PUMEHANA

FIRE ALARM SYSTEM UPGRADE

HA 1047

DEVICE DESIGNATION LEGEND

INITIATING DEVICES

EXAMPLES: P F L1-07

- DEVICE NUMBER
- INITIATING ALD LOOP DESIGNATION
- DEVICE SYMBOL

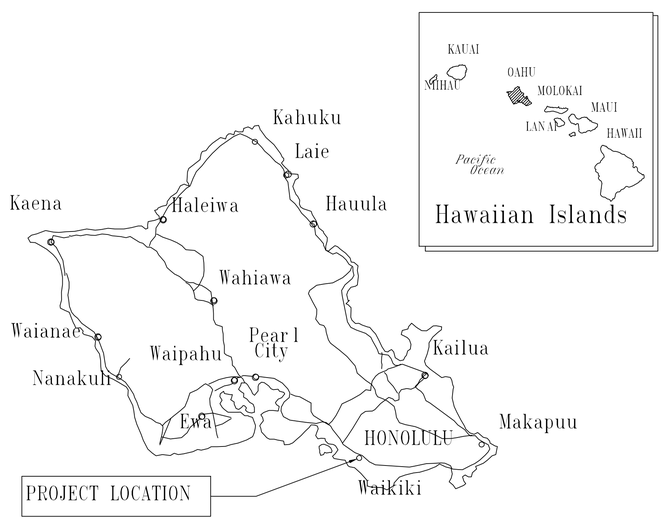
DEVICE DESIGNATION LEGEND

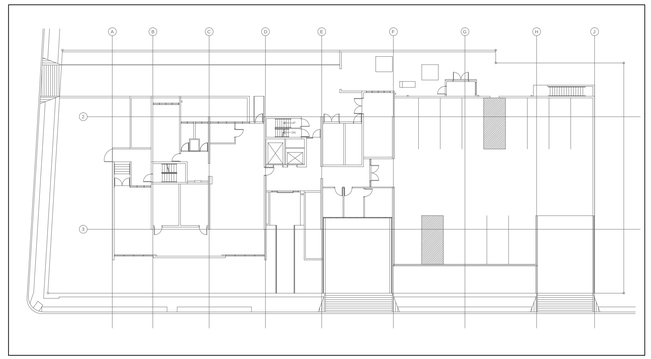
AUDIBLE/VISUAL CIRCUITS:

EXAMPLES: S 75 .5W BPS1 : S1-15 V1-12

- DEVICE NUMBER
- DEVICE TYPE:
  S1- SPEAKER CIRCUIT #1
  V1- SOUNDER / STROBE CIRCUIT #1
- BOOSTER POWER SUPPLY / NAC ZONE CARD NUMBER
  BPS1 - BOOSTER POWER SUPPLY #1
  ZIC1 - ZIC-8B NAC ZONE CARD #1
  ZIC2 - ZIC-8B NAC ZONE CARD #2
- SPEAKER WATT RATING (.125W TO 2W)
- CANDELA RATING (15, 30, 75, 110)
- DEVICE SYMBOL

LOCATION MAP





SITE PLAN

SCALE: N.T.S

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 - 2c # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)

FIRE ALARM SYMBOL LEGEND

SYMBOL	DESCRIPTION	CATALOGUE NUMBER
FACP	FIRE ALARM CONTROL PANEL (FACP)	SIEMENS XLS
XPDR	FIRE ALARM TRANSPONDER PANEL	SIEMENS XLS
ANN	FIRE ALARM ANNUNCIATOR	SIEMENS SSD-C
BPS#	BOOSTER POWER SUPPLY (#= BPS NUMBER)	SIEMENS PAD-4-9A
SSp	SURGE PROTECTOR 120VAC	DITEK DTK-120HW
TELE	TELEPHONE CABINET PORTABLE FFT FIELD MOUNTED	SSU00567 TELEPHONE CABINET HOLDS UPTO TEN SIEMENS XLS PFT
F	FIRE ALARM MANUAL STATION - DUAL ACTION MOUNT SURFACE PULL STATION BACK BOX	FIREFINDER XLS HMS-D/ SB-5R
F WP	FIRE ALARM MANUAL STATION - WEATHERPROOF MOUNT SURFACE PULL STATION BACK BOX	SIEMENS MKS-K-WP MOUNT ON MSM-BOX W/ HTRI-M
FJ	PORTABLE FIREFIGHTERS TELEPHONE FIELD MOUNTED	SIEMENS FJ-303SS MOUNT ON SINGLE GANG BOX 2 1/2" DEEP
P	SMOKE DETECTOR WITH BASE	SIEMENS OP921/DB-11 MOUNT ON 4" SQ BOX
SB	SMOKE DETECTOR WITH SOUNDER BASE	SIEMENS OP921/ABHW-4S MOUNT ON 4" SQ BOX
A	RESIDENTIAL 120VAC SMOKE DETECTOR	BRK 9120B
	HEAT DETECTOR WITH BASE	SIEMENS HI921/DB-11 MOUNT ON 4" SQ BOX
WP	WEATHERPROOF HEAT DETECTOR (RATE COMP. 135°F)	SIEMENS DT-135WP MOUNT ON WP 4" SQ BOX WITH 1/2" THREADED INPUT FOR HEAT DETECTOR ; W/ HTRI-M
MM	FIRE ALARM SINGLE INPUT MONITOR MODULE	SIEMENS HTRI-M MOUNT ON 4" SQUARE BOX BY OTHERS
DM	FIRE ALARM DOUBLE INPUT MONITOR MODULE	SIEMENS HTRI-D MOUNT ON 4" SQUARE BOX BY OTHERS
AIO 4	4 INPUT / 4 OUTPUT MODULE	SIEMENS FDCIO422 MOUNT ON 4" SQUARE BOX BY OTHERS
@ #	SEH HIFI SPEAKER/STROBE, RED, WALL MOUNT (@ = SPEAKER RATING, # = CANDELA RATING)	SIEMENS SEH-MC-R MOUNT ON SPSSB-R BACK BOX
@ # WP	ET WEATHER PROOF SPEAKER/STROBE, RED, WALL MOUNT (@ = SPEAKER RATING, # = CANDELA RATING)	SIEMENS SET-S17-R-WP MOUNT ON MT-SUR-BOX-R BACK BOX
@ S	SEH HIFI SPEAKER, WHITE, WALL MOUNT (@ = SPEAKER RATING)	SIEMENS SEH-W MOUNT ON SPSB-R BACK BOX
#	STROBE, RED, WALL MOUNT (# = CANDELA RATING)	SIEMENS ZR-MC-R/ZR-HMC-R (HI CANDELA) MOUNT ON 4" SQUARE BOX BY OTHERS
# WP	WEATHER PROOF STROBE, RED, WALL MOUNT (# = CANDELA RATING)	SIEMENS ST-75-R-WP MOUNT ON WPSBBS-R BACK BOX
TS	TEMPER SWITCH	BY OTHER
FS	FLOW SWITCH	BY OTHER
JB	JUNCTION BOX	BY OTHER
	FIRE ALARM END OF LINE RESISTOR (EOL)	24K OHM FOR SPEAKER/STROBE CKT, 10K OHM FOR FFT CIRCUIT

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM TITLE SHEET

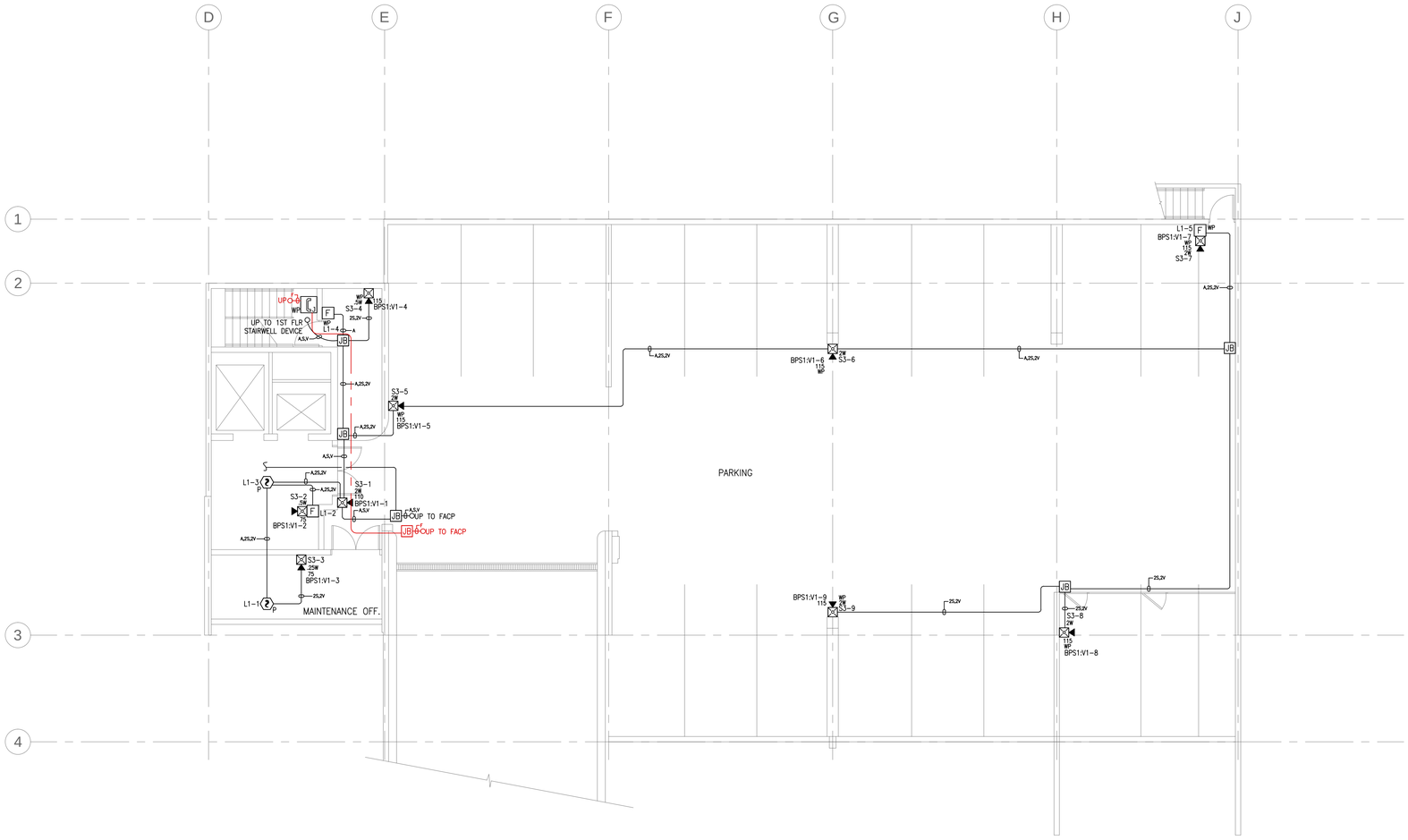
SHEET NUMBER: FA-1.1

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - BASEMENT

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

0 4' 8' 12' 16' 20' 24'

SCALE: 1/8" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - BASEMENT

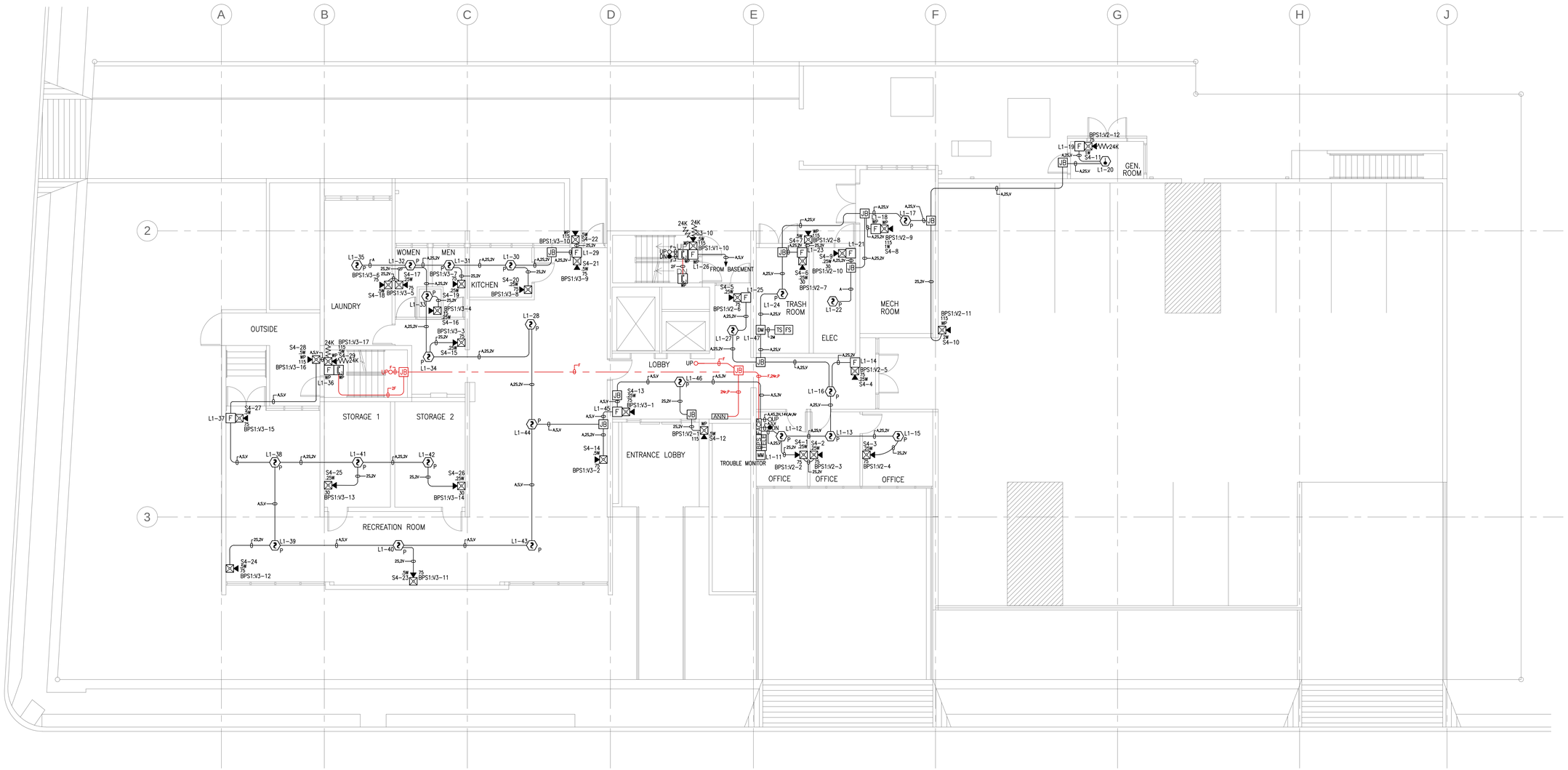
SHEET NUMBER: FA-2.1

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS



FIRE ALARM AND CABLING - LEVEL 1

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

0 4' 8' 12' 16' 20' 24'

SCALE: 1/8" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 1

SHEET NUMBER: FA-2.2

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
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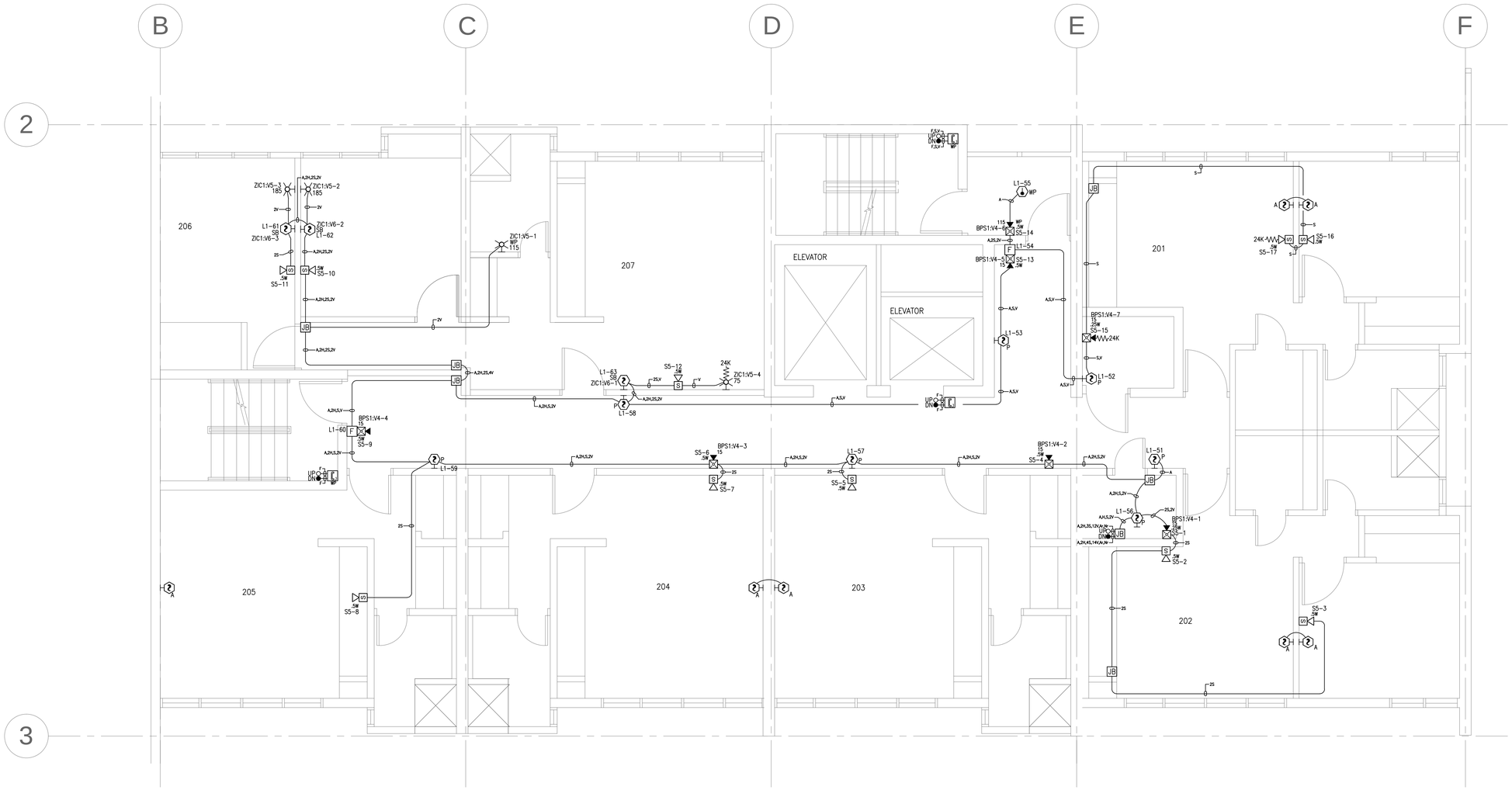
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS



FIRE ALARM AND CABLING - LEVEL 2

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 2

SHEET NUMBER: FA-2.3

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
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4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
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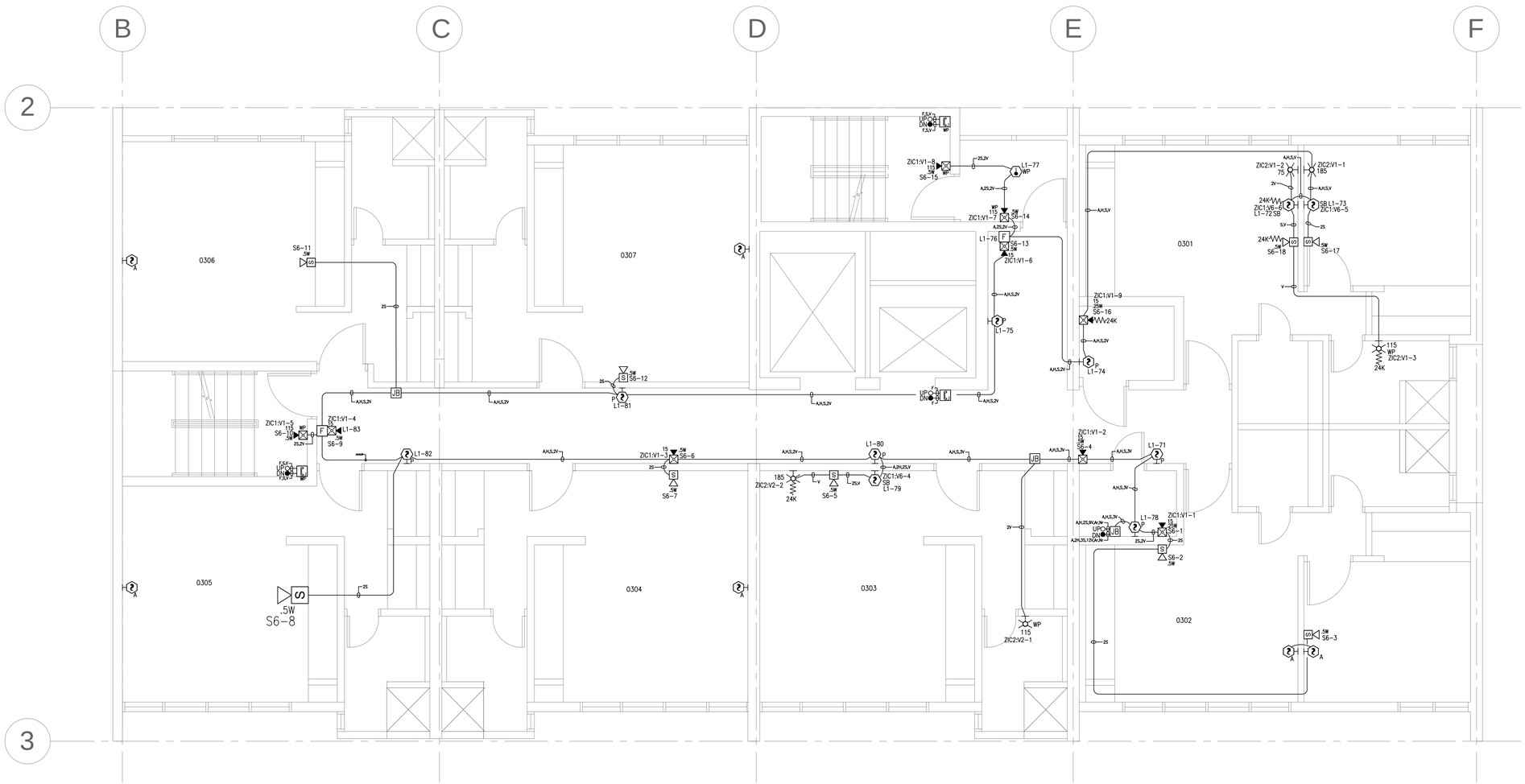
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 3

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

N

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 3

SHEET NUMBER: FA-2.4

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
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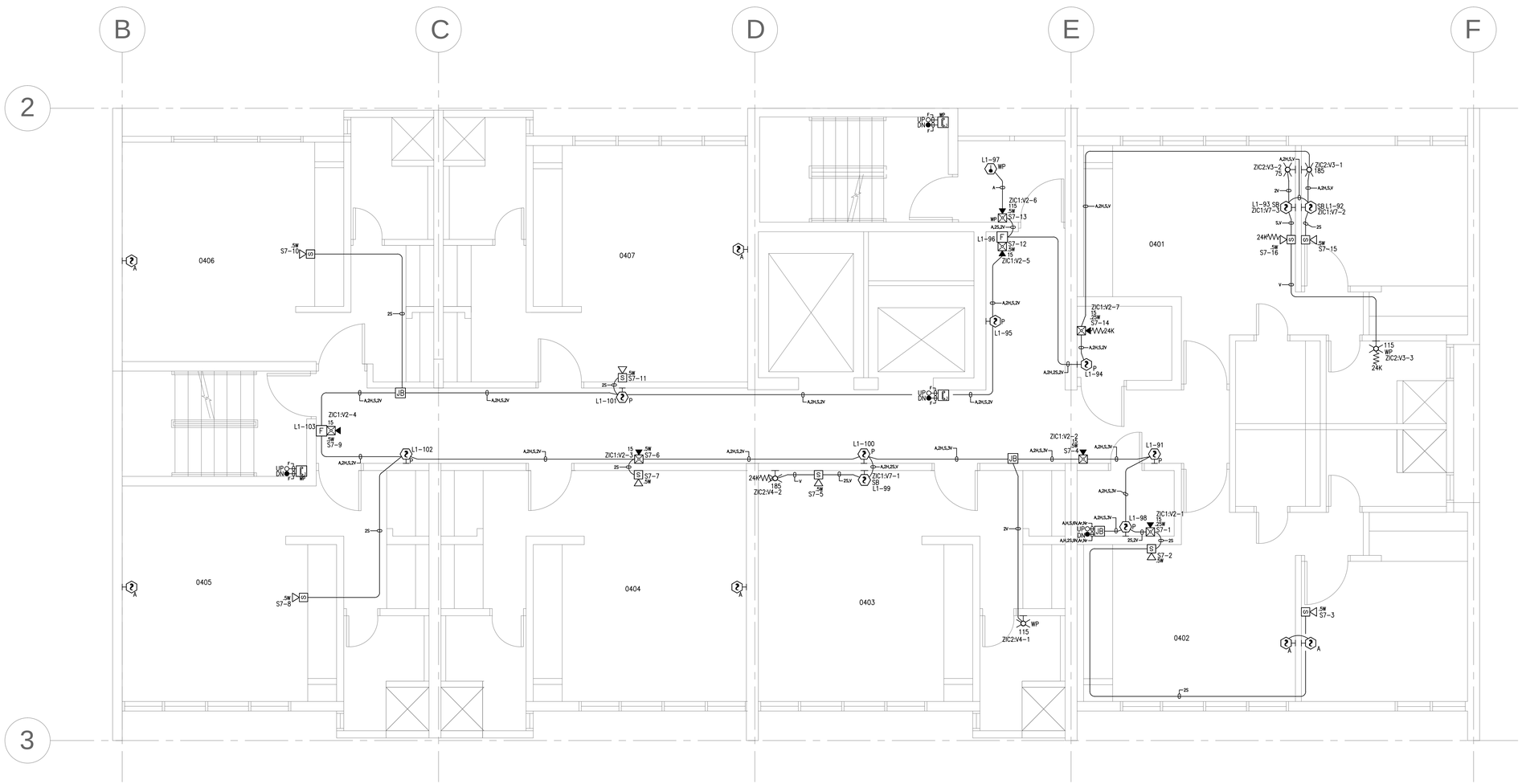
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 4

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 4

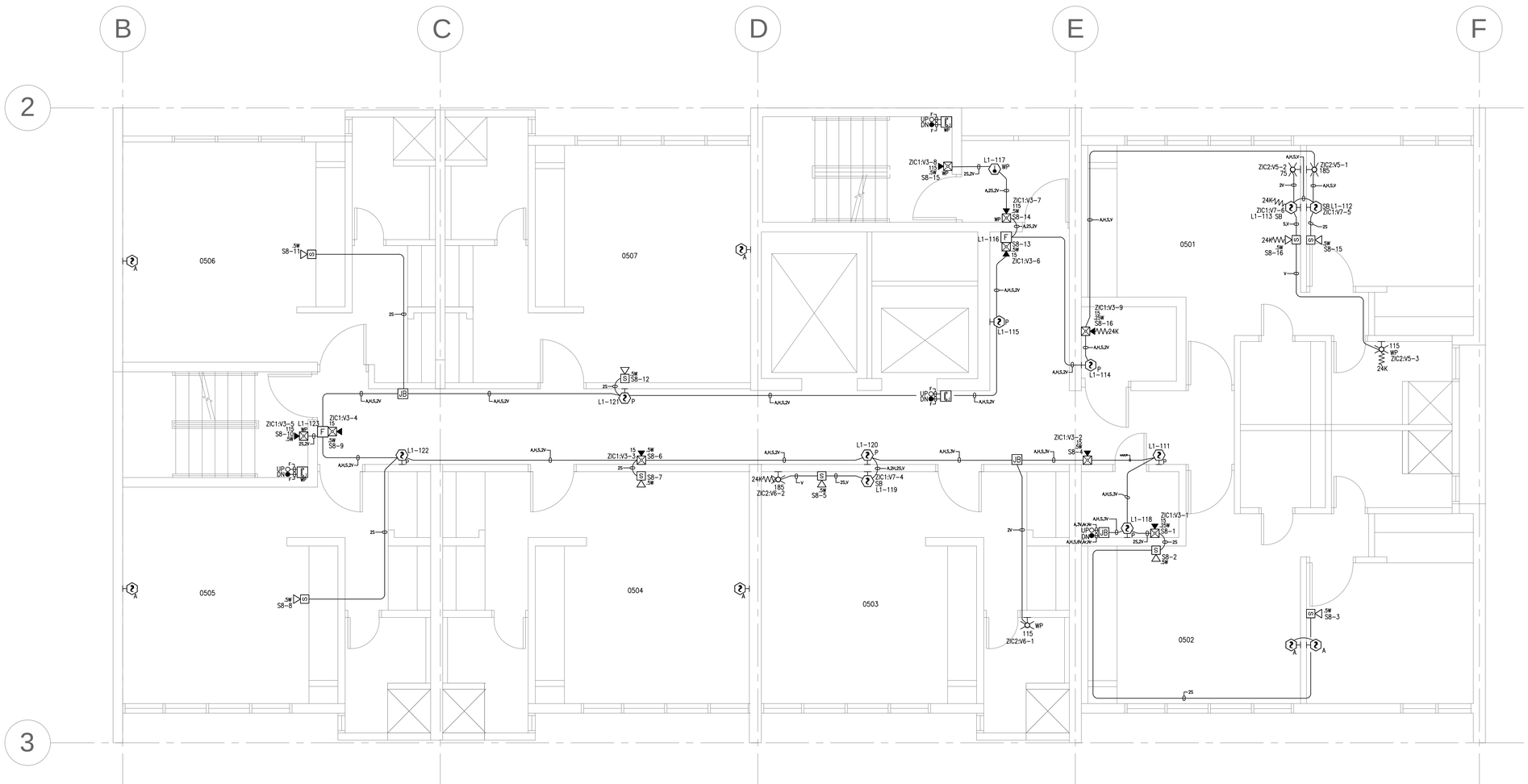
SHEET NUMBER: FA-2.5

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 5

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 5

SHEET NUMBER: FA-2.6

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
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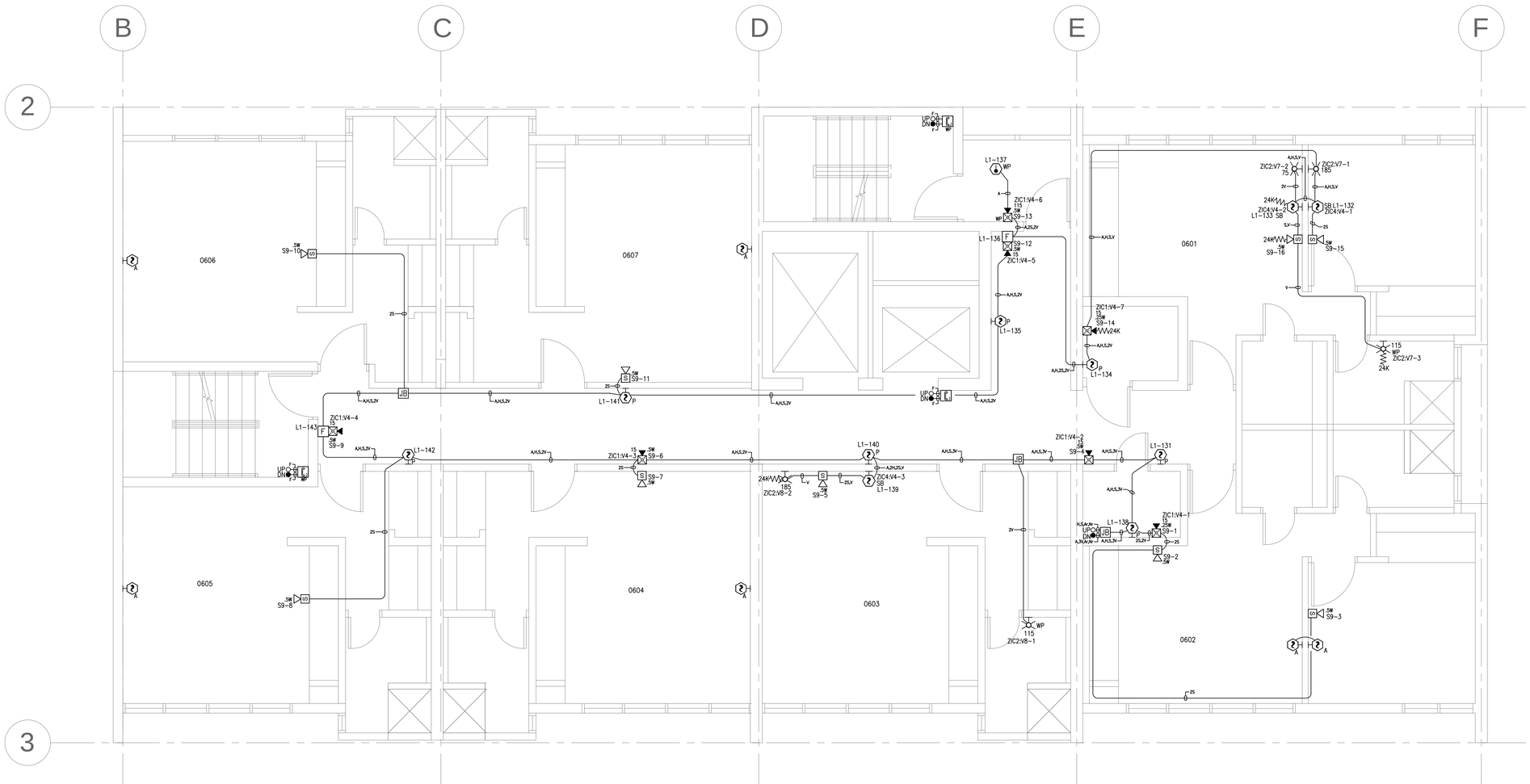
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 6

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 6

SHEET NUMBER: FA-2.7

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
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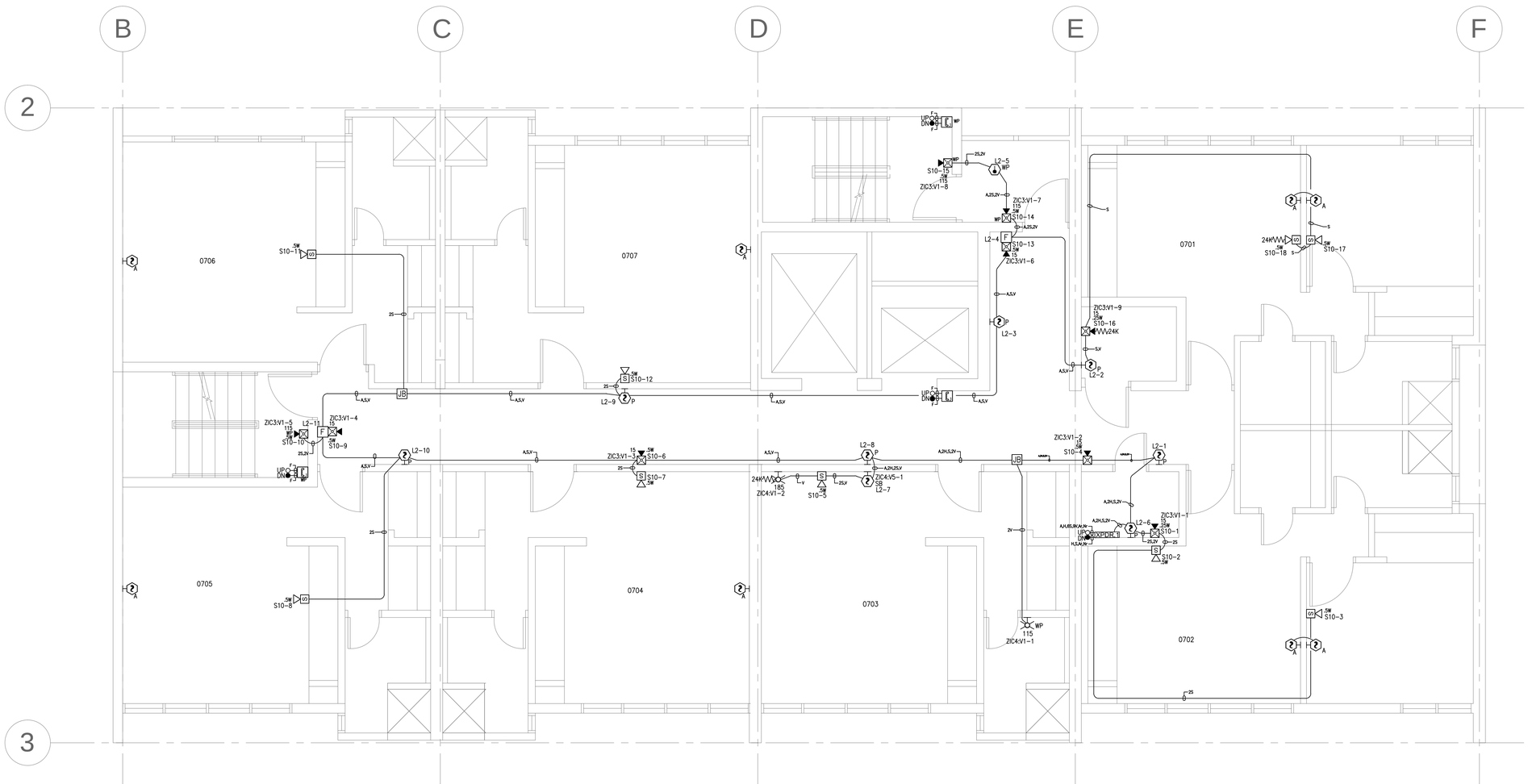
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 7

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 7

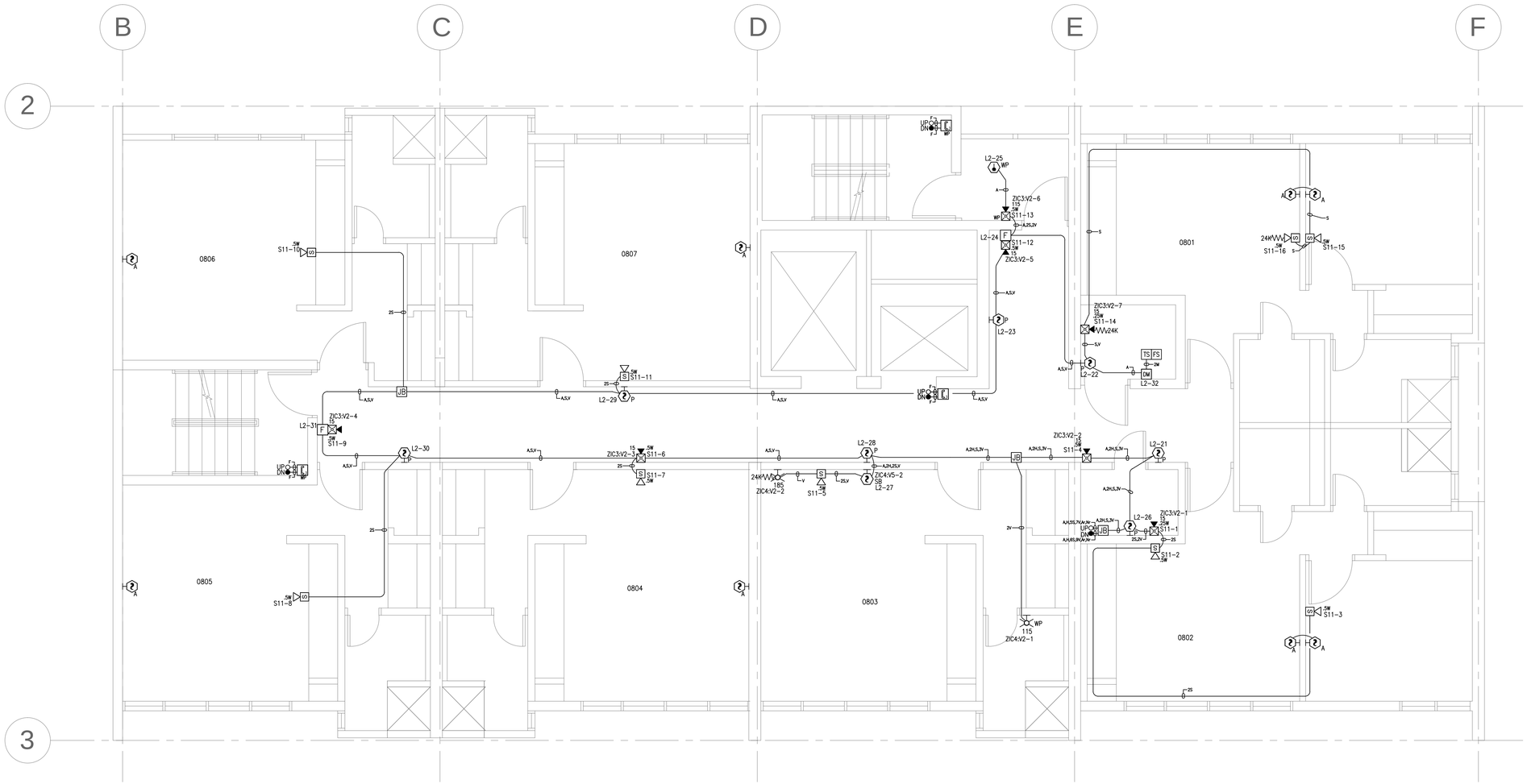
SHEET NUMBER: FA-2.8

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 8

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 8

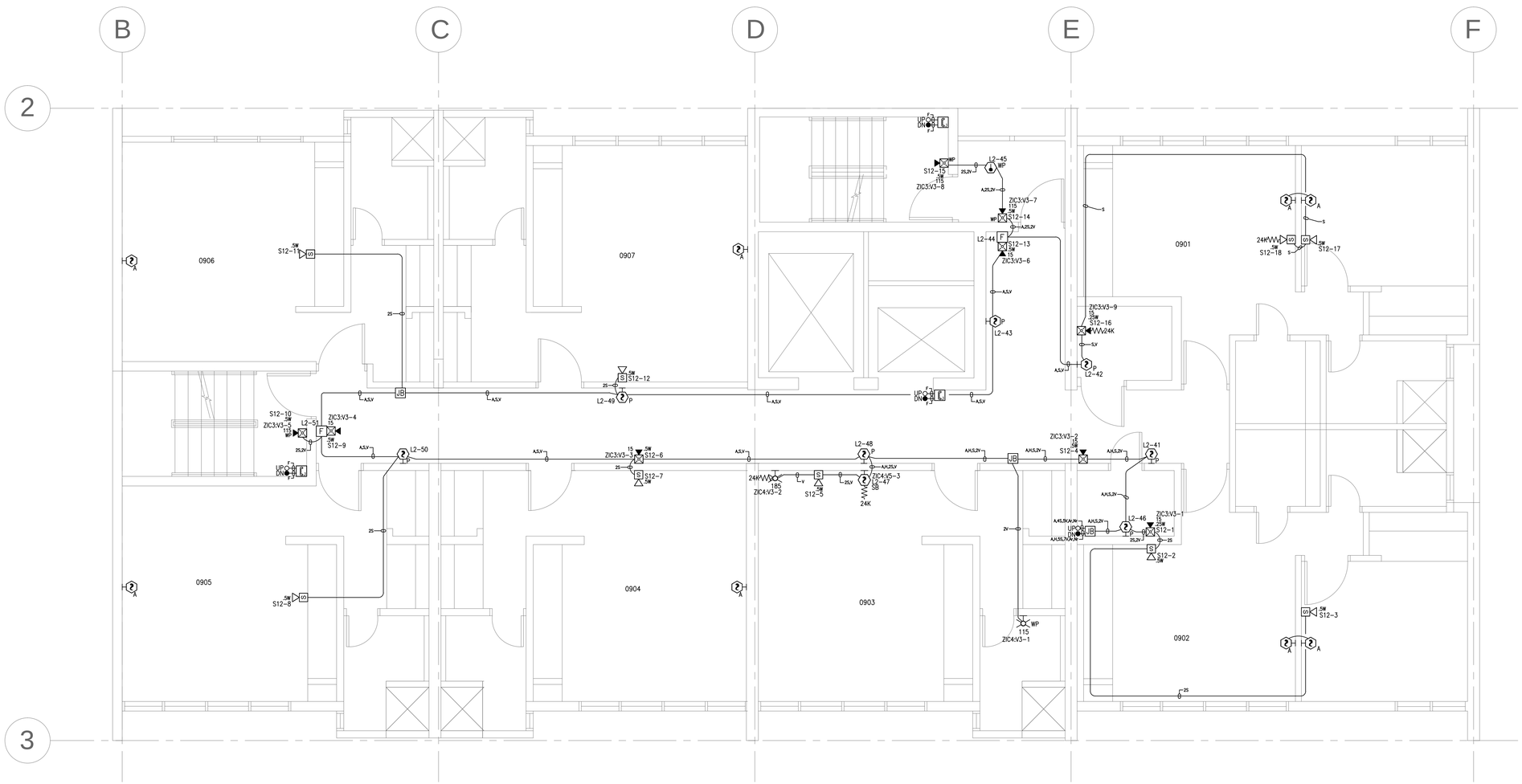
SHEET NUMBER: FA-2.9

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 9

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 9

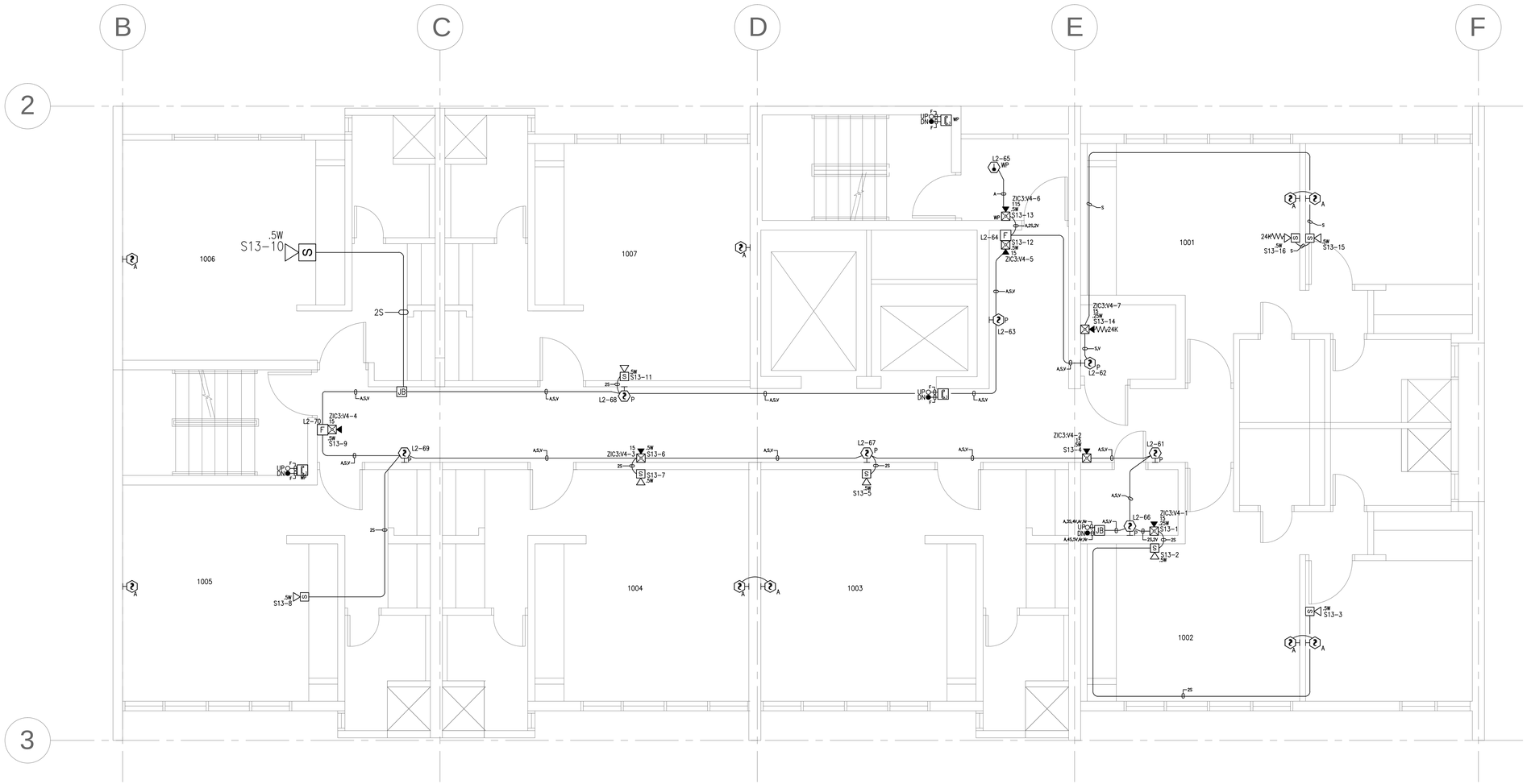
SHEET NUMBER: FA-2.10

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 10

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 10

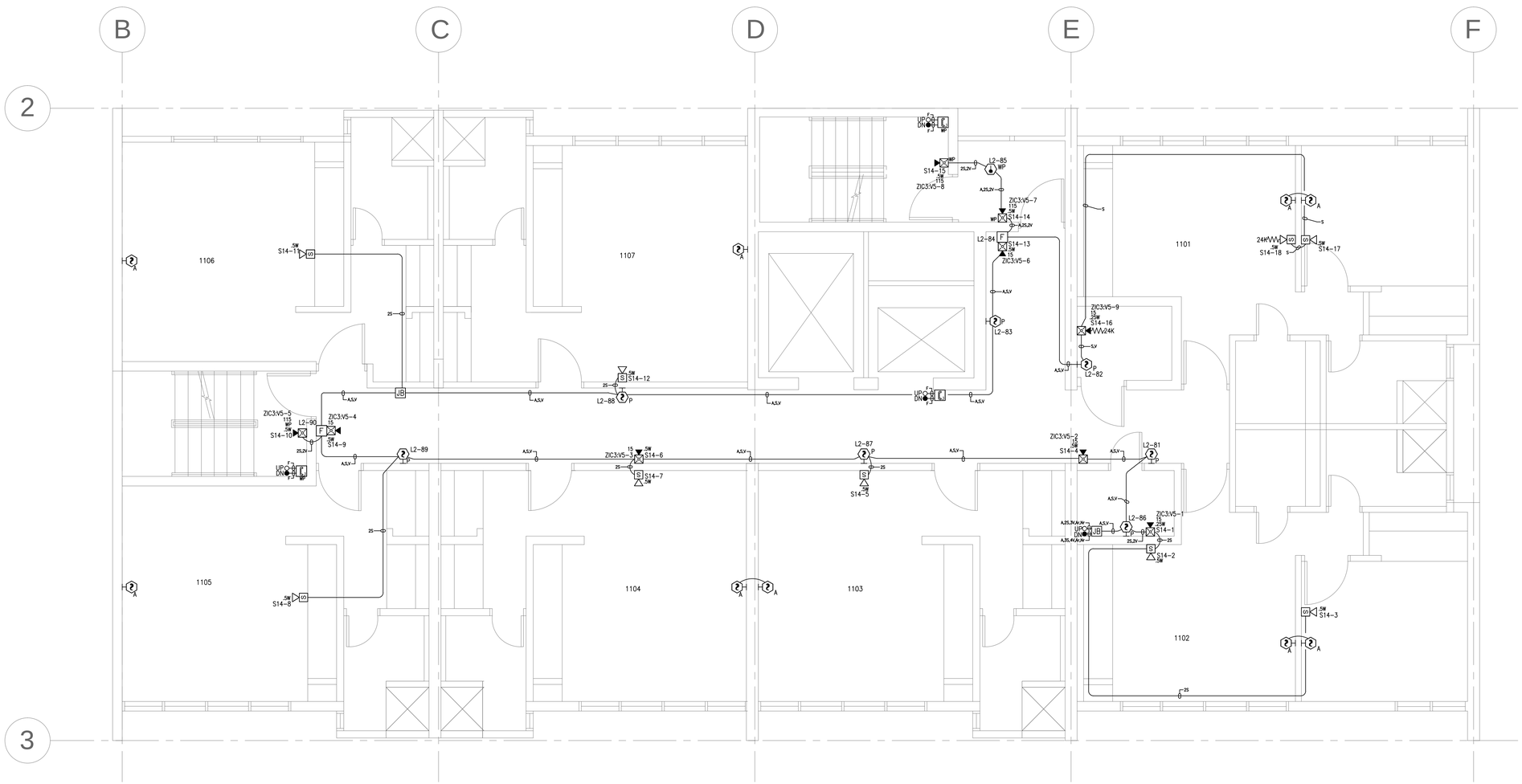
SHEET NUMBER: FA-2.11

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 11

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 11

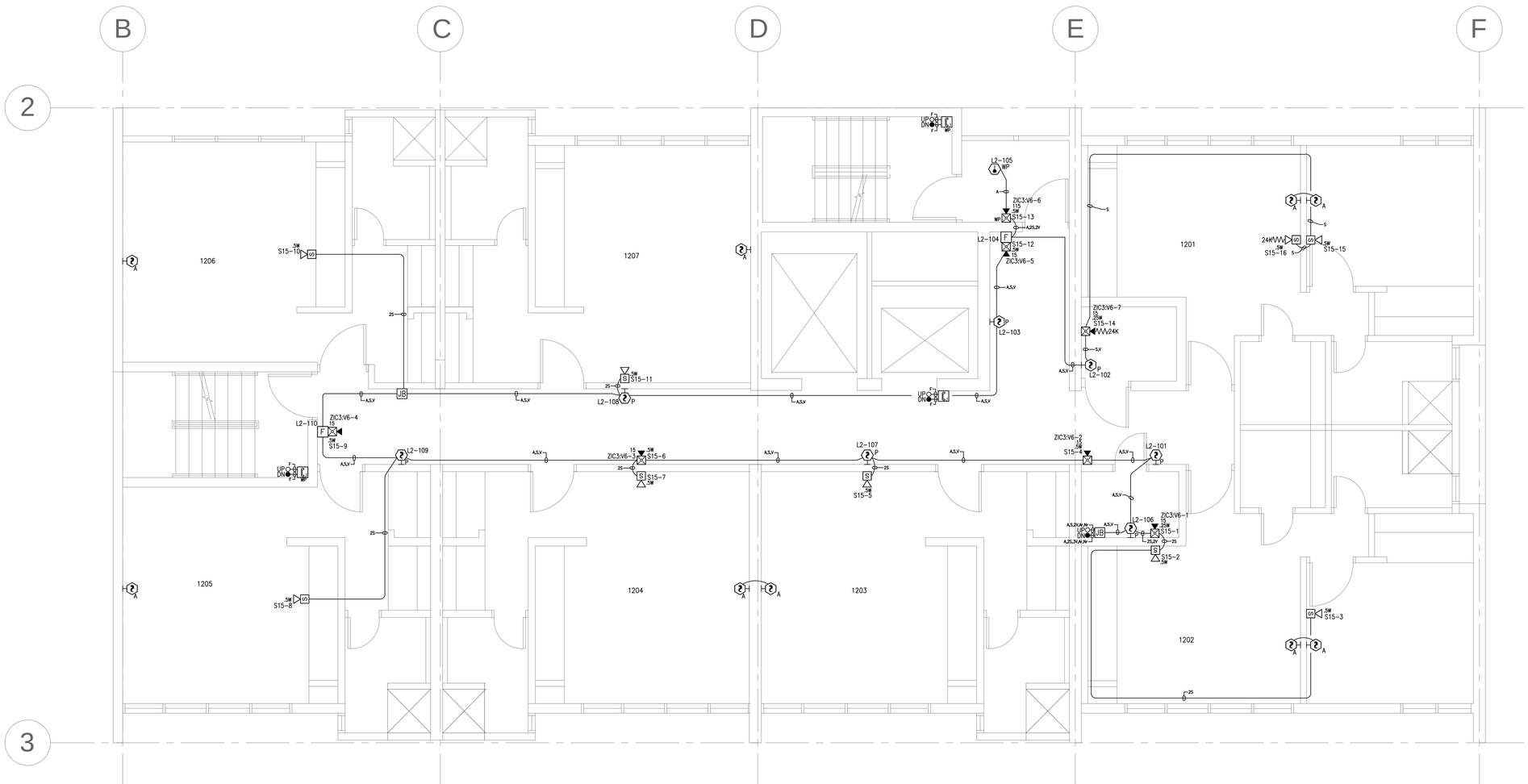
SHEET NUMBER: FA-2.12

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 12

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 12

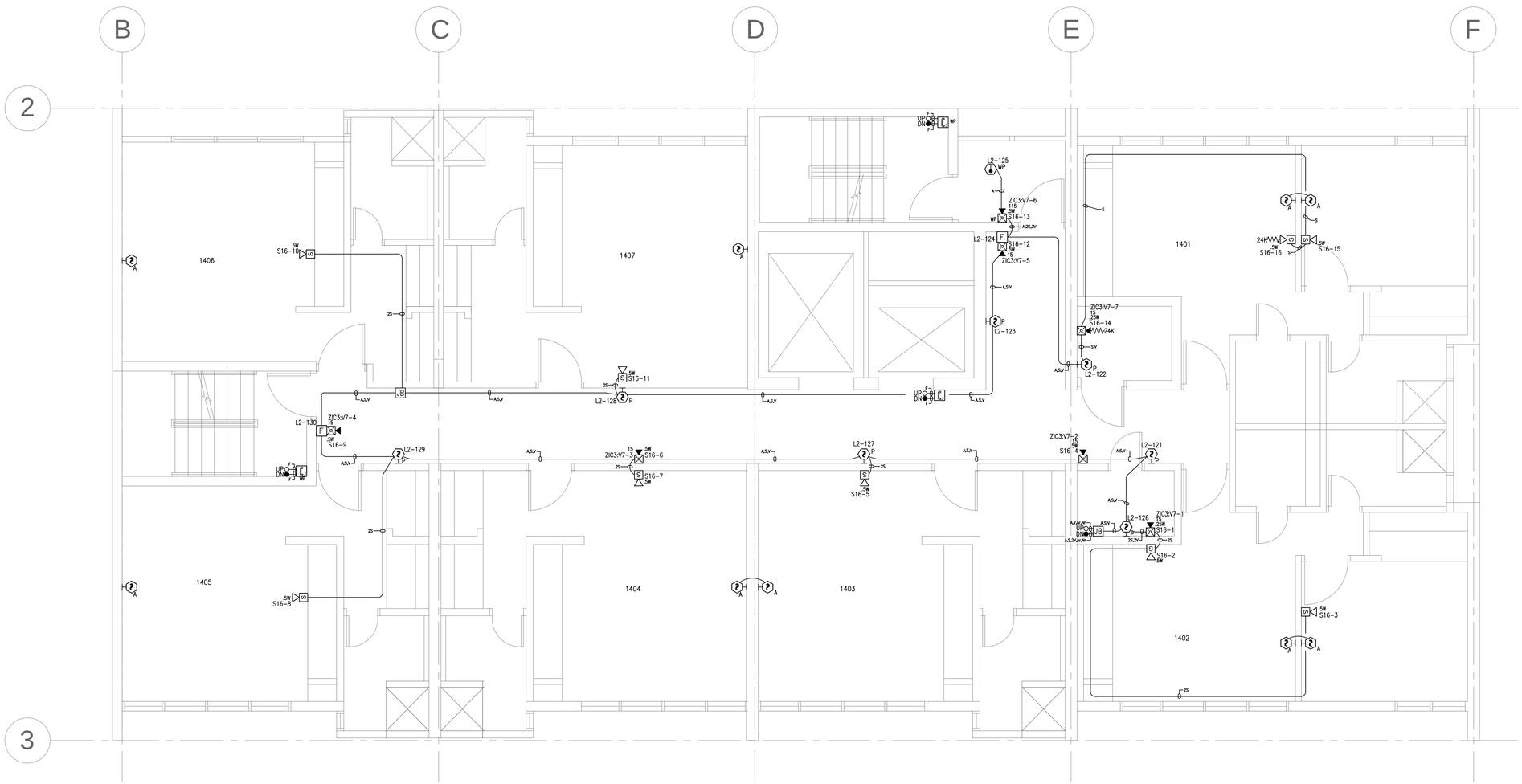
SHEET NUMBER: FA-2.13

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 14

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 14

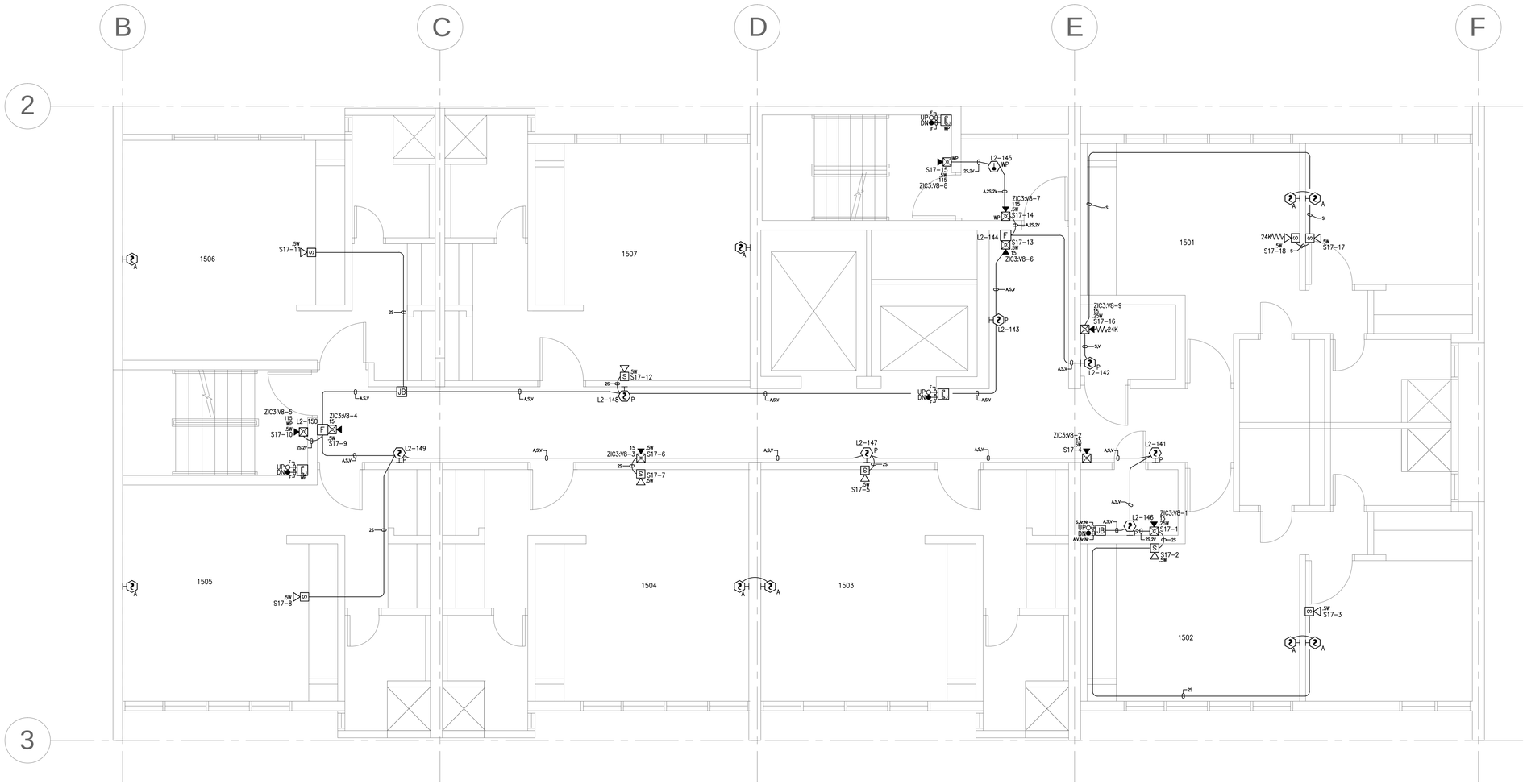
SHEET NUMBER: FA-2.14

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 15

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 15

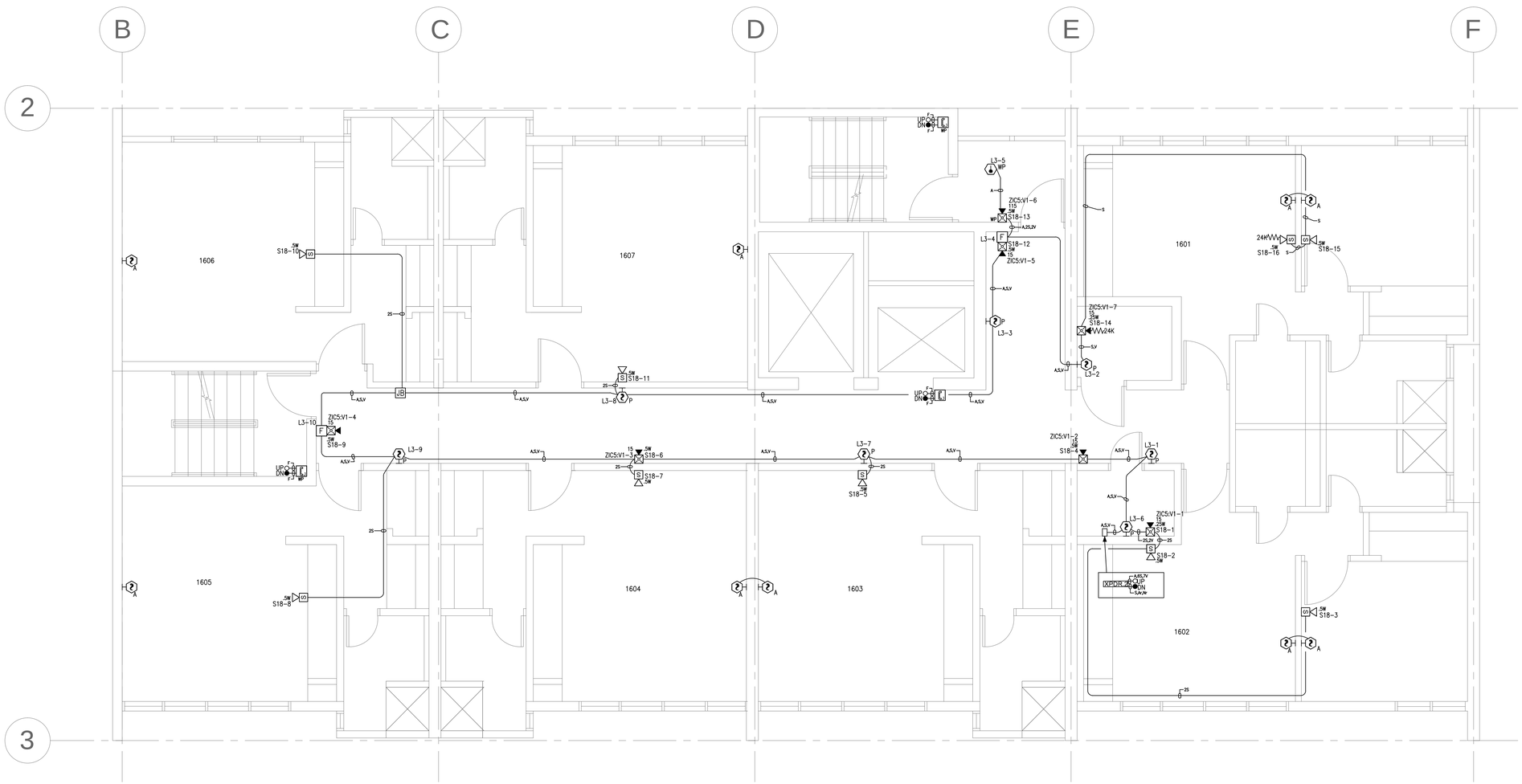
SHEET NUMBER: FA-2.15

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 16

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 16

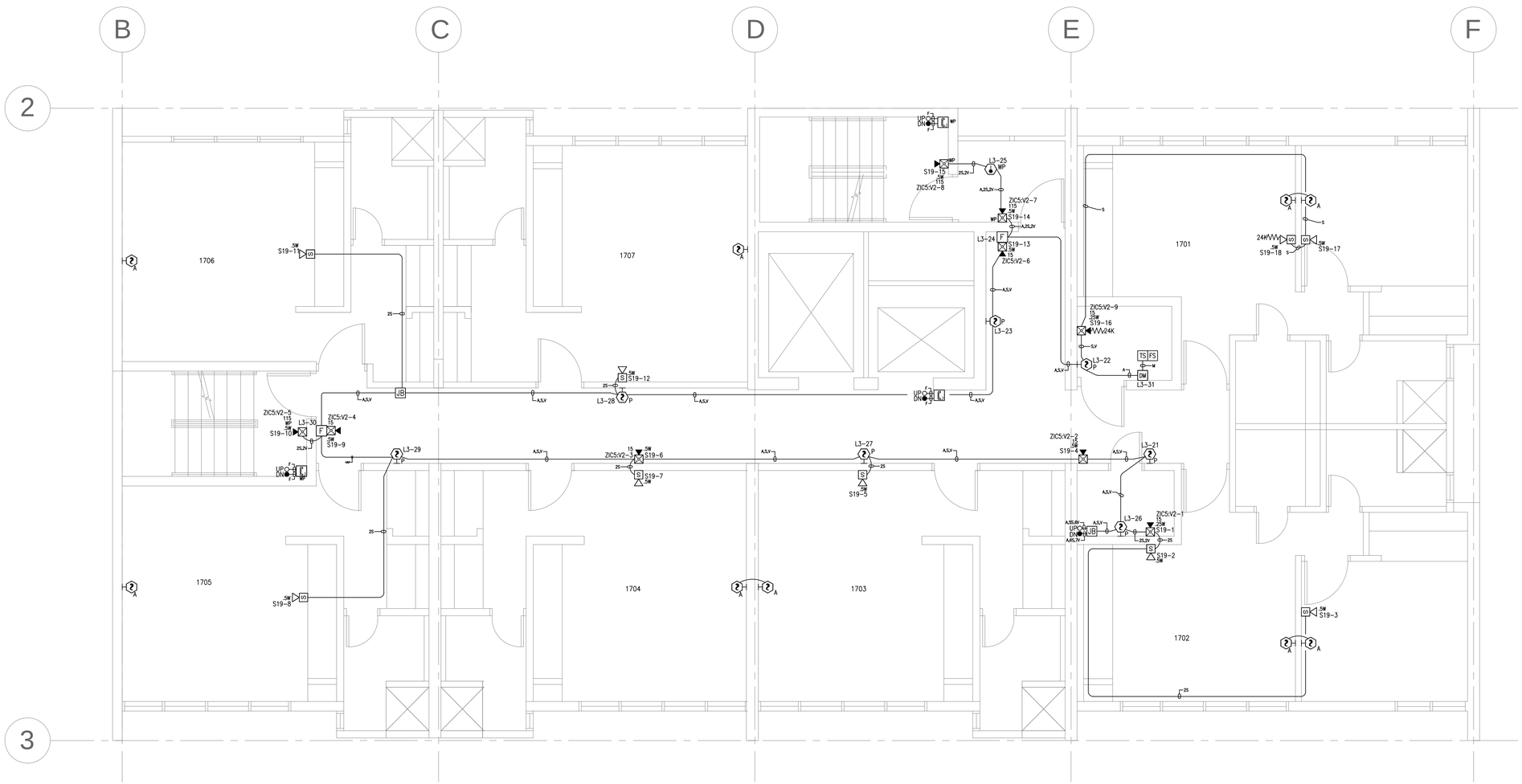
SHEET NUMBER: FA-2.16

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 17

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 17

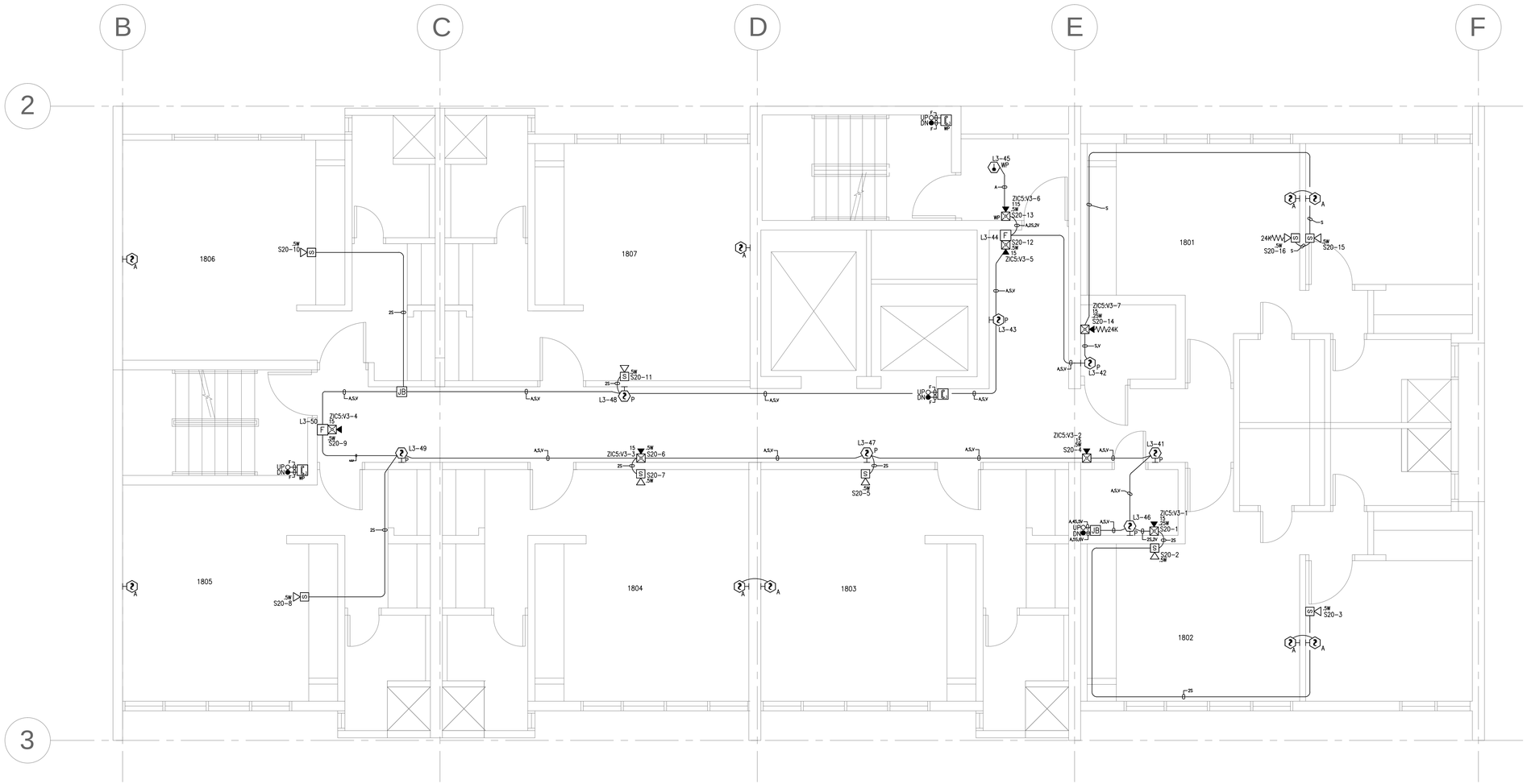
SHEET NUMBER: FA-2.17

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 18

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 18

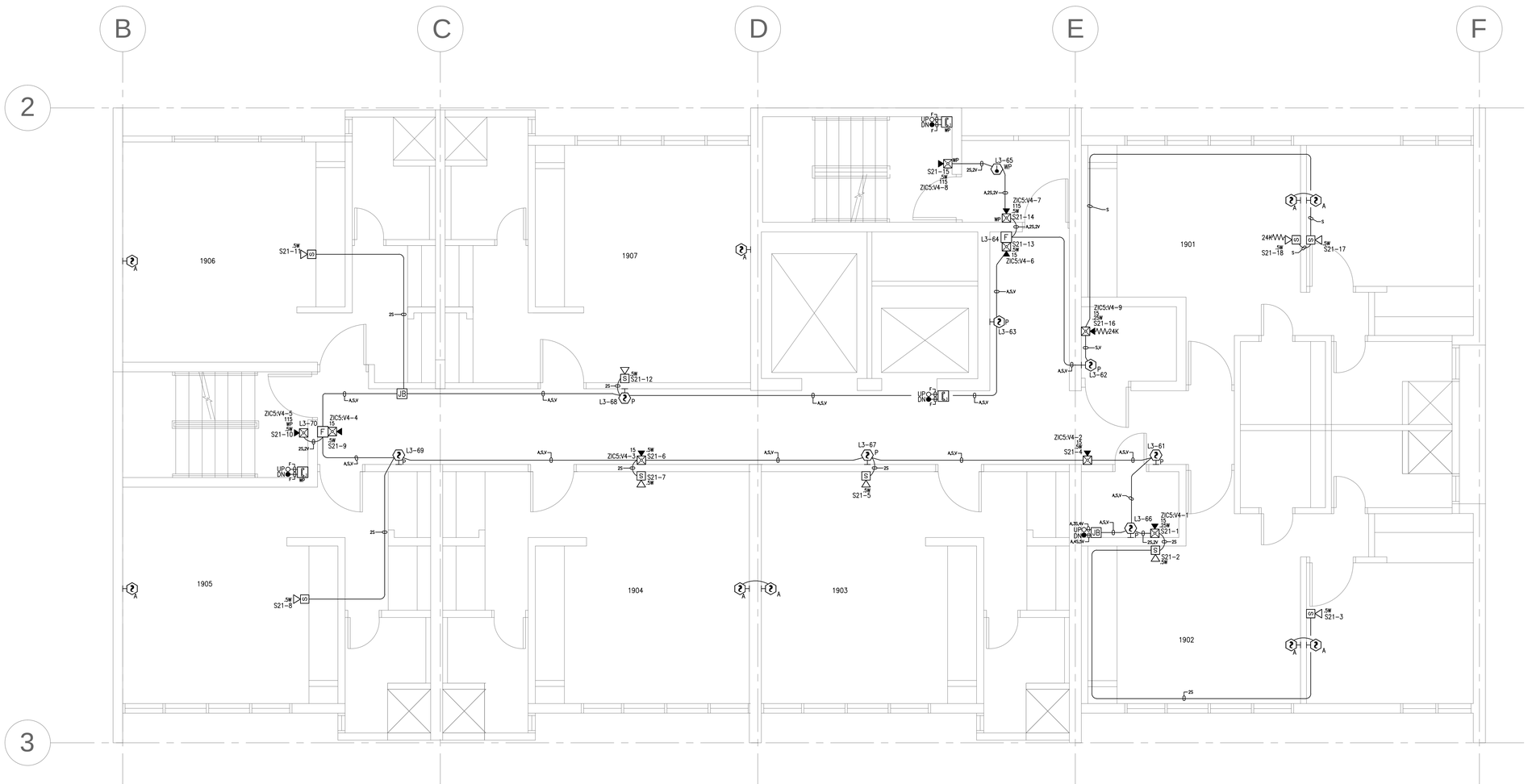
SHEET NUMBER: FA-2.18

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 19

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

N

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 19

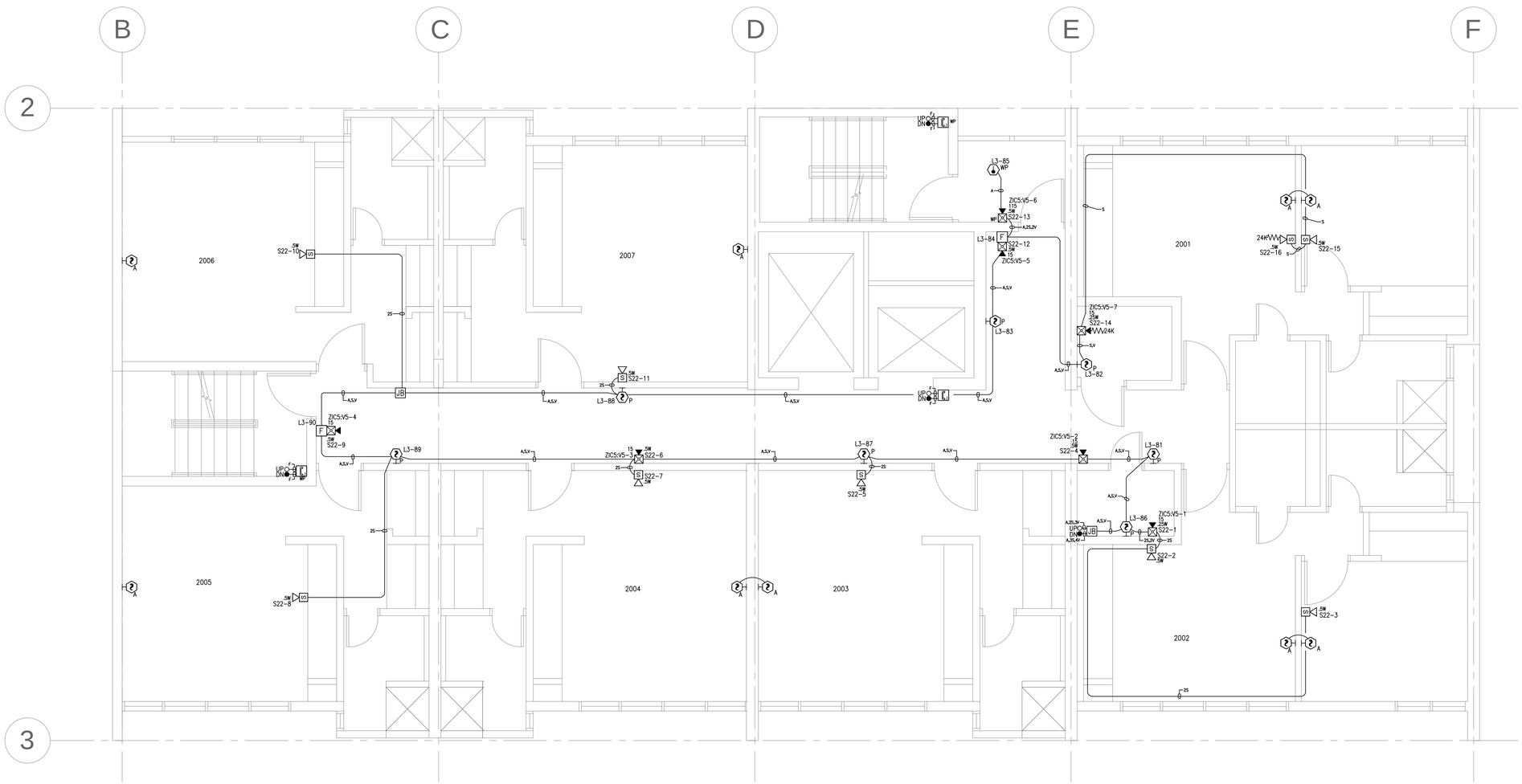
SHEET NUMBER: FA-2.19

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 20

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 20

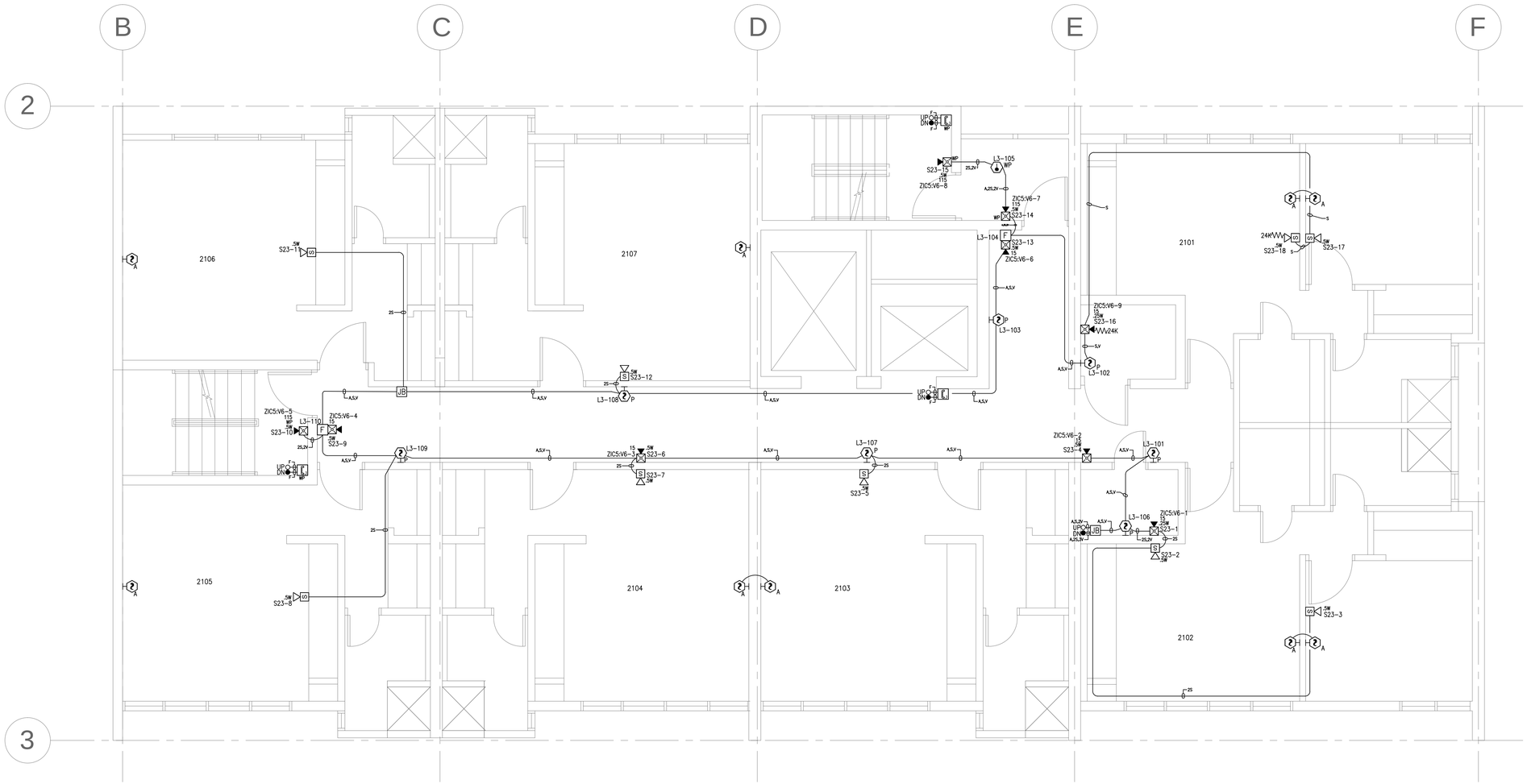
SHEET NUMBER: FA-2.20

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 21

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - 21

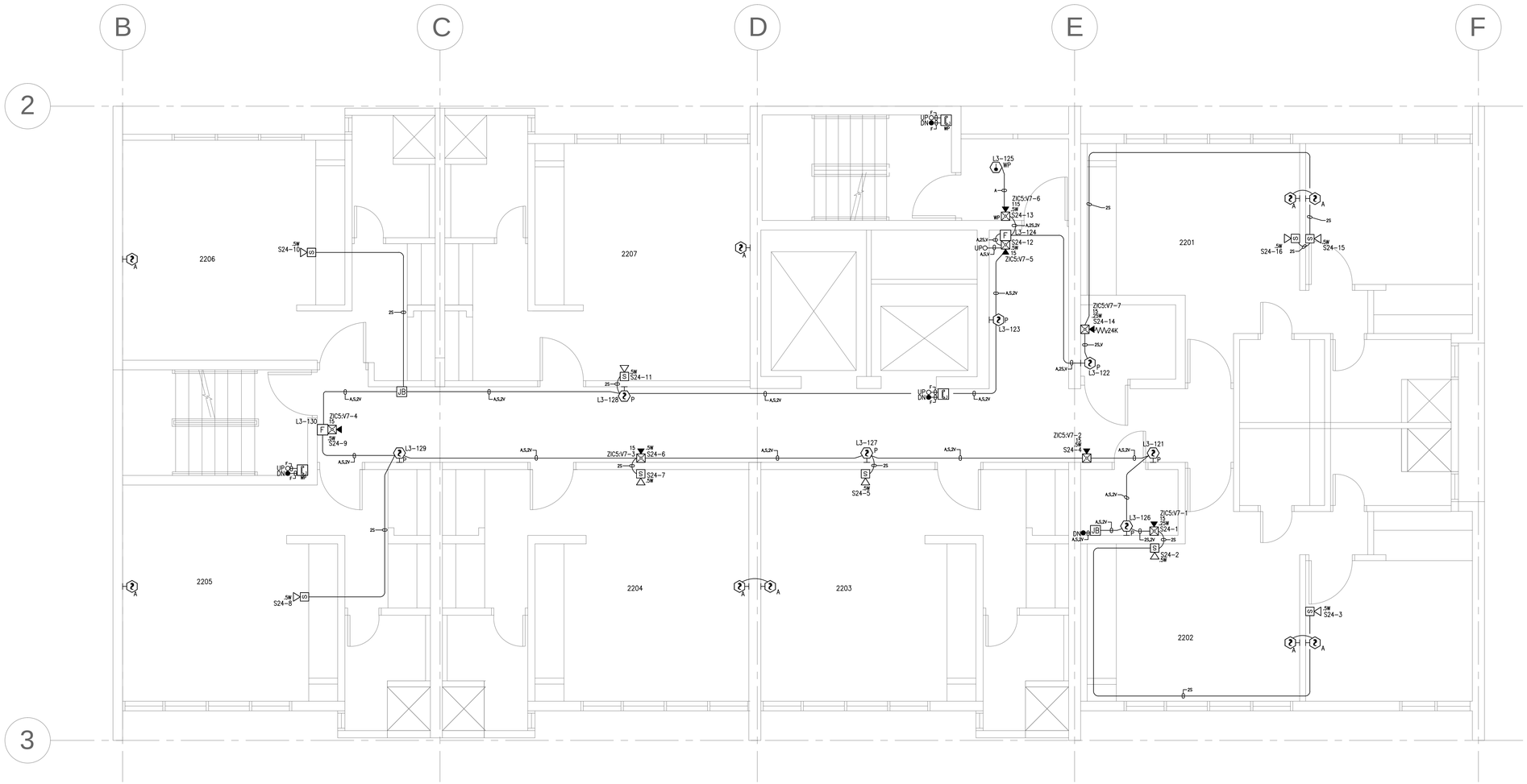
SHEET NUMBER: FA-2.21

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



FIRE ALARM AND CABLING - LEVEL 22

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

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'

NO.	DATE	DESCRIPTION

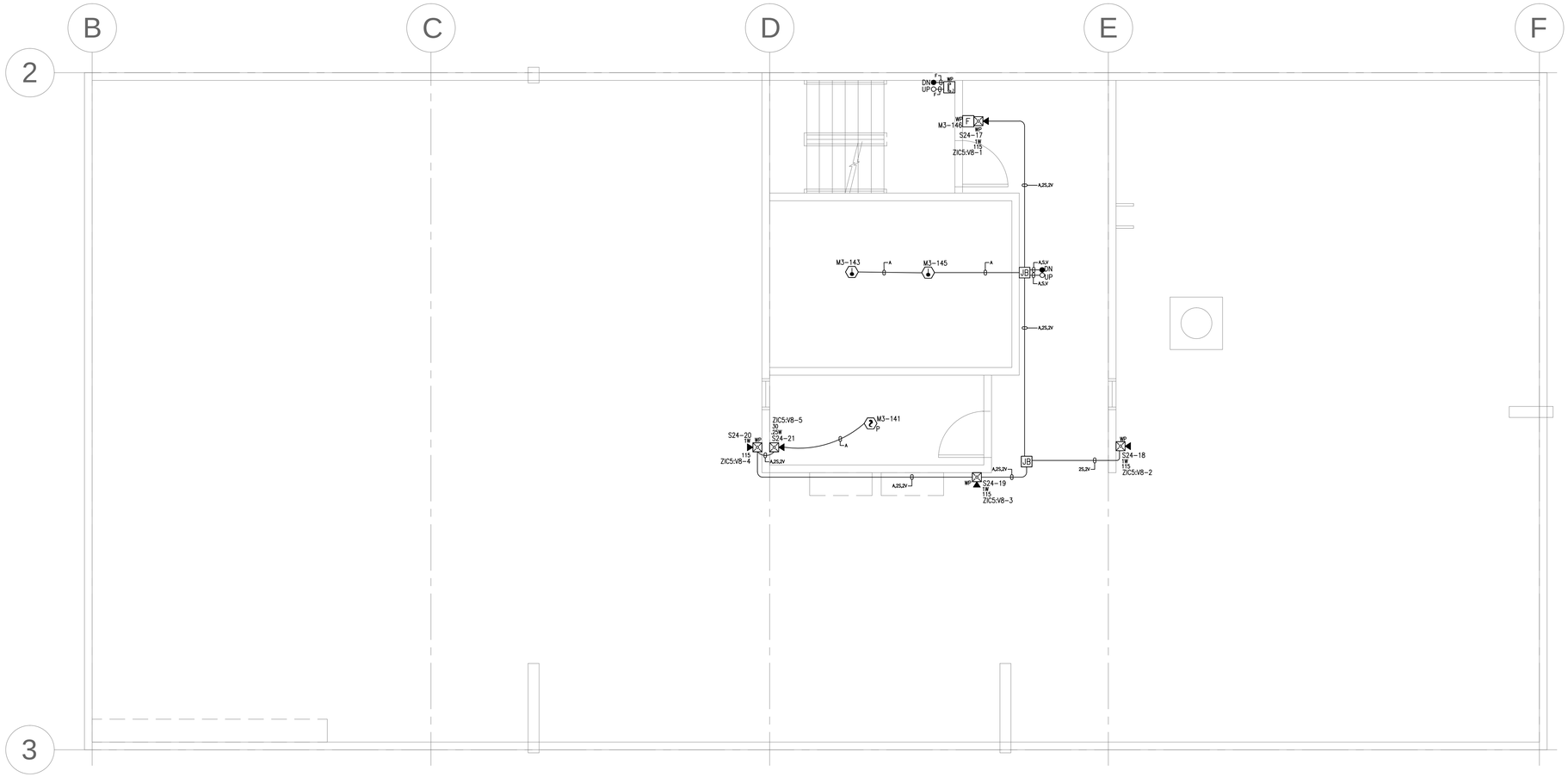
PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

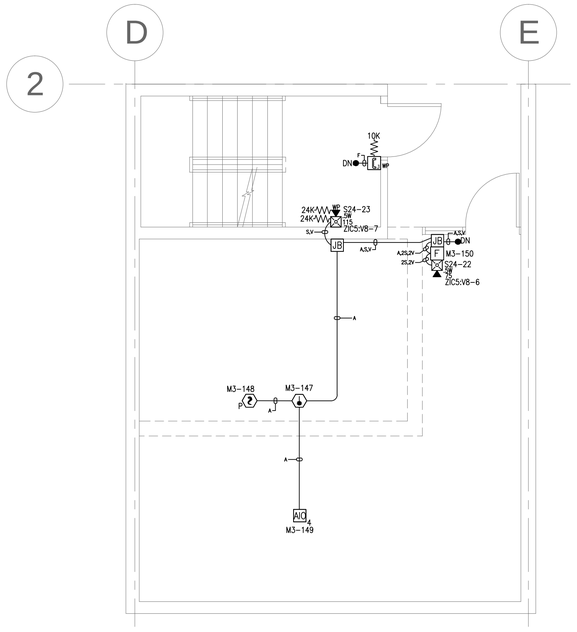
SHEET TITLE: FA SYSTEM LEVEL - 22

SHEET NUMBER: FA-2.22



FIRE ALARM AND CABLING - ROOF

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



FIRE ALARM AND CABLING - ELEV MACHINE ROOM

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

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FT1 CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. Ar, Nr SEPARATE RISER CONDUIT, TYPICAL ALL FLOORS

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

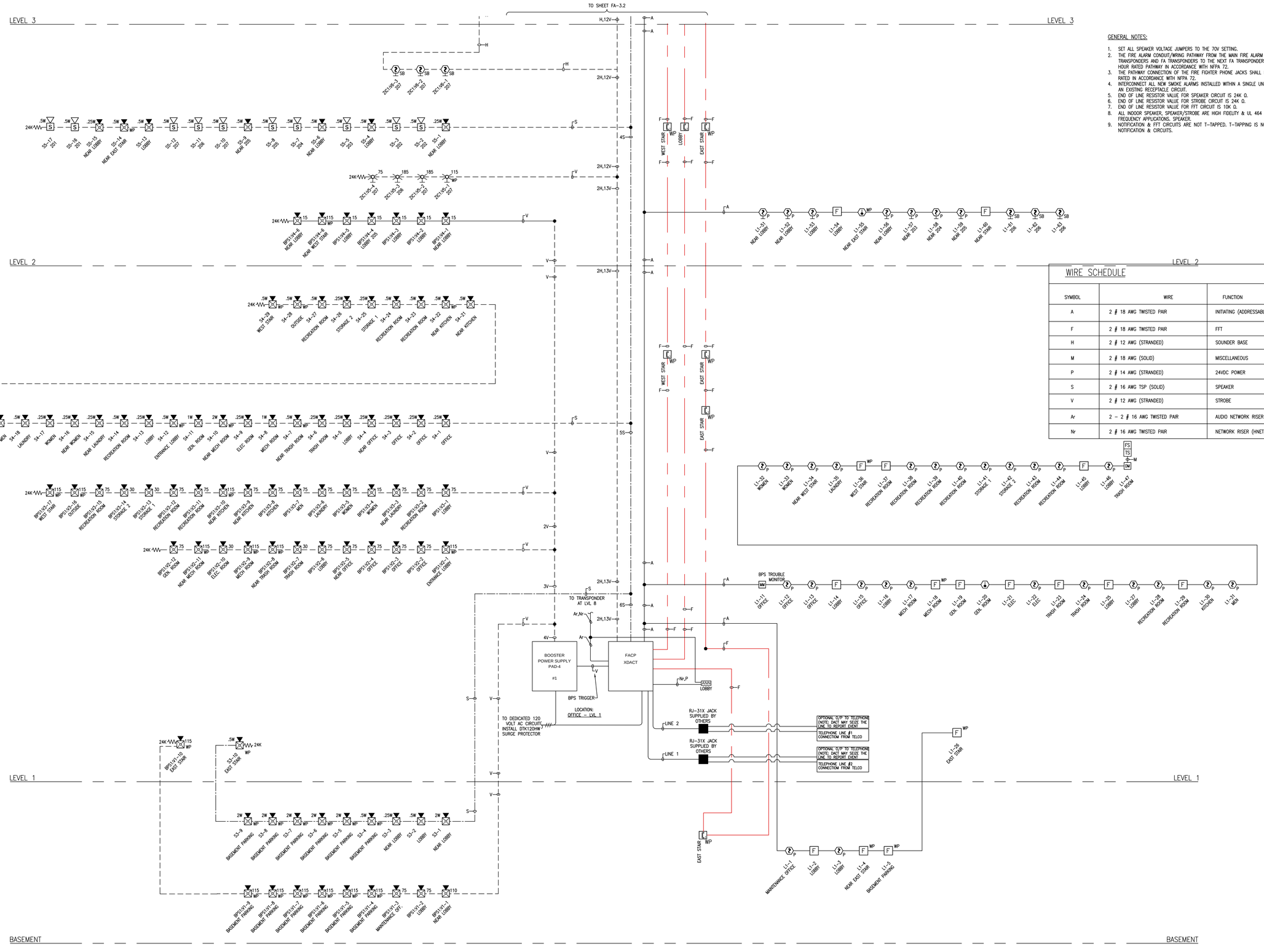
PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM LEVEL - ROOF

SHEET NUMBER: FA-2.23

0 2' 4' 6' 8' 10' 12'

SCALE: 1/4" = 1'



GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. NOTIFICATION & FFT CIRCUITS ARE NOT T-TAPPED. T-TAPPING IS NOT ALLOWED IN NOTIFICATION & CIRCUITS.

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)

NO.	DATE	DESCRIPTION

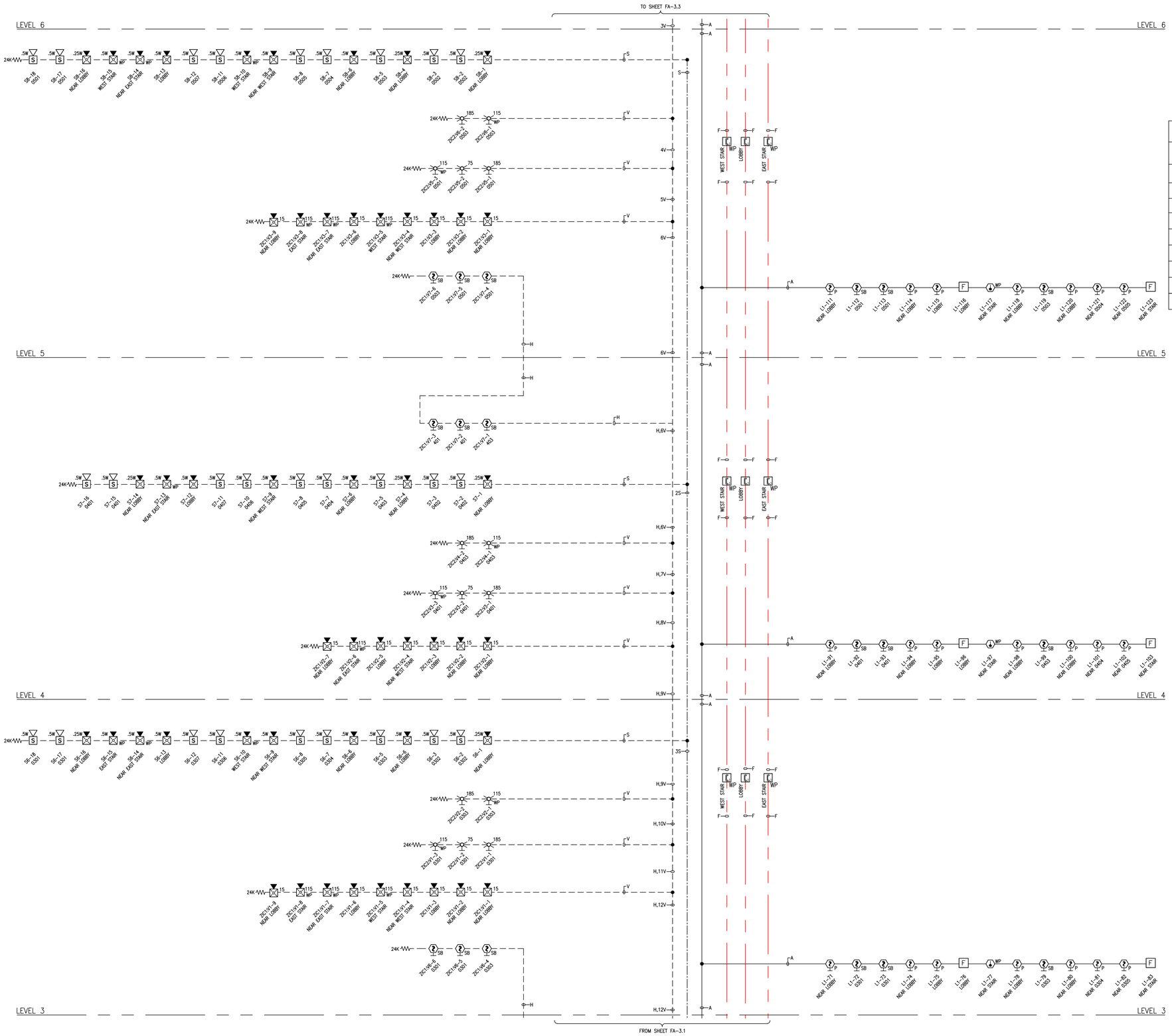
PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM SLD

SHEET NUMBER: FA-3.1



GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. NOTIFICATION & FFT CIRCUITS ARE NOT T-TAPPED. T-TAPPING IS NOT ALLOWED IN NOTIFICATION & CIRCUITS.

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)

NO.	DATE	DESCRIPTION

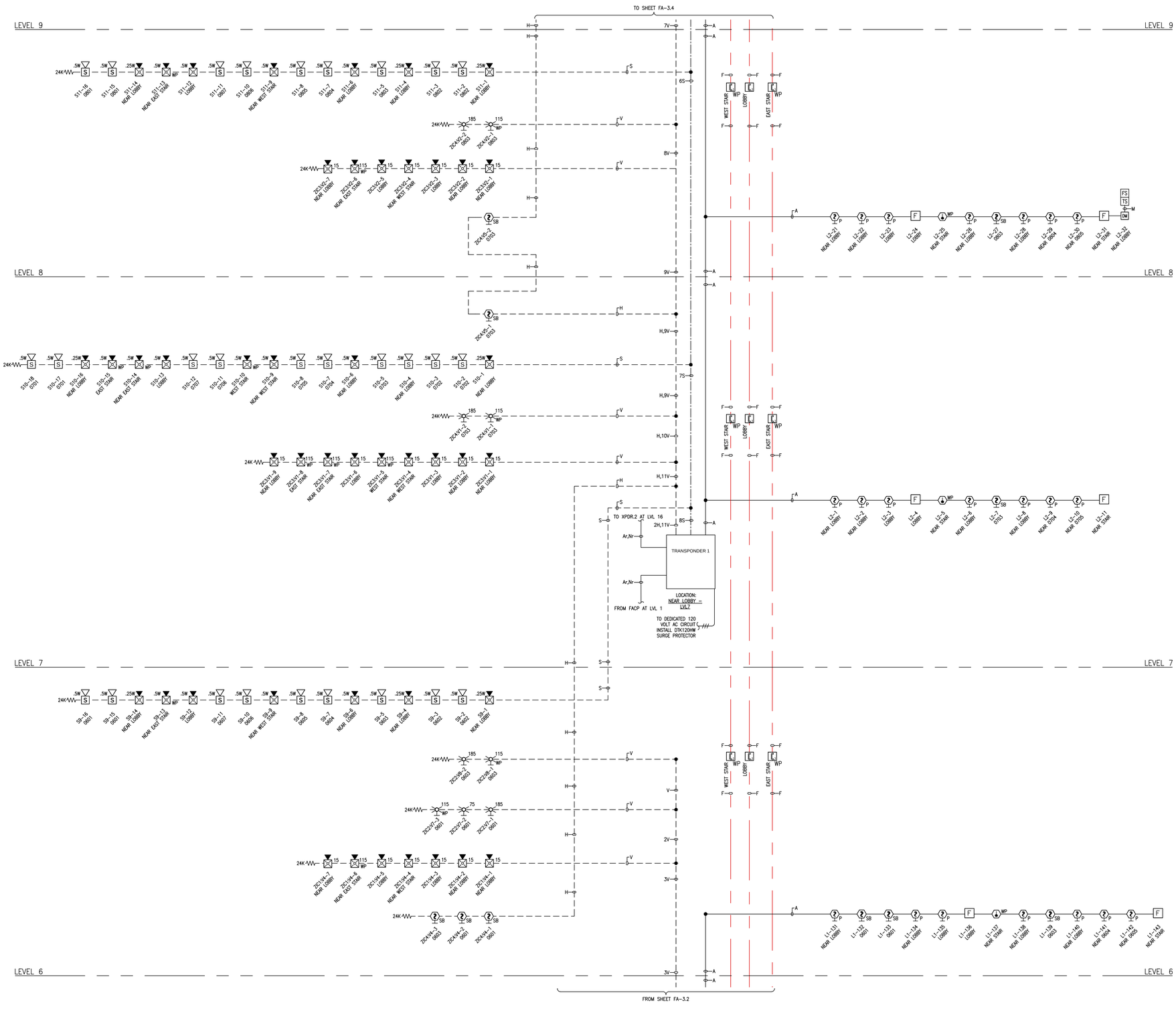
PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM SLD

SHEET NUMBER: FA-3.2



GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. NOTIFICATION & FFT CIRCUITS ARE NOT T-TAPPED. T-TAPPING IS NOT ALLOWED IN NOTIFICATION & CIRCUITS.

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)

NO.	DATE	DESCRIPTION

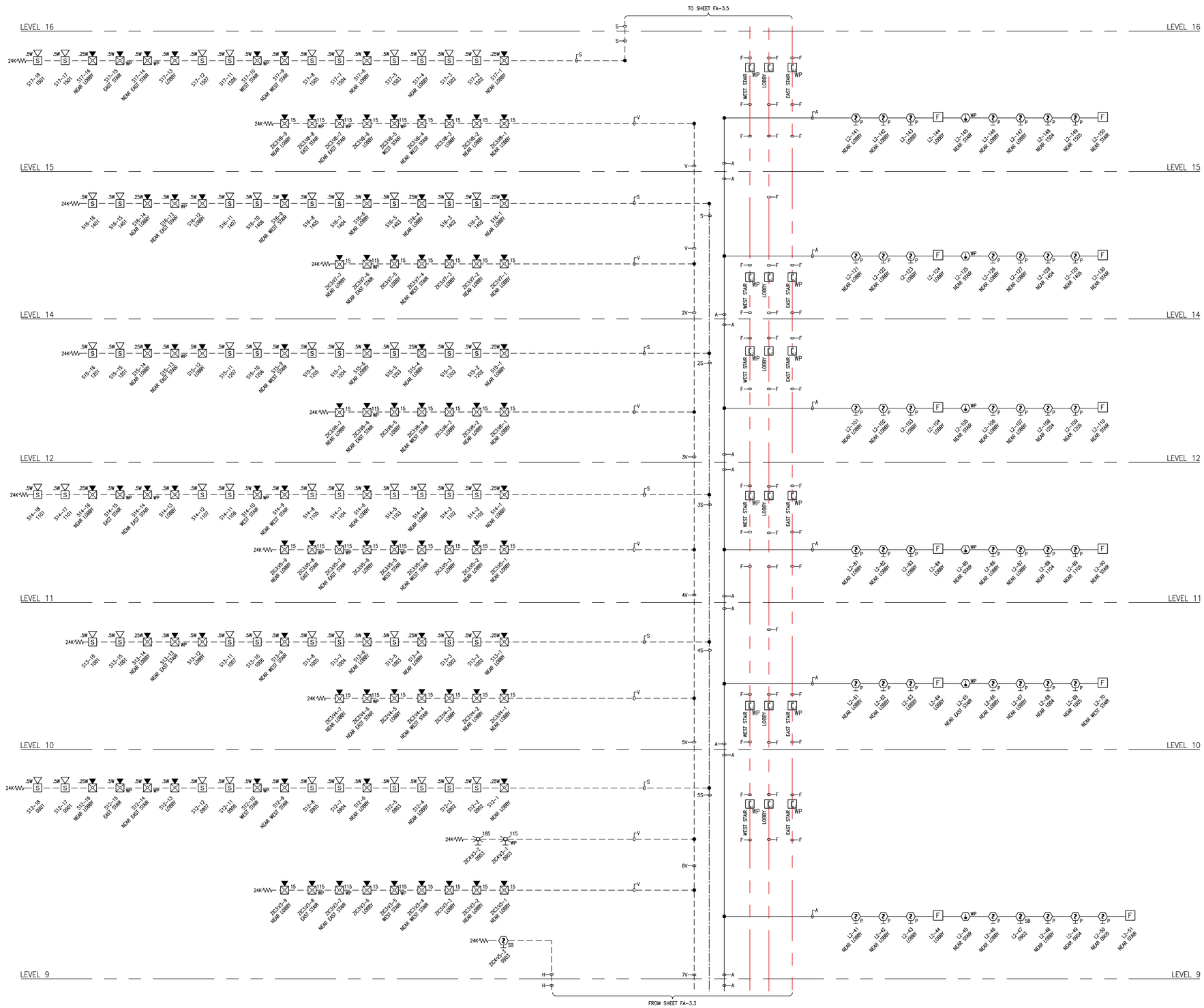
PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM SLD

SHEET NUMBER: FA-3.3



GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. NOTIFICATION & FFT CIRCUITS ARE NOT T-TAPPED. T-TAPPING IS NOT ALLOWED IN NOTIFICATION & CIRCUITS.

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

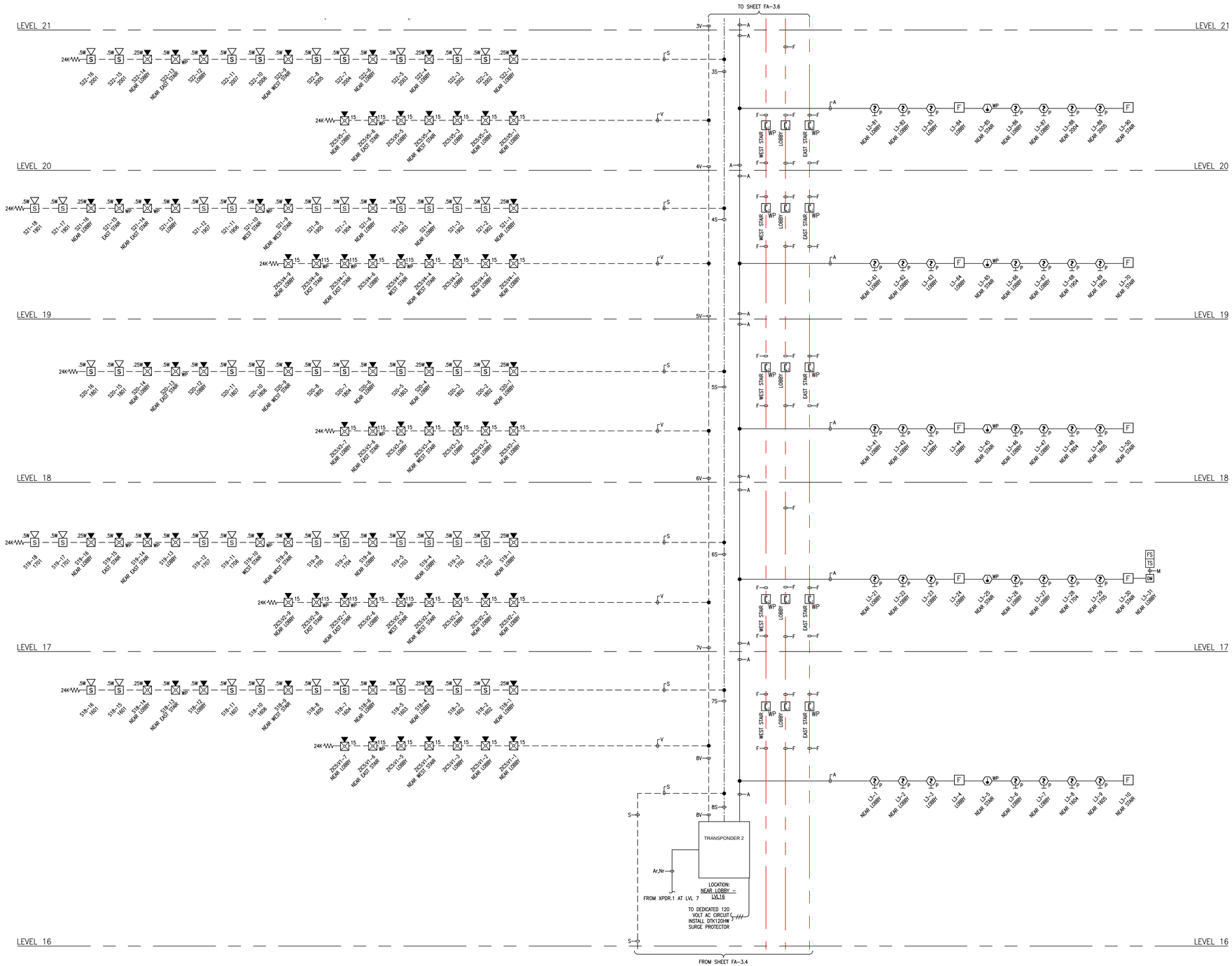
PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM SLD

SHEET NUMBER: FA-3.4

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WIRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. NOTIFICATION & FFT CIRCUITS ARE NOT T-TAPPED. T-TAPPING IS NOT ALLOWED IN NOTIFICATION & CIRCUITS.



WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM SLD

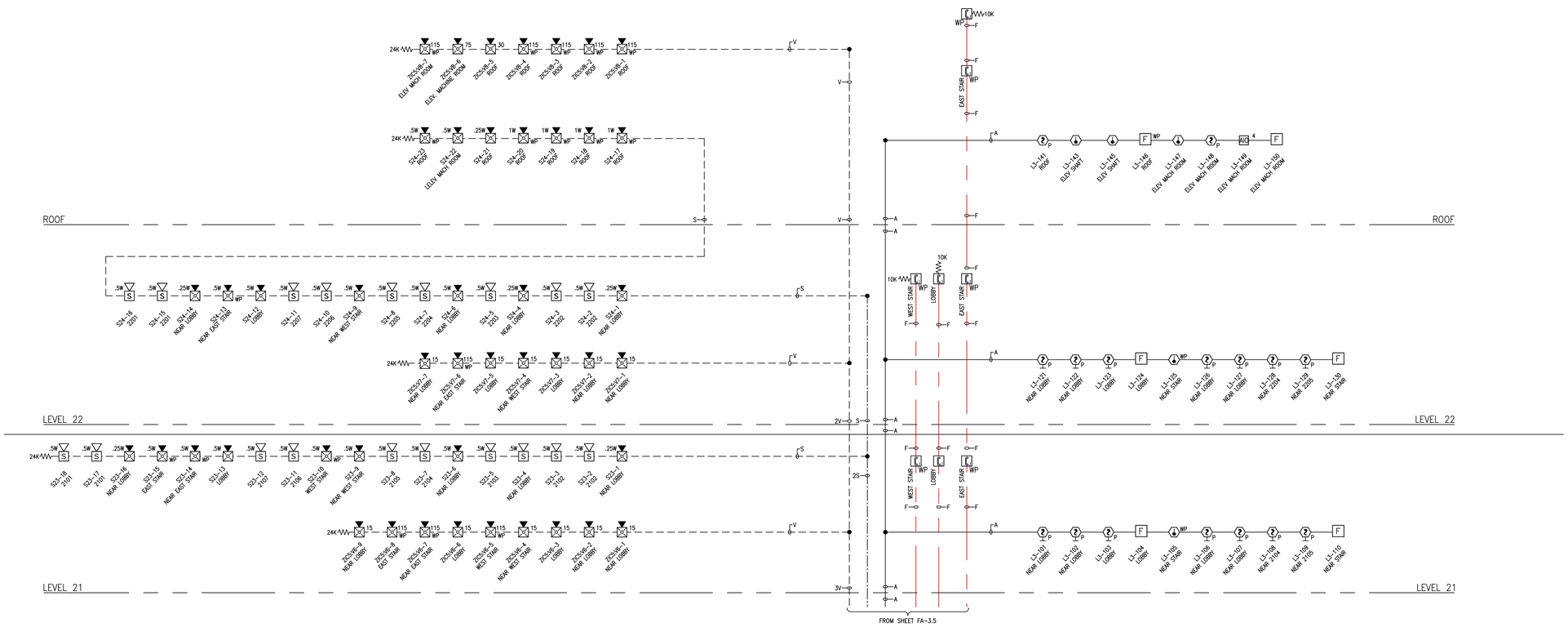
SHEET NUMBER: FA-3.5

GENERAL NOTES:

1. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70V SETTING.
2. THE FIRE ALARM CONDUIT/WRING PATHWAY FROM THE MAIN FIRE ALARM PANEL TO THE FA TRANSPONDERS AND FA TRANSPONDERS TO THE NEXT FA TRANSPONDERS SHALL MAINTAIN A 2 HOUR RATED PATHWAY IN ACCORDANCE WITH NFPA 72.
3. THE PATHWAY CONNECTION OF THE FIRE FIGHTER PHONE JACKS SHALL BE A MINIMUM 2 HOUR RATED IN ACCORDANCE WITH NFPA 72.
4. INTERCONNECT ALL NEW SMOKE ALARMS INSTALLED WITHIN A SINGLE UNIT AND POWER OFF OF AN EXISTING RECEPTACLE CIRCUIT.
5. END OF LINE RESISTOR VALUE FOR SPEAKER CIRCUIT IS 24K Ω.
6. END OF LINE RESISTOR VALUE FOR STROBE CIRCUIT IS 24K Ω.
7. END OF LINE RESISTOR VALUE FOR FFT CIRCUIT IS 10K Ω.
8. ALL INDOOR SPEAKER, SPEAKER/STROBE ARE HIGH FIDELITY & UL 464 LISTED FOR LOW FREQUENCY APPLICATIONS. SPEAKER.
9. NOTIFICATION & FFT CIRCUITS ARE NOT T-TAPPED. T-TAPPING IS NOT ALLOWED IN NOTIFICATION & CIRCUITS.

WIRE SCHEDULE

SYMBOL	WIRE	FUNCTION
A	2 # 18 AWG TWISTED PAIR	INITIATING (ADDRESSABLE)
F	2 # 18 AWG TWISTED PAIR	FFT
H	2 # 12 AWG (STRANDED)	SOUNDER BASE
M	2 # 18 AWG (SOLID)	MISCELLANEOUS
P	2 # 14 AWG (STRANDED)	24VDC POWER
S	2 # 16 AWG TSP (SOLID)	SPEAKER
V	2 # 12 AWG (STRANDED)	STROBE
Ar	2 – 2 # 16 AWG TWISTED PAIR	AUDIO NETWORK RISER (DACNET)
Nr	2 # 16 AWG TWISTED PAIR	NETWORK RISER (HNET)



NO.	DATE	DESCRIPTION

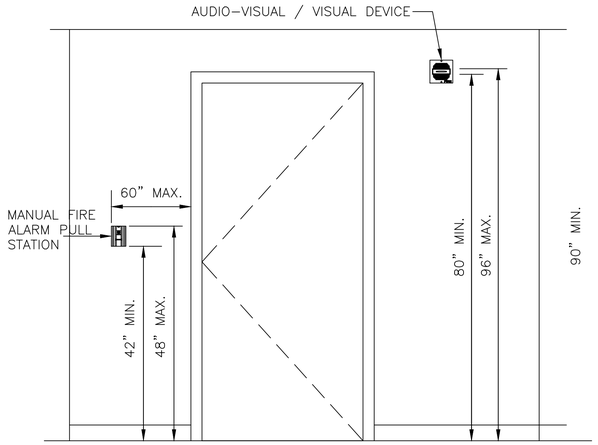
PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

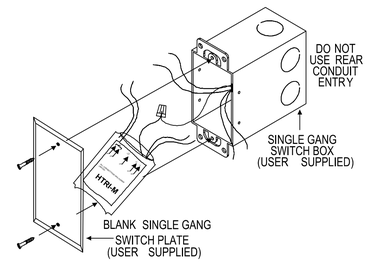
PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM SLD

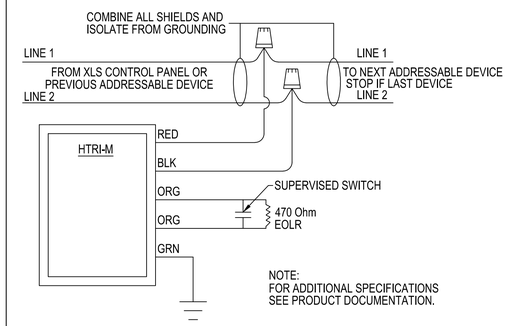
SHEET NUMBER: FA-3.6



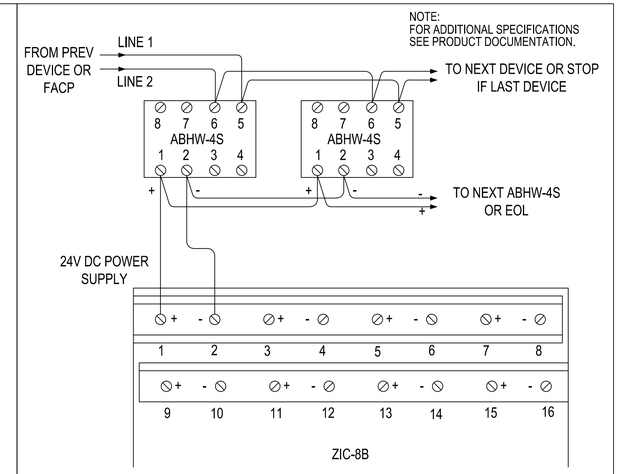
TYPICAL FIRE ALARM DEVICE MOUNTING



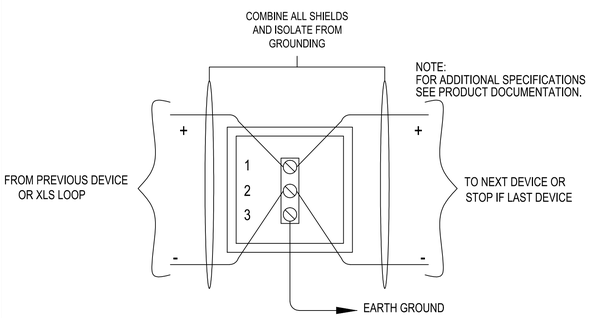
TYPICAL HTRI-M MOUNTING



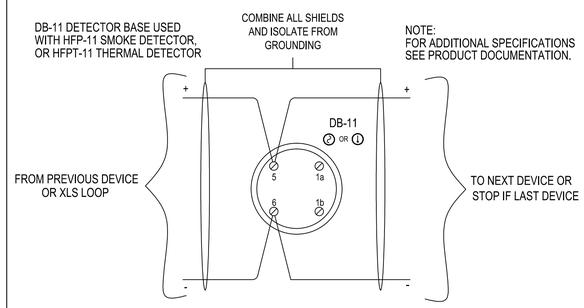
TYPICAL HTRI-M WIRING



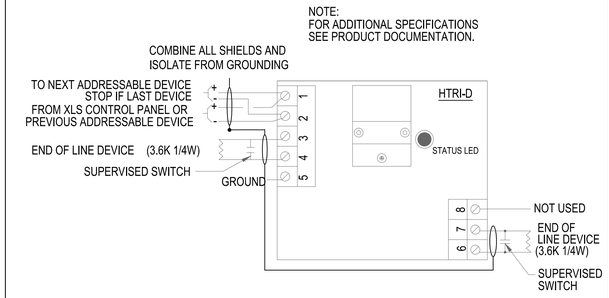
TYPICAL ABHW-4S WIRING



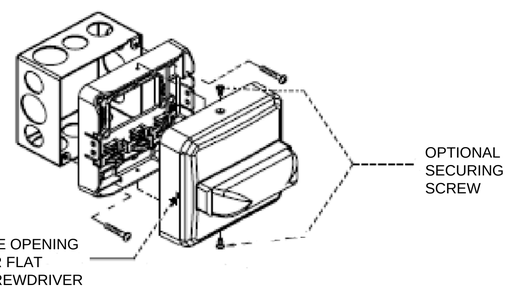
TYPICAL HMS-D MANUAL STATION WIRING DETAIL



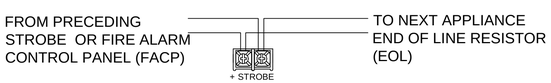
TYPICAL SMOKE & HEAT DETECTOR WIRING



TYPICAL HTRI-D WIRING



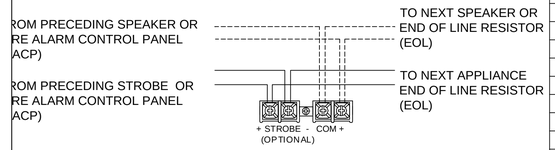
TYPICAL STROBE MOUNTING



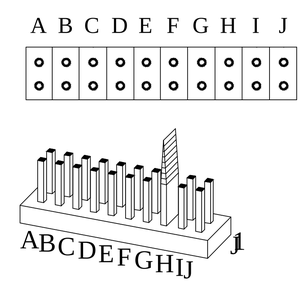
TYPICAL STROBE WIRING

NOTE:
1. Use needle nose pliers to pull and properly insert the jumper plug to the desired tap setting .
2. Use only the 70V tap setting, DO NOT USE 25V Settings.

Figure 1:



Speaker Voltage and Wattage Connection Chart		
Position	25V	70V
A	8	----
B	4	----
C	2	----
D	1	8
E	1/2	4
F	1/4	2
G	1/8	1
H	----	1/2
I	----	1/4
J	----	1/8



Jumper plug is used to select tap settings which = dBA lou

TYPICAL SPEAKER / STROBE WIRING

NO.	DATE	DESCRIPTION

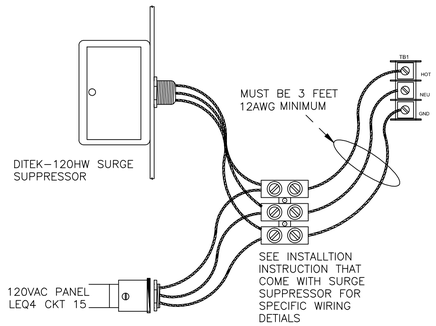
PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

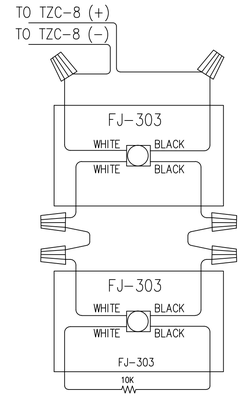
PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM TYPICAL DETAILS

SHEET NUMBER: FA-4.1

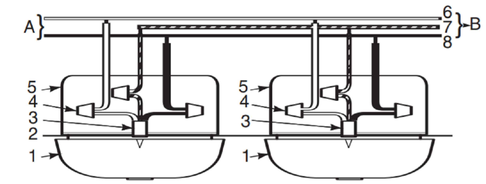


TYPICAL SURGE SUPPRESSOR WIRING



NOTE:
FOR ADDITIONAL SPECIFICATIONS
SEE PRODUCT DOCUMENTATION.

TYPICAL FJ-303 WIRING

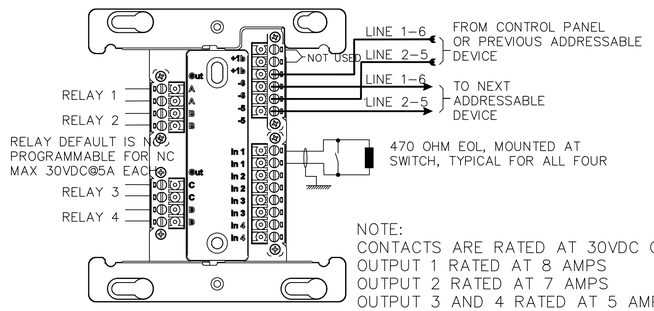


A. Unswitched 120VAC 60 Hz source

B. To additional units; Maximum = 18 total (Maximum 12 Smoke Alarms)

1. Smoke Alarm	4. Wire Nut	7. Interconnect Wire (Orange)
2. Ceiling or Wall	5. Junction Box	8. Hot Wire (Blk)
3. Power Connector	6. Neutral Wire (Wht)	

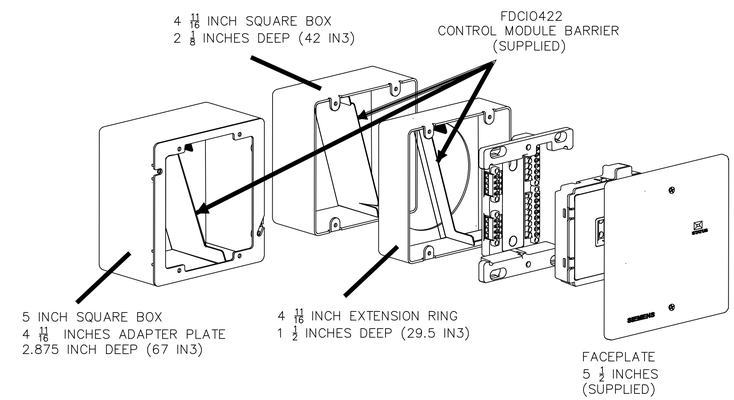
TYPICAL BRK 9120B SMOKE DETECTOR



NOTE:
CONTACTS ARE RATED AT 30VDC OE 125VAC.
OUTPUT 1 RATED AT 8 AMPS
OUTPUT 2 RATED AT 7 AMPS
OUTPUT 3 AND 4 RATED AT 5 AMPS

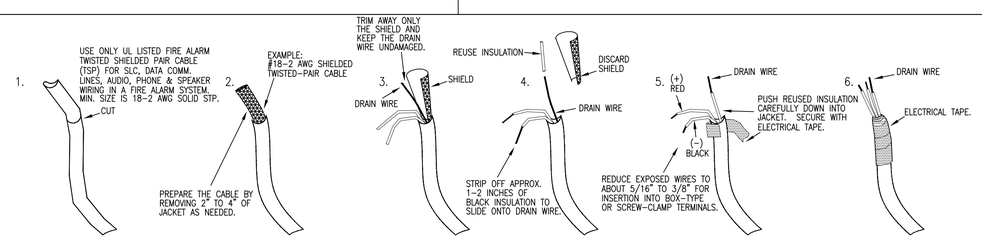
TYPICAL FDCIO422 4 INPUT 4 OUTPUT
MOUNT ON 4 11/16 BOX

TYPICAL FDCIO422 4 INPUT 4 OUTPUT WIRING



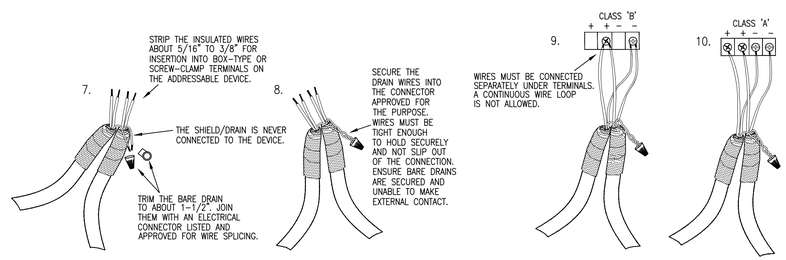
MOUNTING THE FDCIO422

TYPICAL FDCIO422 4 INPUT 4 OUTPUT MOUNTING



NOTE:

- SHIELDS AND DRAINS MUST NEVER TOUCH GROUND.
- MOST GROUNDS ARE DUE TO SHIELDING ISSUES.
- MOST SHORTS ARE SHIELD TO CONDUCTOR.
- BY CREATING A PROPER PROCEDURE FOR WIRE HANDLING WITH ADDRESSABLE CIRCUITS MOST GROUNDS AND SHORTS CAN BE ELIMINATED.
- ALL UNSHIELDED WIRE MUST BE ENTIRELY IN GROUND CONDUIT.
- CONDUIT SYSTEM MUST HAVE A GOOD REFERENCE TO EARTH GROUND
- PIGTAILS, (T-TAP) WIRING IS PERMITTED TO ADDRESSABLE DEVICES FOR CLASS B CIRCUIT WIRING.



SHIELDED WIRING

NO.	DATE	DESCRIPTION

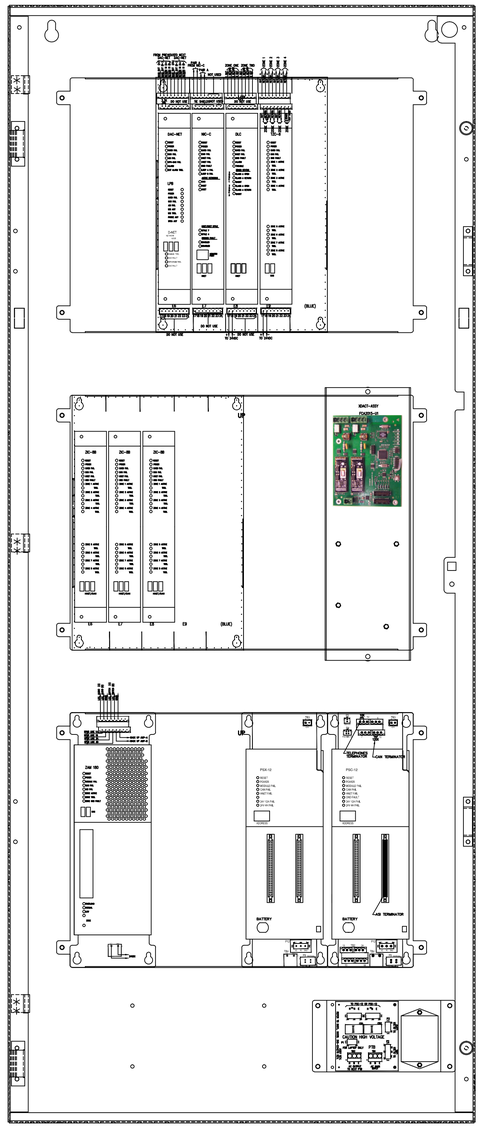
PUMEHANA

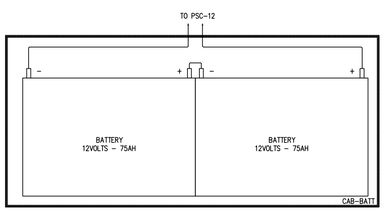
DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

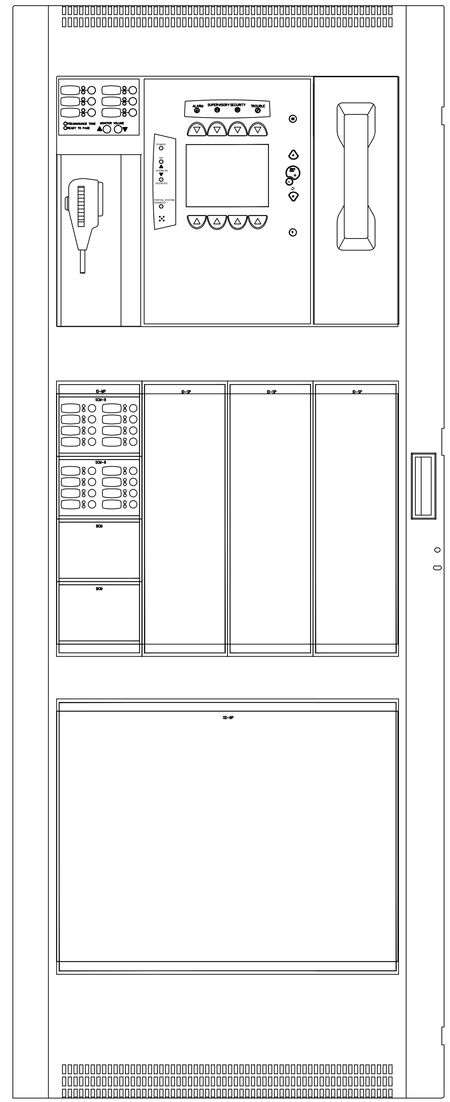
PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM TYPICAL DETAILS

SHEET NUMBER: FA-4.2

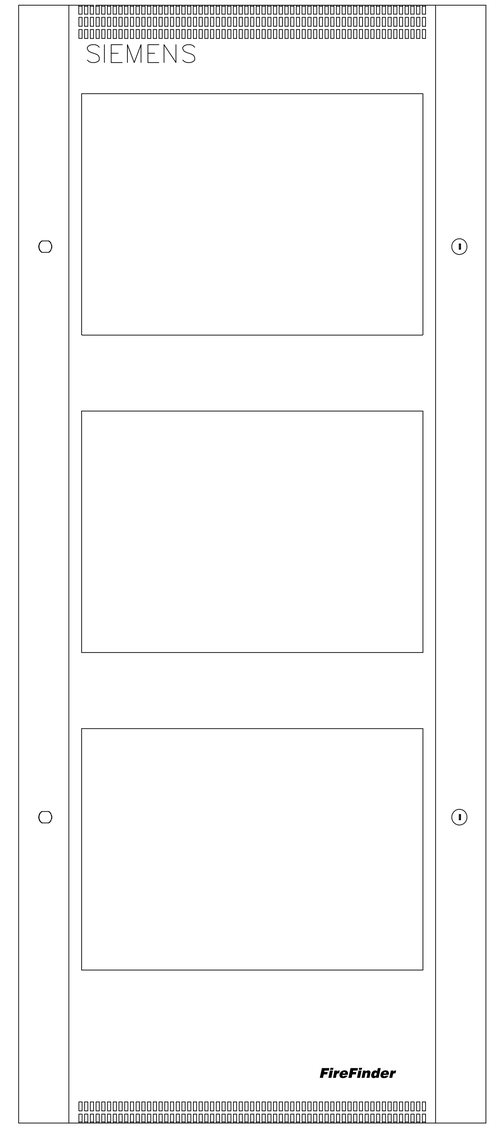






FIRE ALARM CONTROL PANEL

LEVEL 1 - OFFICE



NO.	DATE	DESCRIPTION

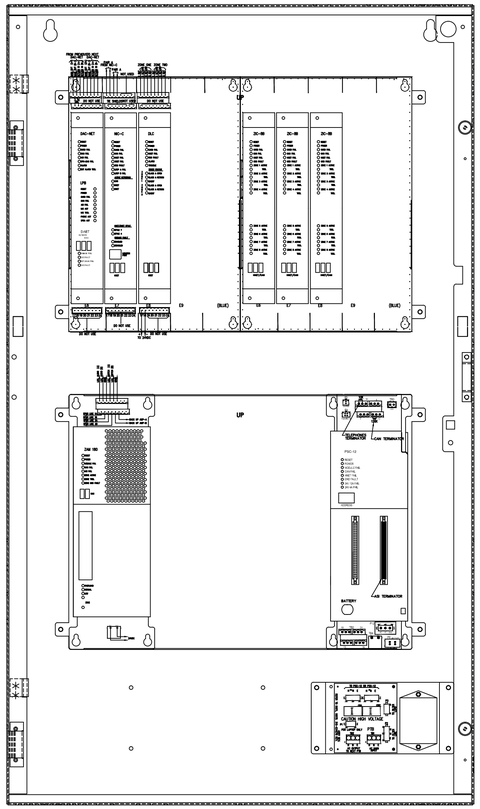
PUMEHANA

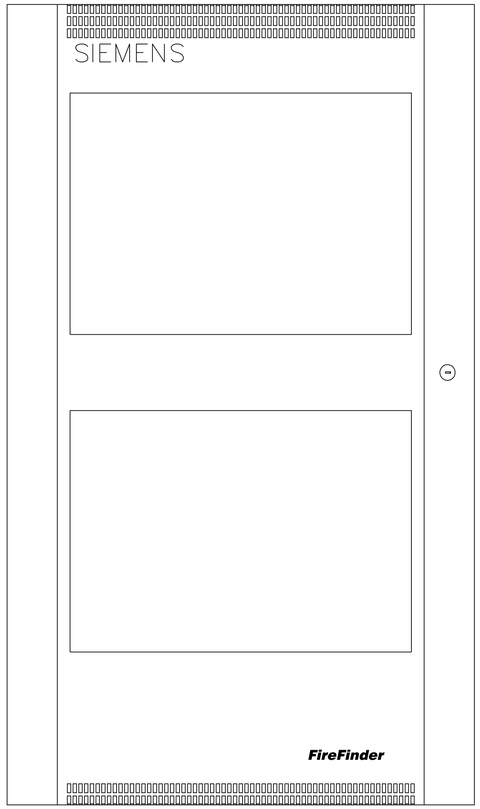
DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: JH	DATE: 10-17-2018
APPROVED BY:	DATE:

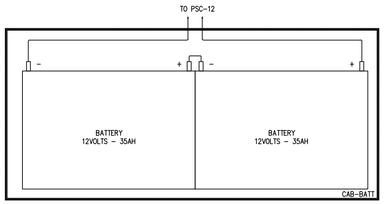
PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM PANEL DETAILS

SHEET NUMBER: FA-5.1

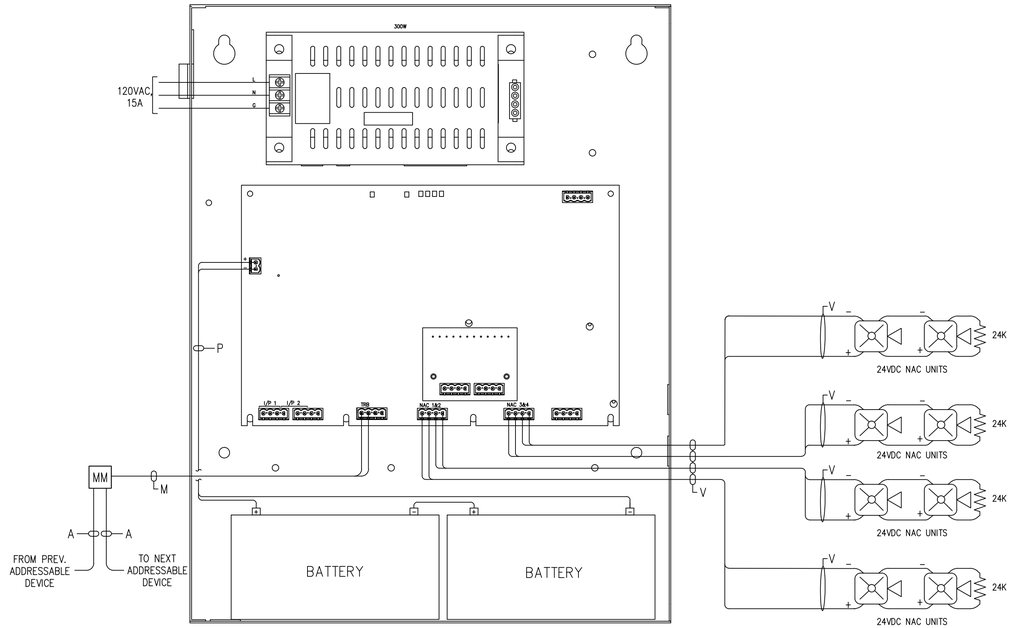






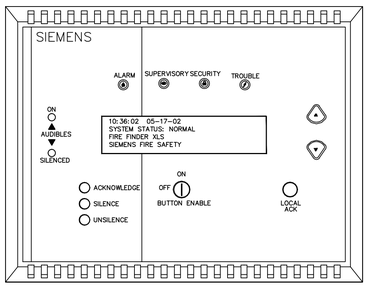
TRANSPONDER 1

LEVEL 7 - NEAR LOBBY



TYPICAL PAD-4 BOOSTER POWER SUPPLY

LEVEL 1 - OFFICE



SSD-C REMOTE ANNUNCIATOR

LEVEL 1 - NEAR ELEV LOBBY

NO.	DATE	DESCRIPTION

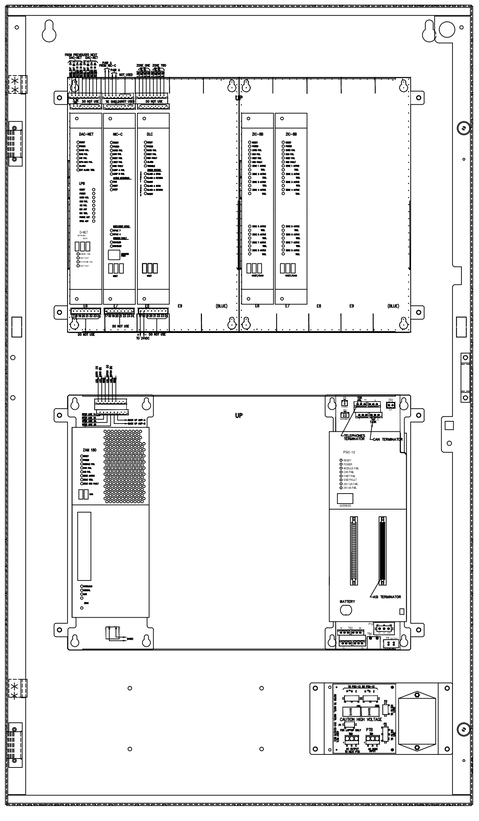
PUMEHANA

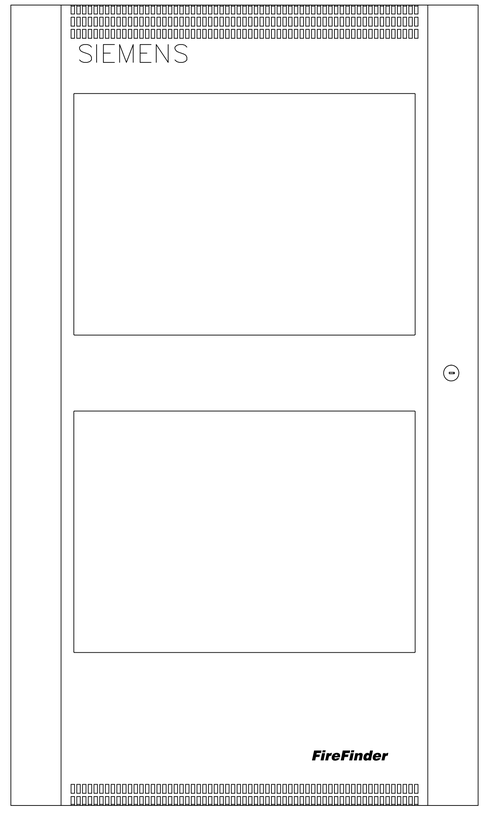
DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

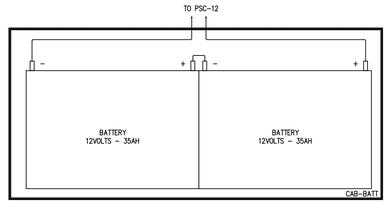
PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM PANEL DETAILS

SHEET NUMBER: FA-5.2







TRANSPONDER 2

LEVEL 16 - NEAR LOBBY

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM PANEL DETAILS

SHEET NUMBER: FA-5.3

PUMEHANA
FACP
LEVEL 1 - OFFICE

Module	Device	Description	Qty	Power Calculations: 24V Backplane Current (mA)	6.2V Backplane Current (mA)	Screw Terminal 24V Current (mA): Standby	Screw Terminal 24V Current (mA): Alarm	Battery Calculations: Standby 24 VDC Current
DAC		Digital Audio Card	1	230.0				230.0
DLC		Device Loop Card	1		200.0	100.0	100.0	145.0
	OP921	Photo detector	75			21.0	21.0	21.0
	HI921	Thermal detector	1			0.3	0.3	0.3
	HMS-D	Manual station	19			17.1	17.1	17.1
	HTRI-D	Dual input module	1			1.3	1.3	1.3
	HTRI-M	Single input mini module	11			14.3	14.3	14.3
FMT		Firefighter Master Telephone	1			150.0	150.0	70.0
FCA2015		Digital Alarm Communicator Transmitter	1			33.5	43.5	33.5
LPB		Local Page Board	1	25.0	95.0			50.0
LVM		Live Voice Module	1			51.0	51.0	51.0
		Active Switch				0.0	0.0	0.0
NIC		Network Interface Card	1	120.0				120.0
PMI-2		Control Panel	1	195.0				125.0
	TSP-40A	Thermal Strip Printer				0.0	0.0	0.0
SCM		Switch Control Module	2			28.0	28.0	28.0
	Switch	Active Pushbutton Switch				0.0	0.0	0.0
SSD		System Status Display	1			200.0	200.0	200.0
TZC		Telephone Zone Card	1			315.0	315.0	280.0
ZAM		Zone Amplifier Module	1			300.0	300.0	301.0
		Total Speaker Wattage	62.25				3299.3	
Total ZICs	Zone Indicating Cards	***Go to the ZIC sheet (double click)***		706.0	0.0	0.0	10000.0	314.0
PSC-12		Power Supply Card 288 Watts	1					150.0
	PSC Relay	Active Relay on the PSC						0.0
	See Note 1	AUX Standby Current [mA] on A.C.						
	See Note 1	AUX Alarm Current [mA] on A.C.						
	See Note 1	AUX Standby Current on Battery [mA]						
	See Note 1	AUX Alarm Current on Battery [mA]						
PSX-12		Power Supply Extender 288 Watts	1					150.0
	See Note 1	AUX Standby Current [mA] on A.C.						
	See Note 1	AUX Alarm Current [mA] on A.C.						
	See Note 1	AUX Standby Current on Battery [mA]						
	See Note 1	AUX Alarm Current on Battery [mA]						
Total [A]				1.2760	0.2950	1.2315	14.5407	2.3015

Power Supply Limits

Parameter	Max value	Actual value	Result
24V Backplane Current	2A	1.276	**OK**
6.2V Backplane Current	2A	0.295	**OK**
Total 24V Standby Current	10	1.801	**OK**
Total 24V Alarm Current	12A * Number of PS	15.817	**OK**

Battery Calculation

Max Standby [Hrs] **Warning: 90 hours required for Pre-Action or Deluge systems (may be less if an engine driven generator is provided)**	24	
Max Alarm [Min]	15	**Voice systems require a minimum 15 minute backup time**
Battery capacity reserve [%]	20	

Required Battery Capacity [AH]:	**58.87**
Required Battery Capacity with reserve [AH]:	**70.64**

PUMEHANA
BPS1 - BATTERY CALCULATION

			Supervisory Current		Alarm Current	
DESCRIPTION	***Module***	Quantity				
MAIN BOARD	PAD-4	1	1	0.0010	1	0.0010
BPS1						
NAC LOAD	NOTIFICATION APPLIANCE	-	-	-	-	6.5880
			Total Supervisory Current	**0.0010**	**Total Alarm Current**	**6.5880**

Total Supr. Current	0.001	AMPS	Total Battery	1.671	AMP HOUR
Hours of Standby	**24**	**HOURS**	Derating Factor 1.25		
Total Supr. Required	0.024	AMP HR	**Total Batt Req**	**2.089**	**AMP HOUR**
Total Alarm Current	6.588	AMPS	**Batt Provided**	**4.4**	**AMP HOUR**
Minutes of Alarm	**15**	**MIN**			
Total Alarm Required	1.647	AMP HR			

PUMEHANA

TRANSPONDER1 : LEVEL 7 - NEAR LOBBY

Module	Device	Description	Qty	Power Calculations: 24V Backplane Current (mA)	6.2V Backplane Current (mA)	Screw Terminal 24V Current (mA): Standby	Screw Terminal 24V Current (mA): Alarm	Battery Calculations: Standby 24 VDC Current
DAC		Digital Audio Card	1	230.0				230.0
DLC		Device Loop Card	1		200.0	100.0	100.0	145.0
	OP921	Photo detector	59			16.5	16.5	16.5
	HMS-D	Manual station	16			14.4	14.4	14.4
	HTRI-D	Dual input module	1			1.3	1.3	1.3
	HTRI-M	Single input mini module	8			10.4	10.4	10.4
NIC		Network Interface Card	1	120.0				120.0
ZAM		Zone Amplifier Module	1			300.0	300.0	
		Total Speaker Wattage	56				2968.0	
ZAM Backup		Zone Amplifier Module - Backup				0.0		0.0
Total ZICs	Zone Indicating Cards	***Go to the ZIC sheet (double click)***		672.0	0.0	0.0	7500.0	312.0
PSC-12		Power Supply Card 288 Watts	1					150.0
	PSC Relay	Active Relay on the PSC						0.0
	See Note 1	AUX Standby Current [mA] on A.C.						
	See Note 1	AUX Alarm Current [mA] on A.C.						
	See Note 1	AUX Standby Current on Battery [mA]						
	See Note 1	AUX Alarm Current on Battery [mA]						
PSX-12		Power Supply Extender 288 Watts						0.0
Total [A]				1.0220	0.2000	0.4426	10.9106	0.9996

Power Supply Limits

Parameter	Max value	Actual value	Result
24V Backplane Current	2A	1.022	**OK**
6.2V Backplane Current	2A	0.200	**OK**
Total 24V Standby Current	5	0.793	**OK**
Total 24V Alarm Current	12A * Number of PS	11.933	**OK**

Battery Calculation

Max Standby [Hrs] **Warning: 90 hours required for Pre-Action or Deluge systems (may be less if an engine driven generator is provided)**	24	
Max Alarm [Min]	15	**Voice systems require a minimum 15 minute backup time**
Battery capacity reserve [%]	20	

Required Battery Capacity [AH]:	**26.72**
Required Battery Capacity with reserve [AH]:	**32.06**

PUMEHANA

TRANSPONDER2 : LEVEL 16 - NEAR LOBBY

Module	Device	Description	Qty	Power Calculations: 24V Backplane Current (mA)	6.2V Backplane Current (mA)	Screw Terminal 24V Current (mA): Standby	Screw Terminal 24V Current (mA): Alarm	Battery Calculations: Standby 24 VDC Current
DAC		Digital Audio Card	1	230.0				230.0
DLC		Device Loop Card	1		200.0	100.0	100.0	145.0
	OP921	Photo detector	51			14.3	14.3	14.3
	HI921	Thermal detector	3			0.8	0.8	0.8
	FDCIO B	4-input/4-output module	1			1.0	1.0	1.0
	HMS-D	Manual station	16			14.4	14.4	14.4
	HTRI-D	Dual input module	1			1.3	1.3	1.3
	HTRI-M	Single input mini module	7			9.1	9.1	9.1
NIC		Network Interface Card	1	120.0				120.0
ZAM		Zone Amplifier Module	1			300.0	300.0	
		Total Speaker Wattage	60.25				3193.3	
ZAM Backup		Zone Amplifier Module - Backup				0.0		0.0
Total ZICs	Zone Indicating Cards	***Go to the ZIC sheet (double click)***		482.0	0.0	0.0	6000.0	210.0
PSC-12		Power Supply Card 288 Watts	1					150.0
	PSC Relay	Active Relay on the PSC						0.0
	See Note 1	AUX Standby Current [mA] on A.C.						
	See Note 1	AUX Alarm Current [mA] on A.C.						
	See Note 1	AUX Standby Current on Battery [mA]						
	See Note 1	AUX Alarm Current on Battery [mA]						
PSX-12		Power Supply Extender 288 Watts						0.0
Total [A]				0.8320	0.2000	0.4409	9.6342	0.8959

Power Supply Limits

Parameter	Max value	Actual value	Result
24V Backplane Current	2A	0.832	**OK**
6.2V Backplane Current	2A	0.200	**OK**
Total 24V Standby Current	5	0.791	**OK**
Total 24V Alarm Current	12A * Number of PS	10.466	**OK**

Battery Calculation

Max Standby [Hrs] **Warning: 90 hours required for Pre-Action or Deluge systems (may be less if an engine driven generator is provided)**	24	
Max Alarm [Min]	15	**Voice systems require a minimum 15 minute backup time**
Battery capacity reserve [%]	20	

Required Battery Capacity [AH]:	**23.91**
Required Battery Capacity with reserve [AH]:	**28.69**

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K	DATE: 10-17-2018
CHECKED BY: J.H	DATE: 10-17-2018
APPROVED BY:	DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM BATTERY CALCULATION

SHEET NUMBER: FA-6.1

PUMEHANA
LEVEL 1 - OFFICE

dB Loss Calculations

SPEAKER CIRCUIT	SPK CIRCUIT NUMBER	WIRE GAUGE	CIRCUIT VOLTAGE	APPLIANCES QUANTITIES SPEAKER WATTAGE 0.25W	0.5W	1W	2W	TOTAL CIRCUIT LOAD (Watts)	ESTIMATED CIRCUIT LENGTH (FEET)	ACTUAL LOSS (dB)	TOTAL CIRCUIT RESISTANCE (OHMS)
SPARE	S1	16 AWG	70 V					0.00 W		0.00 dB	0.0 Ω
SPARE	S2	16 AWG	70 V					0.00 W		0.00 dB	0.0 Ω
BASEMENT	S3	16 AWG	70 V	1	2		6	13.25 W	650 ft.	-0.15 dB	6.4 Ω
LEVEL1	S4	16 AWG	70 V	15	11	2	1	13.25 W	1250 ft.	-0.28 dB	12.3 Ω
LEVEL2	S5	16 AWG	70 V	2	14			7.50 W	620 ft.	-0.08 dB	6.1 Ω
LEVEL3	S6	16 AWG	70 V	2	16			8.50 W	620 ft.	-0.09 dB	6.1 Ω
LEVEL4	S7	16 AWG	70 V	2	14			7.50 W	600 ft.	-0.08 dB	5.9 Ω
LEVEL5	S8	16 AWG	70 V	2	16			8.50 W	620 ft.	-0.09 dB	6.1 Ω
				Appliance Summary				Total Load			
				24	73	2	7	58.50 W			

PUMEHANA
LEVEL 7 - NEAR LOBBY

dB Loss Calculations

SPEAKER CIRCUIT	SPK CIRCUIT NUMBER	WIRE GAUGE	CIRCUIT VOLTAGE	APPLIANCES QUANTITIES SPEAKER WATTAGE 0.25W	0.5W	1W	2W	TOTAL CIRCUIT LOAD (Watts)	ESTIMATED CIRCUIT LENGTH (FEET)	ACTUAL LOSS (dB)	TOTAL CIRCUIT RESISTANCE (OHMS)
LEVEL6	S9	16 AWG	70 V	2	14			7.50 W	630 ft.	-0.08 dB	6.2 Ω
LEVEL7	S10	16 AWG	70 V	2	16			8.50 W	620 ft.	-0.09 dB	6.1 Ω
LEVEL8	S11	16 AWG	70 V	2	14			7.50 W	630 ft.	-0.08 dB	6.2 Ω
LEVEL9	S12	16 AWG	70 V	2	16			8.50 W	650 ft.	-0.10 dB	6.4 Ω
LEVEL10	S13	16 AWG	70 V	2	14			7.50 W	670 ft.	-0.09 dB	6.6 Ω
LEVEL11	S14	16 AWG	70 V	2	16			8.50 W	690 ft.	-0.10 dB	6.8 Ω
LEVEL12	S15	16 AWG	70 V	2	14			7.50 W	710 ft.	-0.09 dB	7.0 Ω
LEVEL14	S16	16 AWG	70 V	2	14			7.50 W	720 ft.	-0.09 dB	7.1 Ω
				Appliance Summary				Total Load			
				16	118	0	0	63.00 W			

PUMEHANA
LEVEL 16 - NEAR LOBBY

dB Loss Calculations

SPEAKER CIRCUIT	SPK CIRCUIT NUMBER	WIRE GAUGE	CIRCUIT VOLTAGE	APPLIANCES QUANTITIES SPEAKER WATTAGE 0.25W	0.5W	1W	2W	TOTAL CIRCUIT LOAD (Watts)	ESTIMATED CIRCUIT LENGTH (FEET)	ACTUAL LOSS (dB)	TOTAL CIRCUIT RESISTANCE (OHMS)
LEVEL15	S17	16 AWG	70 V	2	16			8.50 W	570 ft.	-0.08 dB	5.6 Ω
LEVEL16	S18	16 AWG	70 V	2	14			7.50 W	550 ft.	-0.07 dB	5.4 Ω
LEVEL17	S19	16 AWG	70 V	2	16			8.50 W	570 ft.	-0.08 dB	5.6 Ω
LEVEL18	S20	16 AWG	70 V	2	14			7.50 W	600 ft.	-0.08 dB	5.9 Ω
LEVEL19	S21	16 AWG	70 V	2	16			8.50 W	620 ft.	-0.09 dB	6.1 Ω
LEVEL20	S22	16 AWG	70 V	2	14			7.50 W	650 ft.	-0.08 dB	6.4 Ω
LEVEL21	S23	16 AWG	70 V	2	16			8.50 W	670 ft.	-0.10 dB	6.6 Ω
LEVEL22 & ROOF	S24	16 AWG	70 V	3	16	4		12.75 W	1200 ft.	-0.26 dB	11.8 Ω
				Appliance Summary				Total Load			
				17	122	4	0	69.25 W			

PUMEHANA
FIRE ALARM NAC VOLTAGE DROP CALCULATIONS

System Voltage 25 NEW Gauge wire(12 or 14) 12 Max current per ckt 3 0
Min Voltage 16 Ohms per 1000 1.98 0
0

	BPS 1	STROBE		STROBE WP	STROBE	SPEAKER STOBE				SPEAKER STROBE WP	SOUNDER BASE	Current	Distance	Voltage Drop	End of Line Voltage	Percent Drop	Voltage Drop Check	Current Check
	PAD-4	ZR-HMC-R	ZR-HMC-R	ST-75-R-WP	ZR-MC-R	SEH-MC-R	SEH-MC-R	SEH-MC-R	SEH-MC-R	SET-S17-R-WP	ABHW-4S							
		135CD	185CD	115CD	75CD	15CD	30CD	75CD	110CD	115	LOW							
NAC		0.318	0.445	0.146	0.175	0.054	0.098	0.175	0.233	0.146	0.033							
CIRCUIT	NAC CIRCUIT																	
BASEMENT	V1							2	1	7		1.605	750	4.767	20.24	19.07%	OK	OK
LEVEL 1	V2						2	6		4		1.83	520	3.789	21.24	15.08%	OK	OK
LEVEL 1	V3					1	2	11		3		2.623	570	5.921	19.08	23.69%	OK	OK
LEVEL 2	V4					6				1		0.53	320	0.672	24.33	2.69%	OK	OK
	TOTAL AMPS											6.588						

PUMEHANA
FIRE ALARM NAC VOLTAGE DROP CALCULATIONS

System Voltage 20.4 NEW Gauge wire(12 or 14) 12 Max current per ckt 2 0
Min Voltage 16 Ohms per 1000 1.98 0
0

	ZIC #1	STROBE		STROBE WP		SPEAKER STOBE				SPEAKER STROBE WP	SOUNDER BASE	Current	Distance	Voltage Drop	End of Line Voltage	Percent Drop	Voltage Drop Check	Current Check
	FACP	ZR-MC-R	ZR-HMC-R	ST-75-R-WP	NA	SEH-MC-R	SEH-MC-R	SEH-MC-R	SEH-MC-R	SET-S17-R-WP	ABHW-4S							
		75CD	185CD	115	NA	15CD	30CD	75CD	110CD	115	LOW							
NAC		0.175	0.445	0.146		0.054	0.098	0.175	0.233	0.146	0.033							
CIRCUIT	NAC CIRCUIT																	
LEVEL3	V1					6				3		0.822	400	1.303	19.10	6.39%	OK	OK
LEVEL4	V2					6				1		0.53	300	0.63	19.77	3.09%	OK	OK
LEVEL5	V3					6				3		0.822	320	1.042	19.35	5.11%	OK	OK
LEVEL6	V4					6				1		0.53	340	0.714	19.69	3.50%	OK	OK
LEVEL2(ADA)	V5	1	2	1								1.211	300	1.439	18.97	7.05%	OK	OK
LEVEL2,3(ADA	V6										6	0.198	520	0.408	20.00	2.00%	OK	OK
LEVEL4,5(ADA	V7										6	0.198	550	0.432	19.97	2.12%	OK	OK
BPS TRIGER	V8											0		0	20.40	0.00%	OK	OK
	TOTAL AMPS											4.311						

PUMEHANA
FIRE ALARM NAC VOLTAGE DROP CALCULATIONS

System Voltage 20.4 NEW Gauge wire(12 or 14) 12 Max current per ckt 2 0
Min Voltage 16 Ohms per 1000 1.98 0
0

	ZIC #1	STROBE		STROBE WP		SPEAKER STOBE				SPEAKER STROBE WP	SOUNDER BASE	Current	Distance	Voltage Drop	End of Line Voltage	Percent Drop	Voltage Drop Check	Current Check
	FACP	ZR-MC-R	ZR-HMC-R	ST-75-R-WP	NA	SEH-MC-R	SEH-MC-R	SEH-MC-R	SEH-MC-R	SET-S17-R-WP	ABHW-4S							
		75CD	185CD	115	NA	15CD	30CD	75CD	110CD	115	LOW							
NAC		0.175	0.445	0.146		0.054	0.098	0.175	0.233	0.146	0.033							
CIRCUIT	NAC CIRCUIT																	
LEVEL7	V1											0.591	200	0.459	19.94	2.30%	OK	OK
LEVEL8	V2											0.591	220	0.515	19.89	2.52%	OK	OK
LEVEL9	V3											0.591	240	0.552	19.84	2.75%	OK	OK
LEVEL6	V4										3	0.099	360	0.138	20.27	0.68%	OK	OK
LEVEL7,8,9	V5										3	0.099	330	0.13	20.27	0.64%	OK	OK
	TOTAL AMPS											1.971						

PUMEHANA
FIRE ALARM NAC VOLTAGE DROP CALCULATIONS

System Voltage 20.4 NEW Gauge wire(12 or 14) 12 Max current per ckt 2 0
Min Voltage 16 Ohms per 1000 1.98 0
0

	ZIC #3	STROBE		STROBE WP		SPEAKER STOBE				SPEAKER STROBE WP	SOUNDER BASE	Current	Distance	Voltage Drop	End of Line Voltage	Percent Drop	Voltage Drop Check	Current Check
	XPDR.1	ZR-MC-R	ZR-HMC-R	ST-75-R-WP	NA	SEH-MC-R	SEH-MC-R	SEH-MC-R	SEH-MC-R	SET-S17-R-WP	ABHW-4S							
		75CD	185CD	115	NA	15CD	30CD	75CD	110CD	115	LOW							
NAC		0.175	0.445	0.146		0.054	0.098	0.175	0.233	0.146	0.033							
CIRCUIT	NAC CIRCUIT																	
LEVEL7	V1					6				3		0.822	360	1.14	19.26	5.59%	OK	OK
LEVEL8	V2					6				1		0.53	340	0.714	19.69	3.50%	OK	OK
LEVEL9	V3					6				3		0.822	400	1.303	19.10	6.39%	OK	OK
LEVEL10	V4					6				1		0.53	420	0.882	19.52	4.32%	OK	OK
LEVEL11	V5					6				3		0.822	460	1.465	18.94	7.18%	OK	OK
LEVEL12	V6					6				1		0.53	470	0.987	19.42	4.84%	OK	OK
LEVEL14	V7					6				1		0.53	500	1.05	19.35	5.15%	OK	OK
LEVEL15	V8					6				3		0.822	520	1.693	18.71	8.30%	OK	OK
	TOTAL AMPS											5.408						

PUMEHANA
FIRE ALARM NAC VOLTAGE DROP CALCULATIONS

System Voltage 20.4 NEW Gauge wire(12 or 14) 12 Max current per ckt 2 0
Min Voltage 16 Ohms per 1000 1.98 0
0

	ZIC #4	STROBE		STROBE WP		SPEAKER STOBE				SPEAKER STROBE WP	SOUNDER BASE	Current	Distance	Voltage Drop	End of Line Voltage	Percent Drop	Voltage Drop Check	Current Check
	XPDR.1	ZR-MC-R	ZR-HMC-R	ST-75-R-WP	NA	SEH-MC-R	SEH-MC-R	SEH-MC-R	SEH-MC-R	SET-S17-R-WP	ABHW-4S							
		75CD	185CD	115	NA	15CD	30CD	75CD	110CD	115	LOW							
NAC		0.175	0.445	0.146		0.054	0.098	0.175	0.233	0.146	0.033							
CIRCUIT	NAC CIRCUIT																	
LEVEL7	V1		1	1								0.591	200	0.459	19.94	2.30%	OK	OK
LEVEL8	V2		1	1								0.591	220	0.515	19.89	2.52%	OK	OK
LEVEL9	V3		1	1								0.591	240	0.552	19.84	2.75%	OK	OK
LEVEL6	V4										3	0.099	360	0.138	20.27	0.68%	OK	OK
LEVEL7,8,9	V5										3	0.099	330	0.13	20.27	0.64%	OK	OK
	TOTAL AMPS											1.971						

PUMEHANA
FIRE ALARM NAC VOLTAGE DROP CALCULATIONS

System Voltage 20.4 NEW Gauge wire(12 or 14) 12 Max current per ckt 2 0
Min Voltage 16 Ohms per 1000 1.98 0
0

	ZIC #5	STROBE		STROBE WP		SPEAKER STOBE				SPEAKER STROBE WP	SOUNDER BASE	Current	Distance	Voltage Drop	End of Line Voltage	Percent Drop	Voltage Drop Check	Current Check
	XPDR.2	ZR-MC-R	ZR-HMC-R	ST-75-R-WP	NA	SEH-MC-R	SEH-MC-R	SEH-MC-R	SEH-MC-R	SET-S17-R-WP	ABHW-4S							
		75CD	185CD	115	NA	15CD	30CD	75CD	110CD	115	LOW							
NAC		0.175	0.445	0.146		0.054	0.098	0.175	0.233	0.146	0.033							
CIRCUIT	NAC CIRCUIT																	
LEVEL16	V1					6				1		0.53	360	0.735	19.67	3.60%	OK	OK
LEVEL17	V2					6				3		0.822	370	1.205	19.20	5.91%	OK	OK
LEVEL18	V3					6				1		0.53	380	0.798	19.61	3.91%	OK	OK
LEVEL19	V4					6				3		0.822	420	1.368	19.04	6.71%	OK	OK
LEVEL20	V5					6				1		0.53	460	0.945	19.46	4.63%	OK	OK
LEVEL21	V6					6				3		0.822	470	1.53	18.87	7.50%	OK	OK
LEVEL22	V7					6				1		0.53	500	1.05	19.35	5.15%	OK	OK
ROOF	V8			1	1					5		1.033	550	2.185	18.22	10.71%	OK	OK
	TOTAL AMPS											5.599						

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K DATE: 10-17-2018
CHECKED BY: J.H DATE: 10-17-2018
APPROVED BY: DATE:

PROJECT: PUMEHANA
SHEET TITLE: FA SYSTEM BATTERY CALCULATION
SHEET NUMBER: FA-6.2

		SYSTEM OUTPUT							ANNUNCIATION AT PANEL						EVACUATION SIGNALS		AUXILIARY FUNCTIONS	NOTIFICATION
	FIRE ALARM SYSTEM INPUT	ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE SUPERVISORY SIGNAL INDICATOR (MNS OVERRIDE OF FA)	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL	ACTUATE AUDIBLE NOTIFICATION APPLIANCES	ACTUATE VISIBLE NOTIFICATION APPLIANCES	ACTIVATE ALL THE SMOKE ALARMS WITH THE UNIT	ACTIVATE ALL THE AUDIBLE/VISUAL ALARMS INSIDE THE UNIT (APPLIES TO ADA UNITS ONLY)	INITIATE ELEVATOR CONTROLLER'S RECALL SEQUENCE (TO ALTERNATE FLOOR)	INITIATE ELEVATOR CONTROLLER'S RECALL SEQUENCE (TO FIRST FLOOR)	TRANSMIT FIRE ALARM SIGNAL TO SUPERVISING STATION	TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION
INITIATION	CONTROL UNIT MICROPHONE KEYED				X				X	X		X					
	FIRE ALARM CONTROL PANEL AC POWER FAILURE						X	X									X
	FIRE ALARM CONTROL PANEL LOW BATTERY						X	X									X
	GROUND FAULT						X	X									X
	NOTIFICATION APPLIANCE CIRCUIT SHORTED						X	X									X
	OPEN CIRCUIT						X	X									X
	SMOKE ALARM (RESIDENTIAL UNITS)										X						
	SMOKE DETECTOR (RESIDENTIAL ADA UNITS)	X	X									X			X		
	SMOKE DETECTOR	X	X						X	X		X			X		
	SMOKE DETECTOR - CORRIDOR	X	X						X	X		X			X		
	MANUAL PULL STATION	X	X						X	X		X			X		
	SMOKE (OR HEAT) DETECTOR - ELEVATOR LOBBY FIRST FLOOR	X	X						X	X		X	X		X		
	SMOKE (OR HEAT) DETECTOR - ELEVATOR LOBBY (FLOORS 2-22) +BASEMENT	X	X						X	X		X		X	X		
	SMOKE DETECTOR - ELEVATOR MACHINE ROOM	X	X						X	X		X	X		X		
	HEAT DETECTOR - TOP OF THE ELEVATOR SHAFT	X	X						X	X		X			X		
	HEAT DETECTOR - ELEVATOR MACHINE ROOM	X	X						X	X		X			X		
	HEAT DETECTOR - CORRIDOR														X		

* IN THE EVENT OF A CONFLICT BETWEEN THE SPECIFICATIONS AND THE MATRIX, THE MATRIX SEQUENCE WILL TAKE PRECEDENCE.

FIRE ALARM SEQUENCE OF OPERATIONS MATRIX

SCALE: NOT TO SCALE

NO.	DATE	DESCRIPTION

PUMEHANA

DRAWN BY: A.K
DATE: 10-17-2018

CHECKED BY: J.H
DATE: 10-17-2018

APPROVED BY:
DATE:

PROJECT: PUMEHANA

SHEET TITLE: FA SYSTEM SEQUENCE OF OPERATION

SHEET NUMBER: FA-7.1