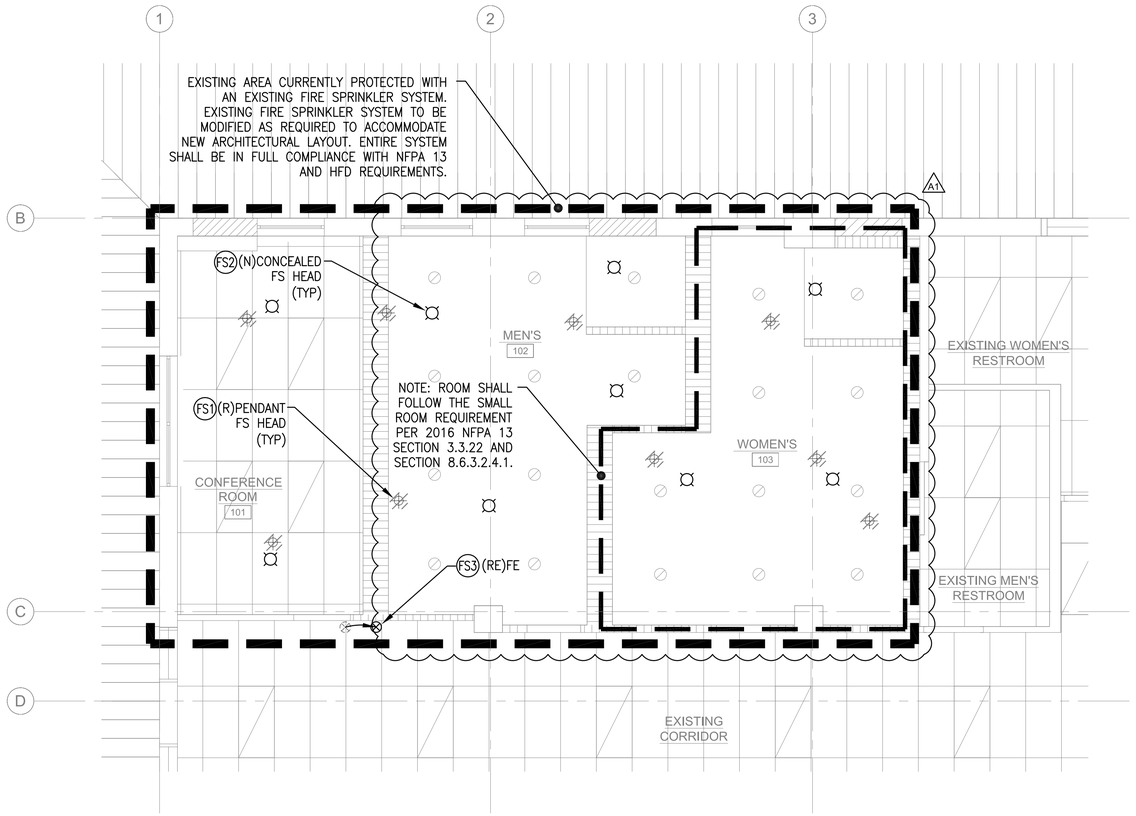
Sheet No.:

M-102



1 M-103 NEW FIRE SPRINKLER PLAN
SCALE: 1/4" = 1'-0"

FIRE SPRINKLER NEW WORK NOTES:

FS1 REMOVE EXISTING PENDANT FIRE SPRINKLER HEAD. CUT AND CAP EXISTING FIRE SPRINKLER PIPING AS REQUIRED. PATCH/REPAIR CEILING TO MATCH EXISTING ADJACENT SURFACE. CONTRACTOR TO FIELD VERIFY.

FS2 PROVIDE NEW CONCEALED TYPE FS HEAD AT LOCATION SHOWN. MODIFY EXISTING FIRE SPRINKLER PIPING AS REQUIRED. PATCH/REPAIR CEILING TO MATCH EXISTING ADJACENT SURFACE. CONTRACTOR TO FIELD VERIFY.

FS3 RELOCATE EXISTING FIRE EXTINGUISHER AT NEW LOCATION SHOWN. INSTALL IN ACCORDANCE WITH NFPA 10 AND HFD REQUIREMENTS. PATCH/REPAIR TO MATCH EXISTING ADJACENT SURFACE. CONTRACTOR TO FIELD VERIFY.

FIRE SPRINKLER GENERAL NOTES:

1. PROVIDE COMPLETE FIRE SPRINKLER COVERAGE IN ACCORDANCE WITH 2016 NFPA 13 AND THE FOLLOWING CRITERIA:
   CLASSIFICATION OF OCCUPANCY: LIGHT HAZARD
   OCCUPANCY: I–4
   TYPE OF CONSTRUCTION: TYPE I–A, SPRINKLED (EXISTING)
2. THE ENTIRE INSTALLATION SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE BUILDING CODE OF THE CITY & COUNTY OF HONOLULU, STATE DEPARTMENT OF HEALTH REGULATIONS, UNIFORM PLUMBING CODE, UNIFORM FIRE CODE, NATIONAL ELECTRICAL CODE, HAWAII STATE MODEL ENERGY CODE, AND ALL OTHER AGENCIES HAVING JURISDICTION.
3. ALL EQUIPMENT SHALL BE CAPABLE OF FITTING INTO THE SPACES ALLOCATED WHILE MEETING THE MANUFACTURER'S RECOMMENDED ACCESS REQUIREMENTS. REVIEW ALL SPACES WHERE EQUIPMENT IS TO BE INSTALLED PRIOR TO ORDERING OF EQUIPMENT AND NOTIFY THE ENGINEER OF ANY INADEQUATE CLEARANCES OR CONDITIONS THAT WILL PREVENT THE PROPER INSTALLATION, MAINTENANCE, AND OPERATION OF THE EQUIPMENT.
4. OBTAIN APPROVAL FROM THE ARCHITECT BEFORE MAKING ANY PENETRATIONS THROUGH STRUCTURAL MEMBERS, WALLS, AND SLABS.
5. REPAIR ANY DAMAGE TO EXISTING CONSTRUCTION RESULTING FROM THE INSTALLATION OF FIRE SPRINKLER ITEMS. THE AREAS REPAIRED SHALL MATCH THE ADJACENT SURFACES IN TEXTURE AND COLOR.
6. STRUCTURES UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION OPERATIONS, INCLUDING THOSE IN UNDERGROUND LOCATIONS, SHALL COMPLY WITH NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS, AND CHAPTER 16 OF 2018 NFPA 1.
7. THESE FIRE SPRINKLER PLANS ARE SUBMITTED FOR CONDITIONAL APPROVAL OF THE FIRE AND BUILDING DEPARTMENTS AND THE HAWAII INSURANCE RATING BUREAU. TWO (2) SETS OF COMPLETE WORKING PLANS AND HYDRAULIC CALCULATIONS (IF NECESSARY), STAMPED AND SIGNED BY A HAWAII LICENSED REGISTERED MECHANICAL OR FIRE PROTECTION ENGINEER, SHALL BE SUBMITTED, AS APPLICABLE, TO THE FIRE PROTECTION SPECIAL INSPECTOR (FPSI) FOR CODE COMPLIANCE REVIEW. ONE (1) SET WITH THE FPSI APPROVAL STAMP SHALL BE SUBMITTED TO THE DPP BUILDING DIVISION ALONG WITH THE FPSI FINAL REPORT/LETTER PRIOR TO CLOSING OF THE BUILDING PERMIT.
8. 50.4.4.1 FIRE EXTINGUISHING EQUIPMENT SHALL INCLUDE BOTH AUTOMATIC FIRE–EXTINGUISHING SYSTEMS AS PRIMARY PROTECTION AND PORTABLE FIRE EXTINGUISHERS AS SECONDARY BACKUP. 2018 NFPA 1, CHAPTER 50.
9. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO COVER THE COMPLETE INSTALLATION OF SYSTEMS TO FUNCTION AS DESCRIBED AND SPECIFIED. THE OMISSION OF REFERENCE TO ANY NECESSARY ITEM OF LABOR OR MATERIAL SHALL NOT RELIEVE THE CONTRACTOR FROM PROVIDING SUCH LABOR AND MATERIAL

AUTOMATIC FIRE SPRINKLER SYSTEM NOTES:

1. PROVIDE COMPLETE FIRE SPRINKLER COVERAGE IN ACCORDANCE WITH NFPA 13, 2016 EDITION.
2. HANGERS FOR FIRE SPRINKLER PIPING SHALL BE IN ACCORDANCE TO NFPA 13.
3. FIRE SAFETY DURING CONSTRUCTION, ALTERATION OR DEMOLITION SHALL BE IN ACCORDANCE WITH CHAPTER 16 OF NFPA 1, 2018.
4. FIRESTOP ALL PIPE AND CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS.
5. ALL DEVICES AND EQUIPMENT SHALL BE UL LISTED AND FM APPROVED.
6. ALL SPRINKLERS SHALL BE APPROVED QUICK RESPONSE TYPE.
7. PIPE AND FITTINGS SHALL COMPLY WITH NFPA 13, EXCEPT THAT ALL PIPING SHALL BE HARD DRAWN COPPER WITH SILVER CONTENT. SOLDER OR BRAZED FITTINGS, OR CARBON STEEL WITH CORROSION–RESISTANT COATINGS. PROVIDE HOT DIPPED GALVANIZED PIPE AND FITTINGS ON ALL STEEL PIPING INCLUDING THE RISER.
8. PIPING SHALL BE PROVIDED WITH EARTHQUAKE PROTECTION IN ACCORDANCE WITH NFPA 13.
9. PROVIDE INSPECTION AND HYDROSTATIC TESTS IN ACCORDANCE WITH NFPA 13 CHAPTER 25. PRIOR TO HYDROSTATIC TESTS THE CONTRACTOR SHALL PERFORM AN AIR PRESSURE TEST TO LOCATE POTENTIAL LEAKAGE POINTS. INSPECTION AND TESTS SHALL BE CERTIFIED IN ACCORDANCE WITH HONOLULU FIRE DEPARTMENT REQUIREMENTS. CONTRACTOR SHALL TAG SYSTEM AND SUBMIT TEST REPORT IN ACCORDANCE TO HFD REQUIREMENTS. SPECIAL INSPECTIONS FOR AUTOMATIC FIRE SPRINKLER SYSTEM SHALL BE PROVIDED IN ACCORDANCE WITH HONOLULU BUILDING CODE AMENDMENTS TO SECTION 1705.18
10. SPARE SPRINKLERS SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 13, 6.2.9.

    6.2.9.1 A SUPPLY OF SPARE SPRINKLERS (NEVER FEWER THAN SIX) SHALL BE MAINTAINED ON THE PREMISES SO THAT ANY SPRINKLERS THAT HAVE OPERATED OR BEEN DAMAGED IN ANY WAY CAN BE PROMPTLY REPLACED.

    6.2.9.3 THE SPRINKLERS SHALL BE KEPT IN A CABINET LOCATED WHERE THE TEMPERATURE IN WHICH THEY ARE SUBJECTED WILL AT NO TIME EXCEED 100°F (38°C).

    6.2.9.5 THE STOCK OF SPARE SPRINKLERS SHALL INCLUDE ALL TYPES AND RATINGS INSTALLED AND SHALL BE AS FOLLOWS:

    1. FOR PROTECTED FACILITIES HAVING UNDER 300 SPRINKLERS – NO FEWER THAN 6 SPRINKLERS.
    2. FOR PROTECTED FACILITIES HAVING 300–1000 SPRINKLERS – NO FEWER THAN 12 SPRINKLERS.
    3. FOR PROTECTED FACILITIES HAVING OVER 1000 SPRINKLERS – NO FEWER THAN 24 SPRINKLERS.

    6.2.9.6 A SPECIAL SPRINKLER WRENCH SHALL BE PROVIDED AND KEPT IN THE CABINET TO BE USED IN THE REMOVAL AND INSTALLATION OF SPRINKLERS. ONE SPRINKLER WRENCH SHALL BE PROVIDED FOR EACH TYPE OF SPRINKLER INSTALLED.

PLAN NORTH

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

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Revisions:

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3675 KILAUEA AVENUE
HONOLULU, HI 96816
T.M.K.: 3-2-031:001

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Sheet Title:

NEW FIRE SPRINKLER PLAN

Project Phase:

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Date:

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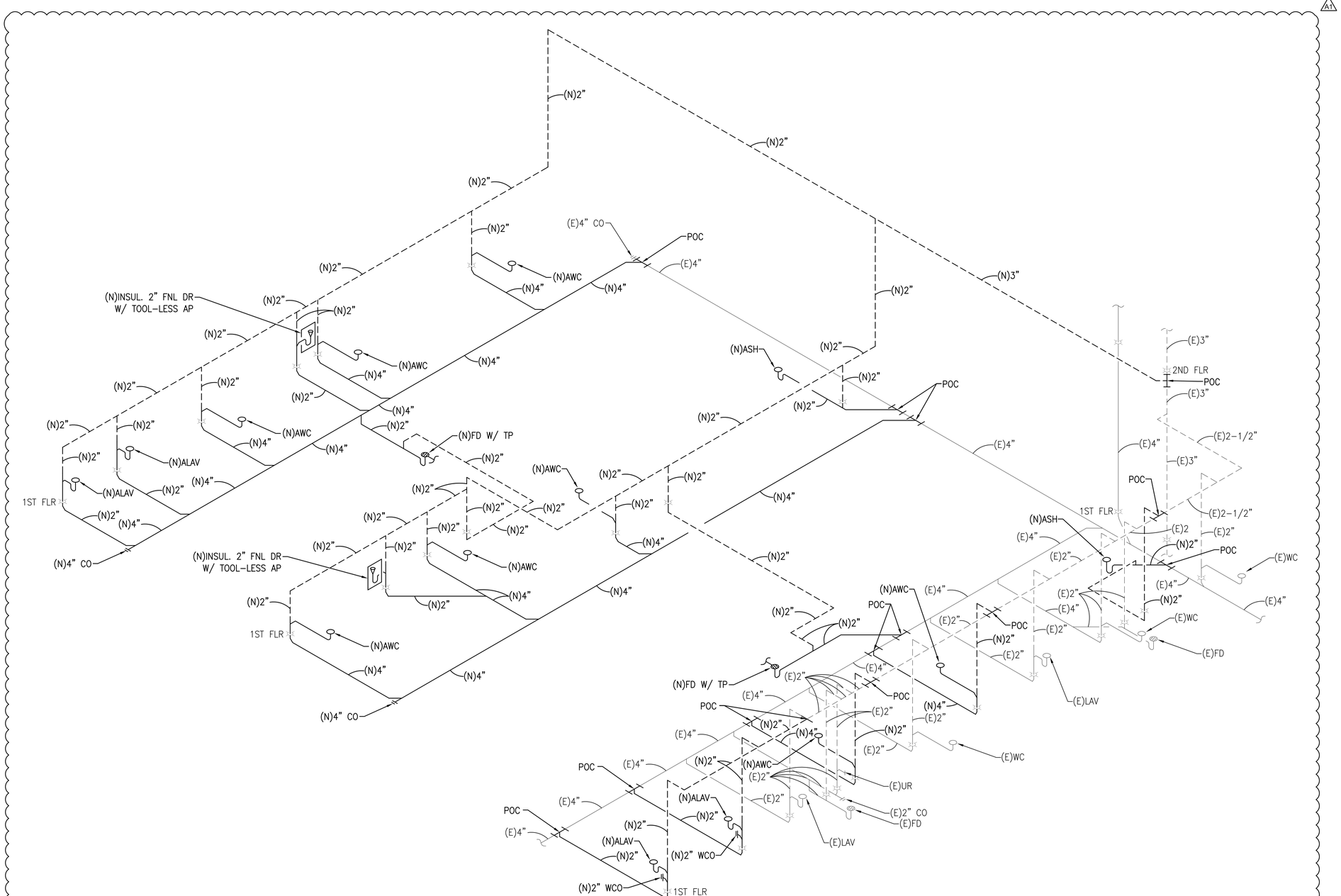
Sheet No.:

M-103



1 M-104 SANITARY PIPING DIAGRAM

SCALE: NOT TO SCALE

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SANITARY PIPING DIAGRAM

Project Phase:
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Date:
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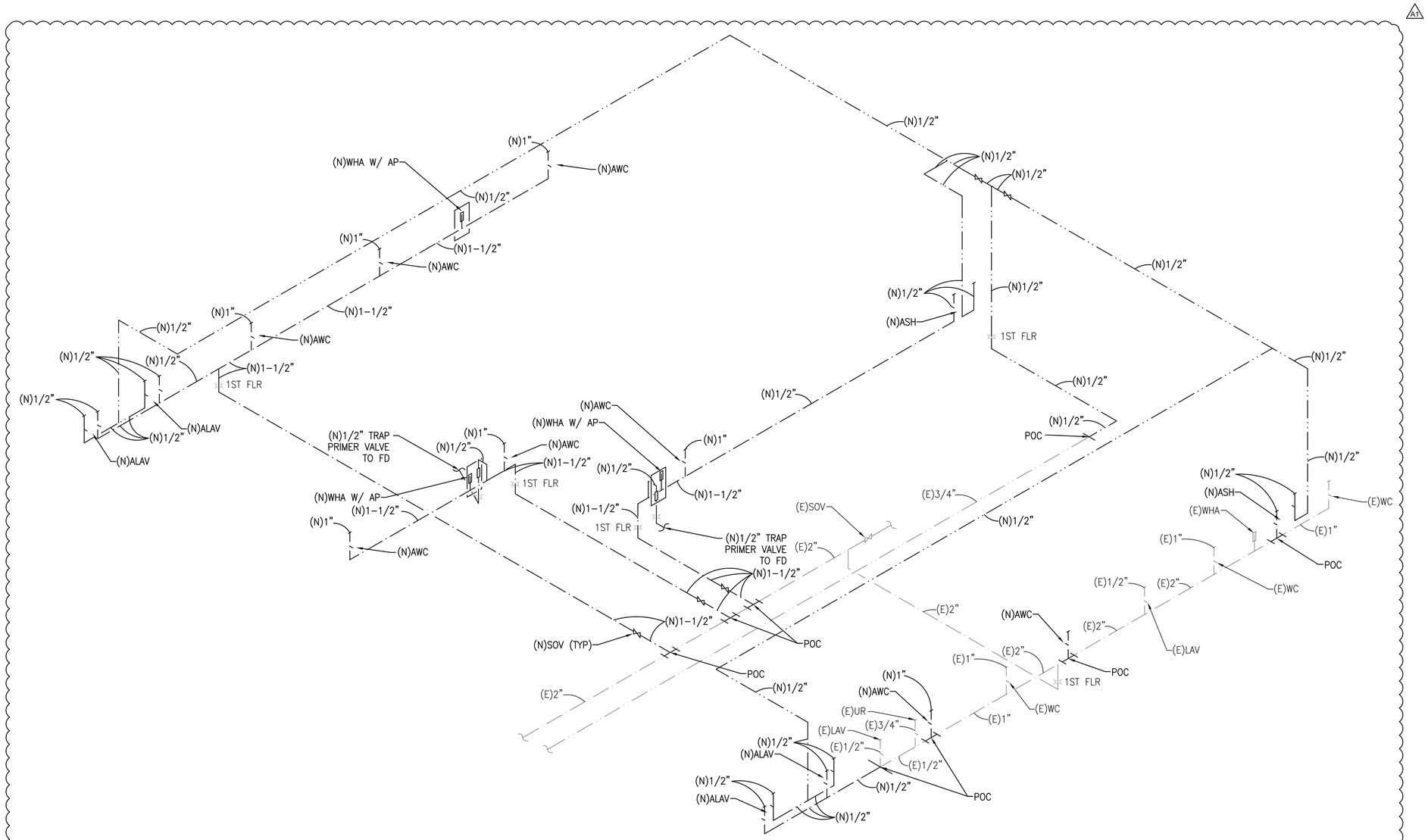
M-104



1 M-105 WATER PIPING DIAGRAM

SCALE: NOT TO SCALE

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WATER PIPING DIAGRAM

Project Phase:

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Date:

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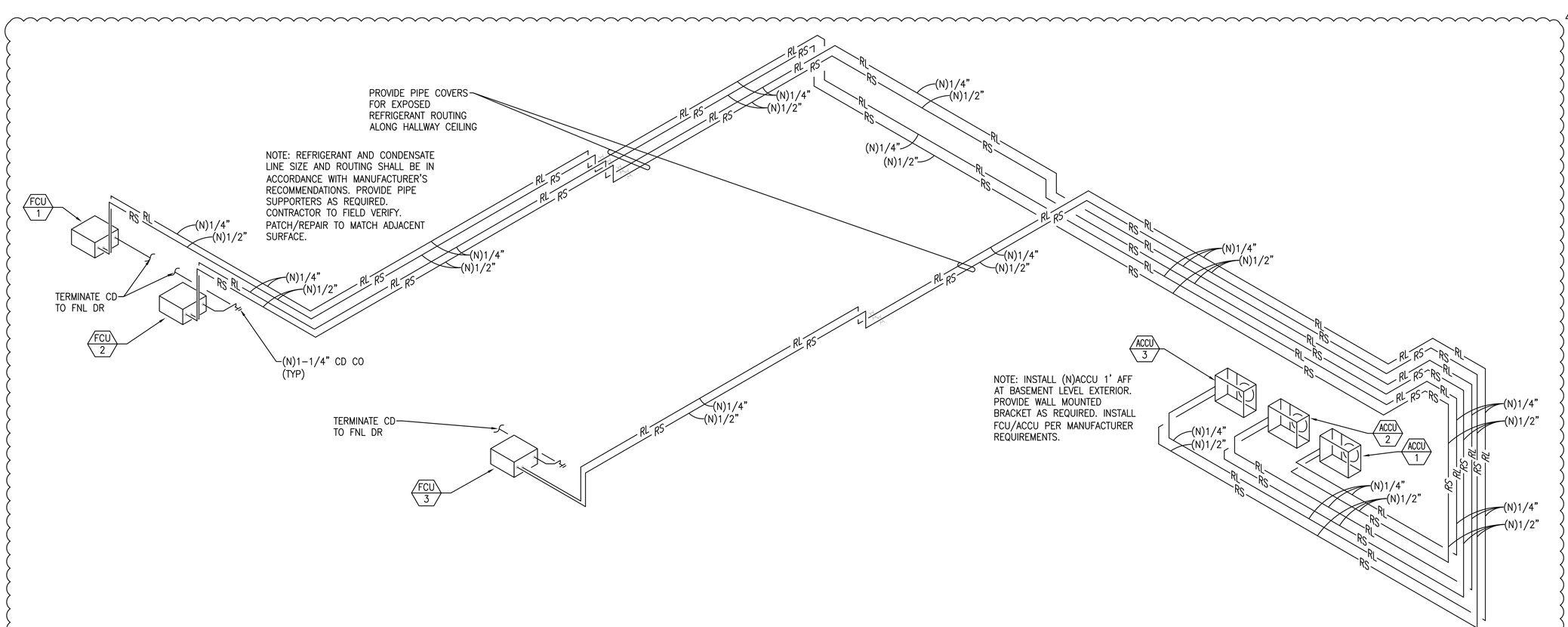
Sheet No.:

M-105



1 M-106 REFRIGERANT PIPING DIAGRAM

SCALE: NOT TO SCALE

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REFRIGERANT PIPING DIAGRAM

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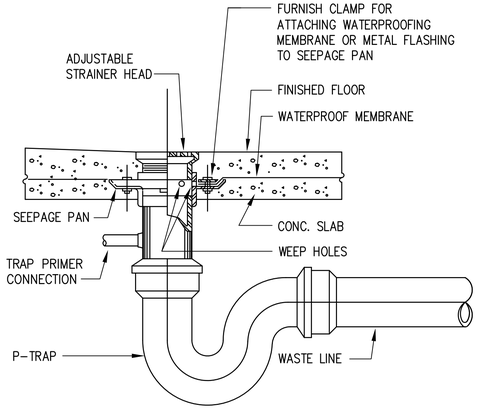
M-106



1 M-107 FLOOR DRAIN DETAIL
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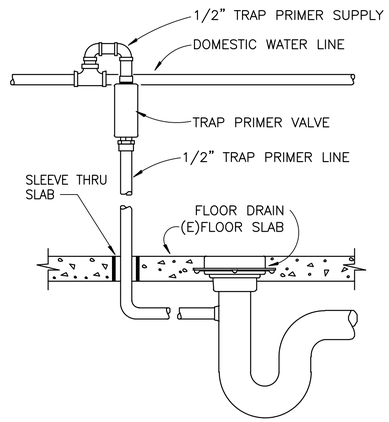

2 M-107 TRAP SEAL PRIMER DETAIL
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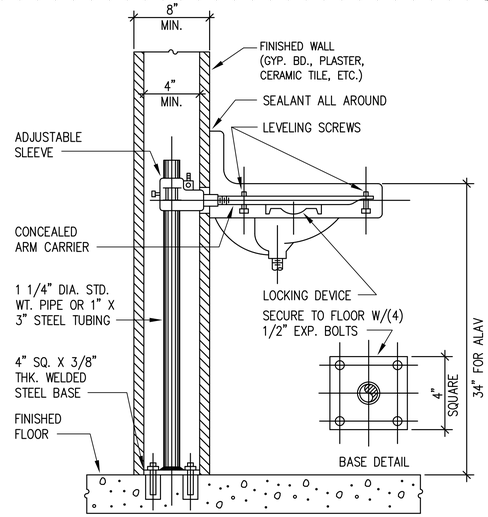

3 M-107 LAVATORY - FLOOR SUPPORTED DETAIL
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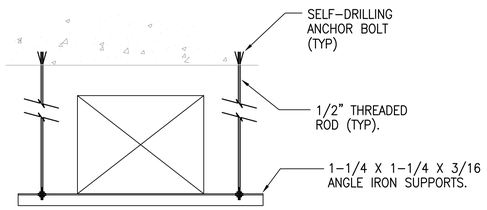

4 M-107 DUCT HANGER DETAIL
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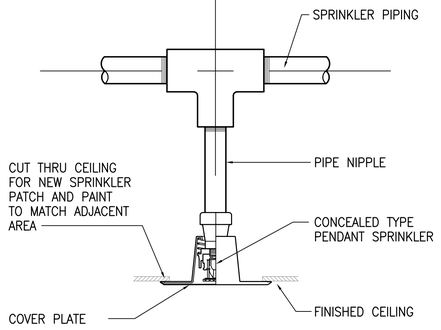

5 M-107 TYPICAL CONCEALED HEAD PENDANT SPRINKLER DETAIL
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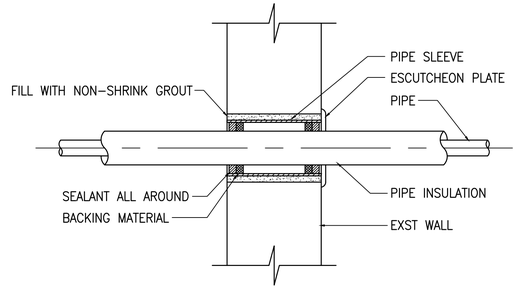

6 M-107 PIPE SLEEVE THRU EXTERIOR WALL DETAIL
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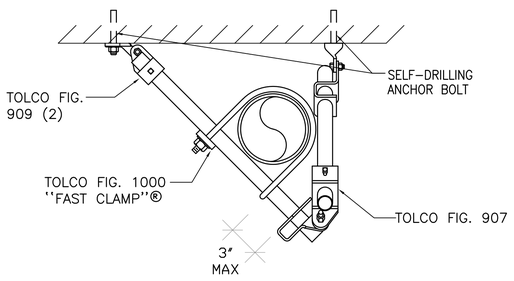

7 M-107 4-WAY SWAY BRACE DETAIL
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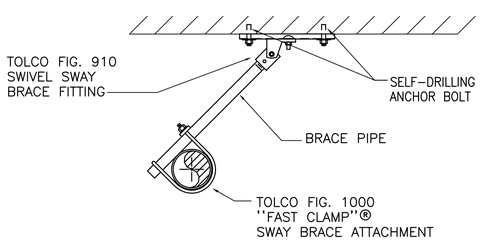
LATER/LONGITUDINAL EARTHQUAKE BRACE



8 M-107 LATERAL SWAY BRACE DETAIL
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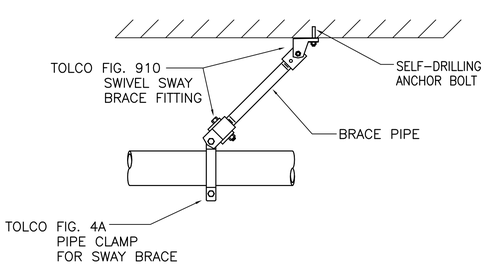
LATERAL EARTHQUAKE BRACE



9 M-107 LONGITUDINAL SWAY BRACE DETAIL
SCALE: NOT TO SCALE
LONGITUDINAL EARTHQUAKE BRACE

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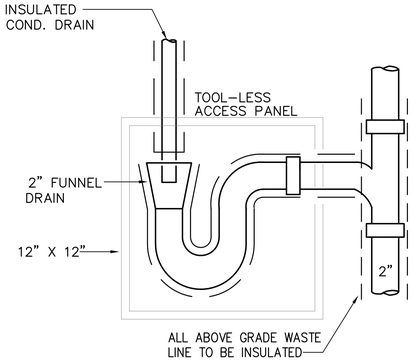
M-107



1 FUNNEL DRAIN DETAIL
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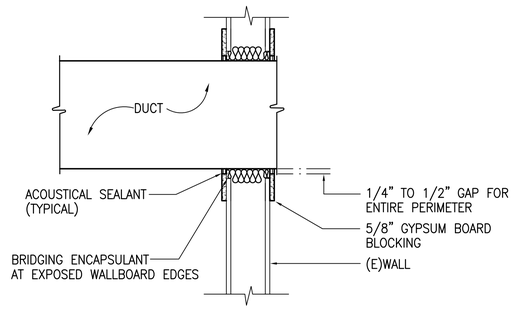

2 DUCT THRU WALL DETAIL
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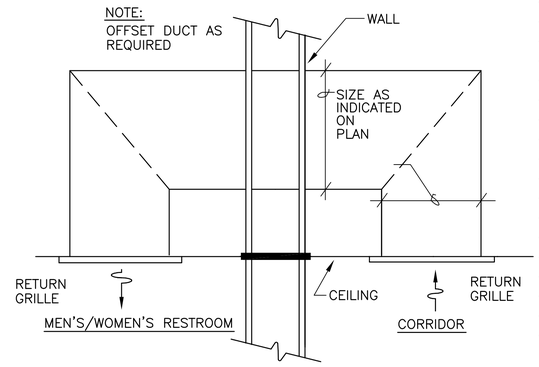

3 RETURN AIR TRANSFER GRILLED DETAIL
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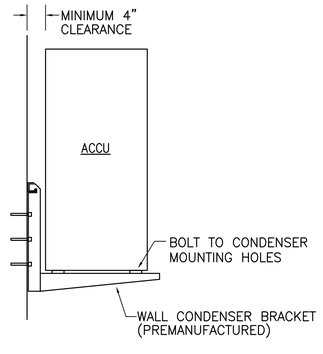

4 ACCU WALL BRACKET DETAIL
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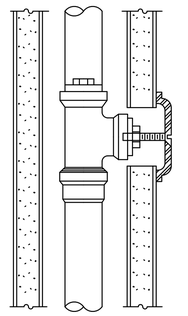

5 WALL CLEANOUT DETAIL
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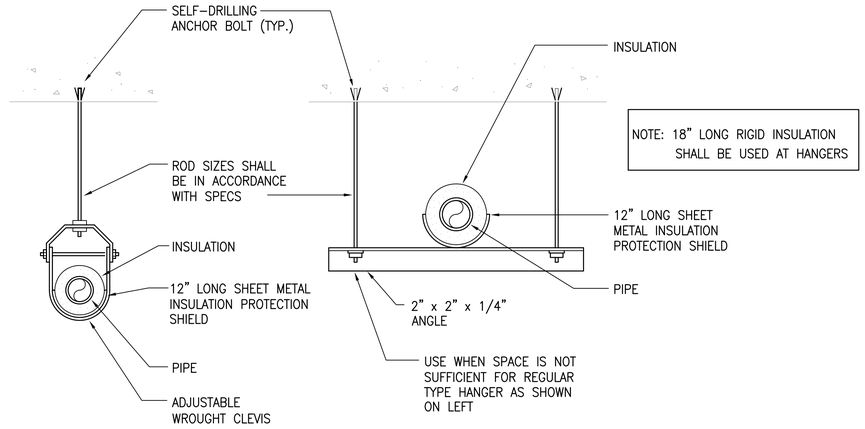
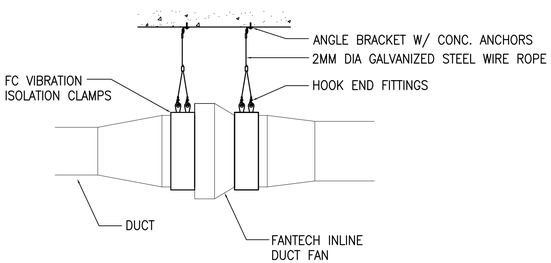
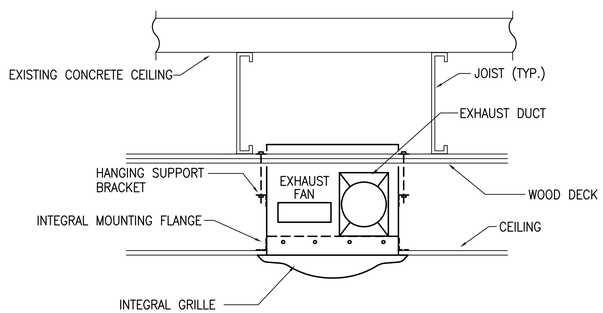


2" AND SMALLER PIPES

6 PIPE HANGER DETAIL
M-108 SCALE: NOT TO SCALE



7 INLINE FAN MOUNTING DETAIL
M-108 SCALE: NOT TO SCALE



8 EXHAUST FAN MOUNTING DETAIL
M-108 SCALE: NOT TO SCALE

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M-108

MECHANICAL SCHEDULE NOTE

PROVIDE INTEGRAL MAGNETIC STARTER/DISCONNECTS WITH AUTOMATIC RESET FOR ALL UNITS. PROVIDE NEMA-4X STARTER ENCLOSURE FOR ALL OUTDOOR EQUIPMENT. ALL OUTDOOR EQUIPMENT SHALL HAVE POLYSILOXANE COATING PROTECTION ON INSIDE AND OUTSIDE OF HOUSING. COILS(CONDENSER) SHALL HAVE BLYGOLD POLUAL COATING. PROVIDE HORIZONTALLY AND VERTICALLY RESTRAINED SPRING ISOLATORS WITH NEOPRENE DIPPED SPRINGS AND GALV. HOUSINGS ON ALL EQUIPMENT. PROVIDE PLASTIC COATED CABLE SWAY BRACING ALL SUSPENDED EQUIPMENT. PROVIDE FLEXIBLE DUCT CONNECTIONS AT ALL EQUIPMENT. PROVIDE S.S. BIRDSCREEN AT ALL NEW OA INTAKES. PROVIDE PHASE FAILURE/PHASE REVERSAL/OVER VOLTAGE/UNDER VOLTAGE ELECTRICAL PROTECTION. PROVIDE CONTROL VOLTAGE TRANSFORMERS.

FAN SCHEDULE

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	AREA SERVED	TYPE	CFM	ESP (IN WG)	FAN RPM	ELECTRICAL V	ø	Hz	W	OPR WT (LBS)	SONES	REMARKS
SF 1	FANTECH FG 4	CONFERENCE ROOM	INLINE	45	0.6	3000	120	1	60	22	5	–	PROVIDE ISOLATION MOUNTS, FAN SPEED CONTROLLER & DISCONNECT. PROVIDE EXTERNAL BACKDRAFT DAMPER AND MERV 13 FILTER BOX. INTERLOCK WITH FCU-1.

EXHAUST FAN SCHEDULE

UNIT	MANUFACTURER AND MODEL OR APPROVED EQUAL	AREA SERVED	DRIVE TYPE	LOCATION	CFM	ESP (IN WG)	FAN RPM	ELECTRICAL V	ø	Hz	W	MCA	MOP	MAX SONE	REMARKS
EF 1	GREENHECK SP-A700-VG	MEN'S RESTROOM	DIRECT	MEN'S RESTROOM	350	0.25	897	115	1	60	45	5.1	15	3.0	PROVIDE ISOLATION MOUNTS, DISCONNECT, SOLID STATE FAN SPEED CONTROLLER MOUNTED ON UNIT, INTEGRAL BACKDRAFT DAMPER, AND INTERLOCK WITH MEN'S RESTROOM LIGHT FIXTURE.
EF 2	GREENHECK SP-A700-VG	WOMEN'S RESTROOM	DIRECT	WOMEN'S RESTROOM	350	0.25	897	115	1	60	45	5.1	15	3.0	PROVIDE ISOLATION MOUNTS, DISCONNECT, SOLID STATE FAN SPEED CONTROLLER MOUNTED ON UNIT, INTEGRAL BACKDRAFT DAMPER, AND INTERLOCK WITH WOMEN'S RESTROOM LIGHT FIXTURE.

DX SPLIT-SYSTEM AIR CONDITIONING UNIT SCHEDULE - CONFERENCE ROOM

INDOOR UNITS

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	AREA SERVED	TYPE	MAX SUPPLY AIR, CFM	DESIGN SUPPLY AIR, CFM	OUTSIDE AIR, CFM	TOTAL CAPACITY (BTUH)	ENT AIR TEMP db (°F)	ENT AIR TEMP wb (°F)	ELECTRICAL V	ø	Hz	MCA	MOCP	REFRIG LINES* LIQ	REFRIG LINES* GAS	COND DRAIN	MAX SOUND LEVEL (dBA)	OPR WT (LBS)	REMARKS
FCU 1	MITSUBISHI PLA-A12EA8	CONFERENCE ROOM	CEILING CASSETTE	530	490	45	12,000	80	65	208	1	60	1.0	–	1/4"	1/2"	1-1/4"	29	46	PROVIDE WITH DISCONNECT. ROUTE CONDENSATE PIPE FROM INTEGRAL LIFT PUMP OUTLET. PROVIDE FILTER BOX WITH MERV 8 FILTER BANK.

*CONTRACTOR SHALL CONFIRM REFRIGERANT PIPE SIZES WITH MANUFACTURER PRIOR TO PROCUREMENT.

OUTDOOR UNIT

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	LOCATION	TYPE	REFRIG	NOMINAL CAPACITY (TONS)	TOTAL CAPACITY (BTUH)	AMBIENT AIR TEMP (°F)	ELECTRICAL V	ø	Hz	MCA	MOCP	EER	OPR WT (LBS)	REMARKS
ACCU 1	MITSUBISHI PUY-A12NKA7	OUTSIDE	VARIABLE REFRIG FLOW	R410A	1	12,000	95	208	1	60	11	28	16.4	92	"INVERTER" DRIVEN COMPRESSOR; PROVIDE NEOPRENE PAD AND WALL MOUNTED BRACKET, INTEGRAL STARTER AND DISCONNECT, FACTORY APPLIED CORROSION INHIBITOR COATING ON CONDENSER COIL AND CASING.

DX SPLIT-SYSTEM AIR CONDITIONING UNIT SCHEDULE - MEN'S RESTROOM

INDOOR UNITS

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	AREA SERVED	TYPE	MAX SUPPLY AIR, CFM	DESIGN SUPPLY AIR, CFM	OUTSIDE AIR, CFM	TOTAL CAPACITY (BTUH)	ENT AIR TEMP db (°F)	ENT AIR TEMP wb (°F)	ELECTRICAL V	ø	Hz	MCA	MOCP	REFRIG LINES* LIQ	REFRIG LINES* GAS	COND DRAIN	MAX SOUND LEVEL (dBA)	OPR WT (LBS)	REMARKS
FCU 2	MITSUBISHI PLA-A12EA8	MEN'S RESTROOM	CEILING CASSETTE	530	490	–	12,000	80	65	208	1	60	1.0	–	1/4"	1/2"	1-1/4"	29	46	PROVIDE WITH DISCONNECT. ROUTE CONDENSATE PIPE FROM INTEGRAL LIFT PUMP OUTLET. PROVIDE FILTER BOX WITH MERV 8 FILTER BANK.

*CONTRACTOR SHALL CONFIRM REFRIGERANT PIPE SIZES WITH MANUFACTURER PRIOR TO PROCUREMENT.

OUTDOOR UNIT

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	LOCATION	TYPE	REFRIG	NOMINAL CAPACITY (TONS)	TOTAL CAPACITY (BTUH)	AMBIENT AIR TEMP (°F)	ELECTRICAL V	ø	Hz	MCA	MOCP	EER	OPR WT (LBS)	REMARKS
ACCU 2	MITSUBISHI PUY-A12NKA7	OUTSIDE	VARIABLE REFRIG FLOW	R410A	1	12,000	95	208	1	60	11	28	16.4	92	"INVERTER" DRIVEN COMPRESSOR; PROVIDE NEOPRENE PAD AND WALL MOUNTED BRACKET, INTEGRAL STARTER AND DISCONNECT, FACTORY APPLIED CORROSION INHIBITOR COATING ON CONDENSER COIL AND CASING.

DX SPLIT-SYSTEM AIR CONDITIONING UNIT SCHEDULE - WOMEN'S RESTROOM

INDOOR UNITS

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	AREA SERVED	TYPE	MAX SUPPLY AIR, CFM	DESIGN SUPPLY AIR, CFM	OUTSIDE AIR, CFM	TOTAL CAPACITY (BTUH)	ENT AIR TEMP db (°F)	ENT AIR TEMP wb (°F)	ELECTRICAL V	ø	Hz	MCA	MOCP	REFRIG LINES* LIQ	REFRIG LINES* GAS	COND DRAIN	MAX SOUND LEVEL (dBA)	OPR WT (LBS)	REMARKS
FCU 3	MITSUBISHI PLA-A12EA8	WOMEN'S RESTROOM	CEILING CASSETTE	530	490	–	12,000	80	65	208	1	60	1.0	–	1/4"	1/2"	1-1/4"	29	46	PROVIDE WITH DISCONNECT. ROUTE CONDENSATE PIPE FROM INTEGRAL LIFT PUMP OUTLET. PROVIDE FILTER BOX WITH MERV 8 FILTER BANK.

*CONTRACTOR SHALL CONFIRM REFRIGERANT PIPE SIZES WITH MANUFACTURER PRIOR TO PROCUREMENT.

OUTDOOR UNIT

UNIT NO.	MANUFACTURER AND MODEL OR APPROVED EQUAL	LOCATION	TYPE	REFRIG	NOMINAL CAPACITY (TONS)	TOTAL CAPACITY (BTUH)	AMBIENT AIR TEMP (°F)	ELECTRICAL V	ø	Hz	MCA	MOCP	EER	OPR WT (LBS)	REMARKS
ACCU 3	MITSUBISHI PUY-A12NKA7	OUTSIDE	VARIABLE REFRIG FLOW	R410A	1	12,000	95	208	1	60	11	28	16.4	92	"INVERTER" DRIVEN COMPRESSOR; PROVIDE NEOPRENE PAD AND WALL MOUNTED BRACKET, INTEGRAL STARTER AND DISCONNECT, FACTORY APPLIED CORROSION INHIBITOR COATING ON CONDENSER COIL AND CASING.

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Revisions:

No.	Description	Date
A1	ADDENDUM 1	5-15-24

Project Title:

LEAHI HOSPITAL

RENOVATION OF ADULT DAY HEALTH

3675 KILAUEA AVENUE
HONOLULU, HI 96816
T.M.K.: 3-2-031:001

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MECHANICAL SCHEDULE

Project Phase:

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Date:

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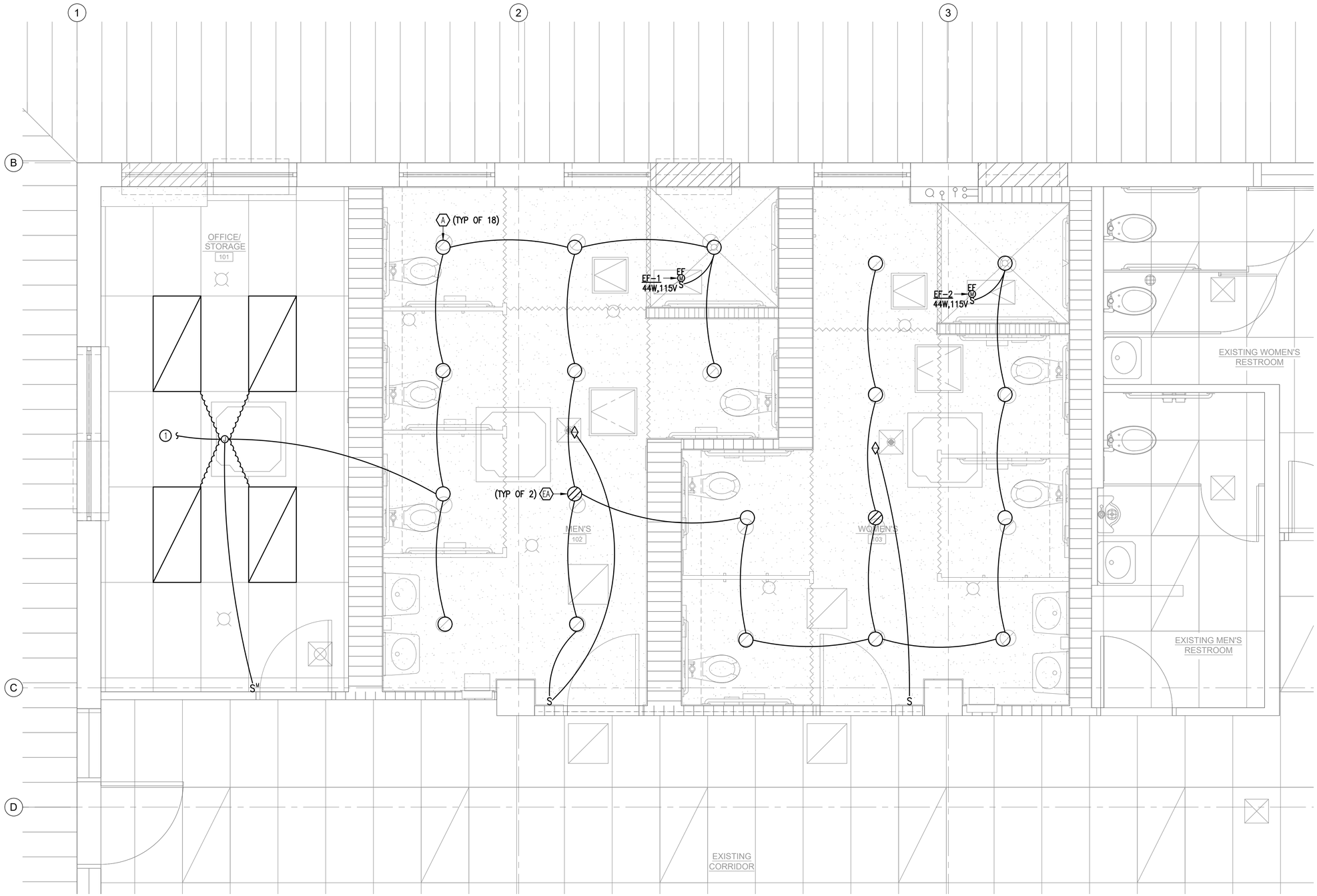
Sheet No.:

M-109



NEW LIGHTING NOTE:

(1) CONNECT TO EXISTING LIGHTING CIRCUIT

LUMINAIRE SCHEDULE

TYPE	LAMP	DRIVER	CATALOG NUMBER	DESCRIPTION
A	15.5W 3500K	0-10V	PORTFOLIO LD4B15D010-EU4B10208035-4LBW1H	DIE CAST ALUMINUM HOUSING WITH SPUN ALLUMINUM REFLECTOR, DIE CAST ALUMINUM DEEP COLLAR, 0-10V DRIVER
EA	15.5W 3500K	0-10V	PORTFOLIO LD4B15D010EM7-EU4B10208035-4LBW1H	DIE CAST ALUMINUM HOUSING WITH SPUN ALLUMINUM REFLECTOR, DIE CAST ALUMINUM DEEP COLLAR, 0-10V DRIVER, EMERGENCY BATTERY

1 / E101 NEW LIGHTING PLAN (A1)

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

PLAN NORTH (TRUE N)

0 1' 2' 3' 4' 5' 6'

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

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Revisions:

No.	Description	Date
A1	ADDENDUM 1	5/16/24

Project Title:

LEAHI HOSPITAL

ADULT DAY HEALTH RENOVATIONS

3675 KILAUEA AVENUE
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NEW LIGHTING PLAN

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Date:

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Sheet No.:

E101

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Consulting Electrical Engineers and Lighting Designers
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Honolulu, Hawaii 96816
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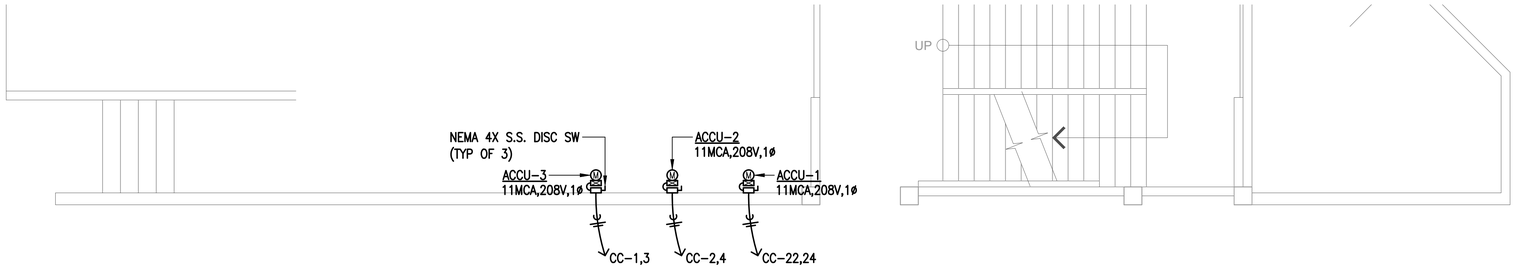
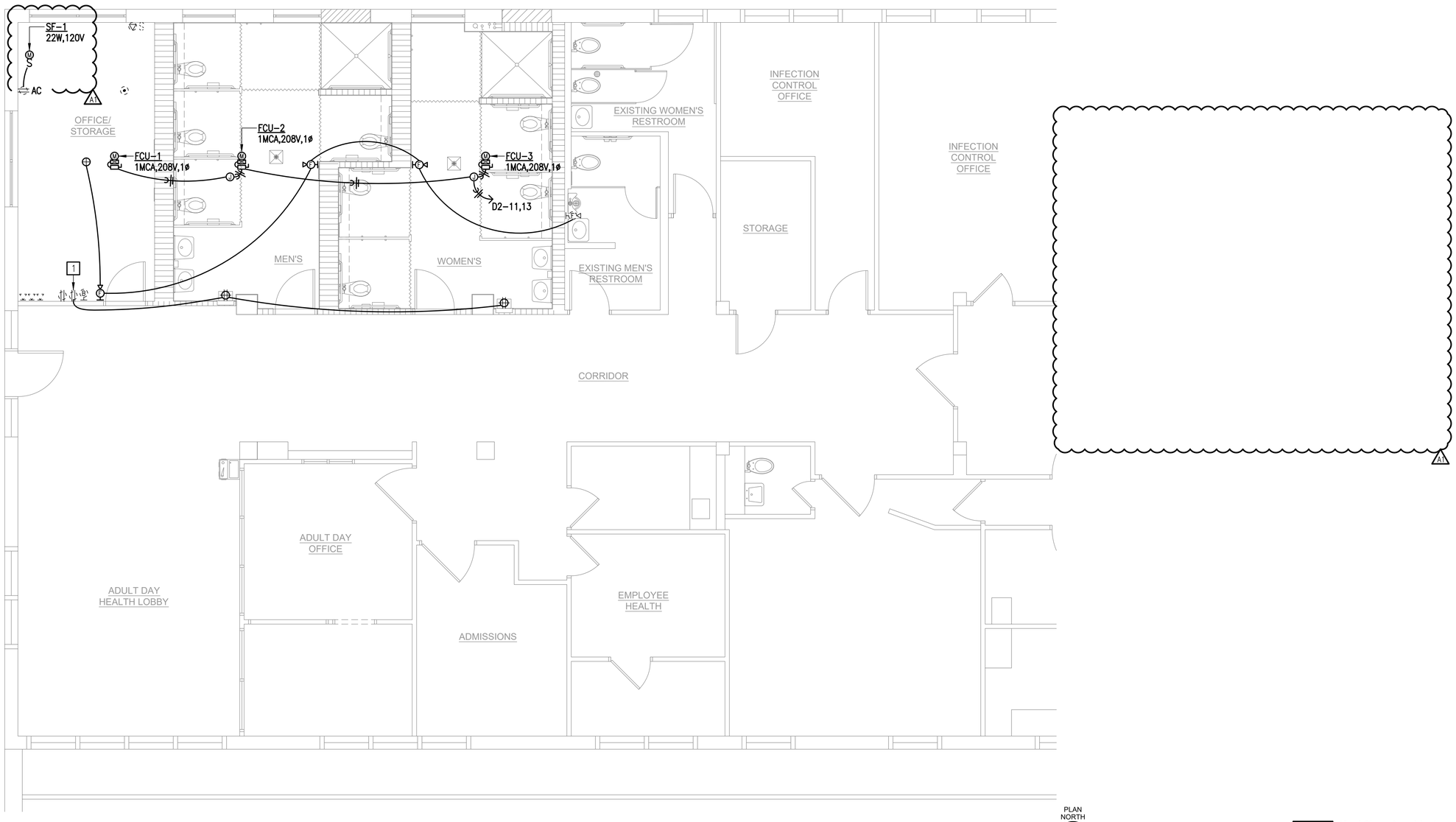


NEW POWER AND SIGNAL NOTE:

1 EXTEND EXISTING CIRCUIT



1 NEW POWER AND SIGNAL PLAN
E102 SCALE: 1/4" = 1'-0"

PLAN NORTH (TRUE N)

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

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ADULT DAY HEALTH RENOVATIONS

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NEW POWER AND SIGNAL PLAN

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E102