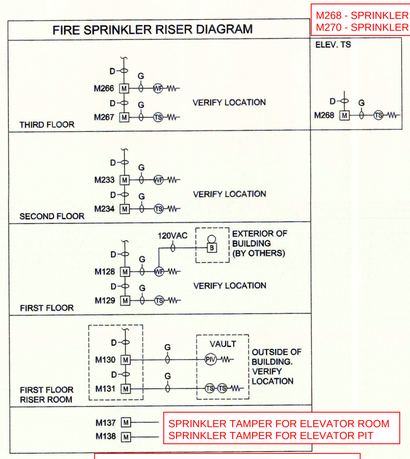



M268 - SPRINKLER TAMPER FOR 3RD FLOOR ELEVATOR
M270 - SPRINKLER TAMPER FOR 3RD FLOOR STANDPIPE

SPRINKLER TAMPER FOR ELEVATOR ROOM
SPRINKLER TAMPER FOR ELEVATOR PIT

M133 - SPRINKLER WATERFLOW FOR STANDPIPE

## Symbols Legend

| Symbol | Description | Mounting |
|---|---|---|
| FACP | Intelligent Fire Alarm System Control Panel | CAB-400AAEnclosure at 72" to Top |
| APSX | Audible Power Supply | Surface |
| ANN | Remote Annunciator | ABF1-D Semi Flush 60" to Center |
| | Intelligent Photo Smoke Detector | 4 Square Deep with 3" Round Ring |
| | Intelligent Heat Detector | 4 Square Deep with 3" Round Ring |
| F | Manual Pull Station | 1 Gang at 48" to Center |
| M | Intelligent Monitor Module | 4 Square Deep |
| C | Intelligent Relay Module | 4 Square Deep |
| | 135 degree fixed temperature Heat Detector | 4 Square Deep |
| SH | 120vac smoke Detector with isolated heat detector | 4 Square Deep |
| FS | Horn with 15cc Strobe | 1 Gang at 80" to Bottom |
| FS | Strobe 15cd | 1 Gang at 80" to Bottom |
| SM | Dual Sync Circuit module, 12 or 24 vdc, red | 4-11/16" Square Deep |
| DIALER | Digital Dialer | Surface |
| WF | Sprinkler Waterflow Switch | |
| TS | Sprinkler Tamper Switch | |

DH FSD

DOOR HOLDER
FIRE/SMOKE DAMPER

**GENERAL REQUIREMENT NOTES**

1.ALL WORK SHALL COMPLY WITH LATEST N.E.C. AND LOCAL CODES.

2.ALL EMPTY CONDUITS SHALL INCLUDE PULL STRING.

3.UNLESS NOTED OTHERWISE ALL WIRING SHALL BE IN GALVANIZED RIGID STEEL OR EMT CONDUIT WITH MINIMUM TRADE SIZE OF 3/4-INCH.

4.COORDINATE ALL WORK WITH OWNER REPRESENTATIVE FOR WORK SCHEDULES DETAILS PRIOR TO DECOMMISSIONED, DEMOLITION, RELOCATION, SHUT DOWN OF FIRE ALARM PANELS AND PANELBOARDS & ETC.

5.PROVIDE PATCH AND PAINT AS REQUIRED FOR ALL NEW EQUIPMENT, DEVICES, AND DEMO AREAS.

6.PROVIDE ELECTRICAL AND FIRE ALARM WORK ACCORDING TO CONSTRUCTION PHASING SCHEDULES AT THE END OF EACH AREA OF CONSTRUCTION PER PHASING PLANNING SCHEDULE, PROVIDE ELECTRICAL AND FIRE ALARM TESTING TO INSURE COMPLETION OF WORK IS SATISFACTORY FOR ACCEPTANCE.

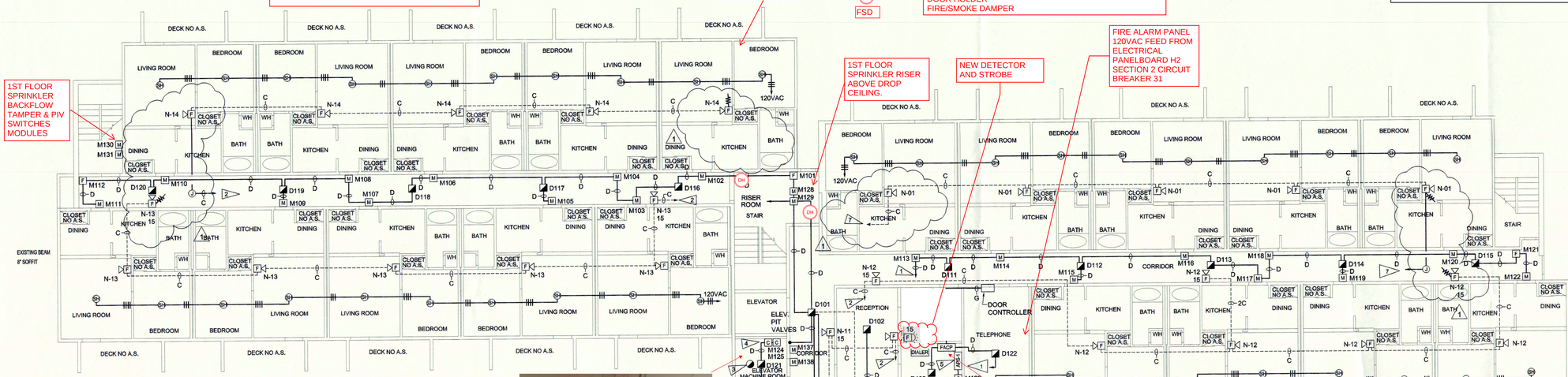
ADA DWELLING UNIT - 111

1ST FLOOR SPRINKLER BACKFLOW TAMPER & PIV SWITCHES MODULES

1ST FLOOR SPRINKLER RISER ABOVE DROP CEILING.

NEW DETECTOR AND STROBE

FIRE ALARM PANEL 120VAC FEED FROM ELECTRICAL PANELBOARD H2 SECTION 2 CIRCUIT BREAKER 31




EXTERIOR BELL/STROBE

NEW DETECTOR AND STROBE

FIVE FIRE ALARM RELAY MODULES SHOWN ARE:
M123 - DOOR HOLDERS
M132 - NAC TRIGGER 1ST FLOOR
M139 - MONITOR WATERFLOW
M140 - MONITOR ALARM
M141 - FIRE/SMOKE DAMPER

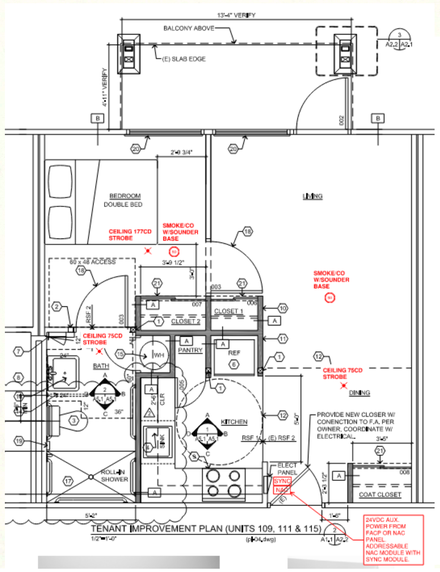
FIRE/SMOKE DAMPERS 24VDC POWER

DOOR HOLDERS 24VDC POWER

1ST FLOOR 24VDC NAC PANEL

FIRE ALARM MONITORING COMPANY IS ALARM CENTER ACCOUNT # LOC-AES-17420

ADA DWELLING UNIT - 106




TYPICAL DWELLING UNIT FIRE ALARM PLAN

TRES WEST ENGINEERS

TRES WEST ENGINEERS, INC.
2702 SOUTH 42ND STREET, SUITE 301
TACOMA, WA 98409-7315
Phone: 253.472.3300
www.treswest.com

1ST FLOOR FIRE ALARM PLAN
REFERENCE ONLY

THIS DRAWING WAS PRODUCED FROM ORIGINAL AS-BUILT DRAWINGS AND FIELD OBSERVATIONS, AND MAY NOT REPRESENT AN ACCURATE AS-BUILT CONDITION. DISCREPANCIES MAY BE ENCOUNTERED, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL CONDITIONS.

BRIARWOOD APARTMENTS
18026 MIDVALE AVENUE NORTH SEATTLE, WASHINGTON

FIRE ALARM

FA-1

1ST FLOOR SPRINKLER BACKFLOW TAMPER & PIV SWITCHES MODULES

VAULT — OUTSIDE OF BUILDING. VERIFY LOCATION

EXTERIOR SPRINKLER BELL

MIDVALE AVE. N

EXISTING BEAM 8" SOFFIT

2ND FLOOR SPRINKLER RISER ABOVE DROP CEILING.

NEW SMOKE DETECTOR

(E)FIRE/SMOKE DAMPER

## SECOND FLOOR PLAN

SCALE: 1/8"=1'0"

TRES WEST ENGINEERS

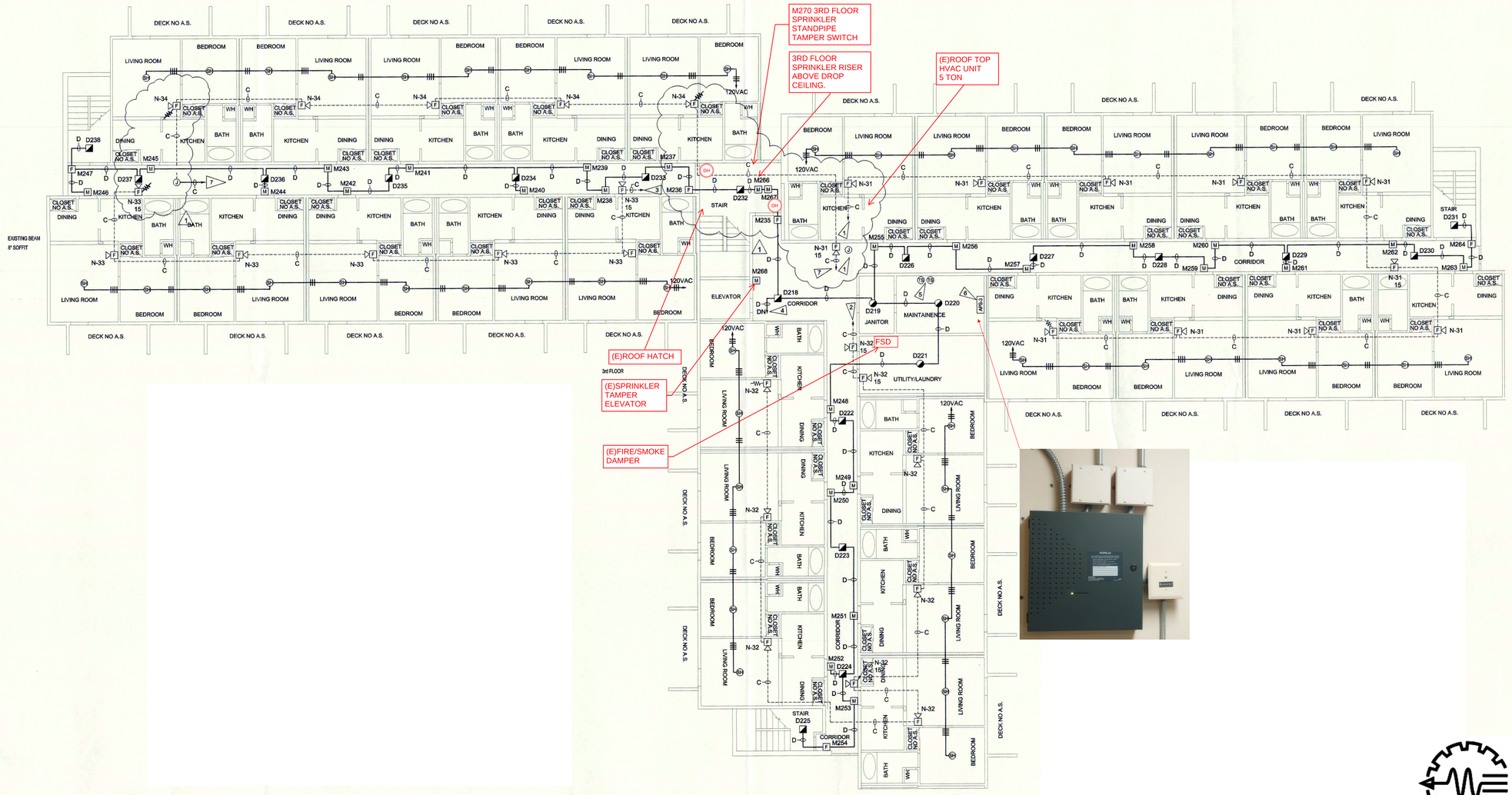
TRES WEST ENGINEERS, INC.
2702 SOUTH 42ND STREET, SUITE 301
TACOMA, WA 98409-7315
Phone: 253.472.3300
www.treswest.com

2ND FLOOR FIRE ALARM PLAN
REFERENCE ONLY

THIS DRAWING WAS PRODUCED FROM ORIGINAL AS-BUILT DRAWINGS AND FIELD OBSERVATIONS, AND MAY NOT REPRESENT AN ACCURATE AS-BUILT CONDITION. DISCREPANCIES MAY BE ENCOUNTERED, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL CONDITIONS.

BRIARWOOD APARTMENTS
18026 MIDVALE AVENUE NORTH SEATTLE, WASHINGTON
FIRE ALARM

FA-2






## THIRD FLOOR PLAN

SCALE: 1/8"=1'0"

TRES WEST ENGINEERS, INC.
2702 SOUTH 42ND STREET, SUITE 301
TACOMA, WA 98409-7315
Phone: 253.472.3300
www.treswest.com

3RD FLOOR FIRE ALARM PLAN
REFERENCE ONLY



BRIARWOOD APARTMENTS
18026 MIDVALE AVENUE NORTH SEATTLE, WASHINGTON

FIRE ALARM

## King County Housing Authority Briarwood Apartments Building Fire Alarm Control Panel FACP General Input and Output Matrix

| | | System Outputs | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ACTIVATION OF LOCAL ALARM AT FACP (LCD DISP. AUDIBLE INDICATION) | DISPLAY ALARM AT ANNUCIATOR | ACTIVATE ALL AUDIBLE/VISIBLE DEVICES & INCLUDING ALL DWELLING UNIT. | RELEASE DOOR HOLDERS AND SHUTDOWN COILING DOORS PER FLOOR | FIRE SMOKE DAMPERS | HVAC SHUNT DOWN | ELEVATOR MAIN RECALL | ELECTRICAL ALTERNATE RECALL | ELEVATOR HAT RECALL | DWELLING UNIT SOUNDER BASES AND STROBES WITHIN THE UNIT. | PRE-ACTION RELEASE | TRANSMIT ALARM EVENTS TO CENTRAL STATION MONITORING | TRANSMIT SUPERVISORY EVENTS TO CENTRAL STATION MONITORING | TRANSMIT GENERAL TROUBLE EVENTS TO CENTRAL STATION MONITORING |
| System Inputs | FIRE ALARM PANEL | X | X | | | | | | | | | | | | | X |
| | PULL STATIONS | X | X | X | X | X | | | | | | | X | | | X |
| | SMOKE DETECTORS | X | X | X | X | X | X | | | | | | X | | | X |
| | ELEVATOR LOBBY 1ST SMOKE DETECTOR | X | X | X | X | X | X | | X | | | | X | | | X |
| | ELEVATOR LOBBY ALL OTHER SMOKE DETECTORS | X | X | X | X | X | X | X | | | | | X | | | X |
| | ELEVATOR MACHINE ROOM SMOKE | X | X | X | X | X | X | | X | X | | | X | | | X |
| | ELEVATOR MACHINE ROOM HEAT | X | X | X | X | X | X | | X | | | | X | | | X |
| | ELEVATOR MACHINE POWER SHUNT LOSS | X | X | | | | | | | | | | | | X | X |
| | ELEVATOR PIT SPRINKLER TAMPER SWITCH | X | X | | | | | | | | | | | | X | X |
| | SPRINKLER WATER FLOW SWITCHES | X | X | X | X | X | X | X | | | | | X | | | X |
| | SPRINKLER TAMPER SWITCHES | X | X | | | | | | | | | | | | X | X |
| | DWELLING UNIT SMOKE DETECTOR | X | X | | | | | | | | X | | | | X | X |
| | DWELLING UNIT ANY 2 SMOKE DETECTORS | X | X | X | X | X | X | | | | X | | X | | | X |

**NOTES: ALL FIRE ALARM DEVICES SHALL REPORT TO CENTRAL STATION MONITORING BY POINT.**

**PROVIDE BYPASS SWITCHES AS REQUIRED MAINTAINING FIRE ALARM SYSTEM DURING MAINTENANCE AND ANNUAL INSPECTION.**

**ALL FIRE ALARM DEVICES WILL LATCH, EXCEPT FOR DWELLING UNIT FIRST SMOKE DETECTOR, SPRINKLER TAMPER, AND PIV SWITCHES.**




1

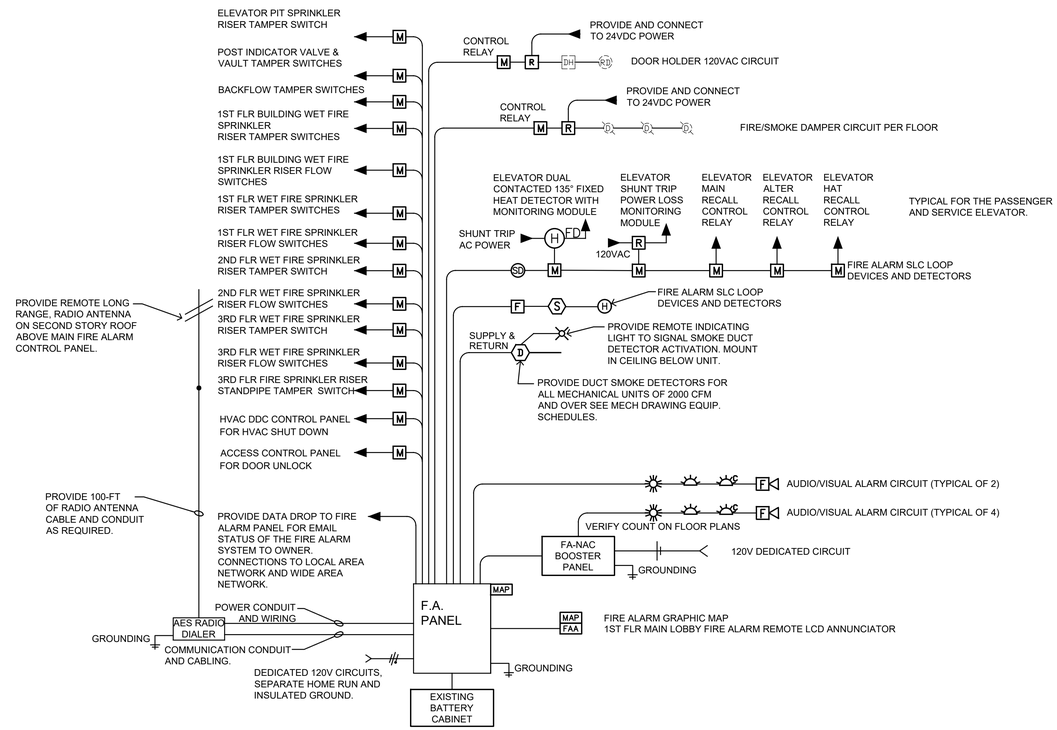
SCALE: NTS

DIAGRAM NOTES:

1. CONTRACTOR TO PROVIDE ADDRESSABLE SMOKE DETECTORS IN ELEVATOR MACHINE ROOM AND ELEVATOR LOBBY FOR ELECTRICAL RECALL PROGRAM FUNCTIONS. CONTRACTOR TO PROVIDE THREE (3) ADDRESSABLE RELAY MODULES FOR ELECTRICAL RECALL MAIN, ALTERNATE, HAT PROGRAM FUNCTIONS PER ELEVATOR CODE. CONTRACTOR TO PROVIDE COMPLETE WIRING AND CONNECTIONS TO ELEVATOR CONTROLLER FOR COMPLETE OPERATION OF RECALL SYSTEM.
2. FA TO PROVIDE DUAL 120V RATED FIXED HEAT 135°F DETECTORS FOR ELEVATOR SHUNT TRIP CONTROL. FA TO PROVIDE ADDRESSABLE MINI POINT MODULES TO MONITOR HEAT DETECTORS PER ELEVATOR CODE. CONTRACTOR TO PROVIDE COMPLETE CONNECTIONS TO SHUNT TRIP COIL IN SWITCH, RELAY, AND POWER INDICATION LED LIGHT. PROVIDE NAMEPLATES ADJACENT TO DETECTORS "DO NOT TEST".
3. CONTRACTOR TO COORDINATE CONNECTION REQUIREMENTS WITH ELEVATOR SUPPLIER/CONTRACTOR PRIOR TO WORK.
4. CONTRACTOR TO PROVIDE COMPLETE POWER AND CONTROL CONNECTIONS TO ELEVATOR SYSTEM FOR COMPLETE OPERATION PER THE MANUFACTURER'S INSTRUCTIONS, WIRING DIAGRAMS, AND ALL CODES.
5. CONTRACTOR TO PROVIDE ADDRESSABLE MONITORING MODULE FOR ELEVATOR SHUNT TRIP POWER MONITORING. PROVIDE 120VAC INTERFACE RELAY INSIDE ENCLOSURE TO BE TIE INTO THE SHUNT TRIP POWER SOURCE FOR MONITORING THE POWER PER SEATTLE ELEVATOR CODE.
6. CONTRACTOR TO PROVIDE ADDRESSABLE MONITORING MODULE FOR EXISTING ELEVATOR SHUNT TRIP SPRINKLER TAMPER SWITCH.

## Z REQUIREMENT NOTES

1. ALL WORK SHALL COMPLY WITH LATEST N.E.C. AND LOCAL CODES.
2. ALL EMPTY CONDUITS SHALL INCLUDE PULL STRING.
3. UNLESS NOTED OTHERWISE ALL WIRING SHALL BE IN GALVANIZED RIGID STEEL OR EMT CONDUIT WITH MINIMUM TRADE SIZE OF 3/4-INCH.
4. COORDINATE ALL WORK WITH OWNER REPRESENTATIVE FOR WORK SCHEDULES DETAILS PRIOR TO DECOMMISSIONED, DEMOLITION, RELOCATION, SHUT DOWN OF FIRE ALARM PANELS AND PANELBOARDS & ETC.
5. PROVIDE PATCH AND PAINT AS REQUIRED FOR ALL NEW EQUIPMENT, DEVICES, AND DEMO AREAS.
6. PROVIDE ELECTRICAL AND FIRE ALARM WORK ACCORDING TO CONSTRUCTION PHASING SCHEDULES AT THE END OF EACH AREA OF CONSTRUCTION PER PHASING PLANNING SCHEDULE, PROVIDE ELECTRICAL AND FIRE ALARM TESTING TO INSURE COMPLETION OF WORK IS SATISFACTORY FOR ACCEPTANCE.




2

SCALE: NTS

DIAGRAM NOTES:

1. PROVIDE ALL J-BOXES, CONDUIT, WIRING & CONNECTIONS TO ALL NEW DEVICES AS REQUIRED FOR COMPLETE FIRE ALARM SYSTEM.
2. REFER TO FLOOR PLAN FOR DEVICE COUNTS.
3. ALL DEVICES WILL BE MOUNTED IN AN ACCESSIBLE SPACE AND AT THE ELEVATION PER NFPA 72, ADA, AND AHJ CODES.
4. PROVIDE FLUSH MOUNT BACK BOXES FOR ALL DEVICES IN ALL FINISHED SPACE.
5. PROVIDE COMPLETE GROUNDING TO EQUIPMENT PER MANUFACTURERS RECOMMENDATION.
6. SEE FIRE ALARM SPECIFICATION FOR COMPLETE DETAILS.
7. PROVIDE NEW FIRE ALARM PANEL ADDRESSABLE.
8. PROVIDE SHUT DOWN CONNECTIONS FOR ALL 2000CFM HVAC UNITS WITH DUCT DETECTORS AS SHOWN.
9. SET ALL VISUAL DEVICES TO PROVIDE THE RIGHT COVERAGE OF CANDELA FOR THE SPACE PER NFPA 72 AND AHJ CODES.
10. SET ALL AUDIO DEVICES TO TEMPORAL AND TO BE 15dB ABOVE AMBIENT SOUND LEVEL OF THE ROOM PER NFPA 72 CODES TABLE.
11. ALL AUDIO AND VISUAL DEVICE WILL BE SYNC PER NFPA 72 CODES.
12. PROVIDE COMPLETE REPROGRAMMING OF SYSTEM TO UPDATE ALL ZONES, ADDRESSES, AND DIALER MONITORING BY POINTS.
13. PROVIDE COMPLETE SHOP PLANS FOR INSTALLATION AND AS-BUILT SET OF THESE PLANS NEXT TO FIRE ALARM PANEL ON COMPLETION.
14. PROVIDE CD-ROM, DVD, OR FINGER DRIVE OF PROGRAM DATA IN FIRE ALARM PANEL AS REQUIRED BY NFPA 72 CODES.
15. PROVIDE FIRE ALARM CURRENT AES RADIO DIALER OR EQUAL WITH REMOTE LONG RANGE ANTENNA TO MONITOR ALL FIRE ALARM LOG EVENTS (ALARM, SUPERVISORY, AND TROUBLE) TO TRANSMIT TO UL LISTED CENTRAL STATION MONITORING IN THE STATE OF WASHINGTON. COORDINATE MONITORING COMPANY WITH SOUND TRANSIT. MOUNT RADIO DIALER ADJACENT TO THE MAIN FIRE ALARM PANEL. TEST RADIO FOR SIGNAL WITH NORMAL ANTENNA, IF NO SIGNAL THEN MOUNT REMOTE LONG RANGE ANTENNA ON SECOND STORY ROOF TOP. COORDINATE ROUTING OF RADIO ANTENNA CONDUIT AND LOCATION OF ROOF TOP ANTENNA WITH OWNER PRIOR TO INSTALLATION. PROVIDE 24VDC POWER FROM FIRE ALARM PANEL OR FIRE ALARM AUX POWER AND PROVIDE BATTERY-BACKUP IN RADIO DIALER. PROVIDE ALL EQUIPMENT, CONNECTIONS, AND PROGRAMMING FOR A COMPLETE OPERATIONAL SYSTEM.
16. PROVIDE ADDITIONAL NAC POWER SUPPLIES AS REQUIRED FOR NAC CIRCUITS AND 24VDC DOOR HOLDERS FOR A COMPLETE OPERATIONAL SYSTEM.


TRES WEST ENGINEERS

TRES WEST ENGINEERS, INC.
2702 SOUTH 42ND STREET, SUITE 301
TACOMA, WA 98409-7315
Phone: 253.472.3300
www.treswest.com


06/11/2024

PROJECT TITLE
KING COUNTY HOUSING AUTHORITY BRIARWOOD APARTMENTS FIRE ALARM SYSTEM REPLACEMENT

PROJECT ADDRESS
18026 MIDVALE AVE. N.
SHORELINE, WA. 98133

| REVISION | DATE |
|---|---|
| 3 | |
| 2 | |
| 1 | |
| BID SET | 06/11/2024 |
| ISSUED | DATE |

SHEET TITLE
FIRE ALARM ONE-LINE DIAGRAMS PLAN

| | |
|---|---|
| DRAWN | BCY |
| CHECKED | RWA |
| TWE JOB # | 240404 |
| CLIENT JOB # | |
| SHEET SCALE | NTS |

SHEET NUMBER
FA-0

240404-FA-0_FIRE ALARM ONE-LINE DIAGRAMS.dwg
6/27/2024 11:1

# BRIARWOOD APARTMENT EXISTING FIRE ALARM SYSTEM POINT LIST

Notes: AFP 400 with 2 loops running in clip mode. Clip only supports 99 detectors and 99 modules per loop. Example of detector's loop and address - D203 stands for Loop 2 Detector 03, M111 is Loop 1 Moduel 11. If you are using the tables to sort in any way, make sure you reset your sorting options if you are sorting another column or else you could be missing infomation.

**LOOP 1 DETECTOR'S**

| ADDRESS | LOCATION | TYPE |
|---|---|---|
| D101 | FL1 ELEVATOR LOBBY | SMOKE PHOTO |
| D102 | RECEPTION | SMOKE PHOTO |
| D103 | AT FACP | SMOKE PHOTO |
| D104 | LOBBY NW | SMOKE PHOTO |
| D105 | LOBBY SE | SMOKE PHOTO |
| D106 | SOUTH LOBBY HALL | SMOKE PHOTO |
| D107 | KITCHEN | ANALOG HEAT |
| D108 | FL1 MULTI PURPOSE E | SMOKE PHOTO |
| D109 | FL1 MULTI PURPOSE W | SMOKE PHOTO |
| D110 | FL1 STORAGE ROOM | SMOKE PHOTO |
| D111 | EAST HALL BY 102 | SMOKE PHOTO |
| D112 | EAST HALL BY 104 | SMOKE PHOTO |
| D113 | EAST HALL BY 105 | SMOKE PHOTO |
| D114 | EAST HALL BY 108 | SMOKE PHOTO |
| D115 | EAST HALL BY 109 | SMOKE PHOTO |
| D116 | WEAST HALL BY 111 | SMOKE PHOTO |
| D117 | WEST HALL BY 114 | SMOKE PHOTO |
| D118 | WEST HALL BY 115 | SMOKE PHOTO |
| D119 | WEST HALL BY 118 | SMOKE PHOTO |
| D120 | WEST HALL BY 119 | SMOKE PHOTO |
| D121 | ELEVATOR MACH RM | SMOKE PHOTO |
| D122 | TELEPHONE RM | SMOKE PHOTO |
| D123 | MANAGERS OFFICE | SMOKE PHOTO |
| D124 | MAILBOX AREA | SMOKE PHOTO |
| D125 | RESIDENCE SVSC OFC | SMOKE PHOTO |
| D126-D199 | NOT INSTALLED | |

**LOOP 1 MODULES**

| ADDRESS | LOCATION | TYPE |
|---|---|---|
| M101 | FL1 N CENTER EXIT | PULL |
| M102 | RM 111 | HEAT DETECTOR |
| M103 | RM 112 | HEAT DETECTOR |
| M104 | RM 113 | HEAT DETECTOR |
| M105 | RM 114 | HEAT DETECTOR |
| M106 | RM 115 | HEAT DETECTOR |
| M107 | RM 116 | HEAT DETECTOR |
| M108 | RM 117 | HEAT DETECTOR |
| M109 | RM 118 | HEAT DETECTOR |
| M110 | RM 119 | HEAT DETECTOR |
| M111 | RM 120 | HEAT DETECTOR |
| M112 | FL1 W HALL EXIT | PULL |
| M113 | RM 102 | HEAT DETECTOR |
| M114 | RM 103 | HEAT DETECTOR |
| M115 | RM 104 | HEAT DETECTOR |
| M116 | RM 105 | HEAT DETECTOR |
| M117 | RM 106 | HEAT DETECTOR |
| M118 | RM 107 | HEAT DETECTOR |
| M119 | RM 108 | HEAT DETECTOR |
| M120 | RM 109 | HEAT DETECTOR |
| M121 | FL1 E HALL EXIT | PULL |
| M122 | RM 110 | HEAT DETECTOR |
| M123 | MAGNETIC DOOR HOLDER | RELAY |
| M124 | ELEV RECALL PRIMARY | RELAY |
| M125 | ELEV RECALL ALT | RELAY |
| M126 | MAIN ENTRY | PULL |
| M127 | RM 101 | HEAT DETECTOR |
| M128 | FL1 WATERFLOW | WATERFLOW |
| M129 | FL1 TAMPER | SUPERVISORY |
| M130 | PIV | SUPERVISORY |
| M131 | BACKFLOW TAMPERS | SUPERVISORY |
| M132 | FL1 APS-1 | NAC TRIGGER |
| M133 | STANDPIPE WATERFLOW | WATERFLOW |
| M134 | MULTI PURPOSE RM N | PULL |
| M135 | MULTI PURPOSE RM S | PULL |
| M136 | FL1 SOUTH EXIT | PULL |
| M137 | ELEV RM TAMPER | SUPERVISORY |
| M138 | ELEV PIT TAMPER | SUPERVISORY |
| M139 | MONITOR WATERFLOW | RELAY |

**LOOP 2 DETECTORS**

| ADDRESS | LOCATION | TYPE |
|---|---|---|
| D201 | FL2 ELEVATOR LOBBY | SMOKE PHOTO |
| D202 | FL2 JANITOR CLOSET | ANALOG HEAT |
| D203 | FL2 MAINTENANCE | ANALOG HEAT |
| D204 | FL2 LAUNDRY\UTILITY | ANALOG HEAT |
| D205 | SOUTH HALL BY 220 | SMOKE PHOTO |
| D206 | SOUTH HALL BY 222 | SMOKE PHOTO |
| D207 | SOUTH HAL BY 225 | SMOKE PHOTO |
| D208 | EAST HAL BY 201 | SMOKE PHOTO |
| D209 | EAST HAL BY 203 | SMOKE PHOTO |
| D210 | EAST HALL BY 204 | SMOKE PHOTO |
| D211 | EAST HALL BY 207 | SMOKE PHOTO |
| D212 | EAST HALL BY 208 | SMOKE PHOTO |
| D213 | WAST HAL BY 210 | SMOKE PHOTO |
| D214 | WEST HALL BY 213 | SMOKE PHOTO |
| D215 | WEST HALL BY 214 | SMOKE PHOTO |
| D216 | WEST HALL BY 217 | SMOKE PHOTO |
| D217 | WEST HALL BY 218 | SMOKE PHOTO |
| D218 | FL3 ELEVATOR LOBBY | SMOKE PHOTO |
| D219 | FL3 JANITOR CLOSET | ANALOG HEAT |
| D220 | FL3 MAINTENANCE | ANALOG HEAT |
| D221 | FL3 LAUNDRY UTILITY | ANALOG HEAT |
| D222 | SOUTH HALL BY 320 | SMOKE PHOTO |
| D223 | SOUTH HALL BY 322 | SMOKE PHOTO |
| D224 | SOUTH HALL BY 325 | SMOKE PHOTO |
| D225 | FL3 SOUTH STAIRS | SMOKE PHOTO |
| D226 | EAST HALL BY 301 | SMOKE PHOTO |
| D227 | EAST HALL BY 303 | SMOKE PHOTO |
| D228 | EAST HALL BY 304 | SMOKE PHOTO |
| D229 | EAST HALL BY 307 | SMOKE PHOTO |
| D230 | EAST HALL BY 308 | SMOKE PHOTO |
| D231 | FL3 EAST STIARS | SMOKE PHOTO |
| D232 | FL3 CENTER STAIRS | SMOKE PHOTO |
| D233 | WEST HALL BY 310 | SMOKE PHOTO |
| D234 | WEST HALL BY 313 | SMOKE PHOTO |
| D235 | WEST HALL BY 314 | SMOKE PHOTO |
| D236 | WEST HALL BY 317 | SMOKE PHOTO |
| D237 | WEST HALL BY 318 | SMOKE PHOTO |
| D238 | FL3 WEST STAIRS | SMOKE PHOTO |
| D239-D299 | NOT INSTALLED | |

**LOOP 2 MODULES**

| ADDRESS | LOCATION | TYPE |
|---|---|---|
| M201 | FL2 CENTER ST EAST | PULL |
| M202 | FL2 CENTER ST WEST | PULL |
| M203 | RM 210 | HEAT DETECTOR |
| M204 | RM 211 | HEAT DETECTOR |
| M205 | RM 212 | HEAT DETECTOR |
| M206 | RM 213 | HEAT DETECTOR |
| M207 | RM 214 | HEAT DETECTOR |
| M208 | RM 215 | HEAT DETECTOR |
| M209 | RM 216 | HEAT DETECTOR |
| M210 | RM 217 | HEAT DETECTOR |
| M211 | RM 218 | HEAT DETECTOR |
| M212 | FL2 WEST STAIRS | PULL |
| M213 | RM 219 | HEAT DETECTOR |
| M214 | WEST STAIRS EXIT | PULL |
| M215 | RM 220 | HEAT DETECTOR |
| M216 | RM 221 | HEAT DETECTOR |
| M217 | RM 222 | HEAT DETECTOR |
| M218 | RM 223 | HEAT DETECTOR |
| M219 | RM 224 | HEAT DETECTOR |
| M220 | RM 225 | HEAT DETECTOR |
| M221 | FL2 SOUTH STAIRS | PULL |
| M222 | RM 201 | HEAT DETECTOR |
| M223 | RM 202 | HEAT DETECTOR |
| M224 | RM 203 | HEAT DETECTOR |
| M225 | RM 204 | HEAT DETECTOR |
| M226 | RM 205 | HEAT DETECTOR |
| M227 | RM 206 | HEAT DETECTOR |
| M228 | RM 207 | HEAT DETECTOR |
| M229 | RM 208 | HEAT DETECTOR |
| M230 | RM 209 | HEAT DETECTOR |
| M231 | FL2 EAST STAIRS | PULL |
| M232 | FL2 APS-2 | NAC TRIGGER |
| M233 | FL2 WATERFLOW | WATERFLOW |
| M234 | FL2 TAMPER | SUPERVISORY |
| M235 | FL3 CENTER ST EAST | PULL |
| M236 | FL3 CENTER ST WEST | PULL |
| M237 | RM 310 | HEAT DETECTOR |
| M238 | RM 311 | HEAT DETECTOR |
| M239 | RM 312 | HEAT DETECTOR |

| | | |
|---|---|---|
| M140 | MONITOR ALARM | RELAY |
| M141 | DOOR/DAMPER | RELAY |
| M142-M196 | NOT INSTALLED | |
| M197 | SHUNT POWER | SUPERVISORY |
| M198 | SHUNT HEAT | SUPERVISORY |
| M199 | FLASH HAT | RELAY |

| | | |
|---|---|---|
| M240 | RM 313 | HEAT DETECTOR |
| M241 | RM 314 | HEAT DETECTOR |
| M242 | RM 315 | HEAT DETECTOR |
| M243 | RM 316 | HEAT DETECTOR |
| M244 | RM 317 | HEAT DETECTOR |
| M245 | RM 318 | HEAT DETECTOR |
| M246 | RM 319 | HEAT DETECTOR |
| M247 | FL3 WEST STAIRS | PULL |
| M248 | RM 320 | HEAT DETECTOR |
| M249 | RM 321 | HEAT DETECTOR |
| M250 | RM 322 | HEAT DETECTOR |
| M251 | RM 323 | HEAT DETECTOR |
| M252 | RM 324 | HEAT DETECTOR |
| M253 | RM 325 | HEAT DETECTOR |
| M254 | FL3 SOUTH STAIRS | PULL |
| M255 | RM 301 | HEAT DETECTOR |
| M256 | RM 302 | HEAT DETECTOR |
| M257 | RM 303 | HEAT DETECTOR |
| M258 | RM 304 | HEAT DETECTOR |
| M259 | RM 305 | HEAT DETECTOR |
| M260 | RM 306 | HEAT DETECTOR |
| M261 | RM 307 | HEAT DETECTOR |
| M262 | RM 308 | HEAT DETECTOR |
| M263 | RM 309 | HEAT DETECTOR |
| M264 | FL3 EAST STAIRS | PULL |
| M265 | FL3 APS-3 | NAC TRIGGER |
| M266 | FL3 WATERFLOW | WATERFLOW |
| M267 | FL3 TAMPER | SUPERVISORY |
| M268 | ELEV TAMPER | SUPERVISORY |
| M269 | NOT INSTALLED | |
| M270 | FL3 STANDPIPE | SUPERVISORY |
| M271-M299 | NOT INSTALLED | |

BRIARWOOD APARTMENT - INPUTS TO OUTPUTS

| | | | TRIGGER ON |
|---|---|---|---|
| **LOOP 1** | | | |
| M123 | DOOR HOLDER | RELAY | GLOBAL ALARM |
| M124 | ELEV RECALL PRIMARY | RELAY | 2ND AND 3RD FLOOR ELEVATOR LOBBY SMOKE DETECTORS |
| M125 | ELEV RECALL ALT | RELAY | ELEVATOR MACHINE ROOM SMOKE DETECTOR AND 1ST FLOOR ELEVATOR LOBBY SMOKE DETECTOR |
| M132 | FL1 APS-1 | NAC TRIGGER | GLOBAL ALARM |
| M139 | MONITOR WATERFLOW | RELAY | ALL SPRINKLER WATERFLOWS |
| M140 | MONITOR ALARM | RELAY | ALL (SMOKE DETEFCTORS / HEAT DETEFCTORS / PULL STSTAIONS) EXCEPT SPRINKLER WATERFLOWS |
| M141 | FIRE SMOKE DAMPER | RELAY | GLOBAL ALARM |
| M199 | FLASH HAT | RELAY | ELEVATOR MACHINE ROOM SMOKE DETECTOR |
| **LOOP 2** | | | |
| M232 | FL2 APS-2 | NAC TRIGGER | GLOBAL ALARM |
| M265 | FL3 APS-3 | NAC TRIGGER | GLOBAL ALARM |

NOTE: EXISTING DWELLING UNIT HAS 2 SMOKE/HEAT COMBOS DETECTORS CONNECTED TO THE MONITORING MODULLE THAT TRIGGERS THE ENTIRE BUILDING ALARM (GLOBAL ALARM).
VERIFY WITH AHJ IF THIS CAN CHANGE TO SUPERVISORY SIGNAL FOR REPLACEMENT FIRE ALARM SYSTEM.
OR IF ONE DWELLING DETECTOR WILL BE SUPERVISORY AND TWO CROSSED ZONED IN THE SAME UNIT WILL TRIGGER AN ENTIRE BUILDING ALARM (GLOBAL ALARM).

TRES WEST ENGINEERS, INC.
A Certified Diverse Firm - ● MWBE ● DBE ● SCS

TRES WEST ENGINEERS

King County Housing Authority

# King County Housing Authority Fire Alarm System Replacement Assessment Report

**Briarwood Apartments**

**18026 Midvale Ave. N**

**Shoreline, WA 98133**

CD Project No: KI2300365

Contact Person:

Mike Cuandra PM

Jone 11, 2024

Prepared by:


**Consultant Team**

Tres West Engineers, Inc.
2702 South 42nd Street, Suite 301
Tacoma, WA 98409-7315
Telephone: 253.472.3300
www.treswest.com

# FIRE ALARM SYSTEM – BRIARWOOD APARTMENTS ASSESSMENT REPORT:

## EXISTING BUILDING INFORMATION:

The existing Briarwood Apartments building is a three-story apartment building with a B and R2 occupancy. The building services seniors and disabled persons aged 62+.
This building has seventy (70) dwelling units.
There are sixty-seven (68) one (1) bedroom one (1) bathroom units and two (2) ADA one (1) bedroom one (1) bathroom units 106 and 111.

## APPLICABLE CODES AND STANDARDS:

| | |
|---|---|
| ADA (Americans with Disability Act) | International Mechanical Code (IMC) |
| International Building Code (IBC) | National Electrical Code (NFPA 70) |
| International Electrical Code (IEC) | National Fire Protection Agency (NFPA) |
| International Fire Code (IFC) | Washington State Energy Code |

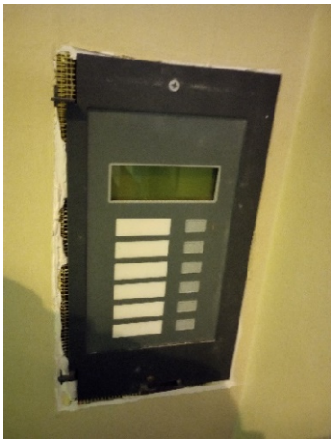
Standards:

| | |
|---|---|
| Institute of Electrical and Electronics Engineers (IEEE) | National Electrical Manufacturers Association (NEMA) |
| National Electrical Contractors Association (NECA) | Underwriters Laboratories (UL) |

## EXISTING FIRE ALARM SYSTEM EQUIPMENT INFORMATION:

The current fire alarm system main control panel is Notifier AFP-400 located in the Office off the main entry lobby on the first floor. The fire alarm was installed in 1999.
Power Panel H2 Circuit Breaker 31.
The UL-listed central station monitoring is provided by Smith Fire System Inc Account # LAC AES 17420 via AES Radio mounted below the main fire alarm panel in photo below:

The existing remote annunciator is located in the main entry lobby. It appears this existing remote annunciator has been disconnected and removed from the existing fire alarm system.
The new fire alarm system will replace this with a new remote annunciator.



The fire alarm NAC panels with sync modules are located on the first floor, adjacent to the main fire alarm panel. See the fire alarm panel photo above.

Second floor central storage room.

Third floor central storage room.

## EXISTING FIRE ALARM SYSTEM DETECTORS AND DEVICE COVERAGE INFORMATION:

The current fire alarm system has the following detectors and devices:

1. Addressable loop smoke detectors are in the common areas (corridors, multi-purpose room, and elevator lobbies), maintenance shop, main office, elevator machine room, and electrical rooms.
2. Stand-a-lone 120VAC smoke/heat detectors are in all dwelling units living rooms and bedrooms. The addressable loop monitor module monitors these smoke detectors per dwelling unit.
3. Addressable loop heat detectors are in the storage and laundry rooms on each floor.
4. There is a zonal dual-connected heat detector in the elevator machine room for elevator shunt trips and the other connection is for monitoring the heat detector status.
5. There is addressable loop pull stations at every exterior exit and every stairway on each level.
6. Notification and visual are horn/strobe devices in all common areas (corridors, multi-purpose room, offices, laundry rooms, some stairways, and elevator lobbies).
7. Dwelling unit notification and visual are stand-a-lone 120VAC smoke/heat detector horns in living and bedroom areas for local dwelling only and living area fire alarm system horn/strobe for full building alarm events.
8. There are two (2) ADA dwelling units (106 &111) notification and visual are stand-a-lone 120VAC smoke/heat detector horns in living and bedroom areas for local dwelling only and living area, bedroom, and restroom fire alarm system horn/strobes for full building alarm events.
9. The Sprinkler riser is located in the central stairways above the drop ceiling 1st, 2nd, and 3rd floors. Each riser has a water flow valve switch and a tamper valve switch. Adjacent to the northwest main road entry on site is the PIV and manhole with backflow device and tamper valve. On the 3rd floor, the standpipe tamper is located in the central stairway. The northwest stairway has the monitoring module for the site PIV and manhole backflow device tamper switch.

## EXISTING FIRE ALARM SYSTEM INTERFACE INFORMATION:

The current fire alarm system has the following:

1. Seven (7) door holders in the existing building two (2) are in the central stairway on 1st, 2nd, and 3rd floors. There is a one (1) in the multi-purpose room hallway.
2. Two (2) existing fire/smoke dampers in this building. They are located on the 2nd and 3rd floors adjacent to the laundry room in the corridor.
3. Elevator Recall in the 1st floor Elevator Machine Room –
   - Primary Elevator Recall to 1st floor.
   - Secondary Elevator Recall to 2nd floor.
   - Hat / Secondary Elevator Recall to 2nd floor turn on HAT symbol inside the elevator cab.
   - Shunt Trip Power monitoring.

- Daul Contact Heat Detector is monitored and provides the disconnect power to the elevator equipment.

## NFPA 72 EFORMS – FIRE ALARM SYSTEM RECORD OF COMPLETION / ANNUAL INSPECTION FORM

**REMOTE ANNUNCIATORS:**

| Type | Location |
|---|---|
| LCD Display | Main Entry Lobby |

**INITIATING DEVICES:**

| Type | Qty | Addressable or Conventional | Alarm or Supervisory | Sensing Technology |
|---|---|---|---|---|
| Manual Pull Stations | 18 | Addressable | Alarm | Contact |
| Smoke Detectors | 56 | Addressable | Alarm | Photo |
| Dwelling Zone Modules | 71 | Addressable | Supervisory | Contact |
| Dwelling 120VCA Smoke/Heat Detectors | 140 | Conventional | Supervisory | Contact |
| Duct Smoke Detectors | 0 | | | |
| Heat Detectors | 7 | (6)Addressable (1)Conventional | Alarm | 135° F Temp |
| Gas Detectors | NA | | | |
| Carbon Monoxide Detectors | NA | | | |
| Waterflow Switches | 4 | Addressable Module | Alarm | Contact |
| Tamper Switches | 5 | Addressable Module | Supervisory | Contact |
| Back Flow Tamper Switches | 2 | Addressable Module | Supervisory | Contact |
| PIV | 1 | Addressable Module | Supervisory | Contact |
| Elevator Shunt trip Power | 1 | Addressable Module | Supervisory | Contact |
| Elevator Dual Contacted Heat Detector | 1 | Addressable Module | Alarm | Contact |

**NOTIFICATION APPLIANCES:**

| Type | Quantity | Description |
|---|---|---|
| Audible | | |
| Visual | 6 | System Sensor |
| Combination of Audible and Visual | 105 | System Sensor |
| Dwelling 120VAC Smoke Detector Audible | 140 | Gentex |
| Sprinkler Exterior Bell | 1 | Wheelock |

| | | |
|---|---|---|
| Fire Alarm Exterior Bell/strobe | 1 | Wheelock Bell and System Sensor Strobe |

**SYSTEM CONTROL FUNCTIONS:**

| Type | Quantity |
|---|---|
| Hold-Open Door Releasing Devices | 7 |
| HVAC Shutdown | 1 |
| Fire/Smoke Dampers | 2 |
| Door Unlocking | |
| Elevator Recall | 3 |
| Elevator Shunt Trip | 1 |

## EXISTING FIRE ALARM SYSTEM OPERATION:

During the site visual inspection of the fire alarm system, it appears that the existing fire alarm system operates on the following:

- If any of the common area smoke detectors, heat detectors, manual pull stations, or waterflow devices will activate alarm events for all notification and visual devices in the entire building, to the building fire alarm system, and central station monitoring. Also, all Door Holders and Fire/Smoke Dampers will close.
- Elevator recall has four (4) different functions as follows below:
  1. Elevator Primary Recall – If the 2nd or 3rd elevator lobby smoke detector activates the alarm event elevator will recall to the 1st floor and open the cab door.
  2. Elevator Secondary Recall – If the 1st elevator lobby smoke detector activates the alarm event elevator will recall to the 2nd floor and open the cab door.
  3. Elevator Hat Recall – If the 1st elevator machine room smoke detector activates the alarm event elevator will recall to the 2nd floor, open the cab door, and turn on the fireman's HAT light symbol.
  4. Elevator Shunt Trip Dual Contact Fixed 135˚ Heat Detector – If the 1st Elevator Machine Room Heat Detector activates the alarm event the elevator power will be cut off.
  5. The elevator is required to have the 120VAC shunt trip power to be monitored. If the 120VAC power is off. The SLC loop addressable monitoring module activates a supervisory signal to the building fire alarm system and central station monitoring.
- If any of the dwelling unit smoke detectors activate the alarm event all smoke detectors within that dwelling unit will be notification devices in the smoke detectors sound within the unit only. Each dwelling unit has an SLC loop addressable monitoring module to activate a supervisory signal to the building fire alarm system and central station monitoring.
- If any of the sprinkler riser tamper valve switches or PIV switch activate the supervisory event to the building fire alarm system and central station monitoring.

## FIRE ALARM SYSTEM ISSUES:

During the site visual inspection of the fire alarm system, it appears that the existing fire alarm system has the following issues:

- The existing remote annunciator has been disconnected and removed from the existing fire alarm system.
- There is an existing heat detector that needs to be removed and replaced with a cover plate in the 3rd floor storage room.
- The existing AES Radio power transformer needs the UL-listed manufacturer enclosure installed.
- The existing AES Radio power cable between the existing transformer and the AES Radio panel needs to be installed in a raceway per code.
- The dwelling unit 101 does not have the same 120VAC smoke detector as the rest of the building. It is missing the heat part on the detector.

## FIRE ALARM SYSTEM LIFE EXPECTANCY:

- NFPA-72 requirement to replace existing fire alarm detectors, devices, and equipment as the following:
  All residential Spot Smoke & CO detectors – 10 years
  Fire Alarm Batteries – 5 years
  System Smoke Detector – 20 years.
  Fire Marshals (AHJ) currently require a detectors and devices sensitivity test reports. All current addressable fire alarm systems have the capability to print out this report.
- Shoreline Fire Department currently does not require this report, although in the future, the new Potter Signal Fire Alarm System will be able to produce this report by email or text message.
- Fire Alarm System Equipment does not define any fixed lifetime for the components of a Fire Alarm System. Does not restrict the technology that is used and different technical solutions may produce a different life expectancy. The expectation is that the equipment manufacturer will be the best guide to an expected lifetime for a particular product. Manufacturers are also likely to have an obsolescence policy regarding spares and support for maintenance.

## BUILDING LIFE SAFETY:

- Does this building have an evacuation plan? If so, it would be good to make sure all managers have a copy of it.
- Make sure everyone knows where to go during the evacuations.
- During an evacuation everyone has a job to do to keep everyone safe. Like, close all doors behind you after you leave each area.
- Never assume anyone else already called the fire department.
- Remember that your cell phone has a flashlight and it would be easier to see you in the dark or smokey area.
- If your cell phone does not have cell service at the time use text messaging. As soon as you get cell service your text will go out.

## FIRE ALARM CODE REQUIREMENTS:

The fire alarm system is recommended by TWE. (See attached fire alarm system code analysis for a deeper understanding of the items below):

- Automatic Smoke Detectors are required in all Public Egress Pathways, electrical rooms, elevator machine room, and elevator lobby.
- Automatic Smoke Detectors with low-frequency sounder bases programmed to function like single- and -multiple station alarms in all dwelling unit sleeping areas (bedroom & living room)
- Monitoring of the existing full sprinkler system.
- Manual Pull Stations are NOT required per section 907.2.9.1 exception 2 of the International Building Code (IBC)
- Graphic Maps (Qty. 2) are required for this project and shall be posted at the fire alarm control panel, the main sprinkler riser (Basement), and at the remote annunciator panel locations.
- Remote Annunciators (Qty. 1) shall be installed. One at a pre-approved fire department location.
- Quantity and location of remote annunciators are subject to the location and accessibility of the main fire alarm panel. Coordinate with the local AHJ to determine if they wish to move the current location or add additional locations.
- Audible/Visual Notification shall be installed throughout the entire building in accordance with sections 907.5.2.1 and 907.5.2.3 of the International Building Code (IBC) and sections 18.4 and 18.5 of NFPA 72.
- Audible/Visual Coverage in building common areas (Dining areas, community rooms, laundry rooms, restrooms, library, community outdoor decks, and interior corridors).
- All sleeping areas will be equipped with low-frequency sounder bases activated by building alarm events.
- Audible/Visual Notification shall be installed in all tenant units in accordance with sections 907.5.2.1 and 907.5.2.3.3 of the International Building Code (IBC) and section 18.5.5.8 of NFPA 72.
- Provide visual coverage in the bedroom, living room, and weather-proof visual for bathroom of all dwelling units.
- The Fire Alarm System shall also interface with other systems such as Smoke and Fire/Smoke Dampers, Duct Smoke Detectors, H.V.A.C. Systems, Magnetic Door Holders, Magnetic Door Releases, Cooking Hood Fire Suppression Systems, Fire Protection Sprinkler Systems, and Elevators where applicable.
- Provide Central station monitoring via AES Radio mesh network.
- Plain Old Telephone Service (POTS) lines are not permitted.

Section 15.05.50 KK, MM, & NN of the City of Shoreline municipal code requires the following amendments to the standard international fire code:

- KK - 907.2 A minimum of one manual fire alarm box shall be provided in an approved location to initiate a fire alarm signal to fire alarm systems employing automatic fire detectors or waterflow detection devices. Where other sections of

this code allow the elimination of fire alarm boxes due to sprinklers, a single fire alarm box shall be installed

- MM - 907.2.25 Remodels and tenant improvements. When undergoing remodeling and tenant improvements, existing occupancies equipped with smoke detectors that are 10 or more years old shall have all such detectors replaced with modern units. Those occupancies without the protection of smoke detection shall add smoke detection in accordance with the applicable requirements in the International Residential Code or International Building Code.
- NN - 907.2.26 Alarm panel beyond repair. When an alarm panel is beyond repair and parts are not available, a new alarm panel shall be required. Installation of the new alarm panel shall be in accordance with Section 907.

## ELEVATOR SHAKE ALERT FIRE ALARM INTERFACE:

A new interface for the elevators:

- In the last few years, elevator shake alert systems were installed in numerous City of Seattle buildings.
- The shake alert system is an earthquake detection system that sends out a signal to the Fire Alarm System:
- This is a signal across the (internet, radio, television, and cellular) with the right program or application that can trigger a relay that can be monitored by the fire alarm system. The fire alarm system will do a primary elevator recall for all elevators in the building.

## RECOMMENDATIONS:

TWE would recommend the following:

1. The existing Notifier AFP-400 Fire Alarm Panel and field devices are obsolete and need to be replaced.

2. Provide zonal output groups for annual inspection bypass. The zonal output groups shall be a minimum of the following:
   A. All Public NAC Circuits.
   B. Dwelling NAC Audio/Visual.
   C. Elevator Recall.
   D. Door Holders and Fire/Smoke Dampers.

3. Set up a binder with the last fire alarm annual inspection reports, printed point list, and instructions on how to find duct detectors and other hard to find fire alarm devices that need to be tested annually. Put half-size as-built drawings inside the binder. These documents could be used to do annual inspections, help the fire department find fire alarm devices, and maintain the fire alarm system.

4. Installing a fire alarm document cabinet adjacent to the fire alarm panel in the building.
   A. A fire alarm documents storage cabinet adjacent to the main fire alarm panel per NFPA-72 current code is required. Coordinate location with Owner's

Representative prior to installation. Download program data and point list onto the 4GB flash drive built-in to cabinet per NFPA-72 current code. Provide closeout documents in a binder as required.
Manufacturers:

- Space Age Electronic Part Number SSU00685 or equal.

5. Installing a fire alarm lock on the device for the 120VAC circuit breaker.
   A. NFPA current code requires that all fire alarm circuit breakers install lockout devices.
   Manufacturers:
   - Space Age Electronic Part Number ELOCK_FA or equal.

B. Fire Alarm equipment and device labeling:
   A. We recommend that the main fire alarm panels shall have the following labeling below:

| Description: | Example: |
|---|---|
| Panel Name: | **MAIN FIRE ALARM** |
| Node #: | **Node 2 and CAB #** |
| AC PANEL: | **AC Panel 2X2** |
| BREAKER #: | **Breaker #1** |

   B. We recommend the Duct Detector Locations shall have the following labeling on the grid next to the ceiling tile to gain access to the duct detector. Mount in clear sight of the floor.
   Refer to the example below:

| Description: | Example: |
|---|---|
| Device Name: | **DUCT SLC1-S26** |

   C. We recommend the fire alarm device labels: Use for the identification of all fire alarm input and output control devices. In clear sight of the floor. Otherwise, provide a duct detector-type label. These address labels shall match the fire alarm readout and as-built drawings. All module devices shall have a description of what it is monitoring and controlling.
   Refer to the example below:

| Description: | Example: |
|---|---|
| Device Name: | **N10SLC1-S26** |

C. Data drop with internet access for the fire alarm panel. Note: all telecom equipment that the fire alarm communication connection (Router) to the internet will need to be battery backup for 4 hours.

D. The cabling support Bridle Ring works better than J and D hooks for open cable support fire alarm installation.

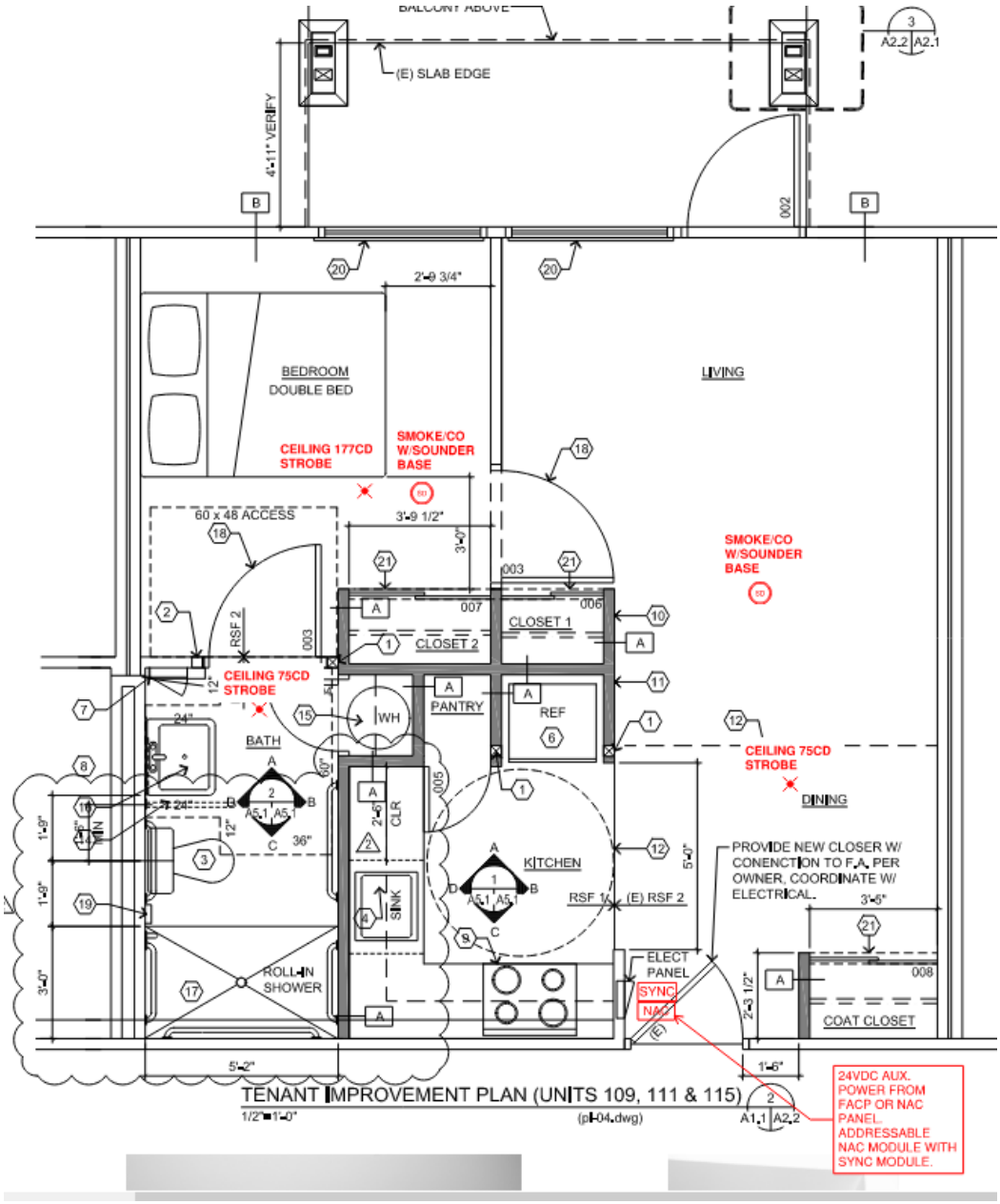
E. The Dwelling Unit Living Room smoke detector should be designed to be a Smoke/Heat/CO multi-criteria detector with a low-frequency sounder base. The heat shall be programmed as a full building alarm event. The smoke and CO shall be programmed to operate like dwelling unit tandem multiple-detector alarms as supervisory events to the fire alarm system and central station monitoring.

## FIRE ALARM SYSTEM REPLACEMENT:

The following items will require replacement:

1. New fire alarm panel should be mounted left of the existing fire alarm panel on the same wall.
2. Stack the four NAC Panels adjacent to the new fire alarm panel.
3. Mount the AES radio above the new fire alarm panel.
4. New NAC Panels should be mounted right of the existing NAC Panel in the storage room 2nd and 3rd floors.
5. Remove the existing remote annunciator and utilize the existing conduit to pull new cabling to the new remote annunciator.
6. The electrical contractor will need to provide Electrical 120VAC equipment and circuits to support any new fire alarm control panels and equipment. They will also need to remove all 120VAC combination smoke detectors in all units once the new fire alarm system has been approved by the local AHJ.
7. Replace each detector or device within 3 feet of the existing detector or device and make sure that all these are within the fire code coverage requirements.
8. The Dwelling Unit shall be designed per the typical drawing provided below.
   A. The dwelling unit shall have the following items for ADA strobe coverage and control will be provided with:
      - (1) - Addressable NAC module
      - (1) - Sync module
      - (2) - fire alarm LED 75CD strobes
      - (1) - fire alarm LED 177CD strobe
      - (2) - Addressable low-frequency sounder bases.
      - (2) - Addressable Smoke/CO detector heads
   B. The fire alarm addressable SLC loop circuit and 24VDC power circuit. The 24VDC power is for the addressable NAC module via the sync module to run the dwelling unit strobes and addressable low-frequency sounder bases.
   C. Briarwood Apts has 3 stories and 70 dwelling units. 20 dwelling units on 1st floor, 25 dwelling units on 2nd floor, and 25 dwelling units on the 3rd floor.
   D. We can power four(4) dwelling units with one(1) NAC power circuit at 2.9A. The 10A NAC panel can service three (3) NAC circuits. We would need to have two(2) NAC Panels per floor for Briarwood Apts.
   E. Briarwood Apts would utilize the main fire alarm panel for two(2) NAC circuits for public areas on 1st floor horn/strobes, one(1) NAC circuit for 2nd floor horn/strobes, and one(1) NAC circuit for 3rd floor horn/strobes.

Figure 1: Typical Fire Alarm Dwelling Unit Layout from Briarwood Apartments




## REVISED FIRE ALARM SYSTEM OPERATION:

After the replacement of the existing fire alarm system, the fire alarm system will operate in the following:

- If any of the common area smoke detectors, heat detectors, manual pull stations, or waterflow devices will activate alarm events for all notification and visual devices in the entire building, to the building fire alarm system, and central station monitoring. Also, all Door Holders and Fire/Smoke Dampers will close.
- Elevator recall has four (4) different functions as follows below:

    1. Elevator Primary Recall – If the 2nd or 3rd elevator lobby smoke detector activates the alarm event elevator will recall to the 1st floor and open the cab door.

2. Elevator Secondary Recall – If the 1st elevator lobby smoke detector activates the alarm event elevator will recall to the 2nd floor and open the cab door.
3. Elevator Hat Recall – If the 1st elevator machine room smoke detector activates the alarm event elevator will recall to the 2nd floor, open the cab door, and turn on the fireman's HAT light symbol.
4. Elevator Shunt Trip Dual Contact Fixed 135˚ Heat Detector – If the 1st Elevator Machine Room Heat Detector activates the alarm event the elevator power will be cut off.
5. The elevator is required to have the 120VAC shunt trip power to be monitored. If the 120VAC power is off. The SLC loop addressable monitoring module activates a supervisory signal to the building fire alarm system and central station monitoring.

- If any of the dwelling unit smoke detectors activate the alarm event all smoke detectors within that dwelling unit will be notification devices in the smoke detectors sound within the unit only. Each dwelling unit has an SLC loop addressable monitoring module to activate a supervisory signal to the building fire alarm system and central station monitoring.
- **If any of the two smoke detectors within the same dwelling unit are in an alarm the entire building will go into a full alarm event.**
- If any of the sprinkler riser tamper valve switches or PIV switch activate the supervisory event to the building fire alarm system and central station monitoring.