STATE OF HAWAII
DEPARTMENT OF DEFENSE
HAWAII ARMY NATIONAL GUARD

PROJECT TITLE:

CA-202505-C BUILDING 46 MEDCOM RENOVATIONS, KALAELOA,

OAHU, STATE OF HAWAIʻI, DEPARTMENT OF DEFENSE, HAWAII

ADDENDUM NO. 1

The items listed hereinafter are hereby made a part of the contract for the above-mentioned project and shall govern the work taking precedence over previously issued contract documents governing the items mentioned. Receipt of this addendum is to be acknowledged on page OF-8 of the proposer's packet.

CLARIFICATIONS:

1. Hazmat Reports have been attached to the end of this Addendum as Attachment #1.

2. Fire Alarm Shop Drawings have been attached to the end of this Addendum as Attachment #2.

3. Specification Section 08111 – Hollow Metal Doors and Frames has been attached to the end of this Addendum as Attachment #3.

4. Requests for Substitution

SECTION/ITEM	SPECIFIED BRAND	SUBSTITUTE OR ALTERNATE	VARIANT FEATURES	RESPONSE
07210, 2.01, A.	ASTM C 1289, Type I or II 20 PSI, R-20 minimum	SOPRA Iso Insulation, ASTM C 1289 Type I or II, 20 PSI, R-20 minimum	None	No exceptions taken to proposed substitution, provided it meets the specifications. Subject to further review and comments during the

				formal submittal process.
07210, 2.01, B.	Tapered EPS Foam 2.0 lb. density, ASTM C 578 Type I	SOPRA Iso TAPERED Insulation, ASTM C 1289	1. PolyIso	No exceptions taken to proposed substitution, provided it meets the specifications. Subject to further review and comments during the formal submittal process.
07531, 1.04, C.1.,2. & 3.	15-Year NDL warranty with 105 MPH Wind Rider	20-Year NDL with 105 MPH Wind Rider (SOPREMA Platinum Warranty)	1. Exceeds specified warranty term	No exceptions taken to proposed substitution, provided it meets the specifications. Subject to further review and comments during the formal submittal process.
07531, 2.02, A.1.	60 MIL TPO Membrane ASTM D 6878	SOPREMA SENTINEL P-150 60 MIL PVC Membrane, ASTM 4434, Type III	1. PVC Membrane	No exceptions taken to proposed substitution, provided it meets the specifications. Subject to further review and comments during the formal

				submittal process.
10161, 2.01, A. (Solid Plastic Toilet Partitions and Urinal Screens)		Hiny Hiders Toilet Partitions	None	Proposed substitution will only be approved on condition that color selection is fire-tested. Subject to further review and comments during the formal submittal process.

5. Questions and Answers have been answered on HIePro and are listed below.

1. **There are no bid documents posted (plans & specs.) or link to download. How do we get these?**
I apologize. Plans and Specs will be uploaded to HIePRO on Monday, August 3. In the meantime, they can be viewed here: https://dod.hawaii.gov/hieng/plans-and-specs/building-46-medcom-renovations-kalaeloa-oahu-hiarng/

2. **The drawings indicate hollow metal doors and frames; however, no corresponding specification section was found in Division 08. Please provide the applicable specifications for the hollow metal doors and frames, including material, gauge, finish, and fire-rating requirements.**
Response: Specification Section 08111 - Hollow Metal Doors and Frames has been added.

3. **Is there a Buy America(n) requirement for this project? If so, are fixtures complying with TAA (Trade Agreement) acceptable?**
Response: There is no Buy America Act requirement for this project.

4. **Is Pollution Insurance coverage required for this project per Item 3D of Attachment S5?**
Response: Pollution insurance will be required only if Bid Alt #7 Roof Replacement is awarded.

5. **During our review of the contract documents, the scope of work for the solid surface material was identified; however, no specific information was found regarding the manufacturer, product type, color, or grade. Please provide the requested information.**
Response: Manufacturer: Corian Solid Surface, Color: Silver Birch, or approved equal. For more information, please refer to SECTION 06220 - SOLID SURFACE COUNTERTOPS

6. **Please provide the company name of the Fire Alarm vendor / contact for this building**
Response: Refer to attached fire alarm shop drawings for the recently installed system.

7. **Specification Section 01715 references an Asbestos/Lead/Hazardous Material Survey, but the report for the existing roof is missing. Please provide the hazardous material survey for the existing roof.**
Response: Refer to prior hazardous material surveys included with this addendum.

8. **Locations and quantities of concrete deficiencies are not shown on the drawings. Please provide the scope quantities for the spall and crack repair details referenced in section 03930 and structural drawings. Additionally, please confirm whether this work is included in the base bid or under the alternates.**
Response: Grid F7 on Plan S-102 Base Bid

9. **Per specification section 01715, the state's hazardous material survey indicates that asbestos was not detected for this project. Please confirm if this understanding is correct.**
Response: Previous testing performed by the state has determined that the roof contains asbestos. Work related to asbestos is included in Section 13280. Refer to prior hazardous material surveys included with this addendum.

10. **Door details indicate a bevel at door openings, but existing CMU and concrete walls are not currently beveled. Please clarify if beveling is required for new, existing, or all wall openings.**
Response: Beveling is not required. Door opening edge profiles/details to match existing conditions.

11. **Per sheet A-601, all new hollow metal door frames show a standard 2" face width; however, the existing door frames have a 4" header face. Please confirm if 2" frame**

faces are required or if 4" header faces should be provided to match existing conditions.
Response: Provide 4" header faces to match existing conditions.

12. **The room finish schedule indicates existing ceilings are to remain, except where replacement is specified. Please clarify if new ductwork, cable trays, piping, and related utilities are to be exposed and surface-mounted below the existing drywall ceilings where ceilings are retained.**
Response: All work will be concealed above ceilings. Ceilings shall be replaced wherever necessary to install new MEP work, and all associated costs for repair and finishing shall be included under the base bid. Extent of ceiling replacement is expected to be coordinated between subcontractors and all costs included.

13. **Can a contractor holding only a C-13 license be the general contractor on this job?**
Response: No. An A or B license is required to be the prime bidder.

14. **What is the difference between base bid electrical and the additive alternatives listed for electrical?**
Response: Refer to description of base bid items shown on E-001, and additive alternates listed on following sheets. In general the base bid is to include all electrical panels, metering switchboard, and feeders, as well as any branch circuiting associated with the new layouts (also called out as "Base Bid" on drawings).

15. **Should base bid include finishes for ceiling, painting, and flooring?**
Response: Refer to response to Question #19.

16. **The painting and flooring on the first and second floors of Building 46 look fairly new. What is the scope for painting and flooring?**
Response: Refer to response to Question #19.

17. **Where is the elevator?**
Response: Elevator is identified throughout drawings. Refer to floor plans with room tag "ELEV".

18. **Is the HVAC system to be a Toshiba brand?**
Response: Basis of design manufacturer has been provided on mechanical schedules, but the contractor is not restricted from using other brands of matching performance

characteristics.

19. **What is the difference between the base bid and the three additive alternatives for architecture on the three floors?**
Response:
Base Bid:
First Floor Rooms:
- 106 Lactation Room, 108 Storage, 110 Electrical 1A, 112 Telecom, 114 Mechanical
- 015 Corr 1D
- 115 Women's RR, 116 Janitor, 117 Men's RR
- 107 Pad Check-Out, 109 Pad Office, 111 Med Records, 113 Storage, 016 Corridor 1E
- Wall demolition/refinishing for existing wall demising existing Offices 105/107 and Offices 106/108
-Opening/repair of chase walls to install any MEP utilities
-Construction of associated walls/finishes in the specific vicinity of the plumbing fixtures at 118 EKG, 119 IMMZ/CHOL A, 121 IMMZ/CHOL B, Dental 122, 123, 124, 125, 127 Hearing Room

Second Floor Rooms:
-214 Jan
-215 Women's RR
-218 Men's RR
-024 Corridor 2D

Third Floor Rooms:
-314 Men's RR
-315 Jan
-319 Women's RR
-320 Men's Shower, 321 Women's Shower

Additive Alternate:
1st floor , 2nd floor and 3rd floor architectural demo and new work, all work not included in base bid.

20. **Is the existing HVAC system and concrete pad below to remain, since they are fairly new?**
Response: Refer to mechanical drawings for scope associated with the existing equipment and pads.

21. **How are ceilings to remain if ductwork is running through it? Do the ceilings need to be replaced?**

Response: Refer to response to Question #12 above.

22. **Is the roof substrate a concrete slab?**
Response: Yes, roof substrate is concrete slab.

23. **How many new water heaters are to be installed?**
Response: Refer to equipment schedules on plumbing drawings.

24. **Since existing CMU walls are to remain, can controllers and other devices be surface-mounted?**
Response: Yes, where devices are shown on existing CMU walls, the devices and conduits will be surface mounted. Where devices are installed on new walls, the devices and conduits shall be recessed.

25. **Will the project be awarded based on the total of Base Bid and all Additive Alternates or is it possible that some Additive Alternates may be included but not others?**
Response: Project will be awarded according to the best interests of the State.

CA-202505-C Addendum

Attachment #1

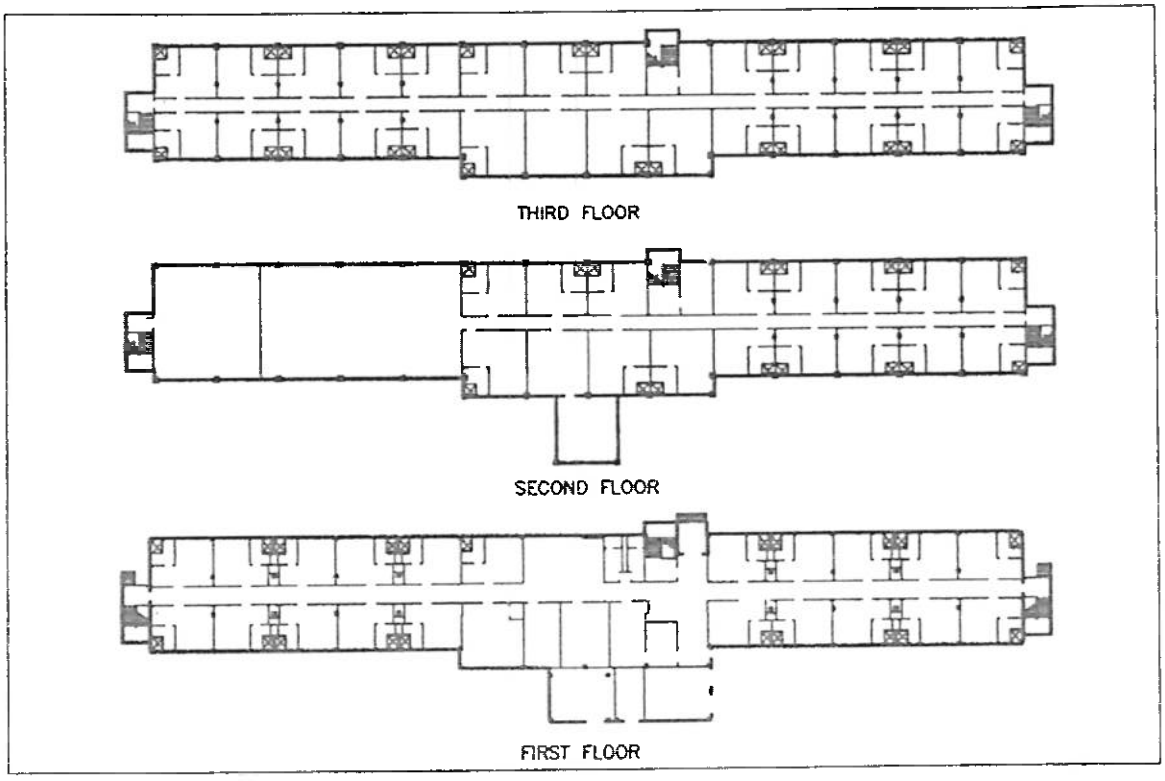
BLDG 46 HAZMAT Report

Inventory Pages 1-18

Summary Pages 19-27

BUILDING 46

Asbestos Inventory



BUILDING SUMMARY

This report presents and discusses the results of a comprehensive asbestos-containing material (ACM) inspection conducted in building 46, Enlisted Men's Barracks, located on Naval Air Station (NAS) Barbers Point, Oahu, Hawaii. The inspection was conducted on 30 August 1994 by an USEPA Accredited Inspector.

Building 46 is a three story 25,806 square foot concrete structure with a built-up roof. Interior finish materials consisted of vinyl and carpet floorings; concrete block, concrete, and gypsum board walls; and concrete ceilings. The year of construction was reported as 1957. The photographs for homogeneous areas 4 - 7 are not available for this building.

Seven homogeneous areas of suspect ACM were identified during the inspection. As indicated by the material bulk sample analysis results, one homogeneous area was found to contain asbestos. The ACM identified for the building was:

(4) tar, black located on the roof AC supports (identified as part of CTO 0126)

Two homogeneous areas assumed to contain asbestos included:

(5) roof core
(7) tar, black and insulation located around roof AC unit

The ACM and assumed ACM identified for building 46 were all noted to be in good condition on the day of the inspection and as such, the materials pose a low potential for exposing building occupants to airborne asbestos fibers. However, if the ACM or assumed ACM become damaged or disturbed, the potential for exposing building occupants to airborne asbestos fibers would increase.

BUILDING #: 46
BUILDING AREA (SF): 25,806
YEAR BUILT: 1957
BUILDING TYPE: HOUSING
LOCATION: NAS BARBERS POINT,HI

BUILDING DATA (INCLUDING COST ESTIMATES) FOR SUSPECT
ASBESTOS-CONTAINING AND ASSUMED ASBESTOS-CONTAINING MATERIAL (ACM)

FACILITY RATING SCORE: PD7

HA NO	ASBESTOS CONTAINING	ACM* RATING SCORE	HA DESCRIPTION	HA LOCATION	HA QUANTITY	DEGREE OF FRIABILITY	RECOMMENDED RESPONSE ACTIONS	INITIAL REPAIR COST	ANNUAL O&M COST	REMOVAL COST	REPLACE-MENT COST	REMOVAL & REPLACE-MENT COST
4	YES	PD7	TAR, BLACK	ROOF AC SUPPORTS	3,000 LF	NON	O&M PROGRAM	$0	$1,800	$54,000	$36,000	$90,000
5	ASSUMED	PD9	ROOF CORE	ROOF	8,600 SF	NON	O&M PROGRAM	$0	$1,634	$64,500	$17,200	$81,700
7	ASSUMED	PD7	TAR, BLACK AND INSULATION	AROUND ROOF AC UNIT	300 LF	NON	O&M PROGRAM	$0	$180	$5,400	$3,600	$9,000
				SUBTOTAL				$0	$3,614	$123,900	$56,800	$180,700
				ADDITIONAL ASBESTOS REMOVAL/REPAIR COST @ 40%**				$0		$49,560		$49,560
				ADDITIONAL REPLACEMENT COSTS @ 20%***							$11,360	$11,360
				TOTAL ASBESTOS ABATEMENT COSTS				$0	$3,614	$173,460	$68,160	$241,620

KEY: CT = CEILING TILE; EA = EACH; O&M = OPERATIONS AND MAINTENANCE; N/A = NOT APPLICABLE
INS = INSULATION; LF = LINEAR FEET; HA = HOMOGENEOUS AREA; ACM = ASBESTOS-CONTAINING MATERIAL
PI = PIPE INSULATION; SF = SQUARE FEET; PFI = PIPE FITTING INSULATION

* SEE PART 4, NEESA FORM 3900/52
** 40% MARK-UP FOR ADDITIONAL ASBESTOS REMOVAL/REPAIR COSTS (CONTINGENCY, DESIGN, AIR MONITORING AND CONSTRUCTION ADMINISTRATION FEES)
*** 20% MARK-UP FOR ADDITIONAL REPLACEMENT COSTS (CONTINGENCY, DESIGN, AND CONSTRUCTION ADMINISTRATION FEES)
NOTE: THESE BUDGETARY COSTS ARE TYPICALLY BASED ON A PER BUILDING PROJECT BASIS. IN THE CASE OF A BUILDING WITH A SMALL AMOUNT OF ACM, SEVERAL BUILDINGS SHOULD BE COMBINED INTO A SINGLE PROJECT FOR COST EFFECTIVENESS.

ASBESTOS INVENTORY SUMMARY
BUILDING NUMBER 46

HOMOGENEOUS AREAS:

NUMBER	HOMOGENEOUS AREA DESCRIPTION	ASBESTOS (Y/N/A)	LOCATION (ROOM NO.)
1	FLOOR TILE/MASTIC, 12" X 12", GREY	N	
2	GYPSUM BOARD, WALLS	N	
3		N	
4	TAR, BLACK	Y	ROOF AC SUPPORTS
5	ROOF CORE	A	ROOF
6	FELT PAPER, BLACK	N	
7	TAR, BLACK AND INSULATION	A	AROUND ROOF AC UNIT

YEAR BUILT: 1957

BUILDING TYPE: HOUSING

(Training, Housing, Research, Medical, Utilities, Production, Supply)

BUILDING SIGNIFICANCE: ESSENTIAL

(Critical, Essential, Non-Essential)

ASBESTOS PROGRAM MANAGER: CARY SPARKS CODE: L20

PHONE: 808-684-0728

(DSN/Commercial)

INSPECTOR NAME: WILLIAM GARIBAY

PHONE: 423-481-8002

SIGNATURE:

EPA ACCREDITATION NUMBER: 1392

SURVEY DATE: 08/30/94

ASBESTOS HOMOGENEOUS AREA SUMMARY
HOMOGENEOUS AREA NUMBER: 4

Homogeneous Area Description: TAR, BLACK

SECTION I

ASBESTOS (Y/N/A):	Y	FRIABLE (Y/N):	N	Building #:	46
Quantity (SF/LF):	3,000 LF	Public Access (Y/N):	N	Room #:	(see Section II #7)

O&M Action(s): O&M PROGRAM

RATING SCORE PD 7

SECTION II

1. Condition:

	Significant Damage	Damage	Potential Damage
Base Score:	20	15	10

10.0

2. Quantity (Square Feet/Linear Feet): 3,000 LF Diameter in Inches (if applicable) _____

Quantity Range:	Greater than 5000	Less than 5000 Greater than 1000	Less than 1000 Greater than 0
Multiplier:	1.2	1.1	1.0

1.1

3. Friability:

	High	Moderate	Low	Non
Multiplier:	1.4	1.1	1.0	0.5

0.5

4. Exposure Potential:

	Accessible and Occupied	Inaccessible and Likely to Expose	Accessible and Non-Occupied	Inaccessible and Not Likely to Expose
Multiplier:	1.5	1.3	1.0	0.5

1.0

5. Number of Persons Exposed: 0

Range:	Greater than 100	Less than 100 Greater than 40	Less than 40 Greater than 10	Less than 10 Greater than 0
Multiplier:	1.4	1.3	1.2	1.1

1.1

6. Recommended action(s): O&M PROGRAM
(isolate area, restrict access, clean area, O&M, encapsulate, enclose, remove)

7. Homogeneous area location: ROOF AC SUPPORTS

8. Asbestos form: TROWELLED-ON
(blanket, molded, preformed, aircell, sheet, sprayed-on, trowelled-on, loose fill)

9. Building Significance:

	Critical	Essential	Non-essential
Multiplier:	1.2	1.1	0.5

1.1

SECTION III (Complete after laboratory analysis)

10.

Sample Number	Total % Asbestos	Type(s) of Asbestos (chrysotile, amosite, etc.)
00	12	CHRYSOTILE

Sample Number	Total % Asbestos	Type(s) of Asbestos (chrysotile, amosite, etc.)

11. Percentage of Asbestos (largest percentage asbestos from sample analysis): 12

Range:	Greater than 40% or Assumed	Less than 40% Greater than 15%	Less than 15% Greater than 1%	Less than 1%
Multiplier:	1.2	1.1	1.0	0

1.0

Multiply the Base Score by the number in each box to get the numeric scores. Place the "Alpha" condition (SD,D,PD) in front of the number (e.g. SD67, D36).

ASBESTOS HOMOGENEOUS AREA SUMMARY
HOMOGENEOUS AREA NUMBER: 5

Homogeneous Area Description: ROOF CORE

SECTION I

ASBESTOS (Y/N/A):	A	FRIABLE (Y/N):	N	Building #:	46
Quantity (SF/LF):	8,600 SF	Public Access (Y/N):	Y	Room #:	(see Section II #7)

O&M Action(s): O&M PROGRAM

RATING SCORE PD 9

SECTION II

1. Condition:

	Significant Damage	Damage	Potential Damage
Base Score:	20	15	10

10.0

2. Quantity (Square Feet/Linear Feet): 8,600 SF Diameter in Inches (if applicable) _____

Quantity Range:	Greater than 5000	Less than 5000 Greater than 1000	Less than 1000 Greater than 0
Multiplier:	1.2	1.1	1.0

1.2

3. Friability:

	High	Moderate	Low	Non
Multiplier:	1.4	1.1	1.0	0.5

0.5

4. Exposure Potential:

	Accessible and Occupied	Inaccessible and Likely to Expose	Accessible and Non-Occupied	Inaccessible and Not Likely to Expose
Multiplier:	1.5	1.3	1.0	0.5

1.0

5. Number of Persons Exposed: 2

Range:	Greater than 100	Less than 100 Greater than 40	Less than 40 Greater than 10	Less than 10 Greater than 0
Multiplier:	1.4	1.3	1.2	1.1

1.1

6. Recommended action(s): O&M PROGRAM
(isolate area, restrict access, clean area, O&M, encapsulate, enclose, remove)

7. Homogeneous area location: ROOF

8. Asbestos form: SHEET
(blanket, molded, preformed, aircell, sheet, sprayed-on, trowelled-on, loose fill)

9. Building Significance:

	Critical	Essential	Non-essential
Multiplier:	1.2	1.1	0.5

1.1

SECTION III (Complete after laboratory analysis)

10.

Sample Number	Total % Asbestos	Type(s) of Asbestos (chrysotile, amosite, etc.)

Sample Number	Total % Asbestos	Type(s) of Asbestos (chrysotile, amosite, etc.)

11. Percentage of Asbestos (largest percentage asbestos from sample analysis): ASSUMED

Range:	Greater than 40% or Assumed	Less than 40% Greater than 15%	Less than 15% Greater than 1%	Less than 1%
Multiplier:	1.2	1.1	1.0	0

1.2

Multiply the Base Score by the number in each box to get the numeric scores. Place the "Alpha" condition (SD,D,PD) in front of the number (e.g. SD67, D36).

ASBESTOS HOMOGENEOUS AREA SUMMARY
HOMOGENEOUS AREA NUMBER: 7

Homogeneous Area Description: TAR, BLACK AND INSULATION

SECTION I

ASBESTOS (Y/N/A):	A	FRIABLE (Y/N):	N	Building #:	46
Quantity (SF/LF):	300 LF	Public Access (Y/N):	Y	Room #:	(see Section II #7)

O&M Action(s): O&M PROGRAM

RATING SCORE

PD 7

SECTION II

1. Condition:

	Significant Damage	Damage	Potential Damage
Base Score:	20	15	10

10.0

2. Quantity (Square Feet/Linear Feet): 300 LF Diameter in Inches (if applicable) _____

Quantity Range:	Greater than 5000	Less than 5000 Greater than 1000	Less than 1000 Greater than 0
Multiplier:	1.2	1.1	1.0

1.0

3. Friability:

	High	Moderate	Low	Non
Multiplier:	1.4	1.1	1.0	0.5

0.5

4. Exposure Potential:

	Accessible and Occupied	Inaccessible and Likely to Expose	Accessible and Non-Occupied	Inaccessible and Not Likely to Expose
Multiplier:	1.5	1.3	1.0	0.5

1.0

5. Number of Persons Exposed: 2

Range:	Greater than 100	Less than 100 Greater than 40	Less than 40 Greater than 10	Less than 10 Greater than 0
Multiplier:	1.4	1.3	1.2	1.1

1.1

6. Recommended action(s): O&M PROGRAM
(isolate area, restrict access, clean area, O&M, encapsulate, enclose, remove)

7. Homogeneous area location: AROUND ROOF AC UNIT

8. Asbestos form: TROWELLED-ON
(blanket, molded, preformed, aircell, sheet, sprayed-on, trowelled-on, loose fill)

9. Building Significance:

	Critical	Essential	Non-essential
Multiplier:	1.2	1.1	0.5

1.1

SECTION III (Complete after laboratory analysis)

10.

Sample Number	Total % Asbestos	Type(s) of Asbestos (chrysotile, amosite, etc.)	Sample Number	Total % Asbestos	Type(s) of Asbestos (chrysotile, amosite, etc.)

11. Percentage of Asbestos (largest percentage asbestos from sample analysis): ASSUMED

Range:	Greater than 40% or Assumed	Less than 40% Greater than 15%	Less than 15% Greater than 1%	Less than 1%
Multiplier:	1.2	1.1	1.0	0

1.2

Multiply the Base Score by the number in each box to get the numeric scores. Place the "Alpha" condition (SD,D,PD) in front of the number (e.g. SD67, D36).

ASBESTOS HOMOGENEOUS AREA SUMMARY
HOMOGENEOUS AREA NUMBER: 9

Homogeneous Area Description: ROOF CORE

RATING SCORE PD 9

SECTION I

ASBESTOS (Y/N/A):	A	FRIABLE (Y/N):	N	Building #:	48
Quantity (SF/LF):	8,600 SF	Public Access (Y/N):	Y	Room #:	(see Section II #7)

O&M Action(s): O&M PROGRAM

SECTION II

1. Condition:

	Significant Damage	Damage	Potential Damage
Base Score:	20	15	10

10.0

2. Quantity (Square Feet/Linear Feet): 8,600 SF Diameter in Inches (if applicable) _____

Quantity Range:	Greater than 5000	Less than 5000 Greater than 1000	Less than 1000 Greater than 0
Multiplier:	1.2	1.1	1.0

1.2

3. Friability:

	High	Moderate	Low	Non
Multiplier:	1.4	1.1	1.0	0.5

0.5

4. Exposure Potential:

	Accessible and Occupied	Inaccessible and Likely to Expose	Accessible and Non-Occupied	Inaccessible and Not Likely to Expose
Multiplier:	1.5	1.3	1.0	0.5

1.0

5. Number of Persons Exposed: 2

Range:	Greater than 100	Less than 100 Greater than 40	Less than 40 Greater than 10	Less than 10 Greater than 0
Multiplier:	1.4	1.3	1.2	1.1

1.1

6. Recommended action(s): O&M PROGRAM
(isolate area, restrict access, clean area, O&M, encapsulate, enclose, remove)

7. Homogeneous area location: ROOF

8. Asbestos form: SHEET
(blanket, molded, preformed, aircell, sheet, sprayed-on, trowelled-on, loose fill)

9. Building Significance:

	Critical	Essential	Non-essential
Multiplier:	1.2	1.1	0.5

1.1

SECTION III (Complete after laboratory analysis)

10.

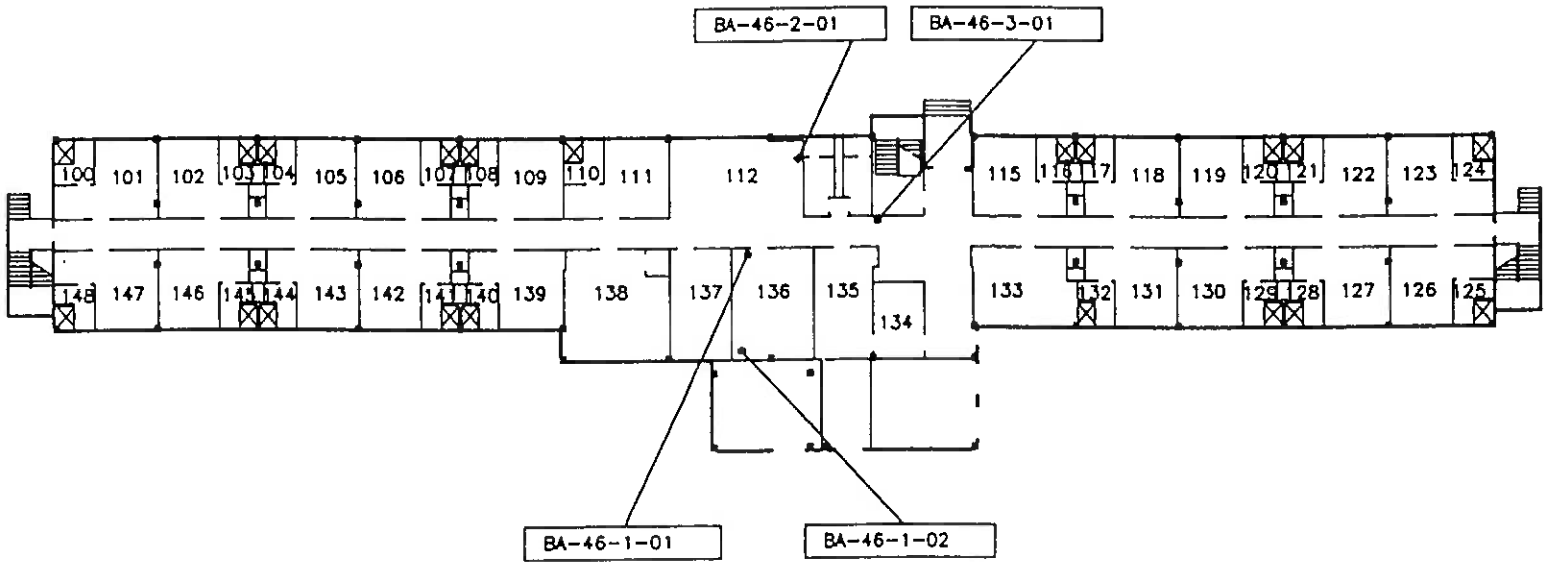
Sample Number	Total % Asbestos	Type(s) of Asbestos (chrysotile, amosite, etc.)	Sample Number	Total % Asbestos	Type(s) of Asbestos (chrysotile, amosite, etc.)

11. Percentage of Asbestos (largest percentage asbestos from sample analysis): ASSUMED

Range:	Greater than 40% or Assumed	Less than 40% Greater than 15%	Less than 15% Greater than 1%	Less than 1%
Multiplier:	1.2	1.1	1.0	0

1.2

Multiply the Base Score by the number in each box to get the numeric scores. Place the "Alpha" condition (SD,D,PD) in front of the number (e.g. SD67, D36).

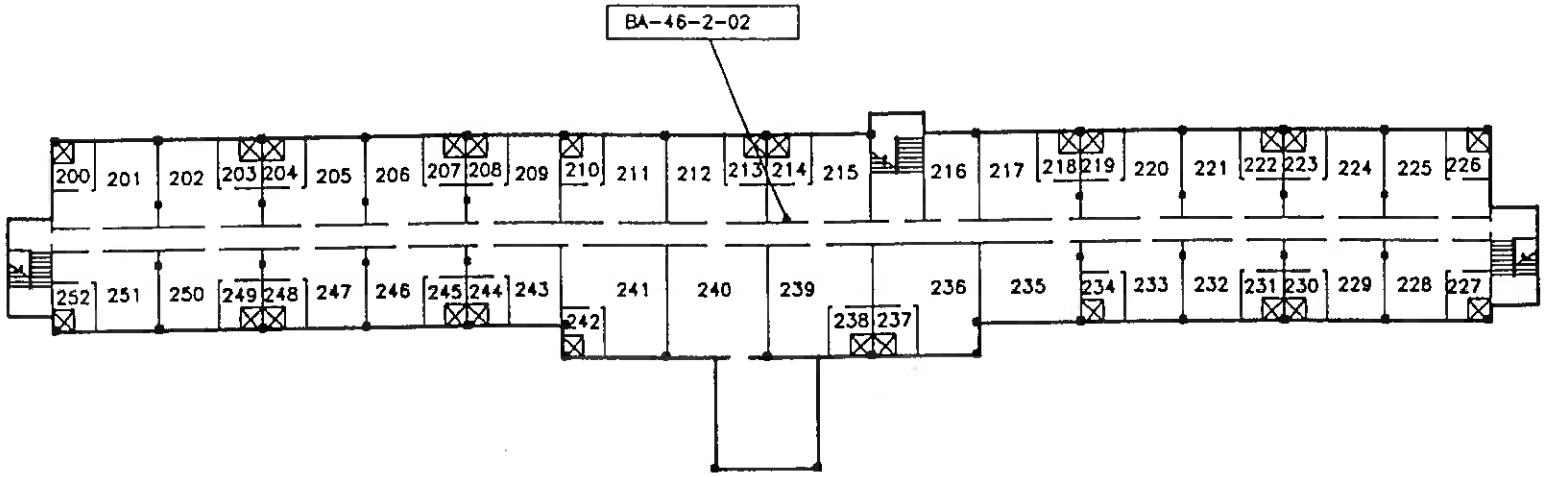


FIRST FLOOR

CTO 152 ASBESTOS INSPECTION
NAVAL AIR STATION – BARBERS POINT
OAHU, HAWAII
BUILDING # 46
ENLISTED MEN'S BARRACKS

SAMPLE LOCATIONS

NOT TO SCALE

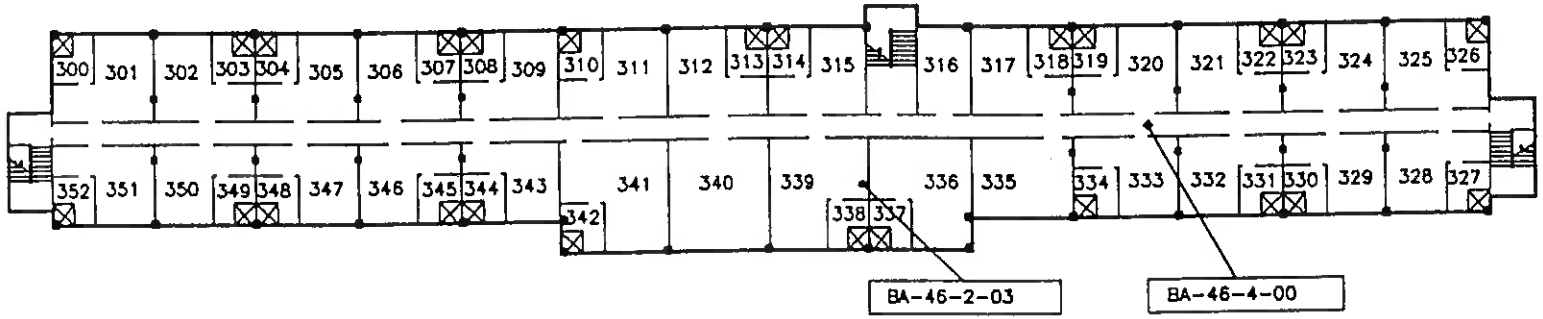


SECOND FLOOR

CTO 152 ASBESTOS INSPECTION
NAVAL AIR STATION – BARBERS POINT
OAHU, HAWAII
BUILDING # 46
ENLISTED MEN'S BARRACKS

SAMPLE LOCATIONS

NOT TO SCALE

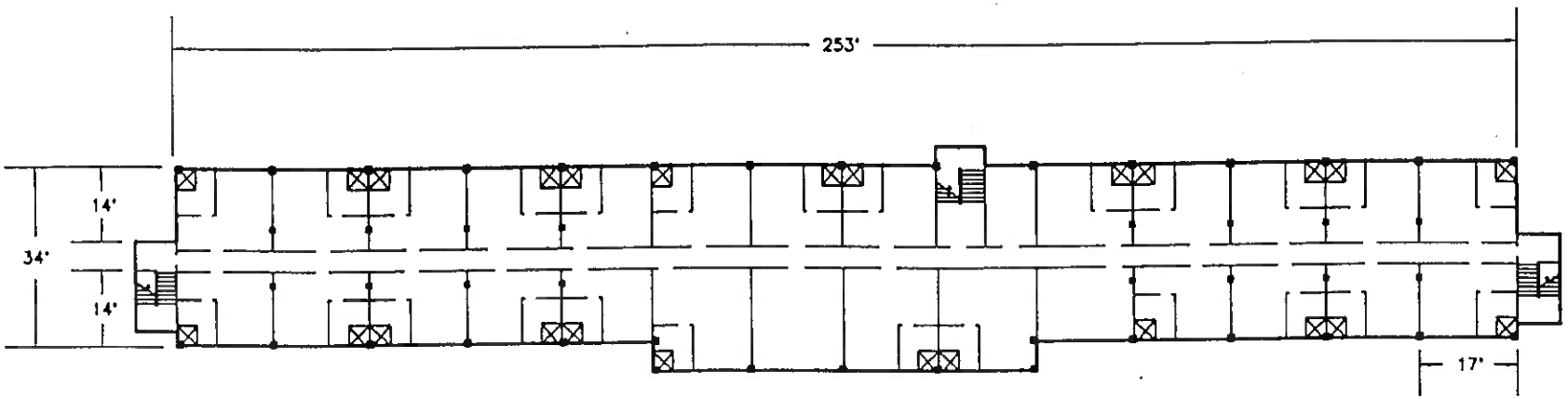


THIRD FLOOR

CTO 152 ASBESTOS INSPECTION
NAVAL AIR STATION – BARBERS POINT
OAHU, HAWAII
BUILDING # 46
ENLISTED MEN'S BARRACKS

SAMPLE LOCATIONS

NOT TO SCALE



THIRD FLOOR

NOTE: THE FOLLOWING WAS IDENTIFIED AS ACM:

- TAR, BLACK LOCATED ON AC SUPPORTS

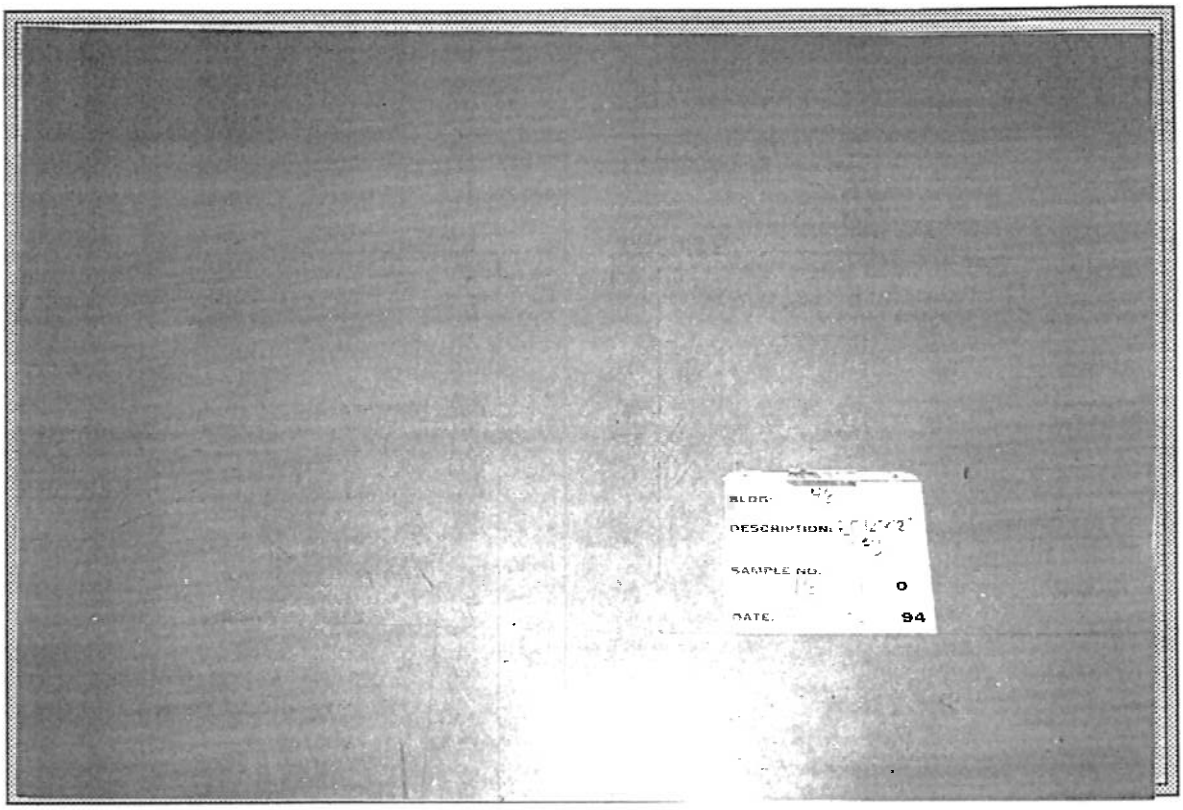
THE FOLLOWING WERE ASSUMED AS ACM:

- ROOF CORE
- TAR, BLACK LOCATED AROUND ROOF AC UNIT

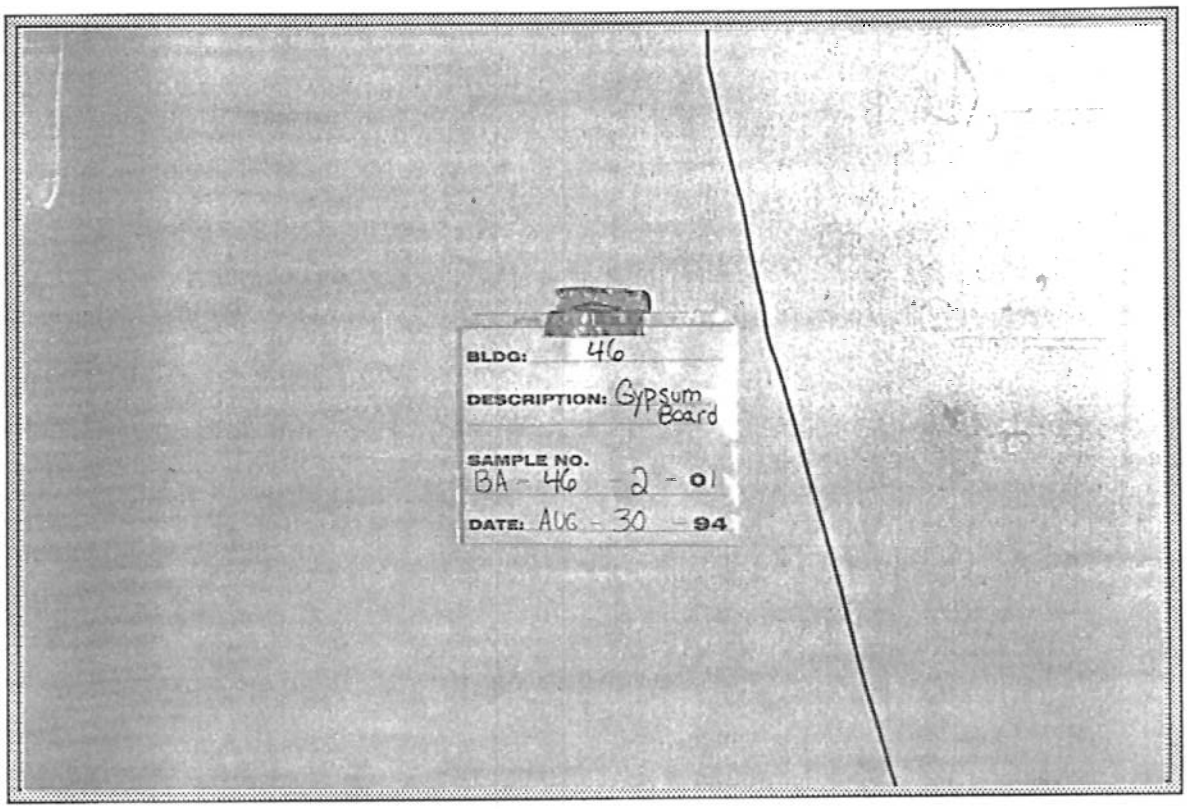
CTO 152 ASBESTOS INSPECTION
NAVAL AIR STATION – BARBERS POINT
OAHU, HAWAII
BUILDING # 46
ENLISTED MEN'S BARRACKS

ROOF

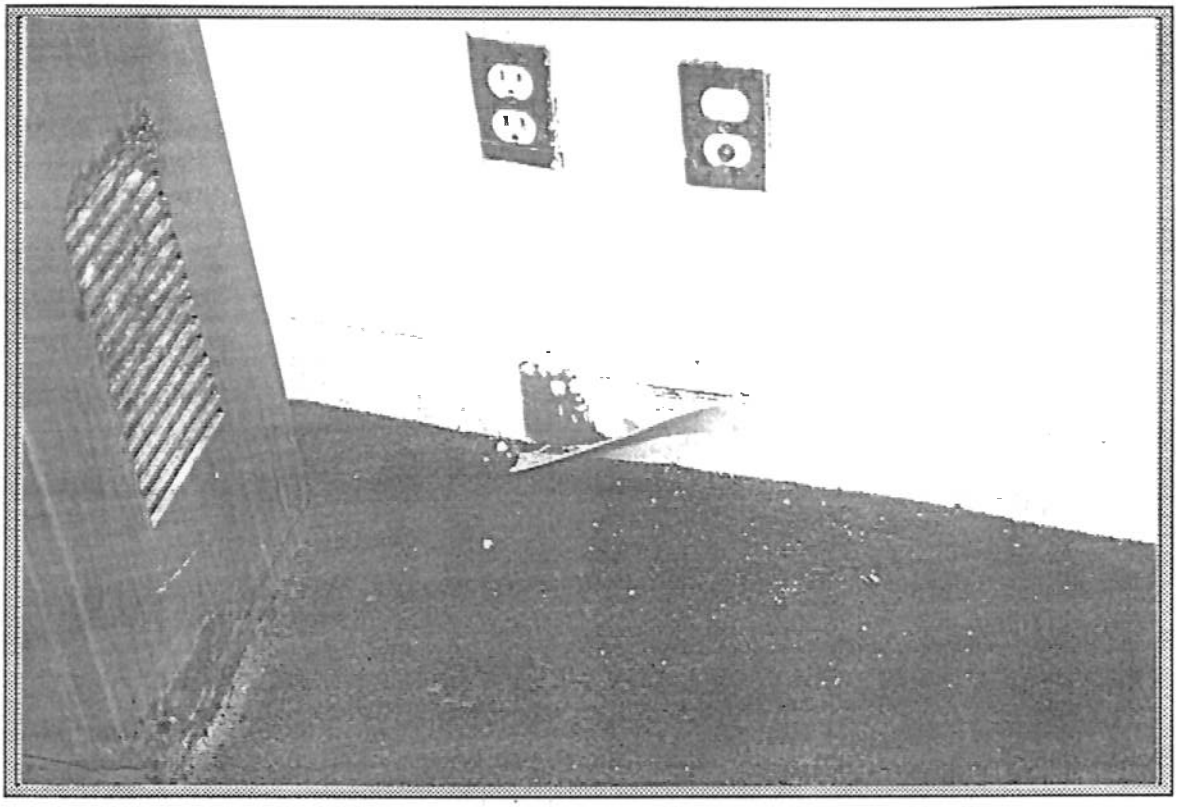
NOT TO SCALE



Homogeneous Area Number: 1
Description: floor tile/mastic 12" x 12", grey



Homogeneous Area Number: 2
Description: gypsum board, walls



Homogeneous Area Number: 3
Description: baseboard mastic

PHOTOGRAPH NOT AVAILABLE

Homogeneous Area Number: 4
Description: tar, black

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BULK ASBESTOS ANALYSIS REPORT

Client Name : OGDEN
Street Address : 1009 Commerce Park Drive
City, State, Zip : Oak Ridge, TN 37830
Location/Description: BARBERS PIONT - 46
Analytical Method: *EPA/NVLAP PLM Method (Federal Register --40 CFR Ch. 1, Pt. 763, Subpt. F, Appendix A, 7/1/91).*

Client Project # : CT00152
ENTEK Project# : 95152-61
Analysis Date : 10/25/94

SAMPLE NUMBER / ENTEK Sample #	ASBESTOS FIBER CONTENT (Composite total and individual layer percentages)	NON-ASBESTOS CONTENT: Fibrous	NON-ASBESTOS CONTENT: Non-fibrous Binder
BA-46-1-01 *94B3820*	**TOTAL ASBESTOS = Not detected** Remarks: FLOORTILE/GLUE Homogeneity: layered Condition **: non-friable Color / texture: blue * Interferences present: recommend additional TEM analysis vinyl tile or sheeting Layer/area # | Vol.% | chrysotile | amosite | tremolite/act. 1 | 99% | N.D. | N.D. | N.D. 2 | 1%	Fibrous = N.D.	Binder approx.=100% Non-fibrous Binder: vinyl binder/carbonate binder
BA-46-1-02 *94B3821*	**TOTAL ASBESTOS = Not detected** Remarks: FLOORTILE/GLUE Homogeneity: layered Condition **: non-friable Color / texture: blue * Interferences present: recommend additional TEM analysis vinyl tile or sheeting Layer/area # | Vol.% | chrysotile | amosite | tremolite 1 | 99% | N.D. | N.D. | N.D. 2 | 1%	Fibrous = N.D.	Binder approx.=100% Non-fibrous Binder: vinyl binder/carbonate binder
BA-46-2-01 *94B3822*	**TOTAL ASBESTOS = Not detected** Remarks: WALLBOARD Homogeneity: homogenous Condition **: non-friable Color / texture: white Layer/area # | Vol.% | chrysotile | amosite | tremolite 1 | 100% | N.D. | N.D. | N.D.	Fibrous =8% Fibrous Materials: cellulose/fiberglass	Binder approx.=92% Non-fibrous Binder: gypsum
BA-46-2-02 *94B3823*	**TOTAL ASBESTOS = Not detected** Remarks: PAINT/TAPING/WALLBOARD Homogeneity: layered Condition **: non-friable Color / texture: white Layer/area # | Vol.% | chrysotile | amosite | tremolite 1 | 2% | N.D. | N.D. | N.D. 2 | 8% 3 | 90%	Fibrous =5% Fibrous Materials: cellulose	Binder approx.=96% Non-fibrous Binder: paint, calcium carbonate, gypsum
BA-46-2-03 *94B3824*	**TOTAL ASBESTOS = Not detected** Remarks: PAINT/TAPING/WALLBOARD Homogeneity: layered Condition **: non-friable Color / texture: white Layer/area # | Vol.% | chrysotile | amosite | tremolite 1 | 2% | N.D. | N.D. | N.D. 2 | 4% 3 | 94%	Fibrous =5% Fibrous Materials: cellulose	Binder approx.=95% Non-fibrous Binder: paint, calcium carbonate, gypsum

Authorized Signature: [signature] Date: 10/25/94 Data Entry Initials : CJC

When a sample is non-homogenous or layered, each non-homogenous area is analyzed separately.

* *An asterisk (*) in front of sample# indicates one layer or non-homogenous area within the sample contains greater than 1% asbestos.*

** *"Condition" is the sample friability observed during sample receipt and preparation and is not necessarily indicative of the source material.*

- *Samples reported as Not detected are non-asbestos containing according to limitations and resolution of the PLM method.*
- *Samples reported as less than 1% (<1%) should be considered "asbestos-containing" unless multiple sample analyses are all less than 1%.*

NVLAP *Accreditation #: 1455*

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BULK ASBESTOS ANALYSIS REPORT

Client Name : OGDEN
Street Address : 1009 Commerce Park Drive
City, State, Zip : Oak Ridge, TN 37830
Location/Description: BARBERS PIONT - 46
Analytical Method: *EPA/NVLAP PLM Method (Federal Register --40 CFR Ch. 1, Pt. 763, Subpt. F, Appendix A 7/1/91).*

Client Project # : CT00152
ENTEK Project# : 95152-61
Analysis Date : 10/25/94

SAMPLE NUMBER *ENTEK Sample #*	ASBESTOS FIBER CONTENT (Composite total and individual layer percentages)	NON-ASBESTOS CONTENT Fibrous	 Non-fibrous Binder
BA-46-3-01 *94B3825*	**TOTAL ASBESTOS = Not detected**	Fibrous =20 %	Binder approx.=80%
	Remarks BROWN GLUE/BACKING		
	Homogeneity layered		
	Condition ** non-friable		
	Color / texture brown resinous/rubber-like		
	Layer/area # / Vol.% / chrysotile / amosite / tremolite	Fibrous Materials:	Non-fibrous Binder:
	1 80% N.D. N.D. N.D.		binder
	2 20%	cellulose	

Authorized Signature: [signature] Date: 10/25/94 Data Entry Initials : CJC

When a sample is non-homogenous or layered, each non-homogenous area is analyzed separately.

* *An asterisk (*) in front of the sample# indicates one layer or non-homogenous area within the sample contains greater than 1% asbestos.*

** *"Condition" is the sample friability observed during sample receipt and preparation and is not necessarily indicative of the source material.*

• *Samples reported as Not detected are non-asbestos containing according to limitations and resolution of the PLM method.*

· *Samples reported as less than 1% (<1%) should be considered "asbestos-containing" unless multiple sample analyses are all less than 1%.*

NVLAP ***Accreditation #: 1455***

ASBESTOS BULK SAMPLING LOG
NAS BARBERS POINT

THE SZARAS COMPANIES — PAGE 1 of 1 — DATE SAMPLES COLLECTED: December 3, 1993

BUILDING NUMBER	BUILDING NAME	BUILDING DESCRIPTION
46	BEQ	3 Story
TSC PROJECT NUMBER	**TSC INSPECTOR**	**TSC LABORATORY ID NO.**
868	J. Brodwolf, T. Maietta	120793H

SAMPLE ID NO	SAMPLE LOCATION / DESCRIPTION	ANALYTICAL RESULTS	FRIABLE	CONDITION	AMOUNT
	INTERIOR:				
BA1203-17	1st floor Vending room Gray 12" x 12" floor tile	None detected	No	Good	500 sq. ft.
	EXTERIOR:				
BA1203-18	Roof Core sample	None detected	No	Good	20,000 sq. ft.
BA1203-19	Roof Roof access Black felt paper	None detected	No	Good	8 sq. ft.
BA1203-20	Roof Concrete supports for A/C unit Black tar	12% Chrysotile	No	Good	3,000 sq. ft.
BA1203-21	Roof Around A/C unit insulation Black tar and insulation	None detected	No	Good	300 sq. ft.

It is assumed that anywhere the above identified asbestos containing building materials are found in the building, that those materials also contain asbestos and should be treated as such.

"Yes or No" refers to a sample of similar material and is considered either positive or negative for asbestos content as per the referred sample in the Sample Location/Desctiption column.

CHAIN OF CUSTODY

SAMPLE MATRIX

DW DRINKING WATER — OL O[illegible]
WW WASTEWATER — AR AIR
GW GROUNDWATER — SL SLUDGE
SW SURFACE WATER — HZ HAZARDOUS
SO SOIL

LAB ID # ____________

CLIENT OGDEN

ADDRESS 1009 Commerce Park Drive Suite No. 100

CITY Oak Ridge

STATE TN ZIP 37830

PHONE NO (615) 481-8002

PROJECT NUMBER CTO 0152

PROJECT NAME Asbestos Inspection

SAMPLED BY Bill Garibay

SAMPLE SITE Barbers Point

PURCHASE ORDER NUMBER 110190152

PROJECT MANAGER (person to receive data) Bill Garibay

REQUEST FAX DATA TO ____________ (FAX #)

REQUEST VERBAL RESULTS BY ____________ (DATE)

NEED DATA PACKAGE BY ____________ (DATE)

QUALITY CONTROL REPORTING LEVEL

0 1 2 3 4 (circle one)

NEED ____ EXTRA COPIES OF REPORT

	SAMPLE I.D.	DATE	TIME	MATRIX									RM%t	TOTAL	LAB USE ONLY
9483820	BA-46-1-01	8-30-94	N/A	N/A									1	1	
21	-1-02	↓	↓	↓									↓	↓	
22	-2-01														
23	-2-02														
24	-2-03														
25	-3-01	↓	↓	↓									↓	↓	

TOTAL NUMBER OF BOTTLES/CONTAINERS 6

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
Linda Brenner	9-12-94	0948	[illegible signature] / [illegible]	10/21/94	

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

TURN AROUND TIME

(NORMAL) ☒ 2 WEEKS

RUSH: ☐ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☐ 1 WEEK

SAMPLE DISPOSAL INSTRUCTIONS

SPECIAL INSTRUCTIONS:

ASBESTOS INVENTORY SUMMARY
BUILDING NUMBER 46

HOMOGENEOUS AREAS:

NUMBER:	HOMOGENEOUS AREA DESCRIPTION	ASBESTOS (Y/N/A)	LOCATION (ROOM NO.)
1	FLOOR TILE/MASTIC, 12" X 12", GREY	N	
2	GYPSUM BOARD, WALLS	N	
3	BASEBOARD MASTIC	N	
4	TAR, BLACK	Y	ROOF AC SUPPORTS
6	FELT PAPER, BLACK	N	
7	TAR, BLACK AND INSULATION	N	AROUND ROOF AC UNIT
8	BUILT-UP ROOF (SEVERAL LAYERS), BLACK GRAVEL	Y	ROOF OVERHANG AT ENTRANCE
9	DUCT INSULATION, GREY	N	ROOF HVAC DUCT SYSTEM

YEAR BUILT: 1957

BUILDING TYPE: BEQ
(Training, Housing, Research, Medical, Utilities, Production,

BUILDING SIGNIFICANCE: ESSENTIAL
(Critical, Essential,

ASBESTOS PROGRAM MANAGER: CARY SPARKS CODE: L20

PHONE: 808-684-0728
(DSN/Commercial)

INSPECTOR NAME: MELISSA HELTON, TRAVIS STANLEY, ABBAS SAM, BRIAN SARIANO, RICK GIACONIA

PHONE: 423-481-8002

SIGNATURE:

EPA ACCREDITATION NUMBER: 1392

SURVEY DATE: (INTERIOR) 6/4/1998 (ROOF)

Attachment (2) THIS FORM MAY BE COPIED

COMMENTS SECTION:

Contractor: OGDEN ENVIRONMENTAL AND ENERGY SVCS

Phone Number: 423-481-8002

Address: 161 MITCHELL ROAD, OAK RIDGE, TN 37830

Additional Information: ADDITIONAL COMMENTS ABOUT BLDG #: 46

BUILDING #: 46
BUILDING AREA (SF): 25,806
YEAR BUILT: 1957
BUILDING TYPE: BEQ
LOCATION: NAS BARBERS POINT,HI

BUILDING DATA (INCLUDING COST ESTIMATES) FOR SUSPECT ASBESTOS-CONTAINING AND ASSUMED ASBESTOS-CONTAINING MATERIALS (ACM)

FACILITY RATING SCORE: PD7

HA NO	ASBESTOS CONTAINING	ACM* RATING SCORE	HA DESCRIPTION	HA LOCATION	QUANTITY	HA DEGREE OF FRIABILITY	RECOMMENDED RESPONSE ACTIONS	INITIAL REPAIR COST	ANNUAL O+M COST	REMOVAL COST	REPLACE-MENT COST	REPLACE-MENT + REMOVAL COST
4	Y	PD	7	TAR, BLACK	ROOF AC SUPPORTS3000	SF	NO&M PROGRAM	$0	$3,600	$12,000	$6,000	$18,000
8	Y	PD	3	BUILT-UP ROOF (SEVERAL LAYERS), BLACK GRAVEL	ROOF OVERHANG AT ENTRANCE	229 SF	NO&M PROGRAM	$435	$458	$2,176	$1,718	
				SUBTOTAL				$0	$4,035	$13,718	$6,458	$20,176
				ADDITIONAL ASBESTOS REMOVAL/REPAIR COST @ 40%**				$0		$5,487		$5,487
				ADDITIONAL REPLACEMENT COST @ 20%***							$1,292	$1,292
				TOTAL ASBESTOS ABATEMENT COSTS				$0	$4,035	$19,205	$7,750	$26,954

KEY:
CT = CEILING TILE
INS = INSULATION
PI = PIPE INSULATION
EA = EACH
LF = LINEAR FEET
SF = SQUARE FEET
O+M = OPERATIONS AND MAINTENANCE
HA = HOMOGENEOUS AREA
PFI = PIPE FITTING INSULATION
N/A = NOT APPLICABLE
ACM = ASBESTOS CONTAINING MATERIAL

* SEE PART 4, NEESA FORM 3900/52
** 40% MARK-UP FOR ADDITIONAL ASBESTOS REMOVAL/REPAIR COSTS (CONTINGENCY, DESIGN, AIR MONITORING AND CONSTRUCTION ADMINISTRATION FEES)
*** 20% MARK-UP FOR ADDITIONAL REPLACEMENT COSTS (CONTINGENCY, DESIGN, AND CONSTRUCTION ADMINISTRATION FEES)
NOTE: THESE BUDGETARY COSTS ARE TYPICALLY BASED ON A PER BUILDING PROJECT BASIS. IN THE CASE OF A BUILDING WITH A SMALL AMOUNT OF ACM, SEVERAL BUILDINGS SHOULD BE COMBINED INTO A SINGLE PROJECT FOR COST EFFECTIVENESS.

Homogeneous Area: 4

Description: Tar, black

Homogenous Area: 8

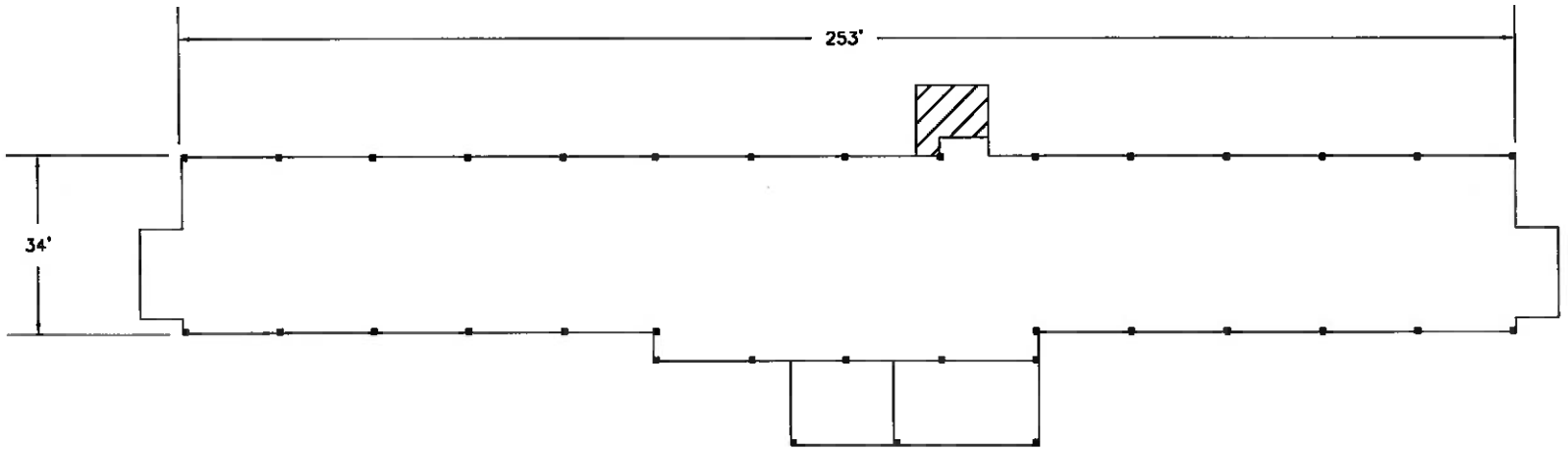
Description: Built-up roof (several layers), black gravel

Homogeneous Area: 4

Description: Tar, black

Homogenous Area: 8

Description: Built-up roof (several layers), black gravel



ROOF

NOTE: THE FOLLOWING WAS IDENTIFIED AS ACM:

* TAR, BLACK LOCATED ON AC SUPPORTS

LEGEND

BUILT-UP ROOF (SEVERAL LAYERS). BLACK GRAVEL

CTO 228 ASBESTOS INSPECTION
NAVAL AIR STATION – BARBERS POINT
OAHU, HAWAII
BUILDING # 46
ENLISTED MEN'S BARRACKS

ROOF

NOT TO SCALE

CA-202505-C Addendum

Attachment #2

BLDG 46 Fire Alarm Shop Drawings

MEDCOM BUILDING 46
91-1227 ENTERPRISE AVENUE
KAPOLEI, HI 96707

FIRE ALARM SYSTEM

PROJECT INFORMATION

1. THIS SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARDS APPROVED BY THE AUTHORITY HAVING JURISDICTION.

2. ALL DEVICES AND APPLIANCES SHALL BE LOCATED AND MOUNTED SO THAT ACCIDENTAL OPERATION OR FAILURE IS NOT CAUSED BY VIBRATION OR JARRING.

3. EQUIPMENT SHALL BE INSTALLED IN LOCATIONS WHERE CONDITIONS DO NOT EXCEED THE VOLTAGE, TEMPERATURE, AND HUMIDITY LIMITS SPECIFIED IN THE MANUFACTURER'S PUBLISHED INSTRUCTIONS.

4. THE SECONDARY POWER SUPPLY SHALL AUTOMATICALLY PROVIDE POWER TO THE PROTECTED PREMISES SYSTEM WITHIN 10 SECONDS WHENEVER THE PRIMARY POWER SUPPLY FAILS TO PROVIDE THE MINIMUM VOLTAGE REQUIRED FOR PROPER OPERATION.

5. INITIATING DEVICES OF THE MANUAL OR AUTOMATIC TYPE SHALL BE SELECTED AND INSTALLED SO AS TO MINIMIZE NUISANCE AND UNINTENTIONAL ALARMS.

6. ALL FIRE ALARM DEVICES SHALL COMPLY FULLY WITH ALL A.D.A. REQUIREMENTS.

7. REQUIRED SIGNALS SHALL NOT BE LOST, INTERRUPTED, OR DELAYED BY MORE THAN 10 SECONDS AS A RESULT OF THE PRIMARY POWER FAILURE.

APPLICABLE CODES & STANDARDS

JURISDICTIONS WITHIN THE STATE MAY HAVE AMENDMENTS TO THE STATE ADOPTED CODE. CHECK WITH THE LOCAL JURISDICTION AUTHORITY FOR MORE DETAILS.

HAWAII BUILDING CODE 2021(IBC 2021) NOT AMENDED
HAWAII RESIDENTIAL CODE 2021(IRC 2021) NOT AMENDED
HAWAII ELECTRICAL CODE 2023(NFPA 70, 2023) NOT AMENDED
HAWAII FIRE ALARM CODE 2019(NFPA 72, 2019)
HAWAII FIRE CODE 2021(NFPA 1, 2021) AMENDED
HAWAII FIRE SPRINKLER CODE 2019(NFPA 13, 2019) NOT AMENDED

OCCUPANCY TYPE(S):
B Business Group

AHJ:
CITY OF HONOLULU (HFD) WITH DOD OVERLAYS

SCOPE OF WORK

REPLACED AN OUTDATED PANEL,DEVICES AND INSTALL A NEW AUTOMATIC AND MANUAL FIRE ALARM SYSTEM AS SHOWN ON DRAWINGS.

ALL WIRING TO BE CLASS A.

AUTOMATIC FIRE ALARM SYSTEM SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX OR UUJS UNDERWRITERS LABORATORY OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 3011. SUPERVISION OF SYSTEM AND LEASED TELEPHONE LINES SHALL BE ARRANGED BY THE OWNER.

VICINITY MAP
SCALE: NTS

DEVICE LEGEND

QTY	SYMBOL	DESCRIPTION	PART NUMBER
1 2	FACP	FIRE ALARM CONTROL PANEL W/ 12VDC 18AH BATTERY	ES-1000X IM-12180
1 2	BPS	BOOSTER POWER SUPPLY W/ 12VDC 12AH BATTERY	FL-PS10 IM-12120
1 1 2	EVAC	EMERGENCY VOICE EVACUATION PANEL W/ CABINET W/ 12VDC 55AH BATTERY	ECC-50/100 BB-55F IM-12550
1	FAA	FIRE ALARM ANNUNCIATOR PANEL	ANN-80
3	LOC	LOCAL OPERATOR CONSOLE	ECC-LOC
1 1	FAC	CELLULAR DIALER W/ 12VDC 7AH BATTERY	HWF2V-COM IM-1270
1	DOC	DOCUMENT BOX	SSU00685
118	S	PHOTOELECTRIC SMOKE DETECTOR W/ STANDARD BASE	SD365 B300-6
2	H	HEAT DETECTOR W/ STANDARD BASE	H365 B300-6
2	D	DUCT SMOKE DETECTOR W/ SMOKE DETECTOR W/ SAMPLING TUBE	D365PL SD365R DST5
2		REMOTE TEST STATION	RTS151KEY
15	F	MANUAL PULL STATION	BG-12LX
1	MM	MONITOR MODULE	MMF-300
7	RM	RELAY MODULE	CRF-300
4	DH	DOOR HOLDER	FM998
4		SURGE SUPPRESSOR 120V	DTK-120HWLOK
6		CEILING MOUNTED STROBE	SCWLED
5		WALL MOUNTED SPEAKER/STROBE	SPSWLED
97	C	CEILING MOUNTED SPEAKER/STROBE	SPSCWLED
4	C	CEILING MOUNTED SPEAKER	SPCWL

FIRE ALARM WIRE LEGEND

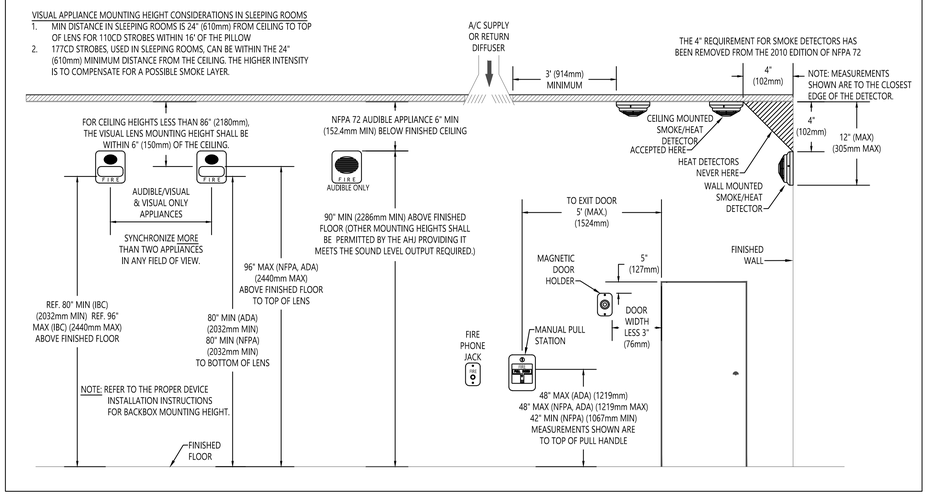
TAG	DESCRIPTION	TYPE	GAUGE	FPL	FPLR	FPLP	THHN	TFFN
A	ADDRESSABLE CIRCUIT (SLC)	UTP SOLID	18 AWG	X	X	X		
B	NOTIFICATION DEVICES (NAC)	2 COND. SOLID	14 AWG	X	X	X	X	X
C	DOOR HOLDER	2 COND. SOLID	14 AWG	X	X	X	X	X
G	ANNUNCIATOR BUS PRIMARY	2 COND. SOLID	18 AWG	X	X	X		
C	LOC BUS CONNECTION	2 COND. SOLID	14 AWG	X	X	X		
SR	EXTERNAL AUDIO RISER	2 COND. SOLID	14 AWG	X	X	X	X	X
R	REMOTE TEST STATION	2 COND. SOLID	14 AWG	X	X	X		
P	AUX / POWER (24VDC)	2 COND. SOLID	14 AWG	X	X	X	X	X
A	AUDIO - SPEAKER	STP SOLID	18 AWG	X	X	X		
TR	TRIGGER CIRCUIT	2 COND. SOLID	14 AWG	X	X	X	X	X

NOTE:
ALL CABLES ARE FOR INDOOR INSTALLATIONS. UNDERGROUND CABLE / WIRE MUST BE LISTED FOR INSTALLATION IN WET CONDITION.

	ANNUNCIATION								NOTIFICATION									FIRE SAFETY CONTROL							
	ACTIVATE COMMON ALARM SIGNAL INDICATOR	ACTIVATE AUDIBLE ALARM SIGNAL	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTIVATE AUDIBLE SUPERVISORY SIGNAL	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR	ACTIVATE AUDIBLE TROUBLE SIGNAL	ACTIVATE APPROPRIATE DEVICE LOCATION INDICATOR	ACTIVATE ALL AUDIBLE EVACUATION SIGNALS	ACTIVATE ALL VISIBLE EVACUATION SIGNALS	DISPLAY / PRINT CHANGE OF STATUS	TRANSMIT ALARM SIGNAL TO SUPERVISING STATION	TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	ACTIVATE EMERGENCY COMMUNICATIONS (SPEAKERS / STROBES)	MAIN FLOOR ELEVATOR RECALL	ALTERNATE FLOOR ELEVATOR RECALL	ELEVATOR HAT FLASH	RELEASE MAGNETICALLY HELD SMOKE DOORS	SHUTDOWN ASSOCIATED FAN	REMOTELY DISPLAY ACTIVE STATUS	
AREA SMOKE DETECTOR	●	●					●	●	●	●	●										●		
SMOKE DETECTOR - AT FACP	●	●					●	●	●	●	●										●		
SMOKE DETECTOR - FOR DOOR RELEASING SERVICE	●	●					●	●	●	●	●								●		●		
SMOKE DETECTOR IN UNITS - SUPERVISORY			●	●			●			●		●									●		
MANUAL PULL STATION	●	●					●	●	●	●	●										●		
AREA HEAT DETECTOR	●	●					●	●	●	●	●										●		
DUCT DETECTOR AT HVAC FAN - SUPERVISORY			●	●			●			●		●								●	●		
ACTIVATION OF EMERGENCY COMMUNICATIONS MESSAGE														●							●		
MAIN FLR. ELEV. LOBBY SMOKE DETECTOR	●	●					●	●	●	●	●						●				●		
ELEVATOR LOBBY SMOKE DETECTORS (EXCEPT PRIMARY FLR)	●	●					●	●	●	●	●					●					●		
ELEVATOR MACHINE ROOM SMOKE DETECTOR	●	●					●	●	●	●	●					●		●			●		
FIRE ALARM PRIMARY/SECONDARY POWER FAILURE					●	●				●			●								●		
FIRE ALARM SYSTEM LOW BATTERY					●	●				●			●								●		
OPEN CIRCUIT					●	●				●			●								●		
GROUND FAULT					●	●				●			●								●		
NOTIFICATION CIRCUIT (NAC) - SHORT					●	●				●			●								●		
LOSS OF COMMUNICATION PATH (INCLUDING CELLULAR DIALER FAILURE)					●	●				●											●		

DEVICE MOUNTING HEIGHT REFERENCE

PER NFPA 72



John Mocker, SET
John Mocker
NICET Level IV - Fire Alarm
Technician ID: 137219
Expires: 11/1/2025

MEDCOM BUILDING 46
91-1227 ENTERPRISE AVENUE
KAPOLEI, HI 96707

PROJECT:

ELECTRICAL CONTRACTOR:
Z.S ELECTRICAL 122 HAILI STREET HILO, HI 96720

DRAWING TITLE:
FIRE ALARM SYSTEM COVER SHEET.

SCALE:
AS SHOWN

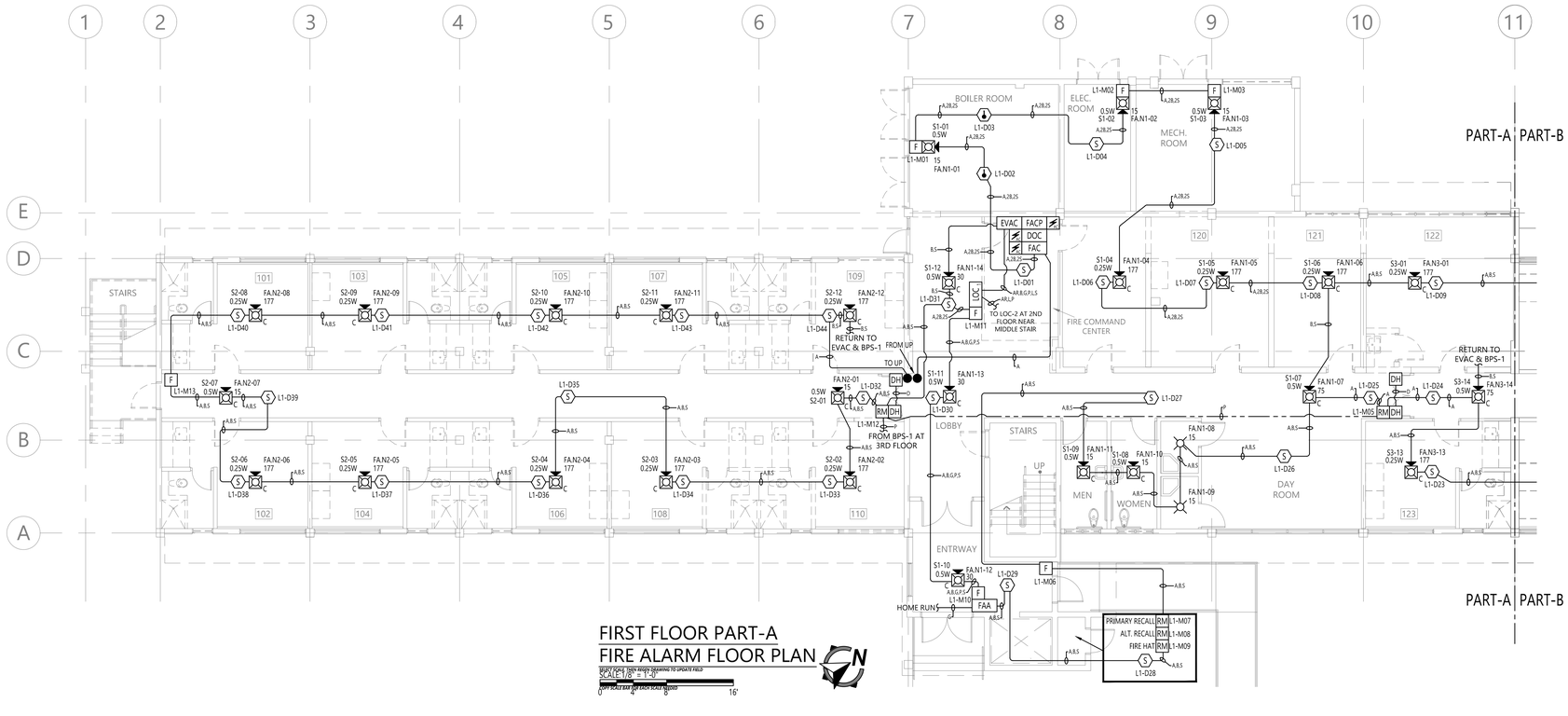
PROJECT NUMBER:

DATE:
09/23/2025

RE-WORK:
--

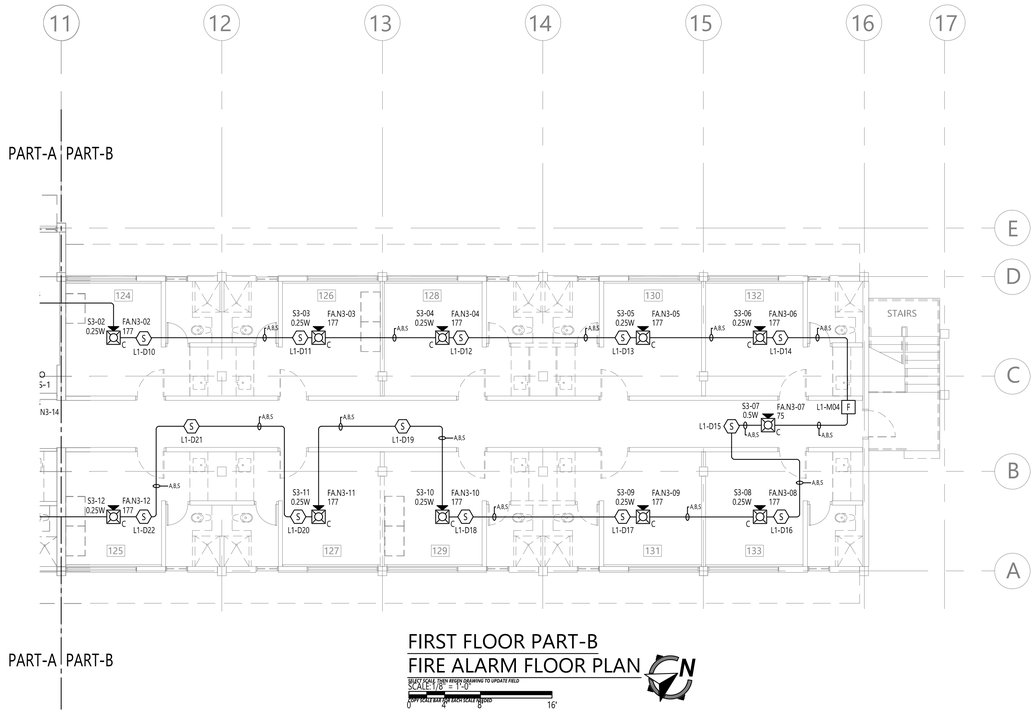
SHEET:
01 OF 9 SHEETS

FA-01



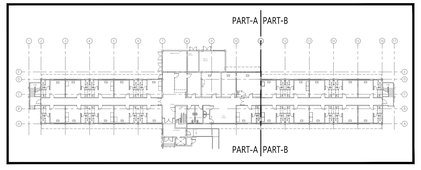
FIRST FLOOR PART-A
FIRE ALARM FLOOR PLAN

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



FIRST FLOOR PART-B
FIRE ALARM FLOOR PLAN

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



KEY PLAN

SCALE: NTS

GENERAL NOTES:

1. ALL CEILINGS ARE ASSUMED TO BE 10' A.F.F., SMOOTH CONSTRUCTION UNLESS NOTED OTHERWISE.
2. MINIMUM CONDUIT SIZE SHALL BE 3/4"
3. ALL EXPOSED CONDUITS SHALL BE GRC (GALVANIZED RIGID METALLIC CONDUIT). ALL CONCEALED CONDUITS SHALL BE EMT (ELECTRICAL METALLIC TUBING). ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 UNLESS NOTED.
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John Mocker, SET
John Mocker
NICET Level IV - Fire Alarm
Technician ID: 137219
Expires: 11/1/2025

MEDCOM BUILDING 46
91-1227 ENTERPRISE AVENUE
KAPOLEI, HI 96707

PROJECT:

ELECTRICAL CONTRACTOR:
Z.S ELECTRICAL 122 HAILI STREET HILO, HI 96720

DRAWING TITLE:
FIRE ALARM SYSTEM
FIRST FLOOR PLAN

SCALE:
AS SHOWN

PROJECT NUMBER:

DATE:
09/23/2025

RE-WORK:
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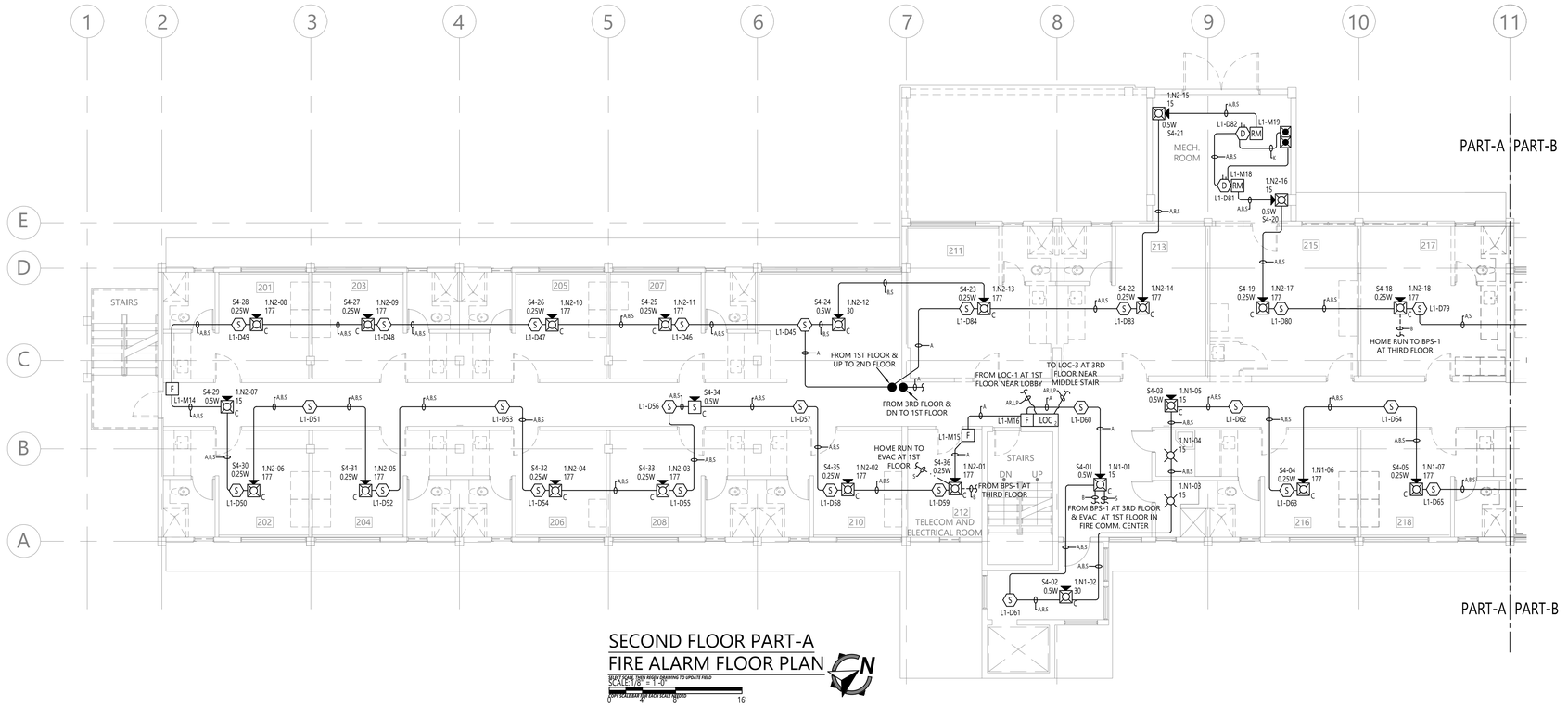
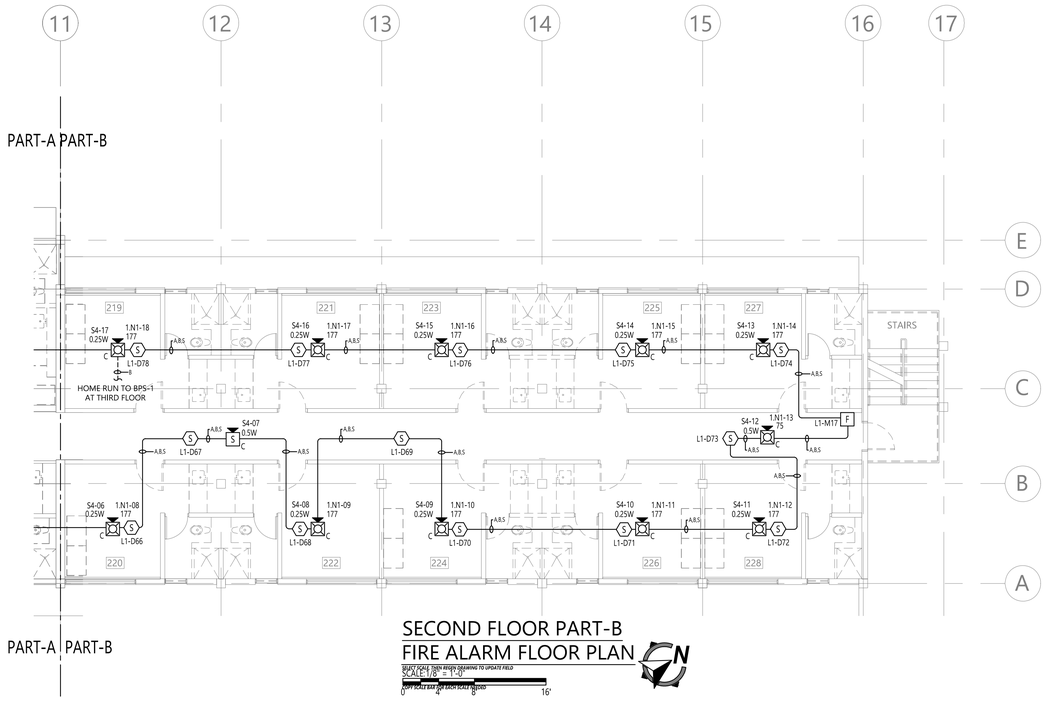
SHEET:
02 OF 9 SHEETS

FA-02



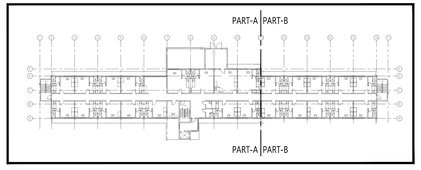
SECOND FLOOR PART-A
FIRE ALARM FLOOR PLAN

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



SECOND FLOOR PART-B
FIRE ALARM FLOOR PLAN

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



KEY PLAN

SCALE: NTS

GENERAL NOTES:

1. ALL CEILINGS ARE ASSUMED TO BE 10' A.F.F., SMOOTH CONSTRUCTION UNLESS NOTED OTHERWISE.
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John Mocker, SET
John Mocker
NICET Level IV - Fire Alarm
Technician ID: 137219
Expires: 11/1/2025

MEDCOM BUILDING 46
91-1227 ENTERPRISE AVENUE
KAPOLEI, HI 96707

PROJECT:

ELECTRICAL CONTRACTOR:
Z.S ELECTRICAL 122 HAILI STREET HILO, HI 96720

DRAWING TITLE:
FIRE ALARM SYSTEM
SECOND FLOOR PLAN

SCALE:
AS SHOWN

PROJECT NUMBER:

DATE:
09/23/2025

RE-WORK:
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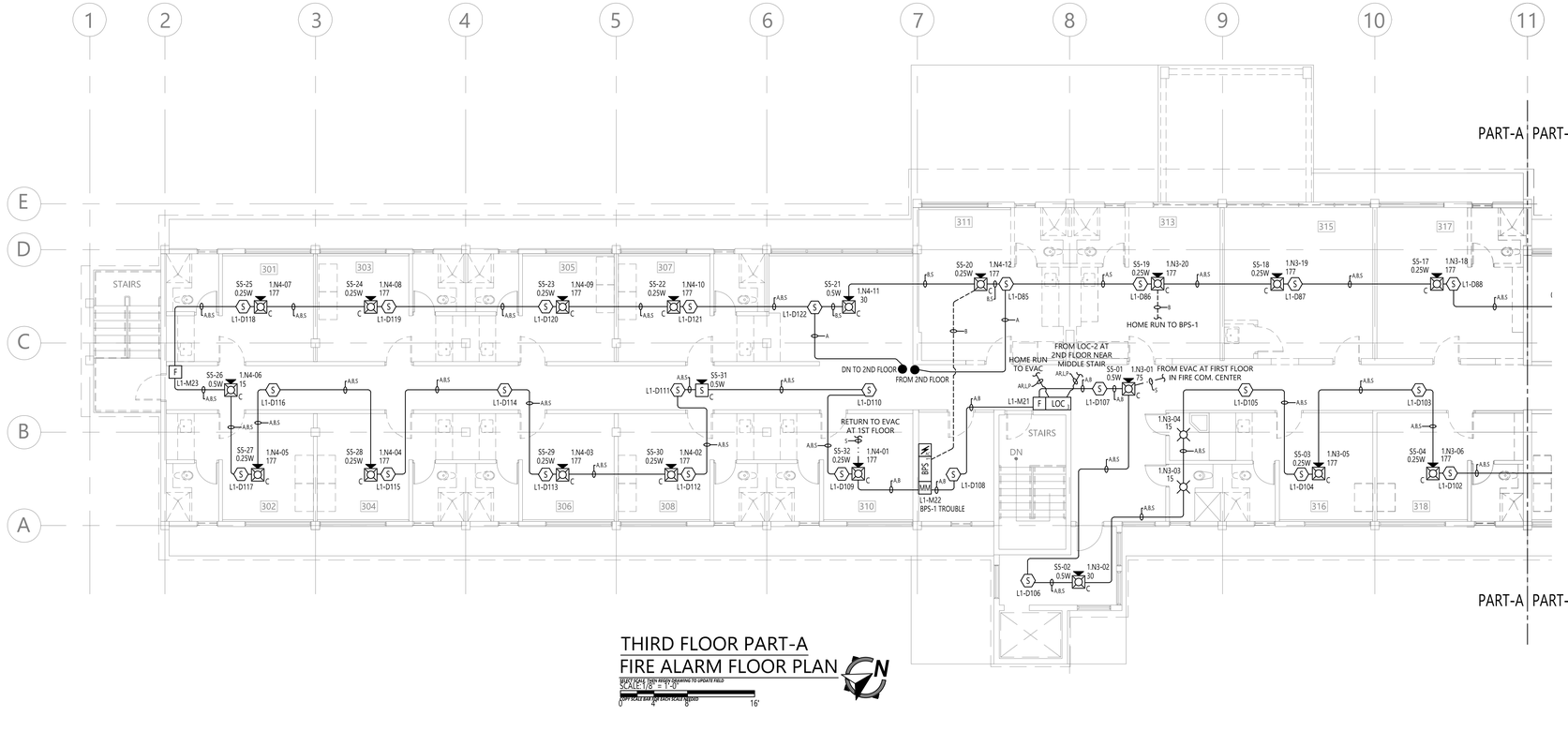
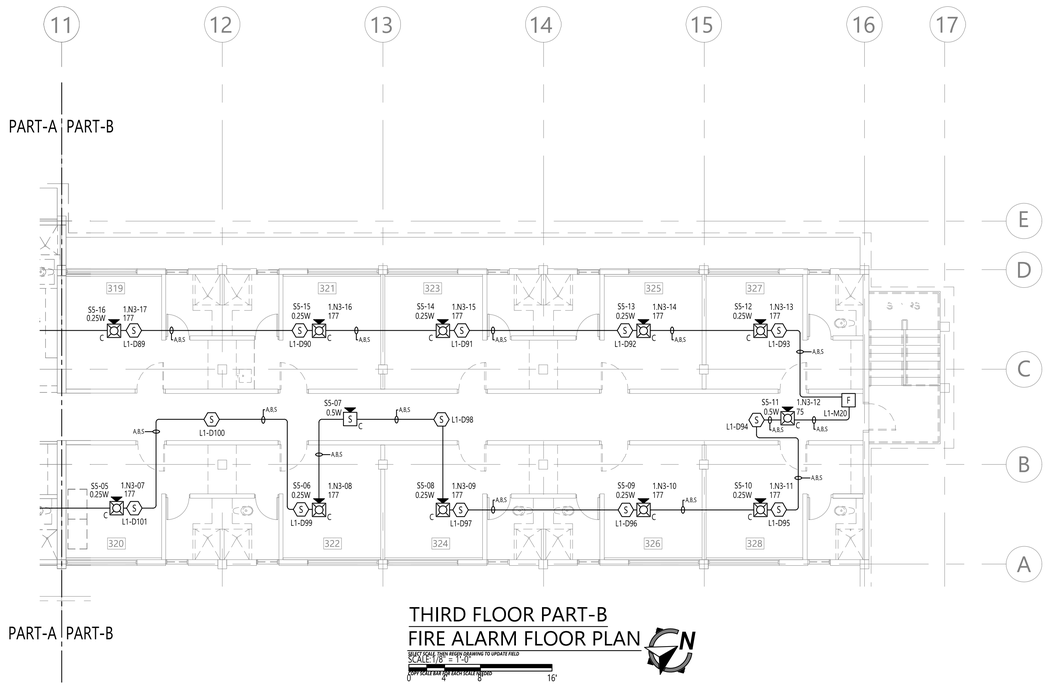
SHEET:
03 OF 9 SHEETS

FA-03



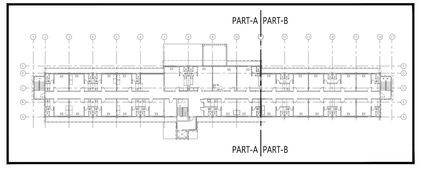
THIRD FLOOR PART-A
FIRE ALARM FLOOR PLAN

SELECTIVE DEMO DRAWING TO UPDATE FIELD
SCALE: 1/8" = 1'-0"
0' 4' 8' 16'



THIRD FLOOR PART-B
FIRE ALARM FLOOR PLAN

SELECTIVE DEMO DRAWING TO UPDATE FIELD
SCALE: 1/8" = 1'-0"
0' 4' 8' 16'



KEY PLAN
SCALE: NTS

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John Mocker
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Technician ID: 137219
Expires: 11/1/2025

MEDCOM BUILDING 46
91-1227 ENTERPRISE AVENUE
KAPOLEI, HI 96707

PROJECT:

ELECTRICAL CONTRACTOR:
Z.S ELECTRICAL 122 HAILI STREET HILO, HI 96720

DRAWING TITLE:
FIRE ALARM SYSTEM THIRD FLOOR PLAN

SCALE:
AS SHOWN

PROJECT NUMBER:

DATE:
09/23/2025

RE-WORK:
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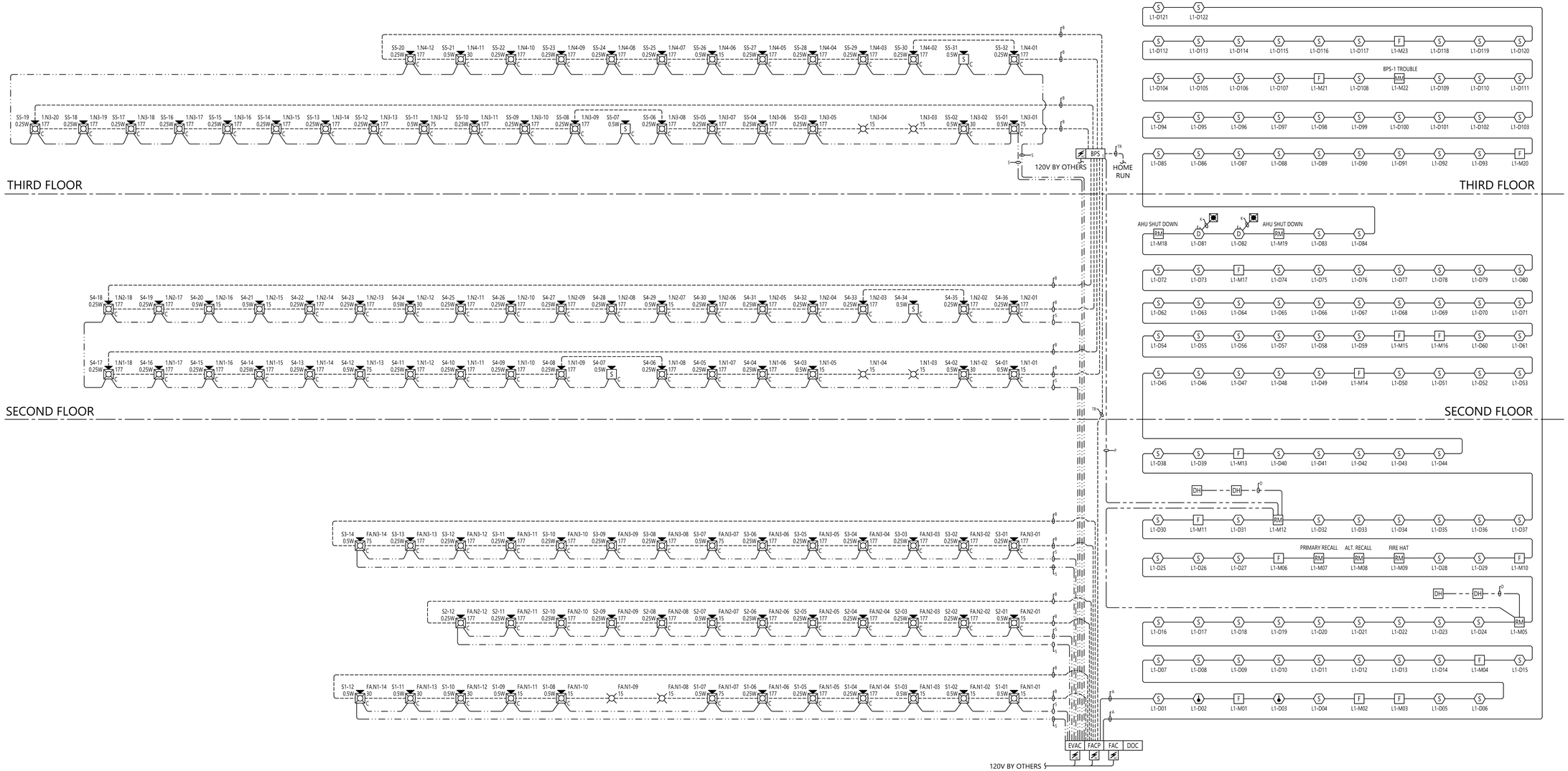
SHEET:
04 OF 9 SHEETS

FA-04



FIRE ALARM RISER DIAGRAM

SCALE: NOT TO SCALE

RISER NOTES:

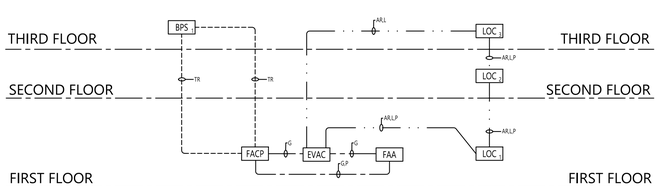
1. RISER IS A DIAGRAMMATICAL REPRESENTATION OF THE SYSTEM ARCHITECTURE IN BUILDING CROSS SECTION. IT IS NOT INTENDED TO REPRESENT ACTUAL WIRE RUNS, PANEL CONFIGURATIONS OR PENETRATIONS. REFER TO FLOOR PLANS AND PANEL DETAILS FOR CIRCUIT ROUTING AND CONFIGURATION INFORMATION.
2. ALL WIRING SHALL COMPLY WITH APPLICABLE ELECTRICAL CODES. REFER TO 'APPLICABLE CODES & STANDARDS' ON SHEET FA-01 FOR SPECIFIC CODE REFERENCES.

FIRE ALARM WIRE LEGEND

TAG	DESCRIPTION	TYPE	GAUGE	FPL	FPLR	FPLP	THHN	TFFN
A	ADDRESSABLE CIRCUIT (SLC)	UTP SOLID	18 AWG	X	X	X		
B	NOTIFICATION DEVICES (NAC)	2 COND. SOLID	14 AWG	X	X	X	X	X
D	DOOR HOLDER	2 COND. SOLID	14 AWG	X	X	X	X	X
G	ANNUNCIATOR BUS PRIMARY	2 COND. SOLID	18 AWG	X	X	X		
L	LOC BUS CONNECTION	2 COND. SOLID	18 AWG	X	X	X		
AR	EXTERNAL AUDIO RISER	2 COND. SOLID	14 AWG	X	X	X	X	X
K	REMOTE TEST STATION	2 COND. SOLID	14 AWG	X	X	X		
P	AUX / POWER (24VDC)	2 COND. SOLID	14 AWG	X	X	X	X	X
S	AUDIO - SPEAKER	STP SOLID	18 AWG	X	X	X		
TR	TRIGGER CIRCUIT	2 COND. SOLID	14 AWG	X	X	X	X	X

NOTE:

ALL CABLES ARE FOR INDOOR INSTALLATIONS. UNDERGROUND CABLE / WIRE MUST BE LISTED FOR INSTALLATION IN WET CONDITION.



PANEL TO PANEL CONNECTION DETAIL

John Mocker, SET
John Mocker
NICET Level IV - Fire Alarm
Technician ID: 137219
Expires: 11/1/2025

MEDCOM BUILDING 46
91-1227 ENTERPRISE AVENUE
KAPOLEI, HI 96707

PROJECT:

ELECTRICAL CONTRACTOR:
Z.S ELECTRICAL 122 HAILI STREET HILO, HI 96720

DRAWING TITLE:
FIRE ALARM SYSTEM RISER DIAGRAM & PANEL TO PANEL CONNECTION ARC.

SCALE:
AS SHOWN

PROJECT NUMBER:

DATE:
09/23/2025

RE-WORK:
– –

SHEET:
05 OF 9 SHEETS

FA-05

FACP BATTERY CALCULATION

FIRE-LITE ALARMS by Honeywell — **ES-1000X Battery Calculation**

Secondary Power Source Requirements

Device Type	Standby Current (amps) Qty	Current Draw	Total	Secondary Alarm Current (amps) Qty	Current Draw	Total
Main Circuit Board	1	x 0.238000	= 0.238000	1	x 0.123000	= 0.123000
IPOTS-COM Communicator	1	x 0.040000	= 0.040000	1	x 0.041000	= 0.04100
PWRMOD24	1	x 0.007000	= 0.007000	1	x 0.008000	= 0.008000
ANN-BUS Devices						
ANN-80(-W)	1	x 0.015000	= 0.015000	1	x 0.040000	= 0.040000
Addressable Devices						
SD365R	2	x 0.000200	= 0.000400			
SD365	118	x 0.000200	= 0.023600			
H365	2	x 0.000200	= 0.000400			
D365PL	2	x 0.000200	= 0.000400			
MMF-300	1	x 0.000350	= 0.000350			
BG-12LX	15	x 0.000375	= 0.005625			
CRF-300	7	x 0.000270	= 0.001890			
Auxiliary Power						
RTS151KEY	2	x 0.012000	= 0.024000	2	x 0.012000	= 0.024000
Output Circuits						
NAC/Output #1		0.000000	=		0.607000	= 0.607000
NAC/Output #2		0.000000	=		1.186000	= 1.186000
NAC/Output #3		0.000000	=		1.520000	= 1.520000
BPS TRIGGER		0.000000	=		0.002000	= 0.002000
	Total Standby Load		**0.356665**	**Total Alarm Load**		**3.951000**

FIRE-LITE ALARMS by Honeywell — **ES-1000X Battery Calculation**

Calculation in Total Sheet

			Required Standby Time in Hours	
			24 Hours	
Standby Load Current	**0.35667 Amps**	x	24	= 8.560 AH
			Required Alarm Time in Minutes	
			15 Minutes	
Alarm Load Current (Amps)	**3.95100 Amps**	x	0.25	= 0.988 AH
			Total Current Load	**9.548 AH**
	Multiply by the Derating Factor		1.25	= x 1.25
			Total Ampere Hours Required	**11.93 AH**
			Recommended Batteries:	**IM-12180 - 18AH Batteries**

EVAC ECC 50/100 BATTERY CALCULATION

FIRE-LITE ALARMS by Honeywell — **ECC-50/100 Battery Calculation**

Secondary Power Source Requirements

Device Type	Standby Current (amps) Qty	Current Draw	Total	Secondary Alarm Current (amps) Qty	Current Draw	Total
1. System						
ECC-50/100 Primary Console	1	X 0.2720	= 0.2720	1	X 0.4460	= 0.4460
ECC-50W-25V/70V*1	1	X 0.1000	= 0.1000	1	X 0.2350	= 0.2350
ECC-CE6 Circuit Expander	1	X 0.0200	= 0.0200	1	X 0.1890	= 0.1890
ECC-RM Remote Microphone	4	X 0.0500	= 0.2000	4	X 0.0640	= 0.2560
2. Operator Interface Devices (Maximum of 8 total)						
ECC-LOC Local Operator Console	3	X 0.0850	= 0.2550	3	X 0.1000	= 0.3000
Total Devices:	3					
4. Speakers (Maximum 100 Watts)						
1/4 Watt	76	X 0.0000	= 0.0000	76	X 0.0170	= 1.2920
1/2 Watt	30	X 0.0000	= 0.0000	30	X 0.0330	= 0.9900
Total Watts:	34.00					
	Total Standby Load		**0.8470**	**Total Alarm Load**		**3.7080**

FIRE-LITE ALARMS by Honeywell — **ECC-50/100 Battery Calculation**

Calculation in Total Sheet

			Required Standby Time in Hours	
			24 Hours	
Standby Load Current (Amps)	**0.8470 Amps**	X	24	= 20.328 AH
			Required Alarm Time in Hours	
			15 Minutes	
Alarm Load Current (Amps)	**3.7080 Amps**	X	0.25	= 0.927 AH
			Total Current Load	**21.26 AH**
	*Multiply by the Derating Factor		1.25	= x 1.25
			Total Ampere Hours Required	**26.57 AH**
			Recommended Batteries:	IM-12550 - 55AH Batteries

DB LOSS CALCULATION

dB Loss Calculations

DESCRIPTION	SPK CIRCUIT NUMBER	AMPLIFIER NUMBER	WIRE GAUGE	CIRCUIT VOLTAGE	APPLIANCES QUANTITIES SPEAKER WATTAGE 0.25W	0.5W	1W	2W	4W	8W	15W	TOTAL CIRCUIT LOAD (Watts)	ESTIMATED CIRCUIT LENGTH (FEET)	ACTUAL LOSS (dB)	MAXIMUM ALLOWABLE CKT. LENGTH (FEET)	TOTAL CIRCUIT RESISTANCE (OHMS)	ACTUAL VOLTAG AT END (Volt)	TOTAL VOLTAGE LOSS (Volt)	TOTAL VOLTAGE LOSS % (Volt)
1ST FLOOR	S1		18 AWG	70 V	3	9						5.25 W	350 ft.	-0.05 dB	300 ft.	5.46 Ω	69.59	0.41	0.58%
1ST FLOOR	S2		18 AWG	70 V	10	2						3.50 W	330 ft.	-0.03 dB	300 ft.	5.15 Ω	69.74	0.26	0.37%
1ST FLOOR	S3	1	18 AWG	70 V	12	2						4.00 W	400 ft.	-0.04 dB	32,543 ft.	6.24 Ω	69.65	0.35	0.51%
2ND FLOOR	S4		18 AWG	70 V	26	10						11.50 W	950 ft.	-0.30 dB	11,319 ft.	14.82 Ω	67.65	2.35	3.36%
3RD FLOOR	S5		18 AWG	70 V	25	7						9.75 W	850 ft.	-0.23 dB	13,351 ft.	13.26 Ω	68.20	1.80	2.57%
	TOTAL CAPACITY		Appliance Summary		76	30	0	0	0	0	0	Total Load 34.00 W	SPARE CAPACITY 16.00 W	SPARE CAPACITY % 32.00%					
	50W																		

FACP VOLTAGE DROP CALCULATIONS

Circuit Number					FA.N1			
Nominal System Voltage					20.4			
Minimum Device Voltage					16			
Total Circuit Current				0.607		Wire Gauge	Ohm's Per 1000	
Wire Gauge for balance of circuit						14	3.07	
Enter current in amps. .150 = 150 ma				Distance from previous device	Voltage			
Device Number	Part Number	Device Candela	Device Current		At Device	Drop from source	Percent Drop	
Panel	ES-1000X	NA	0.000	0	20.40	0.000	0.00%	
FA.N1-01	SPSWLED	15	0.018	32	20.28	0.118	0.58%	
FA.N1-02	SPSWLED	15	0.018	37	20.15	0.253	1.24%	
FA.N1-03	SPSWLED	15	0.018	18	20.08	0.317	1.55%	
FA.N1-04	SPSCWLED	177	0.115	41	19.94	0.456	2.24%	
FA.N1-05	SPSCWLED	177	0.115	18	19.90	0.504	2.47%	
FA.N1-06	SPSCWLED	177	0.115	18	19.86	0.539	2.64%	
FA.N1-07	SPSCWLED	75	0.070	22	19.83	0.567	2.78%	
FA.N1-08	SCWLED	15	0.018	27	19.81	0.590	2.89%	
FA.N1-09	SCWLED	15	0.018	12	19.80	0.599	2.94%	
FA.N1-10	SPSCWLED	15	0.018	15	19.79	0.608	2.98%	
FA.N1-11	SPSCWLED	15	0.018	11	19.79	0.614	3.01%	
FA.N1-12	SPSCWLED	30	0.022	35	19.77	0.628	3.08%	
FA.N1-13	SPSCWLED	30	0.022	29	19.76	0.636	3.12%	
FA.N1-14	SPSCWLED	30	0.022	19	19.76	0.638	3.13%	
END				20	19.76	0.638	3.13%	
Totals			0.607	354	End of Line Voltage		**19.76**	

Circuit Number					FA.N2			
Nominal System Voltage					20.4			
Minimum Device Voltage					16			
Total Circuit Current				1.186		Wire Gauge	Ohm's Per 1000	
Wire Gauge for balance of circuit						14	3.07	
Enter current in amps. .150 = 150 ma				Distance from previous device	Voltage			
Device Number	Part Number	Device Candela	Device Current		At Device	Drop from source	Percent Drop	
Panel	ES-1000X	NA	0.000	0	20.40	0.000	0.00%	
FA.N2-01	SPSCWLED	15	0.018	51	20.03	0.372	1.82%	
FA.N2-02	SPSCWLED	177	0.115	17	19.91	0.492	2.41%	
FA.N2-03	SPSCWLED	177	0.115	28	19.73	0.675	3.31%	
FA.N2-04	SPSCWLED	177	0.115	19	19.62	0.782	3.83%	
FA.N2-05	SPSCWLED	177	0.115	29	19.47	0.929	4.55%	
FA.N2-06	SPSCWLED	177	0.115	18	19.39	1.009	4.95%	
FA.N2-07	SPSCWLED	15	0.018	19	19.32	1.078	5.29%	
FA.N2-08	SPSCWLED	177	0.115	19	19.26	1.145	5.61%	
FA.N2-09	SPSCWLED	177	0.115	18	19.20	1.197	5.87%	
FA.N2-10	SPSCWLED	177	0.115	29	19.14	1.259	6.17%	
FA.N2-11	SPSCWLED	177	0.115	19	19.12	1.285	6.30%	
FA.N2-12	SPSCWLED	177	0.115	28	19.10	1.305	6.40%	
END				40	19.10	1.305	6.40%	
Totals			1.186	335	End of Line Voltage		**19.10**	

Circuit Number					FA.N3			
Nominal System Voltage					20.4			
Minimum Device Voltage					16			
Total Circuit Current				1.520		Wire Gauge	Ohm's Per 1000	
Wire Gauge for balance of circuit						14	3.07	
Enter current in amps. .150 = 150 ma				Distance from previous device	Voltage			
Device Number	Part Number	Device Candela	Device Current		At Device	Drop from source	Percent Drop	
Panel	ES-1000X	NA	0.000	0	20.40	0.000	0.00%	
FA.N3-01	SPSCWLED	177	0.115	55	19.89	0.509	2.50%	
FA.N3-02	SPSCWLED	177	0.115	28	19.65	0.750	3.67%	
FA.N3-03	SPSCWLED	177	0.115	29	19.42	0.981	4.81%	
FA.N3-04	SPSCWLED	177	0.115	19	19.28	1.120	5.49%	
FA.N3-05	SPSCWLED	177	0.115	29	19.09	1.306	6.40%	
FA.N3-06	SPSCWLED	177	0.115	18	18.99	1.413	6.93%	
FA.N3-07	SPSCWLED	75	0.070	16	18.91	1.493	7.32%	
FA.N3-08	SPSCWLED	177	0.115	16	18.83	1.569	7.69%	
FA.N3-09	SPSCWLED	177	0.115	18	18.76	1.642	8.05%	
FA.N3-10	SPSCWLED	177	0.115	29	18.66	1.735	8.51%	
FA.N3-11	SPSCWLED	177	0.115	19	18.62	1.784	8.75%	
FA.N3-12	SPSCWLED	177	0.115	29	18.56	1.838	9.01%	
FA.N3-13	SPSCWLED	177	0.115	25	18.53	1.867	9.15%	
FA.N3-14	SPSCWLED	75	0.070	23	18.52	1.877	9.20%	
END				65	18.52	1.877	9.20%	
Totals			1.520	419	End of Line Voltage		**18.52**	

BPS-1 BATTERY CALCULATION

Notification Power Supply
FL-PS10
Battery Calculation

COMPONENT	QTY.	Standby (A)	Alarm (A)	Standby Total	Alarm Total
Main Circuit Board	1	0.178	0.232	0.178	0.232
ZNAC-PS	1	0.149	0.159	0.149	0.159
1.N1	1	0.000	1.544	0.000	1.544
1.N2	1	0.000	1.686	0.000	1.686
1.N3	1	0.000	1.923	0.000	1.923
1.N4	1	0.000	1.190	0.000	1.190
DOOR HOLDER	4	0.020	0.000	0.080	0.000
Totals				**0.407**	**6.734**

Battery Calculation	Hrs	Current	AH	Safety	Batt Req (AH)
Door holder (Dropout in AC loss)	**0.0830**	0.080	0.007		
Normal	**24**	0.327	7.848		
Alarm 15 min.	**0.25**	6.734	1.684		
Total Required			9.532	1.250	**11.914**
* Battery Supplied	**2 ea 12V**				**12 AH**

*** 24VDC System Requires Two 12VDC Batteries**

NOTE: Class A supervision and the ZNAC-PS module are not intended for use with door holder operation.

HWF2V-COM BATTERY CALCULATION

BATTERY CALCULATION FOR HWF2V-COM COMMUNICATOR

Device or Control		Standby Current in mA QTY	Current	Total	Alarm Current (mA) QTY.	Current	Total
HONEYWELL	HWF2V-COM	1	210	210	1	290	290

Standby Total: (mA)			**210.00**	Total Alarm (mA)		**290**
Standby:	210.00	mA X	24	Hrs =	5.04	A
Alarm:	290	mA X	0.083	Hrs =	0.02407	A
Sub Total:					5.06407	A
Surplus:		25%			1.01281	A
Total Requirement:					6.08	Ah
Battery Required:	**ONE (1) 7 AH batteries**					

BPS-1 VOLTAGE DROP CALCULATIONS

Circuit Number					1.N1			
Nominal System Voltage					20.4			
Minimum Device Voltage					16			
Total Circuit Current				1.544		Wire Gauge	Ohm's Per 1000	
Wire Gauge for balance of circuit						14	3.07	
Enter current in amps. .150 = 150 ma				Distance from previous device	Voltage			
Device Number	Part Number	Device Candela	Device Current		At Device	Drop from source	Percent Drop	
Panel	FL-PS10	NA	0.000	0	20.40	0.000	0.00%	
1.N1-01	SPSCWLED	15	0.018	50	19.93	0.474	2.32%	
1.N1-02	SPSCWLED	30	0.022	23	19.71	0.693	3.40%	
1.N1-03	SCWLED	15	0.018	31	19.42	0.976	4.78%	
1.N1-04	SCWLED	15	0.018	10	19.33	1.068	5.23%	
1.N1-05	SPSCWLED	15	0.018	11	19.24	1.164	5.70%	
1.N1-06	SPSCWLED	177	0.115	33	18.95	1.454	7.13%	
1.N1-07	SPSCWLED	177	0.115	19	18.79	1.610	7.89%	
1.N1-08	SPSCWLED	177	0.115	23	18.62	1.782	8.74%	
1.N1-09	SPSCWLED	177	0.115	29	18.42	1.981	9.71%	
1.N1-10	SPSCWLED	177	0.115	19	18.30	2.098	10.28%	
1.N1-11	SPSCWLED	177	0.115	29	18.15	2.252	11.04%	
1.N1-12	SPSCWLED	177	0.115	18	18.06	2.337	11.46%	
1.N1-13	SPSCWLED	75	0.070	16	18.00	2.402	11.77%	
1.N1-14	SPSCWLED	177	0.115	15	17.94	2.456	12.04%	
1.N1-15	SPSCWLED	177	0.115	19	17.89	2.509	12.30%	
1.N1-16	SPSCWLED	177	0.115	29	17.83	2.570	12.60%	
1.N1-17	SPSCWLED	177	0.115	19	17.80	2.597	12.73%	
1.N1-18	SPSCWLED	177	0.115	29	17.78	2.617	12.83%	
RETURN				90	17.78	2.617	12.83%	
Totals			1.544	512	End of Line Voltage		**17.78**	

Circuit Number					1.N2			
Nominal System Voltage					20.4			
Minimum Device Voltage					16			
Total Circuit Current				1.686		Wire Gauge	Ohm's Per 1000	
Wire Gauge for balance of circuit						14	3.07	
Enter current in amps. .150 = 150 ma				Distance from previous device	Voltage			
Device Number	Part Number	Device Candela	Device Current		At Device	Drop from source	Percent Drop	
Panel	FL-PS10	NA	0.000	0	20.40	0.000	0.00%	
1.N2-01	SPSCWLED	177	0.115	67	19.71	0.694	3.40%	
1.N2-02	SPSCWLED	177	0.115	18	19.53	0.871	4.27%	
1.N2-03	SPSCWLED	177	0.115	29	19.27	1.127	5.52%	
1.N2-04	SPSCWLED	177	0.115	18	19.12	1.277	6.26%	
1.N2-05	SPSCWLED	177	0.115	29	18.90	1.497	7.34%	
1.N2-06	SPSCWLED	177	0.115	19	18.77	1.625	7.97%	
1.N2-07	SPSCWLED	15	0.018	19	18.66	1.739	8.53%	
1.N2-08	SPSCWLED	177	0.115	19	18.55	1.852	9.08%	
1.N2-09	SPSCWLED	177	0.115	19	18.45	1.952	9.57%	
1.N2-10	SPSCWLED	177	0.115	28	18.32	2.083	10.21%	
1.N2-11	SPSCWLED	177	0.115	19	18.24	2.157	10.57%	
1.N2-12	SPSCWLED	30	0.022	27	18.16	2.242	10.99%	
1.N2-13	SPSCWLED	177	0.115	25	18.08	2.320	11.37%	
1.N2-14	SPSCWLED	177	0.115	25	18.02	2.379	11.66%	
1.N2-15	SPSWLED	15	0.018	33	17.97	2.432	11.92%	
1.N2-16	SPSWLED	15	0.018	34	17.92	2.484	12.18%	
1.N2-17	SPSCWLED	177	0.115	22	17.89	2.515	12.33%	
1.N2-18	SPSCWLED	177	0.115	22	17.87	2.530	12.40%	
RETURN				70	17.87	2.530	12.40%	
Totals			1.686	542	End of Line Voltage		**17.87**	

Circuit Number					1.N3			
Nominal System Voltage					20.4			
Minimum Device Voltage					16			
Total Circuit Current				1.923		Wire Gauge	Ohm's Per 1000	
Wire Gauge for balance of circuit						14	3.07	
Enter current in amps. .150 = 150 ma				Distance from previous device	Voltage			
Device Number	Part Number	Device Candela	Device Current		At Device	Drop from source	Percent Drop	
Panel	FL-PS10	NA	0.000	0	20.40	0.000	0.00%	
1.N3-01	SPSCWLED	75	0.070	33	20.01	0.390	1.91%	
1.N3-02	SPSCWLED	30	0.022	30	19.67	0.731	3.58%	
1.N3-03	SCWLED	15	0.018	24	19.40	1.001	4.91%	
1.N3-04	SCWLED	15	0.018	11	19.28	1.122	5.50%	
1.N3-05	SPSCWLED	177	0.115	25	19.00	1.397	6.85%	
1.N3-06	SPSCWLED	177	0.115	19	18.81	1.593	7.81%	
1.N3-07	SPSCWLED	177	0.115	23	18.58	1.816	8.90%	
1.N3-08	SPSCWLED	177	0.115	26	18.35	2.048	10.04%	
1.N3-09	SPSCWLED	177	0.115	19	18.19	2.206	10.81%	
1.N3-10	SPSCWLED	177	0.115	29	17.98	2.420	11.86%	
1.N3-11	SPSCWLED	177	0.115	18	17.85	2.545	12.48%	
1.N3-12	SPSCWLED	75	0.070	19	17.74	2.658	13.03%	
1.N3-13	SPSCWLED	177	0.115	18	17.64	2.760	13.53%	
1.N3-14	SPSCWLED	177	0.115	18	17.55	2.851	13.98%	
1.N3-15	SPSCWLED	177	0.115	29	17.43	2.973	14.57%	
1.N3-16	SPSCWLED	177	0.115	19	17.36	3.041	14.90%	
1.N3-17	SPSCWLED	177	0.115	29	17.28	3.123	15.31%	
1.N3-18	SPSCWLED	177	0.115	25	17.22	3.177	15.57%	
1.N3-19	SPSCWLED	177	0.115	25	17.19	3.212	15.74%	
1.N3-20	SPSCWLED	177	0.115	20	17.17	3.226	15.81%	
RETURN				60	17.17	3.226	15.81%	
Totals			1.923	520	End of Line Voltage		**17.17**	

Circuit Number					1.N4			
Nominal System Voltage					20.4			
Minimum Device Voltage					16			
Total Circuit Current				1.190		Wire Gauge	Ohm's Per 1000	
Wire Gauge for balance of circuit						14	3.07	
Enter current in amps. .150 = 150 ma				Distance from previous device	Voltage			
Device Number	Part Number	Device Candela	Device Current		At Device	Drop from source	Percent Drop	
Panel	FL-PS10	NA	0.000	0	20.40	0.000	0.00%	
1.N4-01	SPSCWLED	177	0.115	14	20.30	0.102	0.50%	
1.N4-02	SPSCWLED	177	0.115	29	20.11	0.292	1.43%	
1.N4-03	SPSCWLED	177	0.115	18	20.00	0.399	1.96%	
1.N4-04	SPSCWLED	177	0.115	29	19.85	0.551	2.70%	
1.N4-05	SPSCWLED	177	0.115	19	19.77	0.635	3.11%	
1.N4-06	SPSCWLED	15	0.018	19	19.69	0.705	3.46%	
1.N4-07	SPSCWLED	177	0.115	19	19.63	0.774	3.80%	
1.N4-08	SPSCWLED	177	0.115	18	19.57	0.829	4.06%	
1.N4-09	SPSCWLED	177	0.115	29	19.51	0.895	4.39%	
1.N4-10	SPSCWLED	177	0.115	19	19.48	0.923	4.53%	
1.N4-11	SPSCWLED	30	0.022	27	19.45	0.946	4.64%	
1.N4-12	SPSCWLED	177	0.115	24	19.44	0.963	4.72%	
RETURN				40	19.44	0.963	4.72%	
Totals			1.190	304	End of Line Voltage		**19.44**	

John Mocker, SET
John Mocker
NICET Level IV - Fire Alarm
Technician ID: 137219
Expires: 11/1/2025

MEDCOM BUILDING 46
91-1227 ENTERPRISE AVENUE
KAPOLEI, HI 96707

PROJECT:

ELECTRICAL CONTRACTOR:
Z.S. ELECTRICAL 122 HAILI STREET HILO, HI 96720

DRAWING TITLE:
FIRE ALARM SYSTEM CALCULATIONS

SCALE:
AS SHOWN

PROJECT NUMBER:

DATE:
09/23/2025

RE-WORK:
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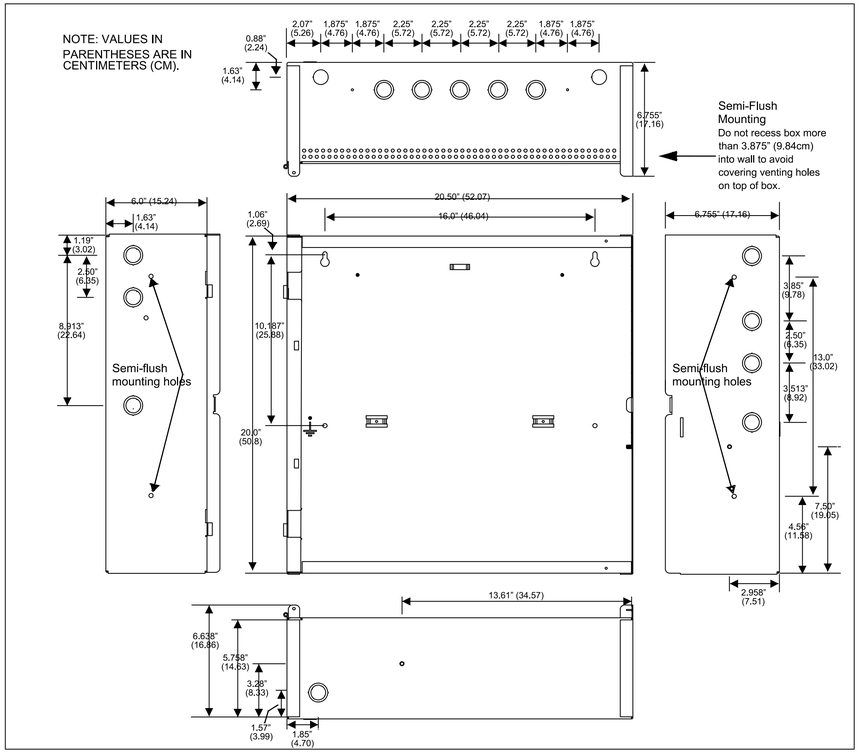
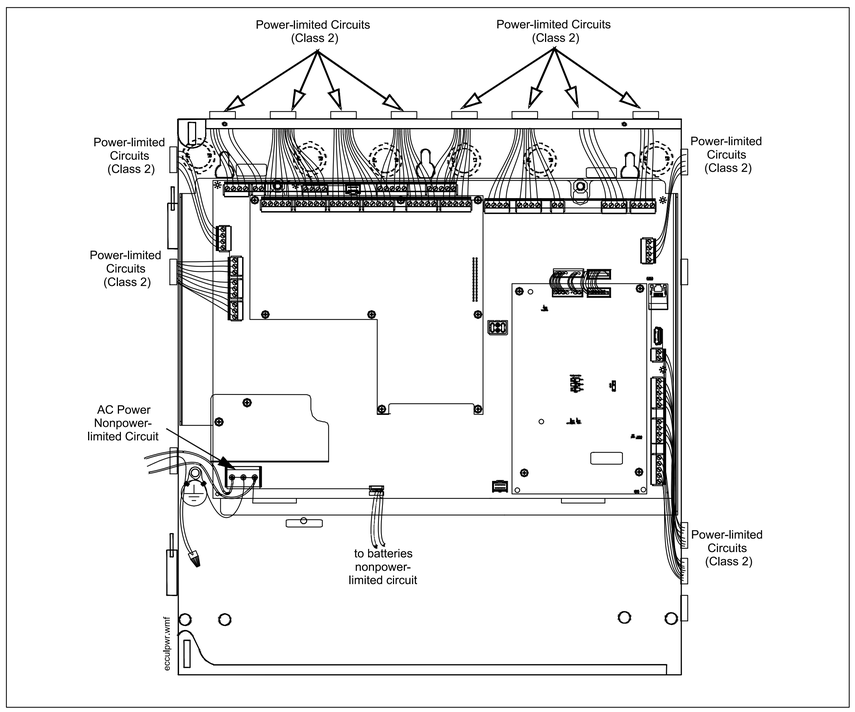
SHEET:
06 OF 9 SHEETS

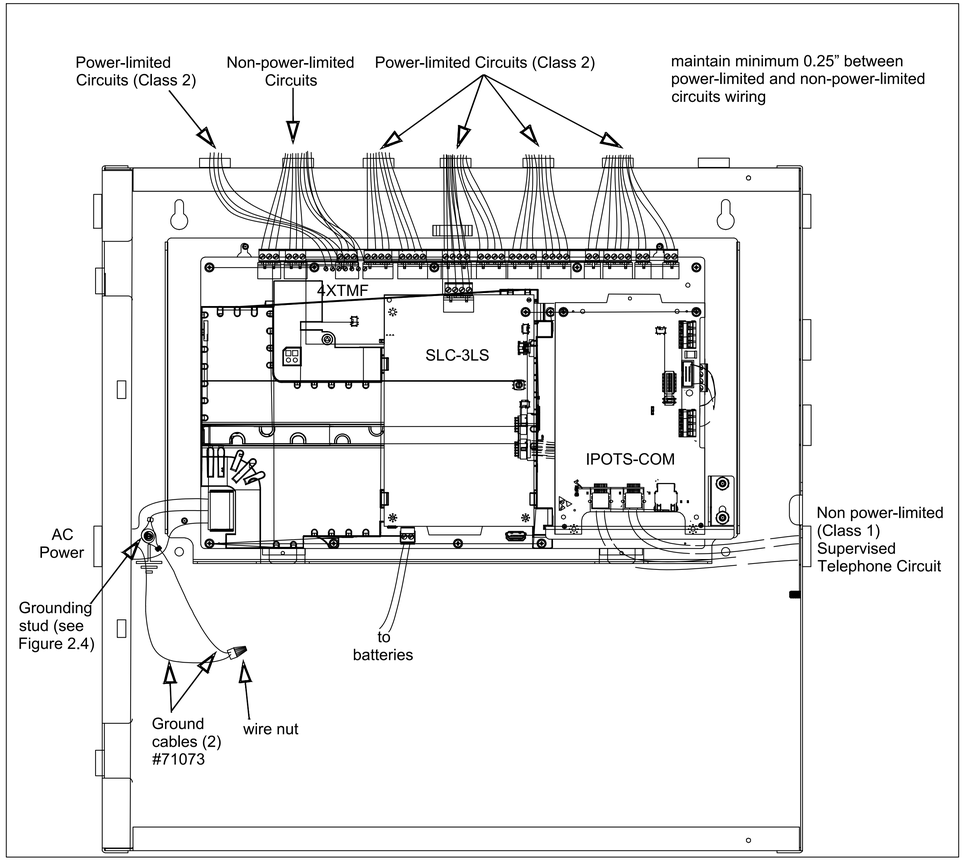
FA-06



ES-1000X CABINET MOUNTING



ECC-50/100 WIRING DETAILS



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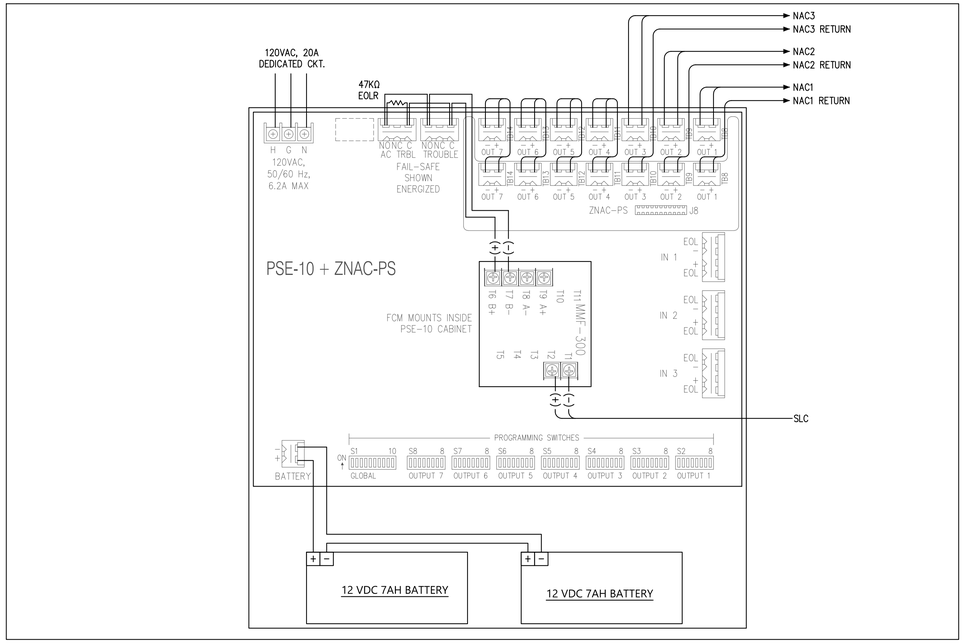

FL-PS10 WIRING

John Mocker, SET
John Mocker
NICET Level IV - Fire Alarm
Technician ID: 137219
Expires: 11/1/2025

MEDCOM BUILDING 46
91-1227 ENTERPRISE AVENUE
KAPOLEI, HI 96707

PROJECT:

ELECTRICAL CONTRACTOR:
Z.S ELECTRICAL 122 HAILI STREET HILO, HI 96720

DRAWING TITLE:
FIRE ALARM SYSTEM WIRING DETAIL

SCALE:
AS SHOWN

PROJECT NUMBER:

DATE:
09/23/2025

RE-WORK:
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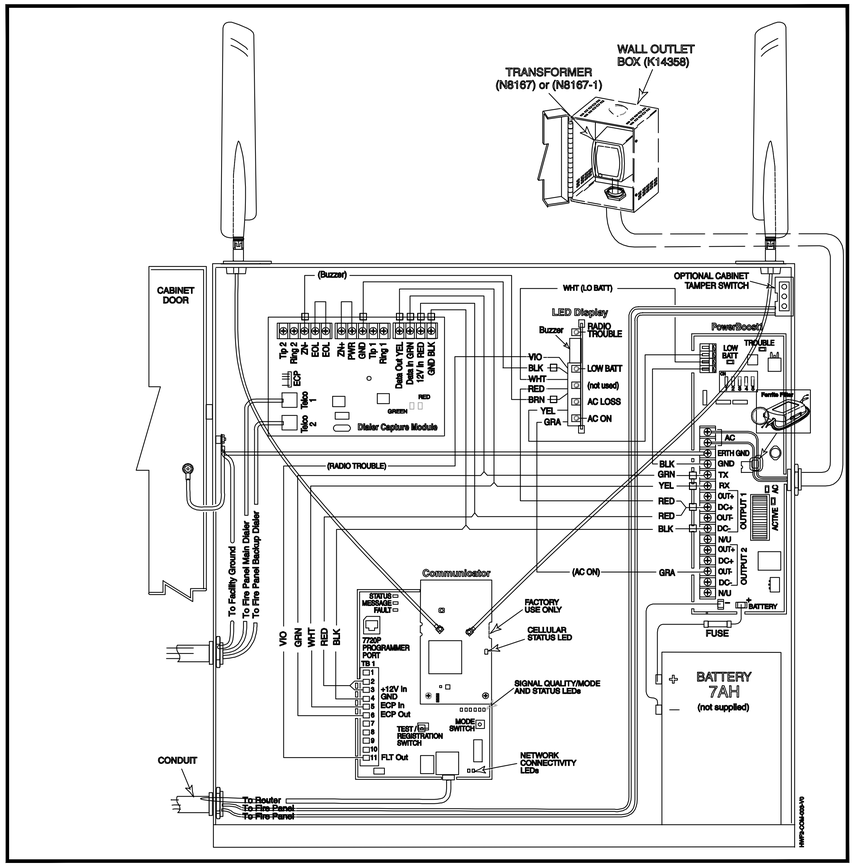
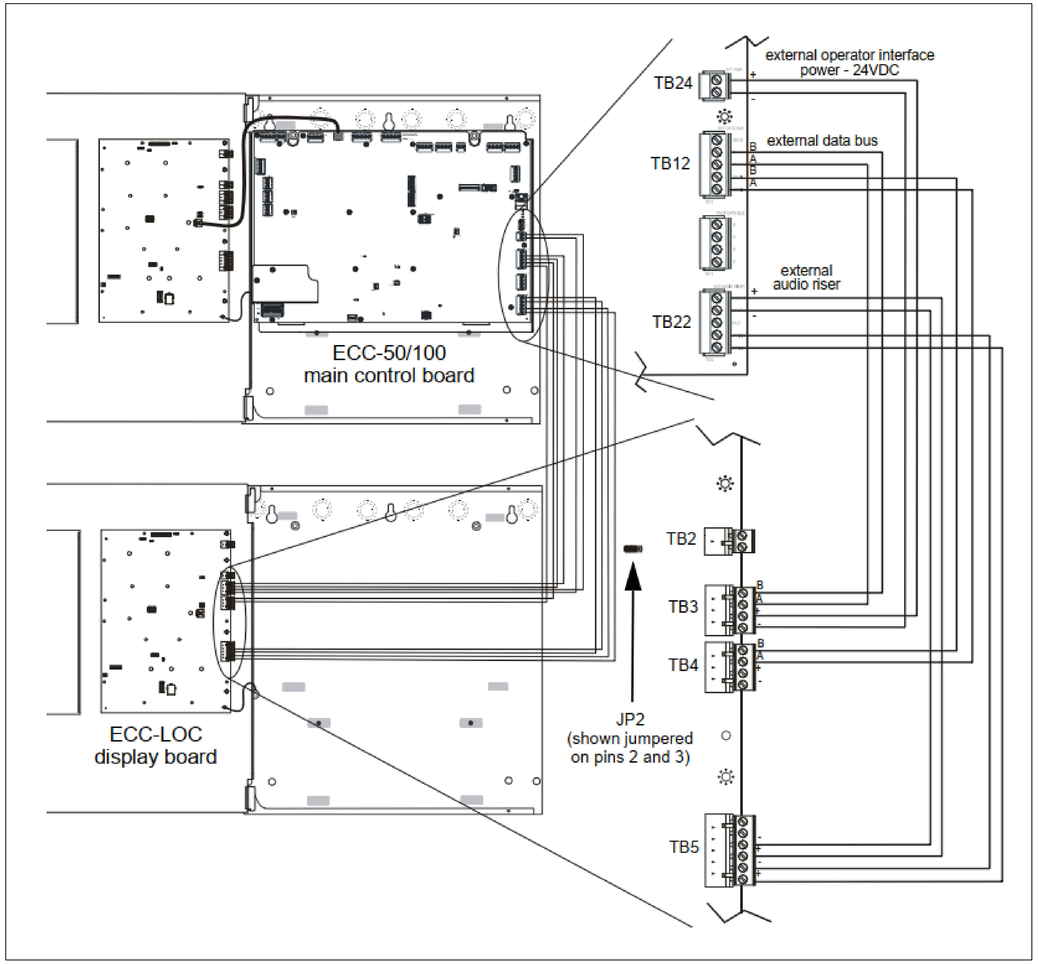
SHEET:
07 OF 9 SHEETS

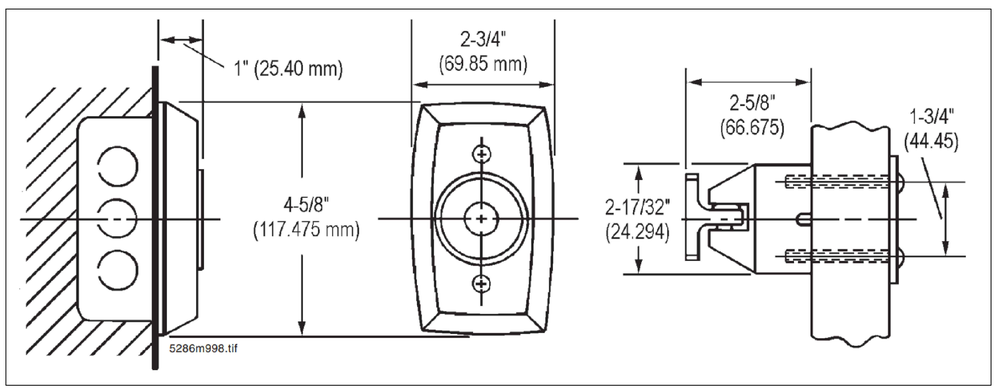
FA-07



HWF2V-COM WIRING DETAIL



ECC-50/100 & ECC-LOC WIRING DETAIL



FM-998 WIRING DETAIL

John Mocker, SET
John Mocker
NICET Level IV - Fire Alarm
Technician ID: 137219
Expires: 11/1/2025

MEDCOM BUILDING 46
91-1227 ENTERPRISE AVENUE
KAPOLEI, HI 96707

PROJECT:

ELECTRICAL CONTRACTOR:
Z.S. ELECTRICAL 122 HAILI
STREET HILO, HI 96720

DRAWING TITLE:
FIRE ALARM SYSTEM
WIRING DETAIL

SCALE:
AS SHOWN

PROJECT NUMBER:

DATE:
09/23/2025

RE-WORK:
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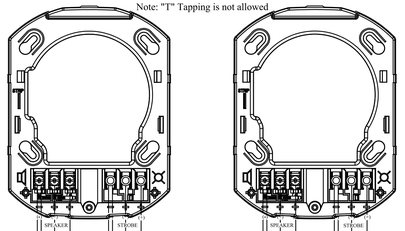
SHEET:
08 OF 9 SHEETS

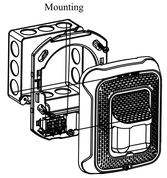
FA-08

Connection Drawing for System Sensor Speaker, Speaker/Strobes

Note: "T" Tapping is not allowed



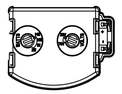
Mounting



From Previous Devices or FACP

To Next Device or Return to Power Supply

"E" Cable is a Shielded cable. This shield needs to be spliced through and insulated from ground



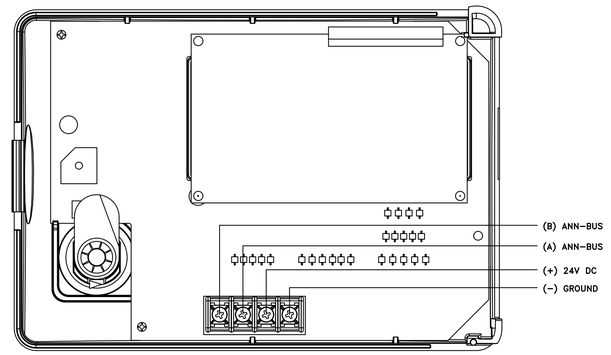
Verify EOLR Value Based on the associated Signal Circuit Control Panel

Note: Refer to Floorplans for candela ratings

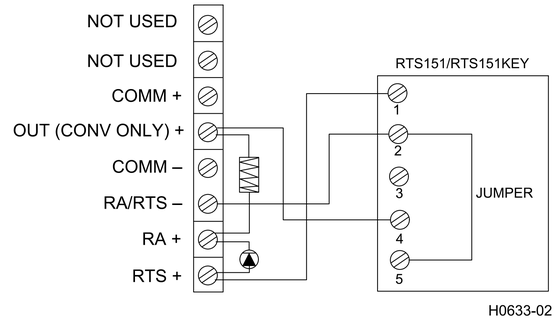
Candela Range
15
30
75
95
110^
115*
135^
150*
177*
185^

*Ceiling Mount Devices Only
^Wall Mount Devices Only

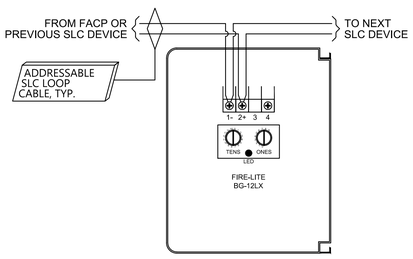
For use with the following models: SPSRL, SPSWL, SPSRL-P, SPSWL-P, SPSRL-SP, SPSWL-CLR-ALERT, SPSCRL, SPSCWL, SPSCWL-P, SPSCWL-SP, SPSCWL-CLR-ALERT, SPRL, SPWL, SPCRL, SPCWL



ANN-80 WIRING

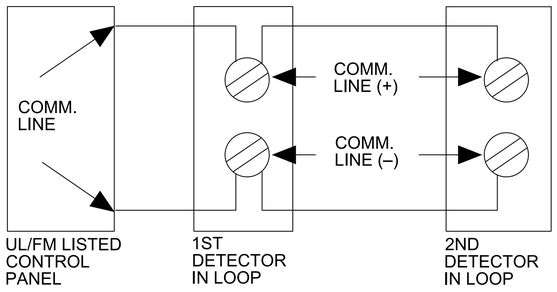


RTS151KEY

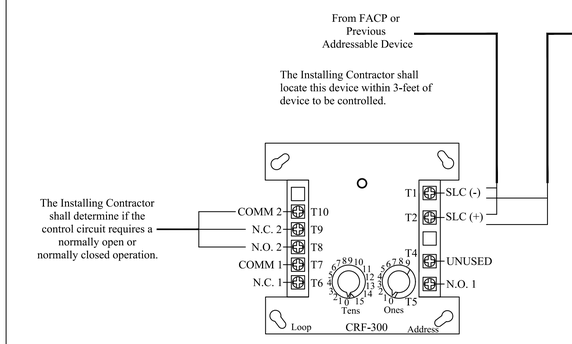


BG-12LX

NOTE: SET DEVICE ADDRESS PER DRAWING BEFORE INSTALLATION

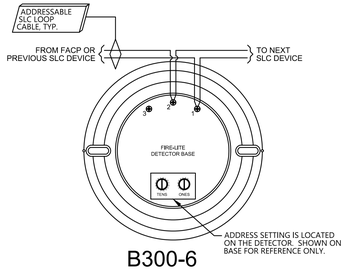


D365 PL



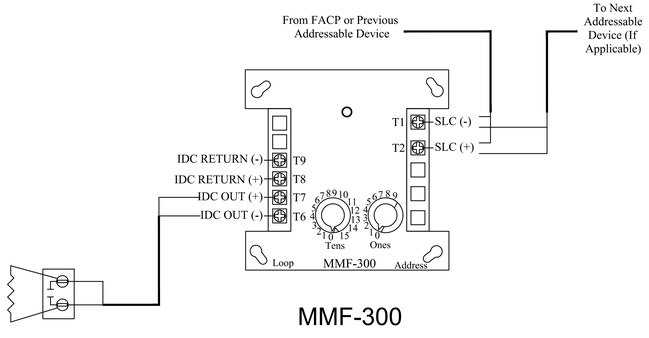
CRF-300

NOTE: SET DEVICE ADDRESS PER DRAWING BEFORE INSTALLATION



B300-6

NOTE: SET DEVICE ADDRESS PER DRAWING BEFORE INSTALLING OF DETECTOR HEAD



MMF-300

NOTE: SET DEVICE ADDRESS PER DRAWING BEFORE INSTALLATION

John Mocker, SET
John Mocker
NICET Level IV - Fire Alarm
Technician ID: 137219
Expires: 11/1/2025

MEDCOM BUILDING 46
91-1227 ENTERPRISE AVENUE
KAPOLEI, HI 96707

PROJECT:

ELECTRICAL CONTRACTOR:
Z.S ELECTRICAL 122 HAILI STREET HILO, HI 96720

DRAWING TITLE:
FIRE ALARM SYSTEM WIRING DETAIL

SCALE:
AS SHOWN

PROJECT NUMBER:

DATE:
09/23/2025

RE-WORK:
--

SHEET:
09 OF 9 SHEETS

FA-09

CA-202505-C Addendum

Attachment #3

BLDG 46 Specification Section 08111

SECTION 08111 – HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.01 SUMMARY:

A. Section Includes:

1. Exterior hollow-metal doors and frames.

2. Hollow-metal panels where indicated.

B. Related Requirements:

1. Division 01 – General Requirements: Administrative, procedural, and temporary work requirements.

2. SECTION 08710 – FINISH HARDWARE

3. SECTION 08800 – GLAZING

4. SECTION 09901 – PAINTING

1.02 REFERENCES

A. ASTM International (ASTM)

1. ASTM A153/A153M – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

2. ASTM A653/A653M – Standard Specification for Steel Sheet, Zinc-Coated or Zinc-Iron Alloy-Coated by the Hot-Dip Process.

3. ASTM A879/A879M – Standard Specification for Steel Sheet, Zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface.

4. ASTM A1008/A1008M – Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable.

5. ASTM A1011/A1011M – Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.

B. Steel Door Institute (SDI)

1. SDI A250.4 – Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frame Anchors and Hardware Reinforcings

2. SDI A250.6 – Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames

3. SDI A250.8 – Specifications for Standard Steel Doors and Frames

4. SDI A250.10 – Test Procedure and Acceptance Criteria for Prime Painted Steel

Surfaces for Steel Doors and Frames

5. SDI A250.11 – Recommended Erection Instructions for Steel Frames

1.03 SUBMITTALS

A. Submit in accordance with SECTION 01300 – SUBMITTAL PROCEDURES.

B. Pre-Construction Submittals:

1. Product Data: Manufacturer's descriptive data for each type of door, frame, core, accessory, and finish.

2. Shop Drawings: Indicate elevations, dimensions, profiles, metal thicknesses, hardware preparations and reinforcements, anchors, joints, field splices, glazing, accessories, and adjacent construction.

3. Door and Frame Schedule: Use the same opening references indicated on the Drawings and coordinate with the final Door Hardware Schedule.

C. Informational Submittals:

1. Product Test Reports: For each type of hollow-metal door and frame assembly, prepared by a qualified testing agency.

2. Oversize Construction Certification: For fire-rated assemblies exceeding the size limitations of labeled assemblies, where applicable.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer specializing in hollow-metal doors and frames with a minimum five years documented experience.

B. Installer Qualifications: Minimum five years experience in work of this Section.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver hollow-metal work palletized, packaged, or crated to protect against damage during transit and storage. Do not use nonvented plastic

B. Deliver welded frames with two removable spreader bars tack welded to jambs at the bottom of frames

C. Store hollow-metal work vertically under cover, with heads up, on minimum 4-inch-high wood blocking.

D. Provide minimum 1/4-inch space between stacked doors to permit air circulation. Protect factory-finished units from damage

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Provide products by a qualified hollow-metal manufacturer regularly engaged in manufacturing doors and frames complying with this Section

B. Substitutions: In accordance with Division 01 requirements.

2.02 EXTERIOR HOLLOW-METAL DOORS AND FRAMES

A. Extra-Heavy-Duty Doors and Frames: SDI A250.8, Level 3.

1. Physical Performance: Level A in accordance with SDI A250.4.

2. Doors:

a. Type: As indicated in the Door and Frame Schedule

b. Thickness: 1-3/4 inches.

c. Face: Metallic-coated steel sheet, minimum 0.053-inch thickness, with minimum A60 coating

d. Edge Construction: Model 2, seamless.

e. Core: Manufacturer’s standard kraft-paper honeycomb, polystyrene, polyurethane, polyisocyanurate, mineral-board, or vertical steel-stiffener core.

3. Frames:

a. Material: Metallic-coated steel sheet, minimum 0.053-inch thickness, with minimum A60 coating.

b. Construction: Full-profile welded.

4. Exposed Finish: Prime.

B. Hollow-Metal Panels: Provide panels of the same materials, construction, and finish as adjacent door assemblies.

2.03 FRAME ANCHORS

A. Jamb Anchors:

1. Stud-Wall Type: Designed to engage studs, welded to backs of frames, and not less than 0.042 inch thick.

B. Floor Anchors: Formed from the same material as frames, minimum 0.042 inch thick, with two holes for fasteners at monolithic concrete slabs

2.04 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel, Type B, suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A1011/A1011M, Commercial Steel, Type B, free of scale, pitting, and surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A653/A653M, Commercial Steel, Type B.

D. Frame Anchors: ASTM A879/A879M, Commercial Steel, 12G coating designation, mill

phosphatized. Hot-dip galvanize anchors built into exterior walls in accordance with ASTM A153/A153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized in accordance with ASTM A153/A153M.

F. Power-Actuated Fasteners in Concrete: Corrosion-resistant fastener system suitable for the application indicated.

G. Mineral-Fiber Insulation: ASTM C665, Type I, unfaced slag- or rock-wool fiber with maximum flame-spread index of 25 and smoke-developed index of 50.

2.05 FABRICATION

A. Fabricate hollow-metal work rigid, free of defects, warp, and buckle, and accurately formed to required sizes and profiles. Factory fit and assemble units where practical.

B. Close door top edges with flush closures of the same material as face sheets. Provide bottom closures or channels where required for weather stripping.

C. Provide weep-hole openings at bottoms of exterior doors and seal joints in top edges against water penetration.

D. Fabricate frames in sections only where required by shipping or handling limitations; provide alignment plates or angles at joints of the same metal thickness as frames.

E. Weld floor anchors to jamb bottoms with at least four spot welds per anchor, except provide anchor clips or countersunk holes for slip-on drywall frames.

F. Provide jamb anchors in number and spacing required by SDI A250.8 and the wall construction indicated.

G. Provide three silencers at strike jambs of single-door frames and two silencers at heads of double-door frames, except at weather-stripped frames.

H. Factory prepare doors and frames for hardware in accordance with SDI A250.6, BHMA A156.115, the Door Hardware Schedule, and approved templates.

2.06 STEEL FINISHES

A. Prime Finish: Clean, pretreat, and apply manufacturer’s standard primer.

1. Shop Primer: Fast-curing, lead- and chromate-free primer complying with SDI A250.10 and compatible with specified field-applied coatings.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine substrates, openings, and conditions for compliance with installation tolerances and conditions affecting performance.

B. Verify locations of embedded and built-in anchors before frame installation.

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

3.02 PREPARATION

A. Remove welded-in shipping spreaders. Grind, fill, and dress exposed surfaces so repaired areas are smooth, flush, and invisible.

B. Drill and tap doors and frames for nontemplated mortised and surface-mounted hardware.

3.03 INSTALLATION

A. Install hollow-metal work plumb, rigid, properly aligned, and securely fastened in accordance with the Drawings and manufacturer's instructions

B. Install hollow-metal frames in accordance with SDI A250.11.

1. Set frames accurately in position; plumb, align, and brace securely until permanent anchors are set.

2. Field splice sectional frames at approved locations by continuously welding face joints; grind, fill, and dress splices smooth, flush, and invisible.

3. Provide floor anchors at each jamb and mullion extending to the floor and secure with postinstalled expansion anchors.

4. Solidly pack mineral-fiber insulation inside frames installed in metal-stud partitions.

5. Installation Tolerances:

a. Squareness: Plus or minus 1/16 inch.

b. Alignment: Plus or minus 1/16 inch.

c. Twist: Plus or minus 1/16 inch.

d. Plumbness: Plus or minus 1/16 inch.

C. Fit hollow-metal doors accurately within frames.

1. Clearances:

a. Between door and frame jambs and head: 1/8 inch, plus or minus 1/32 inch

b. Between edges of pairs of doors: 1/8 inch to 1/4 inch, plus or minus 1/32 inch.

c. At bottom of door: 5/8 inch, plus or minus 1/32 inch.

d. Between door face and stop: 1/16 inch to 1/8 inch, plus or minus 1/32 inch.

3.04 ADJUSTING AND CLEANING

A. Check and readjust operating hardware immediately before final inspection. Leave work in complete and proper operating condition.

B. Remove and replace defective, warped, bowed, or otherwise unacceptable hollow-metal work.

C. Remove grout, adhesive, and other foreign matter immediately after installation.

D. Sand rusted or damaged prime-coated areas smooth and apply compatible rust-inhibitive touchup primer.

E. Repair abraded metallic-coated surfaces with galvanizing repair paint in accordance with manufacturer's instructions.

3.05 PROTECTION

A. Protect installed hollow-metal work from damage until completion of construction.

END OF SECTION 08111