

YOUTH ACTIVITY CENTER BUILDING

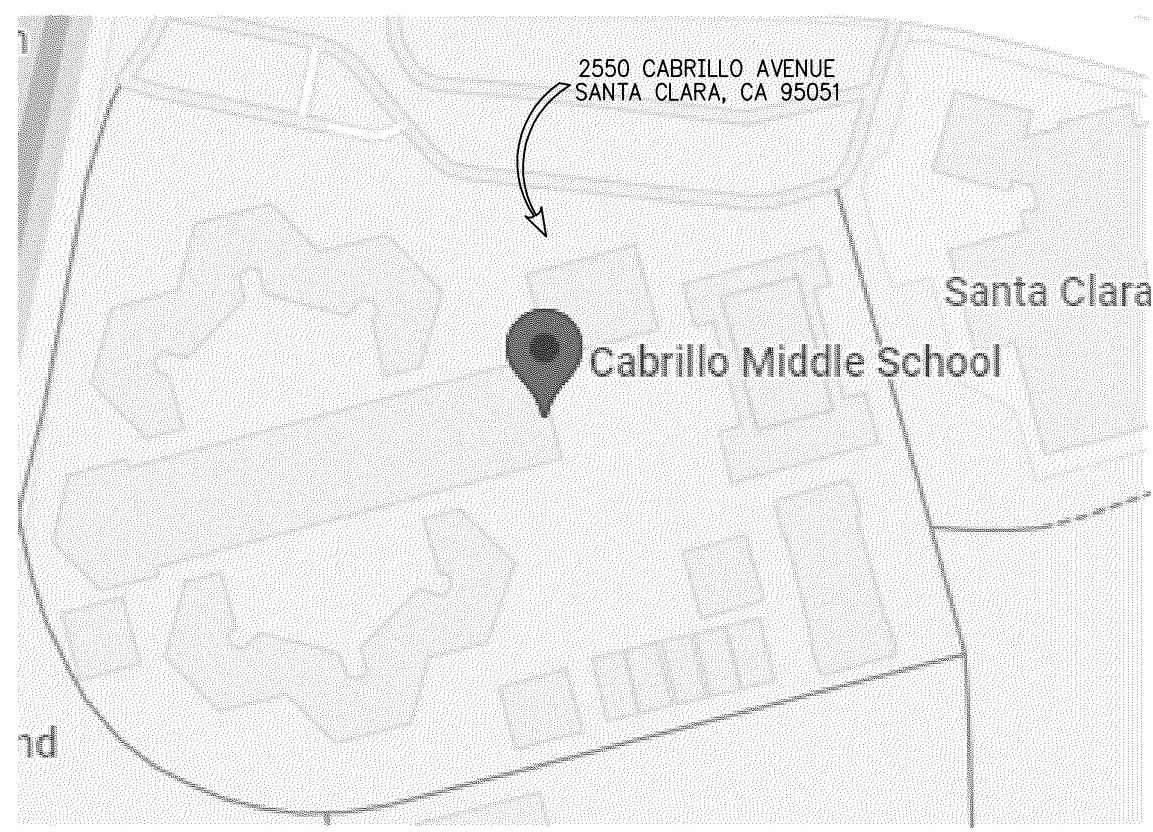
2550 CABRILLO AVENUE, SANTA CLARA, CA 95051

SANTA CLARA UNIFIED SCHOOL DISTRICT

FIRE ALARM UPGRADE AT CABRILLO MIDDLE SCHOOL

DSA APPLICATION No. 01-120540 DSA FILE No. 43-51 TRACKING No. 69674-255

VICINITY MAP



DRAWING INDEX

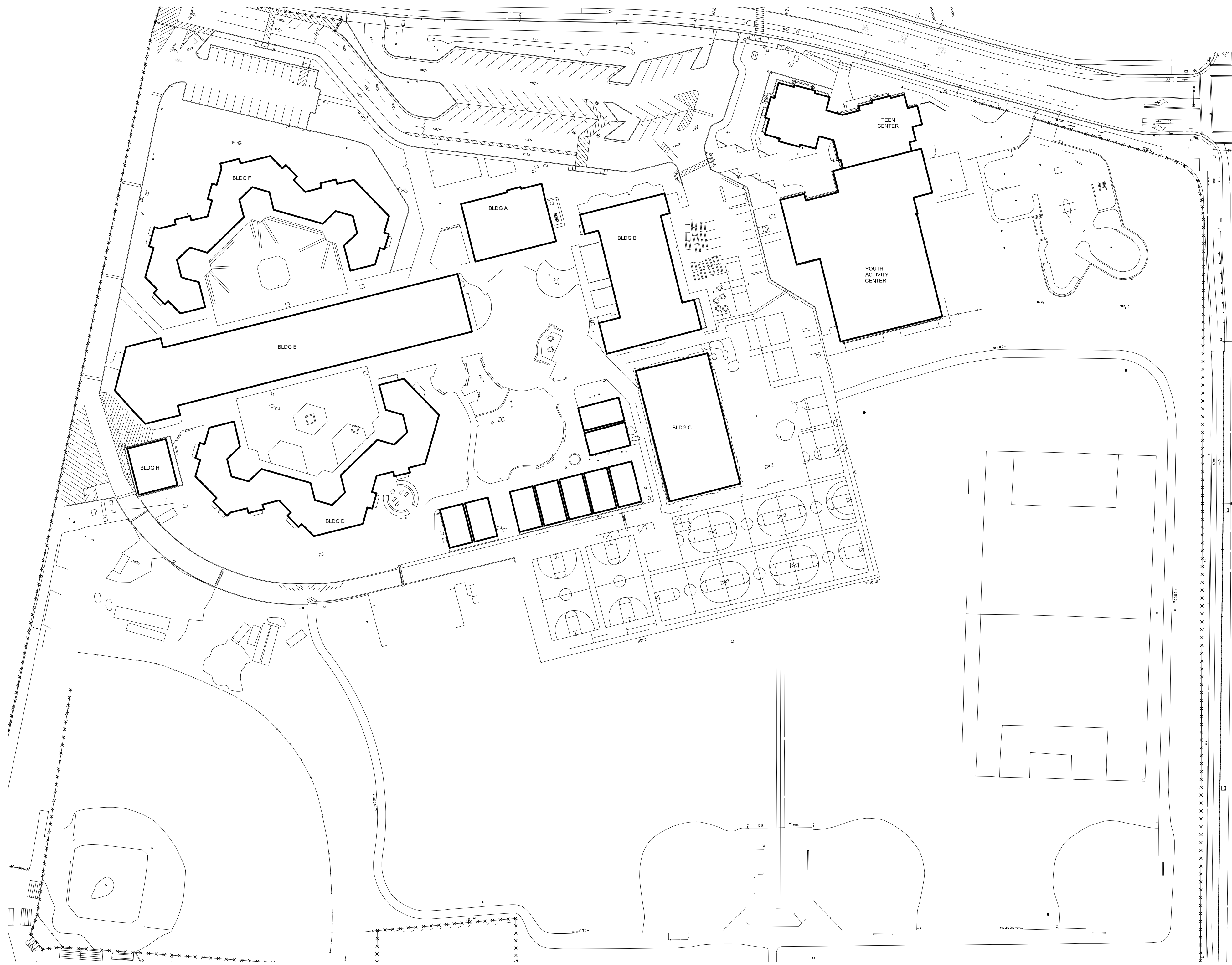
SHEET NO.	SHEET TITLE
TO.1	FIRE ALARM TITLE SHEET
FIRE ALARM	
FA0.1	GENERAL NOTES, SYMBOLS LIST AND ABBREVIATIONS
FA1.1	FIRE ALARM SITE PLAN
FA2.1	DEMOLITION FIRE ALARM FLOOR PLAN - NORTH BUILDING
FA2.2	DEMOLITION FIRE ALARM FLOOR PLAN - SOUTH BUILDING
FA3.1	NEW FIRE ALARM FLOOR PLAN - NORTH BUILDING
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FA4.1	FIRE ALARM RISER DIAGRAM
FA5.1	FIRE ALARM BATTERY CALCULATIONS
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FA6.1	FIRE ALARM DETAILS
FA6.2	FIRE ALARM DETAILS
GRAND TOTAL: 12 SHEETS	

DSA APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED AS THE CERTIFICATION OF COMPLIANCE FOR THE FOLLOWING BUILDING(S) AS REQUIRED BY THE FIELD ACT, EDUCATION CODE SECTION 17260 - 17266 AND SECTIONS 81130 - 81147.

DESIGN TEAM

ARCHITECT/ELECTRICAL ENGINEER
AMERICAN CONSULTING ENGINEERS ELECTRICAL, INC.
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SAN JOSE, CA 95126
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AREA LOCATION MAP



LOCATION SITE PLAN

SCALE: 1" = 60'-0"

GENERAL NOTES

THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK FOR THE NEW FIRE ALARM SYSTEM UPGRADE IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS - 2019. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NONCOMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, A CCG, OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE DSA BEFORE PROCEEDING WITH THE WORK.

THE GENERAL CONTRACTOR AND SUBCONTRACTORS ARE RESPONSIBLE TO VISIT AND INSPECT THE PROJECT SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AFFECTING THE NEW WORK. THE GENERAL CONTRACTOR SHALL NOT DISPUTE, COMPLAIN OR ASSERT THAT THERE IS ANY MISUNDERSTANDING IN REGARDS TO LOCATION, EXTENT, NATURE OR AMOUNT OF WORK TO BE PERFORMED UNDER THIS CONTRACT DUE TO THE GENERAL CONTRACTOR AND SUB CONTRACTOR'S FAILURE TO INSPECT THE SITE.

ALL EXISTING FINISHES OR MATERIALS DAMAGED OR DEMOLISHED DUE TO NEW WORK SHALL BE RESTORED TO THEIR ORIGINAL STATE OR REPLACED WITH NEW MATERIALS FINISHED TO MATCH EXISTING.

A DSA CERTIFIED CLASS 3 PROJECT INSPECTOR IS REQUIRED FOR THIS PROJECT.

FIRE SAFETY DURING CONSTRUCTION & DEMOLITION WILL BE ENFORCED IN ACCORDANCE WITH CBC & CFC CHAPTER 33.

SCOPE OF WORK

SCOPE OF WORK OF THIS PROJECT CONSISTS OF PROVIDING (N) FIRE ALARM DEVICES AND VOICE EVACUATION DEVICES TO THE EXISTING YOUTH ACTIVITY CENTER BUILDINGS. NEW FIRE VOICE EVACUATION DEVICES AND FIRE ALARM DEVICES SHALL BE CONNECTED TO A (N) FCG-SAMXELL 'E3' FIRE ALARM CONTROL PANEL. THE NEW FIRE ALARM CONTROL PANEL SHALL COMMUNICATE WITH EXISTING FIRE ALARM CONTROL PANEL LOCATED IN ADMIN. BUILDING 'A'. THIS PROJECT IS A FIRE ALARM PROJECT ONLY, NO ACCESS WORK OR STRUCTURAL WORK (REHABILITATION, RECONSTRUCTION, ETC) IS INTENDED OR ALLOWED.

APPLICABLE CODES

UNLESS OTHERWISE NOTED, PERFORM THE WORK IN CONFORMANCE WITH THE LATEST APPROVED EDITIONS OF ALL APPLICABLE REGULATORY REQUIREMENTS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

2022 CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24, CCR); 2019 CALIFORNIA BUILDING CODE (CBC), VOLUMES 1, 2 AND 3 (PART 2, TITLE 24, CCR) (BASED ON THE 2019 INTERNATIONAL BUILDING CODE WITH CALIFORNIA AMENDMENTS); 2019 CALIFORNIA ELECTRICAL CODE (CEC) (PART 3, TITLE 24, CCR) (BASED ON THE 2017 NATIONAL ELECTRICAL CODE WITH CALIFORNIA AMENDMENTS); 2019 CALIFORNIA MECHANICAL CODE (CMC) (PART 4, TITLE 24, CCR) (BASED ON THE 2018 UNIFORM MECHANICAL CODE WITH CALIFORNIA AMENDMENTS); 2019 CALIFORNIA PLUMBING CODE (CPC) (PART 5, TITLE 24, CCR) (BASED ON THE 2018 UNIFORM PLUMBING CODE WITH CALIFORNIA AMENDMENTS); 2019 CALIFORNIA ENERGY CODE (PART 6, TITLE 24, CCR); 2019 CALIFORNIA FIRE CODE (PART 9, TITLE 24, CCR); 2019 CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24, CCR)

TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL'S REGULATIONS

2010 ADA STANDARDS FOR ACCESSIBLE DESIGN (APPENDIX A OF 28 CFR PART 36)

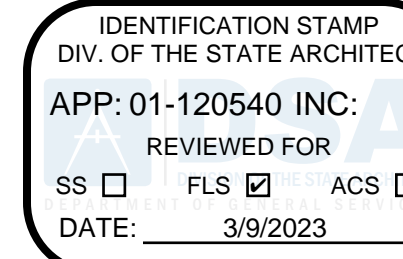
NFPA 72, NATIONAL FIRE ALARM CODE, 2016 EDITION WITH CALIFORNIA AMENDMENTS.

CFC CHAPTER 33, FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION.

NFPA 720 (2015 EDITION) STANDARD FOR THE INSTALLATION OF CARBON MONOXIDE DETECTION AND WARNING EQUIPMENT.

TITLE-24, CCR ADMINISTRATIVE REQUIREMENTS

- A COPY OF PART 1 AND 2, TITLE 24, CCR SHALL BE KEPT ON THE JOB SITE AT ALL TIMES.
- ALL CCG AND APPENDIX A TO BE SIGNED BY THE ARCHITECT AND THE OWNER AND APPROVED BY DSA. CCG ARE NOT VALID UNTIL APPROVED BY DSA PER SECTION 4-336, PART 1, TITLE 24.
- DSA SHALL BE NOTIFIED AT THE START OF CONSTRUCTION AND PRIOR TO THE PLACEMENT OF CONCRETE PER SECTION 4-331, PART 1, TITLE 24.
- INSPECTOR SHALL BE APPROVED BY DSA. INSPECTION SHALL BE IN ACCORDANCE WITH SECTION 4-333(b). THE DUTY OF THE INSPECTOR SHALL BE IN ACCORDANCE WITH SECTION 4-342, PART 1, TITLE 24.
- SUPERVISION OF CONSTRUCTION BY DSA SHALL BE IN ACCORDANCE WITH SECTION 4-334, PART 1, TITLE 24.
- CONTRACTOR, INSPECTOR, ARCHITECT, AND ENGINEERS SHALL SUBMIT VERIFIED REPORTS (FORM DSA-6) IN ACCORDANCE WITH SECTION 4-336 AND 4-343, PART 1, TITLE 24.
- THE CONTRACTOR SHALL PERFORM HIS DUTIES IN ACCORDANCE WITH SECTION 4-343, PART 1, TITLE 24.
- THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO INSTALL THE SCHOOL BUILDING'S FIRE ALARM SYSTEM IN ACCORDANCE WITH TITLE 24, CCR. SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH SAID TITLE 24, CCR, A CCG DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT BEFORE PROCEEDING WITH THE WORK.



REVISIONS	DATE
1ST DSA SUBMITTAL	11/01/2022
DSA BACKCHECK SUBMITTAL	03/08/2023



YOUTH ACTIVITY CENTER BUILDING
FIRE ALARM UPGRADE
AT CABRILLO MIDDLE SCHOOL
2550 CABRILLO AVE.
SANTA CLARA, CA 95051

SHEET TITLE
FIRE ALARM TITLE SHEET

DRAWN ACEE
CHECKED JULIAC/AM
DATE 03/08/2023
SCALE AS NOTED
JOB NO. EK22105.00
SHEET

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OF SHEETS

THE FIRE ALARM SYSTEM SHALL CONFORM TO ARTICLE 260, CA ELEC. CODE. WIRING MUST BE LISTED FOR USE AS REQUIRED BY TITLE 24, CALIF. CODE, ARTICLE 2600 MINIMUM WIRE SIZE SHALL BE TWO (2) #14 AWG FOR INITIATING CIRCUITS AND TWO (2) #12 AWG FOR INDICATING CIRCUITS.

WIRE USED IN NET LOCATIONS SHALL BE OF AN APPROVED TYPE IN ACCORDANCE WITH 3-310-B, 124/CEC (IE, THHN OR EQUIV.).

UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRES APPROVED FOR NET LOCATION.

ALL CONDUCTORS SHALL BE ROUTED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS. MINIMUM CONDUIT SIZE SHALL BE 3/4".

THE CONDUIT AND WIRE SHOWN ON THESE PLANS ARE SHOWN DIAGRAMMATICALLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD TO SUIT THE PROJECT. THE CONDUIT SHALL BE MAINTAINED AND BE AS PROVIDED AS REQUIRED BY THE PROJECT INSPECTOR OF RECORD.

PENETRATIONS OF FIRE RATED WALLS SHALL BE PROTECTED IN ACCORDANCE WITH CALIFORNIA BUILDING CODE, CHAPTER 7, TITLE 24.

ALL DEVICES SHALL BE "GSPM" LISTED.

EXTERIOR DEVICES SHALL BE LISTED FOR EXTERIOR USE BY "GSPM".

AUDIBLE ALARM PRODUCED BY THE FIRE ALARM SYSTEM SHALL FROM THE FIRE ALARM EVACUATION SIGNAL.

AUDIBLE DEVICES TO BE AT LEAST 15 DBA ABOVE THE EQUIVALENT SOUND LEVEL BUT NOT LESS THAN 75 DBA AT 10 FEET OR MORE THAN 110 DBA IN TOTAL, THROUGHOUT.

WHERE VISUAL DEVICES ARE REQUIRED, VISUAL DEVICE SHOULD NOT EXCEED 2 FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN 1 FLASH EVERY 2 SECONDS. THE DEVICE SHALL CONDUCE A PULSING LIGHT SOURCE NOT LESS THAN 1/2 INCHES. NO PLACE IN ANY ROOM SHALL BE MORE THAN 50 FEET FROM A DEVICE.

CONTRACTOR SHALL PROVIDE COPIES OF APPROVED PLANS TO THE PROJECT INSPECTOR OF RECORD PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL SUBMIT SUBMITTAL BOOKLET TO ENGINEER PRIOR TO PURCHASE FOR REVIEW. THE FIRE PROTECTION SYSTEM SHALL NOT BE INSTALLED UNTIL SUBMITTAL BOOKLETS HAVE BEEN SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD.

FINAL TEST SHALL BE MADE WITH DSA INSPECTOR OF RECORD (IOR), LOCAL FIRE AUTHORITY HAVING JURISDICTION SHALL BE NOTIFIED OF DATE AND TIME OF FIRE ALARM TESTING AND SHALL ASSIST/ Witness SUCH TESTING WHEN AVAILABLE. CONTRACTOR SHALL REPEAT TESTING AS NECESSARY UNTIL SATISFACTORY RESULTS ARE ACHIEVED.

FIRE ALARM CONTRACTOR SHALL PROVIDE A "RECORD OF COMPLETION" TO THE INSPECTOR OF RECORD (IOR)/DSA AFTER COMPLETION OF OPERATIONAL ACCEPTANCE TESTS.

POWER SUPPLY SHALL BE ON A DEDICATED BRANCH CIRCUIT WITH LOCK OUT DEVICE, A RED MARKING AND IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL".

ALL ALARM SIGNALS ARE TO BE TRANSMITTED TO AN UL APPROVED LISTED SUPERVISING STATION AND SHALL COMPLY WITH SB 95 POLICY.

THE MAXIMUM SPACING OF SMOKE DETECTORS SHALL BE 30 FEET AND HEAT DETECTORS SHALL BE 50 FEET OF SEPARATION. IN THE EVENT AN ACCESSIBLE CEILING SPACE IS DISCOVERED DURING THE COURSE OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE ADDITIONAL HEAT DETECTORS AND ACCESS HATCHES AS NECESSARY.

PROJECT INSPECTOR SHALL FIELD VERIFY CANDELA SETTING ON STROBES DUE TO FIELD ADJUSTABILITY.

EACH SIGNALING LINE CIRCUIT FOR THE FACP IS CAPABLE OF SERVING A MAXIMUM OF 154 DETECTORS AND 154 MODULES.

PROVIDE A PERMANENT SIGN ON THE EXTERIOR DOOR STATING "FIRE ALARM PANEL" FOR ALL ROOMS WITH REMOTE POWER SUPPLIES OR FACPS.

CONTRACTOR TO PROVIDE FABRICATED NAMEPLATE SIGN PROVIDE AND OBTAIN APPROVED STANDARDS FROM DISTRICT. PROVIDE SUBMITTALS FOR ARCHITECTS' APPROVAL.

PROJECT INSPECTOR SHALL VERIFY THAT THERE ARE NO ACCESSIBLE CEILING SPACES FOR THE ROOMS IN THE SCOPE OF WORK.

IN THE EVENT THAT THE FIRE ALARM SYSTEM IS OFFLINE WHEN STAFF OR STUDENTS OCCUPY THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FIRE MATCH.

THERE SHALL BE NO SPLICES OF FIRE ALARM CONDUCTORS BETWEEN TERMINATIONS OF FIRE ALARM DEVICES, UNLESS SPECIFICALLY NOTED OTHERWISE. ALL FIRE ALARM CONDUCTORS SHALL BE CONTIGUOUS FROM DEVICE TO DEVICE. SPLICES ARE PERMITTED AT THE BUILDING FIRE ALARM TERMINAL. CAN SPLICES IN IN-GRADE PULLBOXES ARE NOT PERMITTED, NO EXCEPTIONS.

APPLICABLE STANDARD 2016 NFPA 72.

INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGNS, DOCUMENTS AND SPECIFICATION, INCLUDING STATE FIRE MARSHAL LISTING NUM, FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY DSA.

UPON COMPLETION OF THE INSTALLATION OF THE SYSTEMS, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.

A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.

ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.

THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.

THE CONTRACTOR SHALL PROVIDE A SYSTEM RECORDS DOCUMENT CABINET ADJACENT TO THE FACP PER NFPA 72 SECTION 7.1.

PER THE NFPA 72 SEC. 24.3.1 (INTELLIGIBLE VOICE MESSAGES), EMERGENCY COMMUNICATIONS SYSTEMS SHALL BE CAPABLE OF THE REPRODUCTION OF CLEAR, UNDISTORTED, LIVE MESSAGE WITH VOICE INTELLIGIBILITY IN ACCORDANCE WITH CHAPTER 18.

PER THE NFPA 72 SEC. 18.4.10 (VOICE INTELLIGIBILITY), WITHIN THE ACOUSTIC DISTINGUISHABLE SPACE (ADS) WHERE VOICE INTELLIGIBILITY IS REQUIRED, V COMMUNICATIONS SYSTEMS SHALL REPRODUCE PRERECORDED, SYNTHESIZED, MESSAGE WITH VOICE INTELLIGIBILITY.

PER THE NFPA 72 SEC. 24.2.1 (MICROPHONE USE), ALL USERS OF SYSTEMS TO MICROPHONES AND VOICE ANNOUNCEMENTS SHALL BE PROVIDED WITH POSTED INSTRUCTIONS FOR THE MICROPHONE.

PER THE NFPA 72 SEC. 7.1.2 (DOCUMENT REQUIREMENT), PROVIDE ALL DOCUMENTS AND REQUIRED TO BE STORED IN THE DOCUMENT CABINET.

PER THE NFPA 72 SEC. 7.1.2.4 (DOCUMENT ACCESSIBILITY), THE DOCUMENT CABINET SHALL BE PROMINENTLY LABELED "SYSTEM RECORD DOCUMENTS".

THE LOG (LOCAL OPERATING CONSOLE) IS LOCATED IN THE MAIN ADMINISTRATION BUILDING. ADDITIONAL REQUIREMENTS, REFER TO THE FIRE ALARM RISER DIAGRAMS.

CONTRACTOR IS RESPONSIBLE FOR PAINTING ALL EXTERIOR COLORED OBJECT COLOR FROM DISTRICT. CONTRACTOR TO PROVIDE AND SUPPLY EXTERIOR MATCH EXISTING.

CONTRACTOR SHALL PROVIDE AND OBTAIN AN UNDERGROUND CONDUIT BATTER AND INSTALL THE CONDUIT OVER THE TRENCH OCCURS. SEE TRENCH NOTE RESPONSIBILITY.

IN ALL BUILDINGS, THE REMOTE POWER SUPPLIES, NIS (EVAC) PANELS, LATCHES AND RLDs SHALL BE MOUNTED HIGH ON THE WALL.

PROVIDE MANUFACTURER'S RECOMMENDED SURFACE MOUNTED BACK BOX FOR NEW MANUAL PULL STATION. SUBMIT FOR REVIEW IN LOCATIONS WHERE NEW SURFACE MOUNTED SPEAKERS/STROBES, STROBES AND SPEAKERS ARE TO BE INSTALLED. THE CONTRACTOR SHALL PROVIDE THE MANUFACTURER'S RECOMMENDED SURFACE MOUNTED BACK BOX REQUIRED FOR THE DEVICE. BACK BOX COLOR MATCH THE DEVICE COLOR. SUBMIT FOR REVIEW.

INTERIOR SURFACE MOUNTED CONDUITS AND FITTINGS AND SHALL BE COATED WITH EPOXY. THE COATING SHALL BE A SPECIALLY FORMULATED MODIFIED EPOXY ADHESIVE. THE OUTSIDE SURFACE TYPE SHALL BE A SPECIALLY FORMULATED BAKED POLYURETHANE / POLYESTER. CONDUITS SHALL BE PRE-COATED BY MANUFACTURER.

CONTRACTOR TO PROVIDE WITH A MINIMUM OF (7) SMOKE DETECTORS AND (7) A DETECTORS FOR SPACES.

ALL ROOF PENETRATIONS REQUIRING INSPECTION AND SHALL BE PERFORMED IN MANNER TO MAINTAIN INTEGRITY OF THE ROOF. COMPLETE WITH CAULKING AN KEAPEPROOFING SO AS TO PREVENT LEAKS. SEALANTS, KEAPEPROOFING SHALL BE APPLICABLE TO ROOF CONSTRUCTION TYPE. COORDINATE WITH DISTRICT FOR ADDITIONAL REQUIREMENTS BEFORE ROOF PENETRATION WORK IS SCHEDULED.

KV	KILOVOLT
KVA	KILOVOLT AMPERES
KL	KILOWATT
LM	LIGHTING
M	THOUSAND CIRCULAR MILS
MD	MAN DISTRIBUTION FRAME
MECH	MECHANICAL
MH	MANHOLE
MTD	MOUNT
MTG	MOUNTING
N	NBN
NC	NORMALLY GLOUED
NIC	NOT IN CONTRACT
NIEG	NOT IN ELECTRICAL CONTRA
NIS	NOT IN MECHANICAL CONTRA
NTC	NOT TO SCALE
ON	ON CENTER
OP	OPEN CIRCUIT BREAKER
PA	PUBLIC ADDRESS
PB	PULL BOX
PF	POWER FACTOR
PH	PHASE
PI	PANEL
(R)	EXISTING TO BE RELOCATED
REGD	REQUIRED
REQ	REQUIREMENTS
RM	ROOM
RSG	RIGID STEEL CONDUIT
SC	SHIRT
SW	SWITCH
SWD	SWITCHBOARD
T	TERMINAL CABINET
TEL	TELEPHONE
TYP	TYPICAL
V	VOLTS OTHERWISE NOTED
V	VOLT
W	WATT
WP	WEATHERPROOF
XP	TRANSFORMER

A - (1) #14 UNSHIELDED TWISTED PAIR FOR SIGNALING LINE CIRCUITS
B - (2) #12 FOR STROBE CIRCUITS
C - (2) #12 TWISTED SHIELDED PAIR FOR SPEAKER CIRCUITS
D - (1) 6-STRAND MULTI - MODE FIBER OPTIC CABLE
E - (2) #12 FOR ANNUNCIATOR POWER
F - (5) #14 TWISTED SHIELDED FOR REMOTE TEST SWITCH

NOTE: ALL INTERIOR SPEAKER SETTINGS SHALL BE 1/2 WATT, UNLESS OTHERWISE NOTED ON THE FLOOR PLANS OR FIRE ALARM RISER DIAGRAM.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE LOCATING ALL EXISTING UNDERGROUND SYSTEMS IN AREA OF NEW TRENCHING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL DAMAGED SYSTEMS TO OWNERS SATISFACTION. EXTREME CARE SHALL BE MAINTAINED DURING TRENCHING AS TO NOT DAMAGE ANY EXISTING UTILITY AREA. MODIFICATIONS TO EXISTING SYSTEMS MAY BE REQUIRED TO ACCOMMODATE NEW SYSTEM CONFIGURATION AND SHALL BE MADE BY THE CONTRACTOR WITHOUT EXTRA EXPENSE TO THE OWNER. THE DRAWINGS AND SPECIFICATIONS ARE FOR THE ASSISTANCE AND GUIDANCE OF THE CONTRACTOR. EXACT LOCATIONS, DISTANCES AND ELEVATIONS SHALL BE ACTUALLY FIELD DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING ALL THE CONTRACT DOCUMENTS AND FIELD CONDITIONS TO DETERMINE EXACT ROUTING AND FINAL TERMINATIONS FOR ALL NEW WORK.

DRAWN ACEE	
CHECKED JJ/JG/JM	
DATE 09/08/2029	
SCALE AS NOTED	
JOB NO. EK22105.00	
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OF	SHEETS

FIRE ALARM SYSTEM OPERATIONAL MATRIX												
CAUSE	EFFECT ALARM AT TAP	ALARM			TROUBLE			CO DETECTOR ALARM		SUPERVISORY		MISC.
		SEND VIBRANT SIGNAL TO MONITORING STATION ON RECEIVING CIRCUITS ACTIVATE AUDIO VISUALS	SEND VIBRANT SIGNAL TO MONITORING STATION ON RECEIVING CIRCUITS ACTIVATE AUDIO VISUALS	SEND VIBRANT SIGNAL TO MONITORING STATION ON RECEIVING CIRCUITS ACTIVATE AUDIO VISUALS	TROUBLE AT TAP MONITORING STATION SEND ALARM SIGNAL TO ACTIVE AUDIBLES IN THE BUILDING	TROUBLE AT TAP MONITORING STATION SEND ALARM SIGNAL TO ACTIVE AUDIBLES IN THE BUILDING	TROUBLE AT TAP MONITORING STATION SEND ALARM SIGNAL TO ACTIVE AUDIBLES IN THE BUILDING	CO DETECTOR ALARM SEND ALARM SIGNAL TO ACTIVE AUDIBLES IN THE BUILDING	CO DETECTOR ALARM SEND ALARM SIGNAL TO ACTIVE AUDIBLES IN THE BUILDING	CO DETECTOR ALARM SEND ALARM SIGNAL TO ACTIVE AUDIBLES IN THE BUILDING	CO DETECTOR ALARM SEND ALARM SIGNAL TO ACTIVE AUDIBLES IN THE BUILDING	
SMOKE DETECTOR	*	*	*	*	*	*	*	*	*	*	*	REMARKS
HEAT DETECTOR	*	*	*	*	*	*	*	*	*	*	*	
HIGH HEAT DETECTOR	*	*	*	*	*	*	*	*	*	*	*	
ATTIC HEAT DETECTOR	*	*	*	*	*	*	*	*	*	*	*	
BEAM SMOKE DETECTOR	*	*	*	*	*	*	*	*	*	*	*	
FIRE SPRINKLER FLOW SWITCH	*	*	*	*	*	*	*	*	*	*	*	
FIRE SPRINKLER TAMPER SWITCH	*	*	*	*	*	*	*	*	*	*	*	
MANUAL PULL STATION	*	*	*	*	*	*	*	*	*	*	*	
AC POWER FAILURE					*	*						
SIGNAL SILENCE										*	*	
SYSTEM RESET										*	*	*
FIRE ALARM TROUBLE (OPEN, SHORTS, OR GROUNDS) ON INITIATION OR SIGNALING CIRCUITS					*	*						

GENERAL NOTES:

- SEE THE FIRE ALARM FLOOR PLANS AND RISER DIAGRAM FOR ADDITIONAL REQUIREMENTS.
- TERMINATE EXISTING FIRE ALARM CABLES AT THE FIRE ALARM EQUIPMENT INSIDE EACH BUILDING. REFER TO THE RISER DIAGRAM FOR ADDITIONAL REQUIREMENTS.
- THE EXISTING FIRE ALARM CONTROL PANEL, GAMEWELL ES-INCC AND ANNUNCIATOR IS LOCATED IN THE MAIN ADMINISTRATION BUILDING.
- THE CONTRACTOR SHALL OBTAIN AND UTILIZE AN UNDERGROUND CONDUIT LOCATOR IN AREAS WHERE NEW TRENCH OCCURS.
- CONTRACTOR SHALL SLURRY AND MATCH EXISTING SURFACES FOR ALL TRENCHES. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL REQUIREMENTS NECESSARY TO RE-ESTABLISH THE EXISTING SURFACE TO ITS PREVIOUS CONDITION.

SHEET NOTES:

- EXISTING FIRE ALARM CONTROL PANEL, GAMEWELL ES-INCC AND DOCUMENT CABINET INSTALLED UNDER THE DSA #01-119352 TO REMAIN.
- EXISTING GAMEWELL FIRE ALARM PULL STATION AND ANNUNCIATOR INSTALLED UNDER THE DSA #01-119352 TO REMAIN.
- NEW REMOTE POWER SUPPLY #1 AND AMPLIFIER ES-INX #1.
- NEW REMOTE POWER SUPPLY #2 AND AMPLIFIER ES-INX #2.
- EXISTING UNDERGROUND FIRE ALARM PULL BOX TO REMAIN.

FIRE ALARM CABLE SCHEDULE:

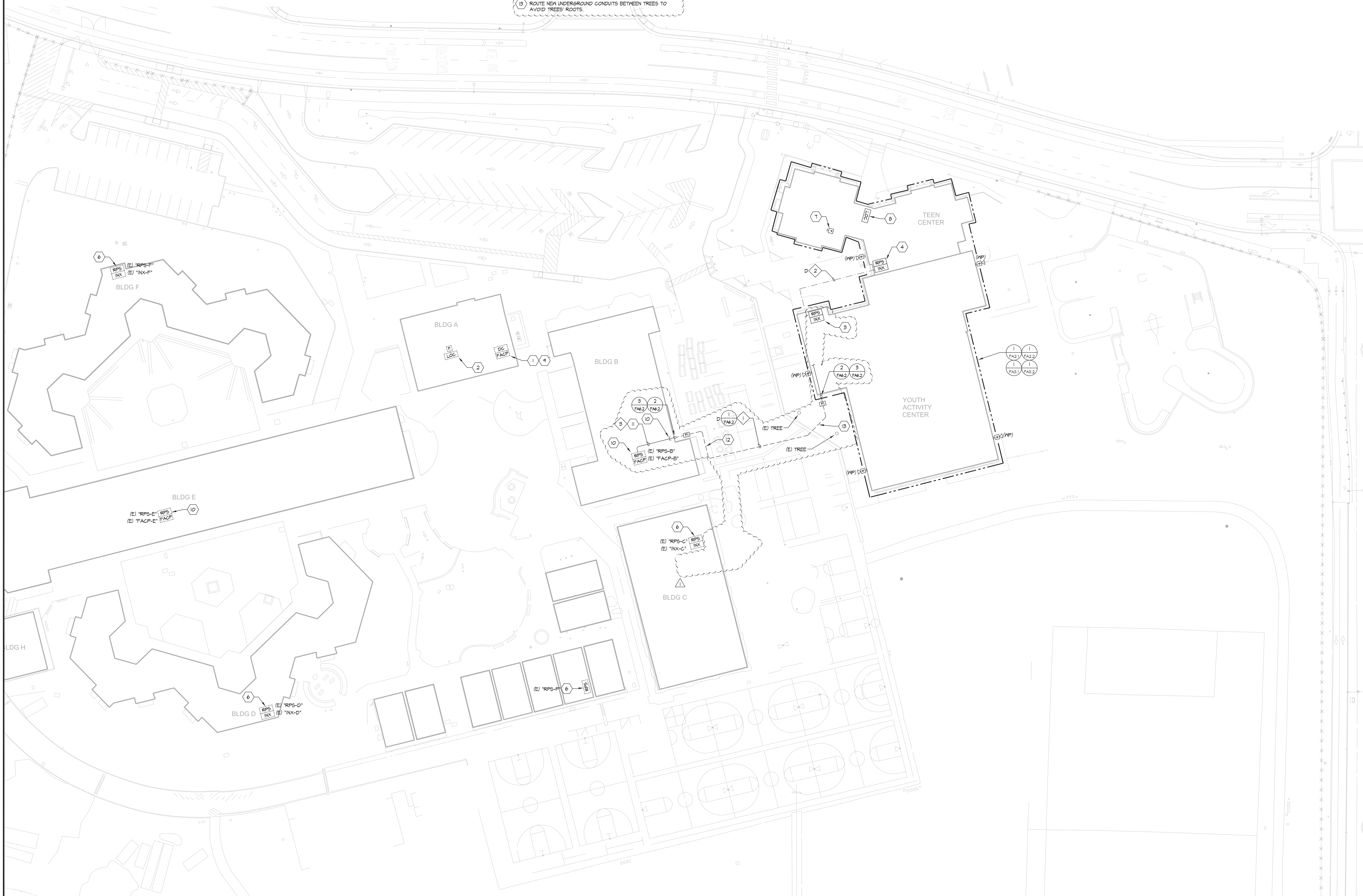
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B - (2) #12 FOR STROBE CIRCUITS
C - (2) #12 TWISTED SHIELDED PAIR FOR SPEAKER CIRCUITS
D - (1) 6-STRAND MULTI-MODE FIBER OPTIC CABLE
E - (2) #12 FOR ANNUNCIATOR POWER
F - (5) #14 TWISTED SHIELDED FOR REMOTE TEST SWITCH

PULLBOX SCHEDULE:

- [E] - FIRE ALARM BIO/IT PULLBOX WITH TRAFFIC RATED LID LABEL LID "FIRE ALARM".

CONDUIT SCHEDULE:

- 1 (N) (1) 2" C - (N) FIRE ALARM
(N) (3) 2" CO - SPARE
2 (E) UNDERGROUND FIRE ALARM CONDUIT.
3 (N) (1) 2" C - (N) FIRE ALARM



NEW FIRE ALARM SITE PLAN

SCALE: 1" = 30'-0"

APPROVED
BY: OF THE STATE ARCHITECT
APP: 01-120540 INC.
REVIEWED FOR:
SS [] PLS [] ACS []
DATE: 04/13/2023

REVISIONS	DATE
1ST DSA SUBMITTAL	11/01/2022
DSA BACKCHECK SUBMITTAL	03/08/2023
APPENDUM #1	04/06/2023

American Consulting Engineers
Electrical, Inc.
1890 The Meadows Drive, Suite 200
San Jose, CA 95128
JOB #EK22105.00
408/236-1312
Fax: 408/236-1314

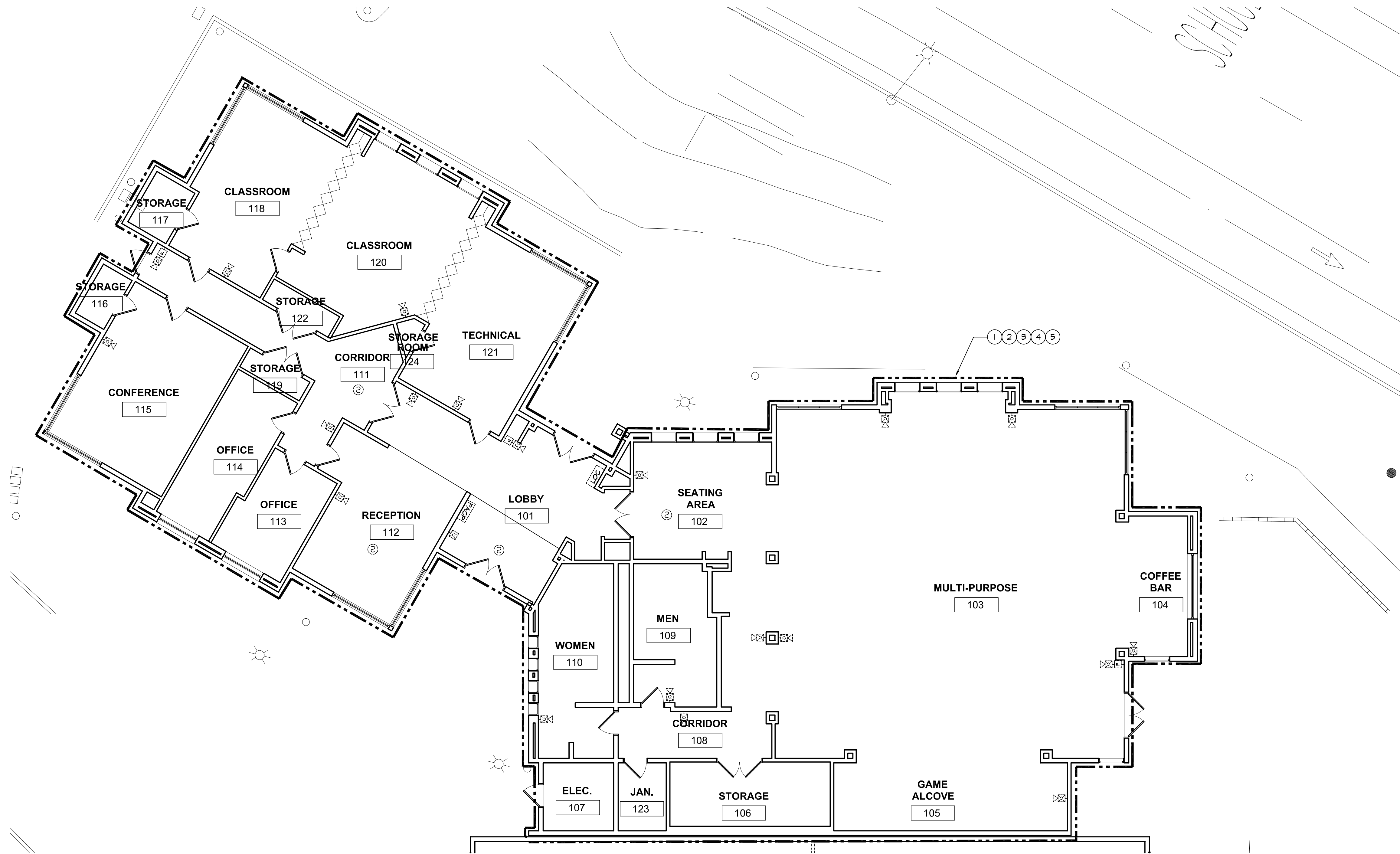
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FIRE ALARM UPGRADE
AT CABRILLO MIDDLE SCHOOL
2550 CABRILLO AVE.
SANTA CLARA, CA 95051

SHEET TITLE
NEW FIRE ALARM SITE
PLAN

DRAWN ACEE
CHECKED JULIAC/AM
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SCALE AS NOTED
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SHEET

AD1-FA1.1

OF SHEETS



DEMOLITION FIRE ALARM FLOOR PLAN - NORTH BUILDING

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

DEMOLITION GENERAL NOTES:

- EXISTING FIRE ALARM DEVICES AND CONDUIT ARE SHOWN BASED ON AS-BUILTS AND FIELD CONDITIONS. THE CONTRACTOR SHALL REMOVE ALL FIRE ALARM DEVICES AND WIRING TO SOURCE UNLESS OTHERWISE NOTED. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD LOCATE EXISTING FIRE ALARM DEVICES NOT SHOWN AND REMOVE AS REQUIRED.
- SEE NEW FLOOR PLANS FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING DAMAGE WALLS/CEILING AND ROOF AS A RESULT OF DEMOLITION WORK. PAINT TO MATCH EXISTING.
- IN THE EVENT THAT THE FA SYSTEM IS DISABLED WHILE STAFF AND STUDENTS ARE AT THE SITE, THE CONTRACTOR SHALL PROVIDE FIREWATCH.
- (E) INITIATING DEVICES TO BE REMOVED. REMOVAL SHALL BE COORDINATED WITH THE INSTALLATION OF THE NEW DEVICES.
- REMOVE (E) FIRE ALARM CONDUIT, J-BOXES, PULLBOXS AND (E) FIRE ALARM EQUIPMENT NOT BEING REUSED. REMOVAL SHALL BE COORDINATED WITH THE INSTALLATION OF THE NEW DEVICES.
- CONTRACTOR SHALL COORDINATE WITH THE DISTRICT REPRESENTATIVE TO DETERMINE SCHEDULING FOR THE DEMOLITION AND NEW WORK OF EACH BUILDING AT THE SITE. THE EXISTING FIRE ALARM SYSTEM IN EACH BUILDING IS TO REMAIN OPERATIONAL UNTIL THE INSTALLATION OF THE NEW FIRE ALARM SYSTEM IN THAT BUILDING IS COMPLETE AND OPERATIONAL. COORDINATE EXACT REQUIREMENTS WITH DISTRICT REPRESENTATIVE.
- CONTRACTOR SHALL REPLACE ANY EXISTING CEILING TILE BROKEN OR DAMAGED DURING DEMOLITION WORK.
- EXISTING FIRE ALARM REMOTE POWER SUPPLY SHALL BE REMOVED. REMOVAL SHALL BE COORDINATED WITH THE INSTALLATION OF THE NEW DEVICES.
- WHERE EXISTING INITIATING DEVICES ARE REMOVED, THE CONTRACTOR IS RESPONSIBLE FOR PATCHING AND REPAIRING THE AREA WHERE THE DEVICES WERE LOCATED. PAINT TO MATCH EXISTING SURFACE AREA.
- WHERE EXISTING SURFACE MOUNTED FIRE ALARM CONTROL PANEL, REMOTE POWER SUPPLIES, ANNUNCIATORS AND AUXILIARY EQUIPMENT ARE REMOVED, THE CONTRACTOR IS RESPONSIBLE FOR PATCHING AND REPAIRING THE AREA WHERE THE EQUIPMENT AND CONDUITS WERE LOCATED. PAINT TO MATCH EXISTING SURFACE AREA.

DEMOLITION NOTES:

- EXISTING FIRE ALARM INITIATING DEVICES TO BE REMOVED. SEE DEMOLITION GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
- EXISTING FIRE ALARM NOTIFICATION DEVICES TO BE REMOVED. SEE DEMOLITION GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
- EXISTING FIRE ALARM CONTROL PANEL AND LOCAL OPERATION CONSULT TO BE REMOVED. SEE DEMOLITION GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
- EXISTING PULL STATIONS TO BE REMOVED. SEE DEMOLITION GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
- EXISTING REMOTE POWER SUPPLY TO BE REMOVED. SEE DEMOLITION GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.

DEMOLITION OF (E) EXTERIOR FA HORNS/SPEAKER

- EXTERIOR HORNS/SPEAKER WITH JUNCTION BOX FLUSH IN WALL SHALL BE ABANDONED IN PLACE AND SHALL BE PROVIDED WITH (N) JUNCTION BOX COVER PLATE. COVER PLATE SHALL BE RATED FOR EXTERIOR USE OVER (E) JUNCTION BOX.
- EXTERIOR HORNS/SPEAKER MOUNTED SURFACE JUNCTION BOX SHALL BE REMOVED. EXPOSED CONDUIT SHALL BE REMOVED BACK TO THE SOURCE. DAMAGED EXTERIOR WALL OR OPENING SHALL BE PATCHED TO MATCH EXISTING. CONTRACTOR TO INCLUDE IN HIS/HER BID ALL PATCHING AND REPAIR WORK TO MATCH EXISTING. OBTAIN PAINT FROM DISTRICT TO MATCH EXISTING.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120540 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 3/9/2023

REVISIONS	DATE
1ST DSA SUBMITTAL	11/01/2022
DSA BACKCHECK SUBMITTAL	03/08/2023

**American Consulting Engineers
Electrical, Inc.**

1800 The Meadows, Suite 200
San Jose, CA 95128
JOB #EK22105.00

408/236-1312
Fax: 408/236-1314



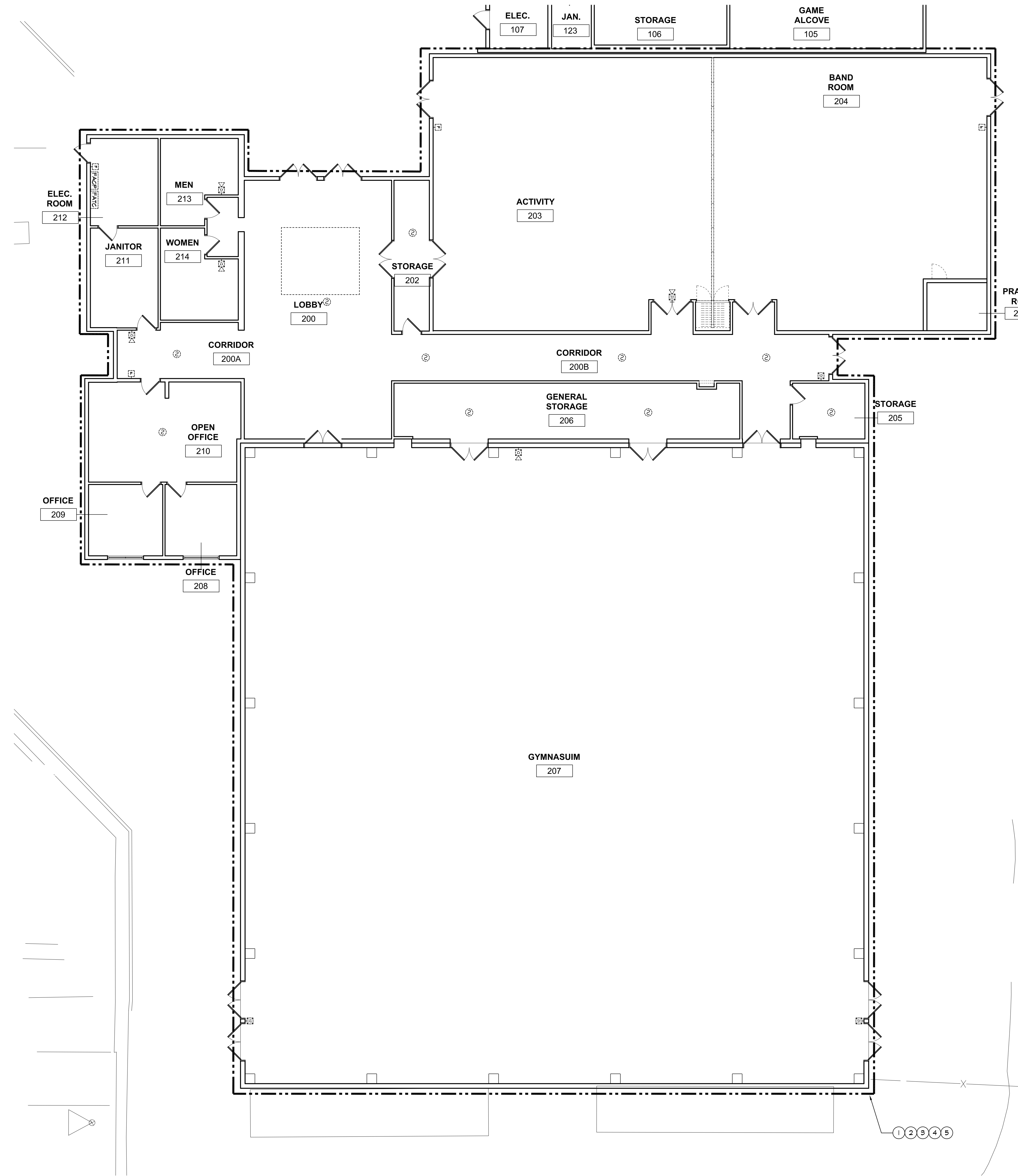
YOUTH ACTIVITY CENTER BUILDING
FIRE ALARM UPGRADE
AT CABRILLO MIDDLE SCHOOL
2550 CABRILLO AVE.
SANTA CLARA, CA 95051

DEMOLITION FIRE ALARM
FLOOR PLAN - NORTH
BUILDING

SHEET TITLE

DRAWN AGEE
CHECKED JUL16/24M
DATE 03/08/2023
SCALE AS NOTED
JOB NO. EK22105.00
SHEET

FA2.1



DEMOLITION GENERAL NOTES:

- EXISTING FIRE ALARM DEVICES AND CONDUIT ARE SHOWN BASED ON AS-BUILTS AND FIELD CONDITIONS. THE CONTRACTOR SHALL REMOVE ALL FIRE ALARM DEVICES AND WIRING TO SOURCE UNLESS OTHERWISE NOTED. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD LOCATE EXISTING FIRE ALARM DEVICES NOT SHOWN AND REMOVE AS REQUIRED.
- SEE NEW FLOOR PLANS FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING DAMAGE WALLS/CEILING AND ROOF AS A RESULT OF DEMOLITION WORK. PAINT TO MATCH EXISTING.
- IN THE EVENT THAT THE FA SYSTEM IS DISABLED WHILE STAFF AND STUDENTS ARE AT THE SITE, THE CONTRACTOR SHALL PROVIDE FIREWATCH.
- (E) INITIATING DEVICES TO BE REMOVED. REMOVAL SHALL BE COORDINATED WITH THE INSTALLATION OF THE NEW DEVICES.
- REMOVE (E) FIRE ALARM CONDUIT, J-BOXES, PULLGANS AND (E) FIRE ALARM EQUIPMENT NOT BEING REUSED. REMOVAL SHALL BE COORDINATED WITH THE INSTALLATION OF THE NEW DEVICES.
- CONTRACTOR SHALL COORDINATE WITH THE DISTRICT REPRESENTATIVE TO DETERMINE SCHEDULING FOR THE DEMOLITION AND NEW WORK OF EACH BUILDING AT THE SITE. THE EXISTING FIRE ALARM SYSTEM IN EACH BUILDING IS TO REMAIN OPERATIONAL UNTIL THE INSTALLATION OF THE NEW FIRE ALARM SYSTEM IN THAT BUILDING IS COMPLETE AND OPERATIONAL. COORDINATE EXACT REQUIREMENTS WITH DISTRICT REPRESENTATIVE.
- CONTRACTOR SHALL REPLACE ANY EXISTING CEILING TILE BROKEN OR DAMAGED DURING DEMOLITION WORK.
- EXISTING FIRE ALARM REMOTE POWER SUPPLY SHALL BE REMOVED. REMOVAL SHALL BE COORDINATED WITH THE INSTALLATION OF THE NEW DEVICES.
- WHERE EXISTING INITIATING DEVICES ARE REMOVED, THE CONTRACTOR IS RESPONSIBLE FOR PATCHING AND REPAIRING THE AREA WHERE THE DEVICES WERE LOCATED. PAINT TO MATCH EXISTING SURFACE AREA.
- WHERE EXISTING SURFACE MOUNTED FIRE ALARM CONTROL PANEL, REMOTE POWER SUPPLIES, ANNUNCIATORS AND AUXILIARY EQUIPMENT ARE REMOVED, THE CONTRACTOR IS RESPONSIBLE FOR PATCHING AND REPAIRING THE AREA WHERE THE EQUIPMENT AND CONDUITS WERE LOCATED. PAINT TO MATCH EXISTING SURFACE AREA.

DEMOLITION NOTES:

- EXISTING FIRE ALARM INITIATING DEVICES TO BE REMOVED. SEE DEMOLITION GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
- EXISTING FIRE ALARM NOTIFICATION DEVICES TO BE REMOVED. SEE DEMOLITION GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
- EXISTING FIRE ALARM CONTROL PANEL AND FIRE ALARM TERMINAL CAN TO BE REMOVED. SEE DEMOLITION GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
- EXISTING PULL STATIONS TO BE REMOVED. SEE DEMOLITION GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
- EXISTING REMOTE POWER SUPPLY TO BE REMOVED. SEE DEMOLITION GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.

DEMOLITION OF (E) EXTERIOR FA HORNS/SPEAKER

- EXTERIOR HORNS/SPEAKER WITH JUNCTION BOX FLUSH IN WALL SHALL BE ABANDONED IN PLACE AND SHALL BE PROVIDED WITH (N) JUNCTION BOX COVER PLATE. COVER PLATE SHALL BE RATED FOR EXTERIOR USE OVER (E) JUNCTION BOX.
- EXTERIOR HORNS/SPEAKER MOUNTED SURFACE JUNCTION BOX SHALL BE REMOVED. EXPOSED CONDUIT SHALL BE REMOVED BACK TO THE SOURCE. DAMAGED EXTERIOR WALL OR OPENING SHALL BE PATCHED TO MATCH EXISTING. CONTRACTOR TO INCLUDE IN HIS/HER BID ALL PATCHING AND REPAIR WORK TO MATCH EXISTING. OBTAIN PAINT FROM DISTRICT TO MATCH EXISTING.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120540 INC.
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DATE: 3/9/2023

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DSA BACKCHECK SUBMITTAL	03/08/2023

**American Consulting Engineers
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JOB #EK221103.00
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**YOUTH ACTIVITY CENTER BUILDING
FIRE ALARM UPGRADE
AT CABRILLO MIDDLE SCHOOL
2550 CABRILLO AVE.
SANTA CLARA, CA 95051**

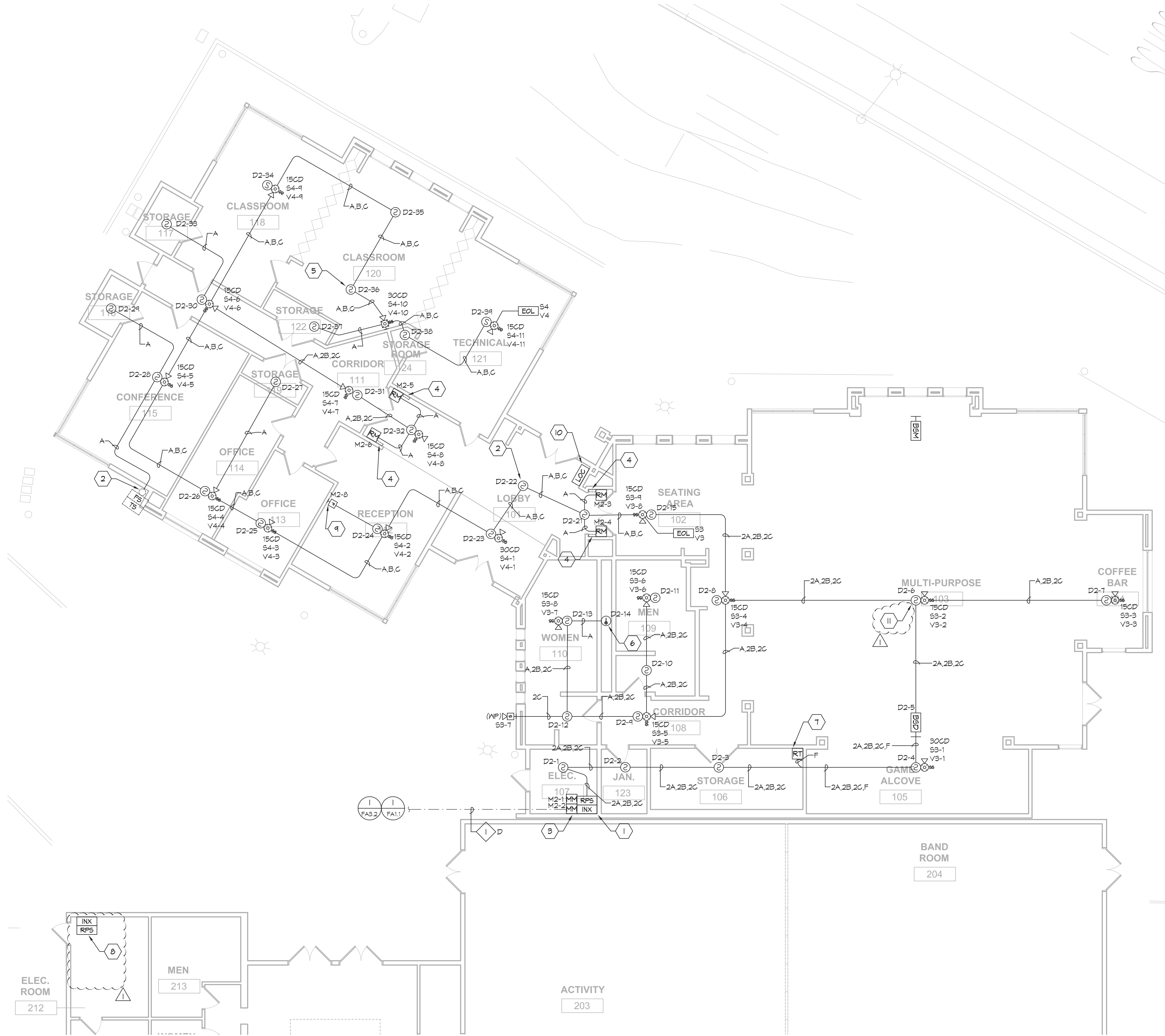
**DEMOLITION FIRE ALARM
FLOOR PLAN - SOUTH
BUILDING**

SHEET TITLE

DRAWN
AGEE
CHECKED
JULIAG/AM
DATE
03/08/2023
SCALE
AS NOTED
JOB NO.
EK221103.00
SHEET

FA2.2

OF SHEETS



1
FA3.1
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- SEE FIRE ALARM RISER DIAGRAM SHEET FOR ADDITIONAL REQUIREMENTS.
- ALL FIRE ALARM CONDUITS SHALL BE CONCEALED, U.O.N.
- THERE SHALL BE NO SPLICING OF FIRE ALARM CONDUCTORS BETWEEN TERMINATIONS OF FIRE ALARM DEVICES, UNLESS SPECIFICALLY NOTED OTHERWISE. FIRE ALARM CONDUCTORS SHALL BE CONTINUOUS FROM DEVICE TO DEVICE. SPLICES ARE PERMITTED AT THE BUILDING FIRE ALARM TERMINAL CAN.
- ALL FIRE ALARM EQUIPMENT, CONDUIT, CONDUCTORS SHALL BE NEW, U.O.N.
- IN ABOVE ACCESSIBLE CEILING SPACES, ALL FIRE ALARM CONDUCTORS SHALL BE INSTALLED IN MIN. 3/4" CONDUIT, UPSIZE CONDUIT AS REQUIRED BY CONDUCTOR QUANTITY.
- ROUTE FIRE ALARM CONDUIT CONCEALED WHERE POSSIBLE. WHERE SURFACE MOUNTED RACEWAY IS REQUIRED, INSTALL ALL FIRE ALARM CABLES IN CONDUIT. SEE FA01 GENERAL NOTES FOR ADDITIONAL CONDUIT REQUIREMENTS.
- WHERE ABOVE CEILING HEAT DETECTORS ARE LOCATED IN INACCESSIBLE AREAS, THE DETECTORS SHALL BE MADE ACCESSIBLE WITH ACCESS HATCHES. WHERE ACCESS BY A SERVICE PERSON IS REQUIRED, MINIMUM USABLE OPENING SHALL BE 10" X 24".
- END-OF-LINE RESISTORS (EOL) SHALL BE PROVIDED AT THE LAST DEVICE ON EACH NOTIFICATION AND SPEAKER CIRCUIT. REFER TO THE FIRE ALARM RISER DIAGRAMS FOR THE DEVICES THAT REQUIRE THE END-OF-LINE RESISTOR (EOL).
- IN THE EVENT DURING INSTALLATION THAT THE FIRE ALARM SYSTEM IS OFFLINE WHEN THE SITE IS OCCUPIED BY STAFF/STUDENTS, CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FIRE WATCH.
- ALL FIRE ALARM JUNCTION BOXES LOCATED IN THE ABOVE CEILING SPACES SHALL BE PAINTED/COLORED RED TO INDICATE FIRE ALARM EQUIPMENT.
- ALL INTERIOR SPEAKERS SHALL BE SET AT THE 1/2 WATT (0.5W) SETTING, UNLESS OTHERWISE INDICATED AS 1 WATT (1.0W).
- ALL EXTERIOR WP SPEAKERS SHALL BE SET AT THE 1 WATT SETTING, UNLESS OTHERWISE NOTED.
- EXISTING SPRINKLER UPRIGHT HEAD AT ABOVE CEILING SPACE. NO ATTIC HEAT DETECTOR REQUIRED.

SHEET NOTES:

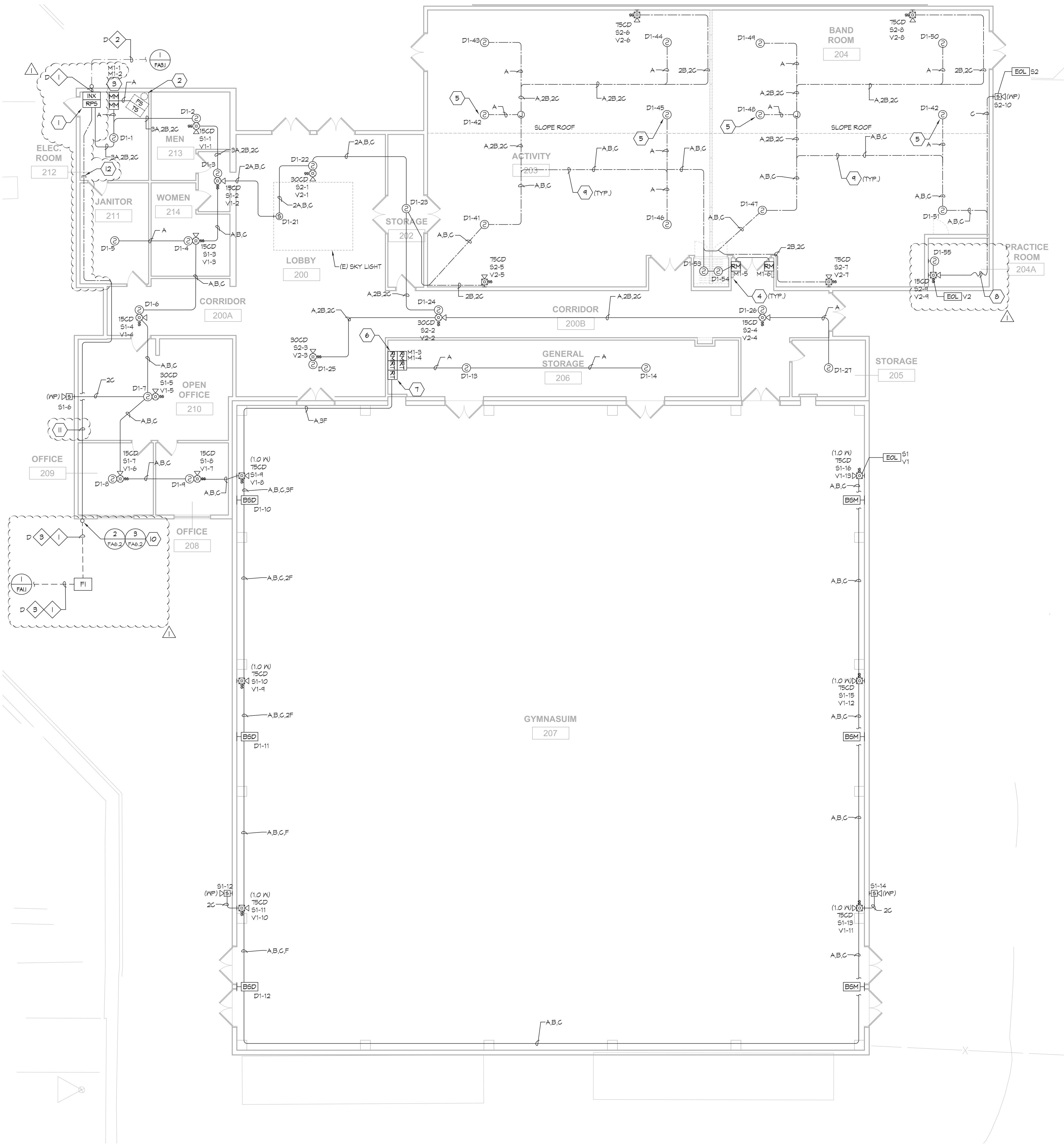
- NEW REMOTE POWER SUPPLY #2 AND AMPLIFIER ES-INX #2.
- EXISTING FIRE SPRINKLER RISER. PROVIDE NEW MONITOR MODULES IN THE ELECTRICAL ROOM FOR EXISTING TAMPER SWITCH AND FLOW SWITCH MONITORING.
- NEW MONITOR MODULES FOR EXISTING FIRE RISER MONITORING.
- EXISTING MAGNET DOOR HOLDER. PROVIDE NEW CONTROL MODULE FOR MAGNETIC DOOR HOLDER.
- INSTALL SMOKE DETECTOR WITHIN 3' FROM THE PEAK.
- PROVIDE HEAT DETECTOR IN THE CONCEALED SPACE REQUIRED.
- NEW REMOTE TEST SWITCH FOR BEAM SMOKE DETECTOR.
- NEW REMOTE POWER SUPPLY #1 AND AMPLIFIER ES-INX #1. SEE SHEET FA3.2 FOR ADDITIONAL INFORMATION.
- PROVIDE NEW FIRE ALARM PULL STATION IN RECEPTION AREA. COORDINATE EXACT LOCATION WITH DISTRICT.
- NEW LOCAL OPERATING CONSOLE.
- INSTALL NEW SMOKE DETECTOR AND SPEAKER/STROBE AT HIGHER CEILING.

FIRE ALARM CABLE SCHEDULE:

- A - (1) #14 UNSHIELDED TWISTED PAIR FOR SIGNALING LINE CIRCUITS.
B - (2) #12 FOR STROBE CIRCUITS
C - (2) #12 TWISTED SHIELDED PAIR FOR SPEAKER CIRCUITS
D - (1) 6-STRAND MULTI-MODE FIBER OPTIC CABLE
E - (2) #12 FOR ANNUNCIATOR POWER
F - (3) #14 TWISTED SHIELDED FOR REMOTE TEST SWITCH

CONDUIT SCHEDULE:

- (E) UNDERGROUND FIRE ALARM CONDUIT.



1
FA3.2
NEW FIRE ALARM FLOOR PLAN - SOUTH BUILDING
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- SEE FIRE ALARM RISER DIAGRAM SHEET FOR ADDITIONAL REQUIREMENTS.
- ALL FIRE ALARM CONDUITS SHALL BE CONCEALED, U.O.N.
- THERE SHALL BE NO SPLICING OF FIRE ALARM CONDUCTORS BETWEEN TERMINATIONS OF FIRE ALARM DEVICES, UNLESS SPECIFICALLY NOTED OTHERWISE. FIRE ALARM CONDUCTORS SHALL BE CONTINUOUS FROM DEVICE TO DEVICE. SPLICES ARE PERMITTED AT THE BUILDING FIRE ALARM TERMINAL CAN.
- ALL FIRE ALARM EQUIPMENT, CONDUIT, CONDUCTORS SHALL BE NEW, U.O.N.
- IN ABOVE ACCESSIBLE CEILING SPACES, ALL FIRE ALARM CONDUCTORS SHALL BE INSTALLED IN MIN. 3/4" CONDUIT. UPSIZE CONDUIT AS REQUIRED BY CONDUCTOR QUANTITY.
- ROUTE FIRE ALARM CONDUIT CONCEALED WHERE POSSIBLE. WHERE SURFACE MOUNTED RACEWAY IS REQUIRED, INSTALL ALL FIRE ALARM CABLES IN CONDUIT. SEE FA01 GENERAL NOTES FOR ADDITIONAL CONDUIT REQUIREMENTS.
- WHERE ABOVE CEILING HEAT DETECTORS ARE LOCATED IN INACCESSIBLE AREAS, THE DETECTORS SHALL BE MADE ACCESSIBLE WITH ACCESS HATCHES. WHERE ACCESS BY A SERVICE PERSON IS REQUIRED, MINIMUM USABLE OPENING SHALL BE 18" X 24".
- END-OF-LINE RESISTORS (EOL) SHALL BE PROVIDED AT THE LAST DEVICE ON EACH NOTIFICATION AND SPEAKER CIRCUIT. REFER TO THE FIRE ALARM RISER DIAGRAMS FOR THE DEVICES THAT REQUIRE THE END-OF-LINE RESISTOR (EOL).
- IN THE EVENT DURING INSTALLATION THAT THE FIRE ALARM SYSTEM IS OFFLINE WHEN THE SITE IS OCCUPIED BY STAFF/STUDENTS, CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FIRE WATCH.
- ALL FIRE ALARM JUNCTION BOXES LOCATED IN THE ABOVE CEILING SPACES SHALL BE PAINTED/COLORED RED TO INDICATE FIRE ALARM EQUIPMENT.
- ALL INTERIOR SPEAKERS SHALL BE SET AT THE 1/2 WATT (0.5W) SETTINGS, UNLESS OTHERWISE INDICATED AS 1 WATT (1.0W).
- ALL EXTERIOR WP SPEAKERS SHALL BE SET AT THE 1 WATT SETTINGS, UNLESS OTHERWISE NOTED.
- SPRINKLER UPRIGHT HEAD AT ABOVE CEILINGS, NO ATTIC HEAT DETECTOR REQUIRED.
- PROVIDE WIRE GUARD/DEVICE COVER TO ALL NEW FIRE ALARM DEVICES LOCATED IN THE GYM AREA FOR PHYSICAL DAMAGE PROTECTION.

SHEET NOTES:

- NEW REMOTE POWER SUPPLY #1 AND AMPLIFIER ES-1XK #1, REMOVE EXISTING KEY BOX TO INSTALL NEW FIRE ALARM EQUIPMENT.
- EXISTING FIRE SPRINKLER RISER. PROVIDE NEW MONITOR MODULES IN THE ELECTRICAL ROOM FOR EXISTING TAMPER SWITCH AND FLOW SWITCH MONITORING.
- NEW MONITOR MODULES FOR EXISTING FIRE RISER MONITORING.
- EXISTING MAGNET DOOR HOLDER. PROVIDE NEW CONTROL MODULE FOR MAGNETIC DOOR HOLDER.
- INSTALL SMOKE DETECTOR WITHIN 3' FROM THE PEAK.
- PROVIDE NEW RELAY MODULE FOR EXISTING MECHANICAL UNITS HV-1 AND HV-2 ON THE ROOF SHUTDOWN. REMOVE EXISTING DUCT SMOKE DETECTORS ON THE EXISTING MECHANICAL UNIT.
- REMOTE TEST SWITCHES FOR BEAM SMOKE DETECTORS.
- PROVIDE METAL FLEXIBLE CONDUIT FROM TO CONNECT THE FIRE ALARM DEVICES IN THE ROOM.
- ROUTE NEW EXPOSE CONDUITS CLOSE TO THE EXISTING STRUCTURE AS REQUIRED.
- CONDUIT TRANSITION FROM UNDERGROUND TO ACCESSIBLE CEILING ABOVE.
- ROUTE FIRE ALARM CONDUIT ABOVE ACCESSIBLE CEILING TO ELECTRICAL ROOM.
- STUB NEW (3) 2" SPARE CONDUITS IN THE ELECTRICAL ROOM AS REQUIRED.

FIRE ALARM CABLE SCHEDULE:

- A - (1) #14 UNSHIELDED TWISTED PAIR FOR SIGNALING LINE CIRCUITS.
B - (2) #12 FOR STROBE CIRCUITS
C - (2) #12 TWISTED SHIELDED PAIR FOR SPEAKER CIRCUITS
D - (1) 6-STRAND MULTI - MODE FIBER OPTIC CABLE
E - (2) #12 FOR ANNUNCIATOR POWER
F - (3) #14 TWISTED SHIELDED FOR REMOTE TEST SWITCH

CONDUIT SCHEDULE:

- (N) (1) 2" C - (N) FIRE ALARM
- (E) UNDERGROUND FIRE ALARM CONDUIT
- (N) (3) 2" CO - SPARE

REVISIONS	DATE
1ST DSA SUBMITTAL	11/01/2022
DSA BACKCHECK SUBMITTAL	03/08/2023
APPENDUM #1	04/06/2023

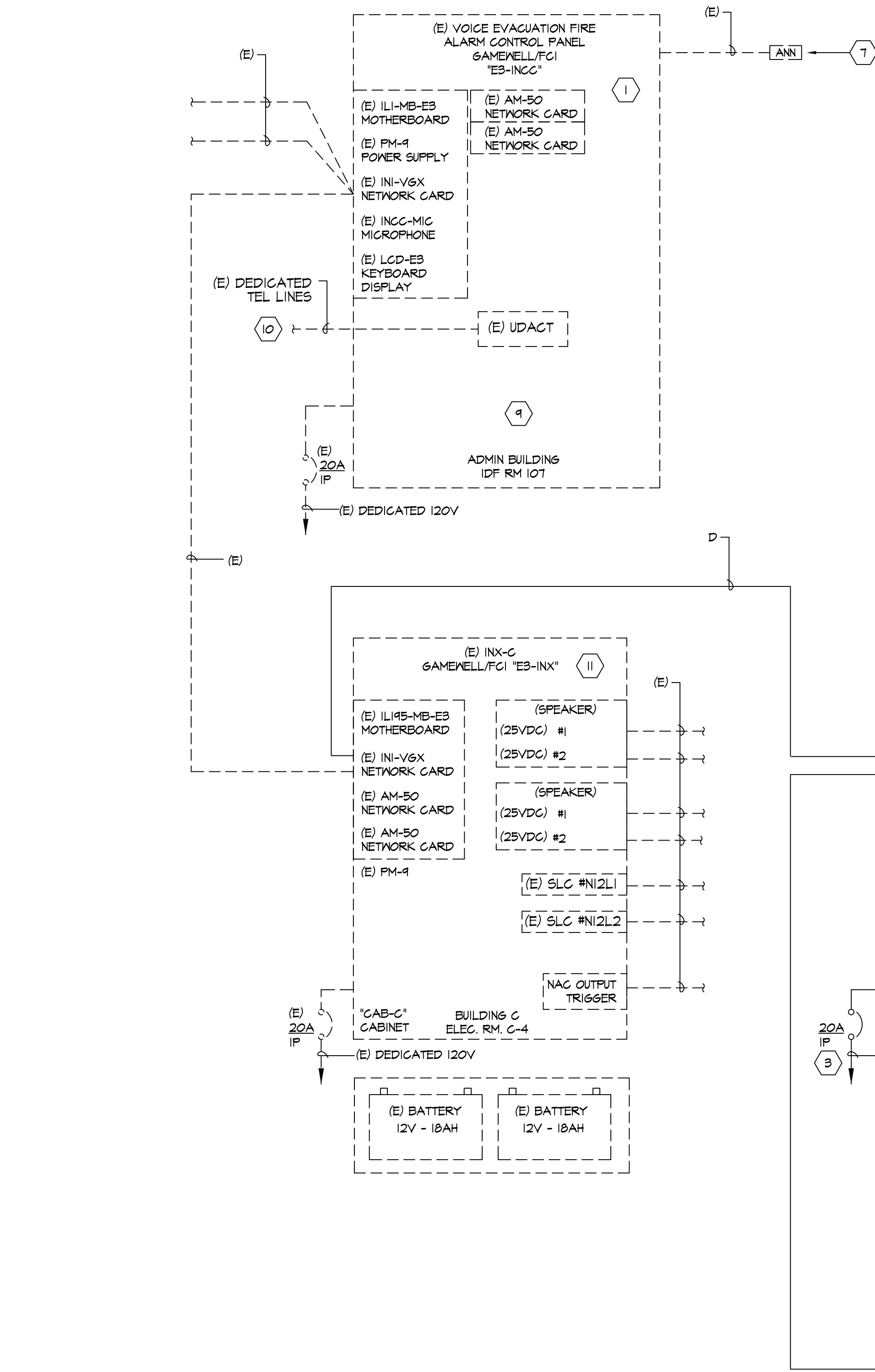
**American Consulting Engineers
Electrical, Inc.**
1500 The Meadows, Suite 200
San Jose, CA 95128
JOB #EK22105.00
408/236-1313
408/236-1314



**YOUTH ACTIVITY CENTER BUILDING
FIRE ALARM UPGRADE
AT CABRILLO MIDDLE SCHOOL
2550 CABRILLO AVE.
SANTA CLARA, CA 95051**

**NEW FIRE ALARM
FLOOR PLAN - SOUTH
BUILDING**

DRAWN ACEE
CHECKED JULIAG/AM
DATE 04/06/2023
SCALE AS NOTED
JOB NO. EK22105.00
SHEET



GENERAL NOTES:

- THERE SHALL BE NO SPLICES OF FIRE ALARM CONDUCTORS BETWEEN TERMINATIONS OF FIRE ALARM DEVICES, UNLESS SPECIFICALLY NOTED OTHERWISE. FIRE ALARM CONDUCTORS SHALL BE CONTINUOUS FROM DEVICE TO DEVICE. SPLICES ARE PERMITTED AT THE BUILDING FIRE ALARM TERMINAL CAN.
- ALL INTERIOR SPEAKERS SHALL BE SET AT THE 1/2 WATT (0.5W) SETTING, UNLESS OTHERWISE INDICATED AS 1/4 WATT (0.25W).
- ALL EXTERIOR WP SPEAKERS SHALL BE SET AT THE 1 WATT SETTING, UNLESS OTHERWISE NOTED.

SHEET NOTES:

- (E) FIRE ALARM CONTROL PANEL - VOICE EVAC PANEL (GAMEKELL/FCI) "ES-INGC".
- (N) REMOTE POWER SUPPLY GAMEKELL/FCI HPFFB.
- PROVIDE AND INSTALL DEDICATED POWER CONNECTION. PROVIDE (N) 20A-IP DEDICATED CIRCUIT BREAKER. PROVIDE ALL NECESSARY HARDWARE FOR A COMPLETE INSTALLATION. PROVIDE CIRCUIT BREAKER LOCKOUT TO PREVENT UNAUTHORIZED TAMPERING. CIRCUIT BREAKER SHALL HAVE A RED MARKING AND BE IDENTIFIED AS FIRE ALARM CIRCUIT. LOCATION OF CIRCUIT DISCONNECT (CIRCUIT BREAKER) PERMANENTLY IDENTIFIED AT THE FIRE ALARM PANEL.
- (N) REMOTE VOICE EVAC AMPLIFIER PANEL (GAMEKELL/FCI) "ES-INVX".
- PROVIDE ISOLATOR MODULES. INSTALL INSIDE PULL CAN.
- (N) LOCAL OPERATING CONSOLE (MICROPHONE). PROVIDE WITH OPTIONAL NETWORK GRAPHIC ANNUNCIATOR (NSA). INSTALL INSIDE AA CABINET.
- EXISTING ANNUNCIATOR LOCATED IN ADMIN BUILDING LOBBY 10B.
- PROVIDE NEW FIRE ALARM TERMINAL STRIP AND NEW 12"x12"x6" PULL CAN TO ACCOMMODATE (N) INITIATING DEVICES SHOWN. LOCATE IN THE ABOVE ACCESSIBLE CEILING SPACE. IF THERE IS NO ACCESSIBLE CEILING SPACE, LOCATE HIGH ON WALL (BELOW THE CEILING). PROVIDE PERMANENT LABEL ON PULL CAN.
- EXISTING 17AMP-HR BATTERY BACK-UP.
- TO (E) UL LISTED CENTRAL MONITORING STATION.
- (E) REMOTE VOICE EVAC AMPLIFIER PANEL (GAMEKELL/FCI) "ES-INVX".

FIRE ALARM CABLE SCHEDULE:

- A - (1) #14 UNSHIELDED TWISTED PAIR FOR SIGNALING LINE CIRCUITS
- B - (2) #12 FOR STROBE CIRCUITS
- C - (2) #14 SHIELDED FOR SPEAKER CIRCUITS
- D - (1) 6-STRAND MULTI-MODE FIBER OPTIC CABLE
- E - (2) #12 FOR ANNUNCIATOR POWER
- F - (5) #14 TWISTED SHIELDED FOR REMOTE TEST SWITCH

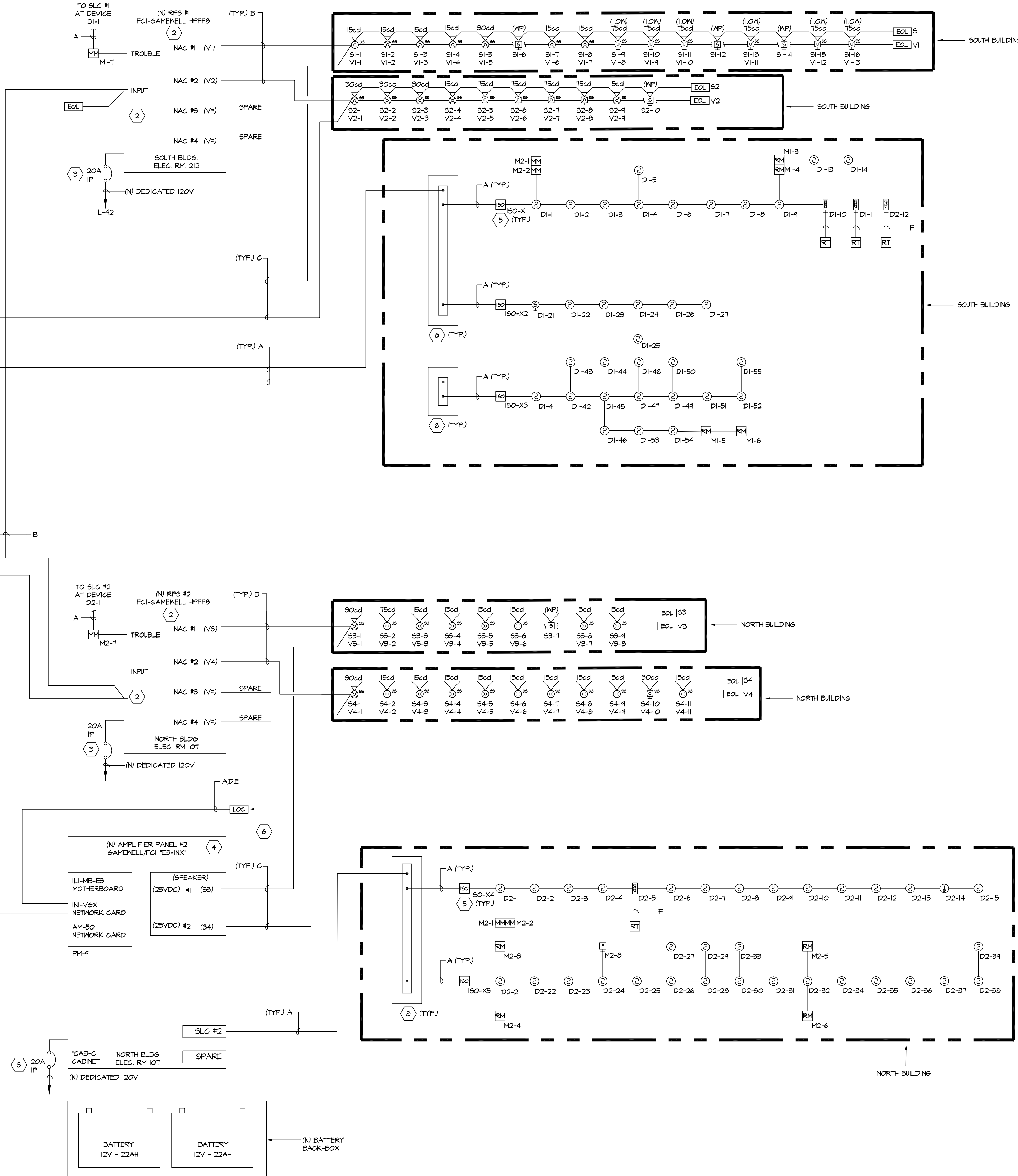
AMPLIFIER WATTAGE:

AMPLIFIER LINE	MAX WATTS CAPABLE PER LINE	QUANTITY OF (1 WATT) EXTERIOR SPEAKERS	QUANTITY OF (1.0 WATT) INTERIOR SPEAKERS	QUANTITY OF (0.25 WATT) INTERIOR SPEAKERS	TOTAL WATTAGE PER LINE
S1	50 WATTS	3	6	1	19.5
S2	50 WATTS	1	2	5	9
TOTAL =					21.5

TOTAL OVERALL WATTAGE CAPACITY PER AMPLIFIER (AM-50 NETWORK CARD) IS 50 WATT
TOTAL WATTAGE USAGE ON SYSTEM IS: 21.5 WATTS
TOTAL WATTAGE AVAILABILITY ON SYSTEM IS:

AMPLIFIER LINE	MAX WATTS CAPABLE PER LINE	QUANTITY OF (1 WATT) EXTERIOR SPEAKERS	QUANTITY OF (1.0 WATT) INTERIOR SPEAKERS	QUANTITY OF (0.25 WATT) INTERIOR SPEAKERS	TOTAL WATTAGE PER LINE
S3	50 WATTS	1	2	5	9
S4	50 WATTS	2	2	11	11.5
TOTAL =					11.5

TOTAL OVERALL WATTAGE CAPACITY PER AMPLIFIER (AM-50 NETWORK CARD) IS 50 WATT
TOTAL WATTAGE USAGE ON SYSTEM IS: 11.5 WATTS
TOTAL WATTAGE AVAILABILITY ON SYSTEM IS:



IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120540 INC.
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 3/9/2023

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YOUTH ACTIVITY CENTER BUILDING
FIRE ALARM UPGRADE
AT CABRILLO MIDDLE SCHOOL
2550 CABRILLO AVE.
SANTA CLARA, CA 95051

SHEET TITLE
FIRE ALARM
RISER DIAGRAM

DRAWN
ACEE
CHECKED
JULIAC/AM
DATE
03/08/2023
SCALE
AS NOTED
JOB NO.
EK22105.00
SHEET

FA4.1

OF SHEETS


(N) VOICE EVACUATION SYSTEM AMPLIFIER PANEL #1 - BATTERY CALCULATION						
QUANTITY	MODEL #	DEVICE	SUPV. CURRENT PER	TOTAL SUPV. CURRENT	ALARM CURRENT PER	TOTAL ALARM CURRENT
(N) DEVICES						
1	ILI-MB-E3	ES-INGG MOTHERBOARD	0.0810	0.0810	0.1500	0.1500
1	INI-VSX	VOICE GATEWAY NETWORK CARD	0.1800	0.1800	0.1500	0.1500
1	PM-4	INTERNAL POWER SUPPLY	0.0300	0.0300	0.0500	0.0500
1	AM-50-25	AMPLIFIER	0.0860	0.0860	2.2000	2.2000
(N) DEVICES						
8	SFSGNL	CEILING SPEAKER/STROBE 15CD - 0.50 WATT	0.000	0.000	0.032	0.256
4	SFSGNL	CEILING SPEAKER/STROBE 30CD - 0.50 WATT	0.000	0.000	0.032	0.128
0	SFSSL	MALL SPEAKER/STROBE 30CD - 0.50 WATT	0.000	0.000	0.032	0.000
4	SFSSL	MALL SPEAKER/STROBE 15CD - 0.5 WATT	0.000	0.000	0.032	0.128
6	SFSSL	MALL SPEAKER/STROBE 15CD - 1.0 WATT	0.000	0.000	0.064	0.384
4	SFVX	WEATHERPROOF SPEAKER - 2.0 WATT	0.000	0.000	0.132	0.528
52	ASD-FL3	SMOKE DETECTOR/BASE	0.0008	0.0046	0.0065	0.2080
3	YSOXX	ISOLATOR MODULE	0.0005	0.0014	0.0005	0.0014
4	ADM-2RF	RELAY MODULE	0.0004	0.0015	0.0065	0.0260
4	AMM-2F	MONITOR MODULE	0.0004	0.0015	0.0006	0.0024
3	ABD-2F	BEAM SMOKE DETECTOR	0.0002	0.0006	0.0085	0.0255
			Max. Supv. Current		Max. Alarm Current	4.24
Maximum Supervisory Current:			0.33			
Standby Period 24 hour:			24			
Total Supervisory Reserve:			1.96 (A)			
Maximum Alarm Current:			4.24			
Alarm Period (15 minute)			0.25			
Total Alarm Reserve:			1.06 (B)			
Total Reserve Current: (A + B)			9.01			
Safety Margin (20%)			1.2			
Total Ampere Hours Required:			10.81			
(N) Battery 2: 12V 18 Ampers Hour in (N) Battery Backbox						

(N) VOICE EVACUATION SYSTEM AMPLIFIER PANEL #2 - BATTERY CALCULATION						
QUANTITY	MODEL #	DEVICE	SUPV. CURRENT PER	TOTAL SUPV. CURRENT	ALARM CURRENT	TOTAL ALARM CURRENT
(N) DEVICES						
1	ILI-MB-E3	E3-INX MOTHERBOARD	0.0810	0.0810	0.1500	0.1500
1	NI-VSX	VOICE GATEWAY NETWORK CARD	0.1800	0.1800	0.1800	0.1800
1	PM-I	INTERNAL POWER SUPPLY	0.0000	0.0000	0.0800	0.0800
1	AM-50-25	AMPLIFIER	0.0860	0.0860	2.2000	2.2000
0	SPSVL	MALL SPEAKER/STROBE 15CD - 0.50 WATT	0.000	0.000	0.032	0.032
0	SPSVL	MALL SPEAKER/STROBE 30CD - 0.50 WATT	0.000	0.000	0.032	0.032
0	SPSVL	MALL SPEAKER/STROBE 75CD - 0.50 WATT	0.000	0.000	0.032	0.000
0	SPSVL	MALL SPEAKER/STROBE 110CD - 0.5 WATT	0.000	0.000	0.032	0.000
15	SP3CAL	CEILING SPEAKER/STROBE 15CD - 0.50 WATT	0.000	0.000	0.032	0.480
3	SP3CAL	CEILING SPEAKER/STROBE 30CD - 0.50 WATT	0.000	0.000	0.032	0.060
0	SP3CAL	CEILING SPEAKER/STROBE 75CD - 0.50 WATT	0.000	0.000	0.032	0.000
0	SP3CAL	CEILING SPEAKER/STROBE 110CD - 0.50 WATT	0.000	0.000	0.032	0.000
0	SPCAL	CEILING SPEAKER - 0.50 WATT	0.000	0.000	0.032	0.000
0	SPSVL	MALL SPEAKER/STROBE 110CD - 1.0 WATT	0.000	0.000	0.064	0.000
0	SPFK	WEATHERPROOF SPEAKER - 2.0 WATT	0.000	0.000	0.132	0.000
(N) DEVICES						
32	ASD-PL3	SMOKE DETECTOR/BASE	0.0003	0.0006	0.0065	0.2080
1	ASD-2F	BEAM SMOKE DETECTOR	0.0002	0.0002	0.0072	0.0072
0	MCS-CO3	CO DETECTOR	0.0003	0.0000	0.0072	0.0000
1	ATD-L3	HEAT DETECTOR/BASE	0.0003	0.0003	0.0065	0.0065
0	ATD-L3H	ATTIC HEAT DETECTOR/BASE	0.0003	0.0000	0.0065	0.0000
0	ATD-L3H	HIGH TEMPERATURE HEAT DETECTOR/BASE	0.0003	0.0000	0.0065	0.0000
0	MS-TABF	MANUAL CALL STATION	0.0000	0.0000	0.0003	0.0000
2	MSOOC	ISOLATOR MODULE	0.0005	0.0004	0.0005	0.0004
4	ACM-2RF	RELAY MODULE	0.0004	0.0015	0.0005	0.0260
4	AMM-2F	MONITOR MODULE	0.0004	0.0015	0.0006	0.0024
REMOTE LCD DISPLAY						
1	NI-VSC	VOICE GATEWAY NETWORK CARD	0.1800	0.1800	0.1800	0.1800
1	ASM-1	SWITCHCARD	0.0050	0.0050	0.0050	0.0050
1	NSA	GRAPHIC ANNUNCIATOR	0.2000	0.2000	0.2000	0.2000
			Max. Supv. Current	Max. Alarm Current		3.78
Maximum Supervisory Current:			0.69			
Standby Period 24 hour:			24			
Total Supervisory Reserve:			16.47 (A)			
Maximum Alarm Current:			3.78			
Alarm Period (15 minute)			0.25			
Total Alarm Reserve:			0.94 (B)			
Total Reserve Current: (A + B)			17.42			
Safety Margin (20%)			1.2			
Total Ampere Hours Required:			20.90			
(N) Battery: 2- 12V 22 Ampere Hour in (N) Battery Backbox						

(N) REMOTE POWER SUPPLY #1 - BATTERY CALCULATION						
QUANTITY	MODEL #	DEVICE	SUPV. CURRENT PER	TOTAL SUPV. CURRENT	ALARM CURRENT	TOTAL ALARM CURRENT
1	HFFFB	REMOTE POWER SUPPLY	0.030	0.030	0.150	0.150
4	SPSCNL	CEILING SPEAKER/STROBE 30CD - 0.50 WATT	0.000	0.000	0.063	0.252
8	SPSCNL	CEILING SPEAKER/STROBE 15CD - 0.50 WATT	0.000	0.000	0.041	0.328
4	SPSVAL	WALL SPEAKER/STROBE 75CD - 0.50 WATT	0.000	0.000	0.107	0.428
6	SPSVAL	WALL SPEAKER/STROBE 75CD - 1.00 WATT	0.000	0.000	0.107	0.642
			Max. Supv. Current		Max. Alarm Current	1.80
Maximum Supervisory Current:			0.03			
Standby Period 24 hour:			24			
Total Supervisory Reserve:			0.72 (A)			
Maximum Alarm Current:			1.80			
Alarm Period (15 minute)			0.25			
Total Alarm Reserve:			0.45 (B)			
Total Reserve Current: (A + B)			1.17			
Safety Margin (20%)			1.2			
Total Ampere Hours Required:			1.40			
(N) Battery: 2- 12V 7 Ampere Hour						


(N) REMOTE POWER SUPPLY #2 - BATTERY CALCULATION						
QUANTITY	MODEL #	DEVICE	SUPV. CURRENT PER	TOTAL SUPV. CURRENT	ALARM CURRENT	TOTAL ALARM CURRENT
1	HFFFB	REMOTE POWER SUPPLY	0.030	0.030	0.150	0.150
3	SPSCNL	CEILING SPEAKER/STROBE 30CD - 0.50 WATT	0.000	0.000	0.063	0.189
15	SPSCNL	CEILING SPEAKER/STROBE 15CD - 0.50 WATT	0.000	0.000	0.041	0.615
1	SPSVAL	CEILING SPEAKER/STROBE 75CD - 0.50 WATT	0.000	0.000	0.111	0.222
			Max. Supv. Current		Max. Alarm Current	1.18
Maximum Supervisory Current:			0.03			
Standby Period 24 hour:			24			
Total Supervisory Reserve:			0.72 (A)			
Maximum Alarm Current:			1.18			
Alarm Period (15 minute)			0.25			
Total Alarm Reserve:			0.24 (B)			
Total Reserve Current: (A + B)			1.01			
Safety Margin (20%)			1.2			
Total Ampere Hours Required:			1.22			
(N) Battery: 2- 12V 7 Ampere Hour						

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REVISIONS	DATE
1ST DSA SUBMITTAL	11/01/2022
DSA BACKCHECK SUBMITTAL	03/08/2023



**American Consulting Engineers
Electrical, Inc.**

15801 The Americas, Suite 200 408/238-2212
San Jose, CA 95128 Fax: 408/238-2216
JOB #EK22105.00



**YOUTH ACTIVITY CENTER BUILDING
FIRE ALARM UPGRADE
AT CABRILLO MIDDLE SCHOOL
2550 CABRILLO AVE.
SANTA CLARA, CA 95051**

**FIRE ALARM BATTERY
CALCULATIONS**

FA5.1

DRAWN ACE	
CHECKED JJ/JC/JM	
DATE 08/08/2023	
SCALE AS NOTED	
JOB NO. EK22105.00	
SHEET	

NOTIFICATION CIRCUIT #		1			
#	DEVICE TYPE	(FT)	AMPS OF DEVICE	TOTAL AMPS @ DEVICE	VOLTAGE DROP @ DEVICE
V1-1	SPEAKER/STROBE 15cd	30	0.043	0.987	0.098
V1-2	SPEAKER/STROBE 15cd	15	0.043	0.944	0.047
V1-3	SPEAKER/STROBE 15cd	15	0.043	0.901	0.045
V1-4	SPEAKER/STROBE 15cd	20	0.043	0.858	0.057
V1-5	SPEAKER/STROBE 30cd	15	0.063	0.815	0.040
V1-6	SPEAKER/STROBE 15cd	20	0.043	0.752	0.050
V1-7	SPEAKER/STROBE 15cd	15	0.043	0.709	0.035
V1-8	SPEAKER/STROBE 75cd	30	0.111	0.666	0.066
V1-9	SPEAKER/STROBE 75cd	30	0.111	0.555	0.055
V1-10	SPEAKER/STROBE 75cd	30	0.111	0.444	0.044
V1-11	SPEAKER/STROBE 75cd	80	0.111	0.333	0.038
V1-12	SPEAKER/STROBE 75cd	30	0.111	0.222	0.022
V1-13	SPEAKER/STROBE 75cd	30	0.111	0.111	0.011
WIRE GAU 12		TOTAL CIRCUIT AMPS:		0.987	
		TOTAL VOLTAGE DROP:		0.658	
		CIRCUIT VOLTAGE:		20.4	
		% VOLTAGE DROP		3.23%	
		VOLTAGE @ END OF LINE		19.74	
		MIN. OPERATIONAL		17	
		VOLTAGE OF DEVICES			

NOTIFICATION CIRCUIT #		3			
#	DEVICE TYPE	(FT)	AMPS OF DEVICE	TOTAL AMPS @ DEVICE	VOLTAGE DROP @ DEVICE
V3-1	SPEAKER/STROBE 30cd	80	0.063	0.432	0.114
V3-2	SPEAKER/STROBE 75cd	30	0.111	0.369	0.037
V3-3	SPEAKER/STROBE 15cd	30	0.043	0.258	0.026
V3-4	SPEAKER/STROBE 15cd	60	0.043	0.215	0.043
V3-5	SPEAKER/STROBE 15cd	40	0.043	0.172	0.023
V3-6	SPEAKER/STROBE 15cd	30	0.043	0.129	0.013
V3-7	SPEAKER/STROBE 15cd	45	0.043	0.086	0.013
V3-8	SPEAKER/STROBE 15cd	120	0.043	0.043	0.017
WIRE GAU 12		TOTAL CIRCUIT AMPS:		0.432	
		TOTAL VOLTAGE DROP:		0.285	
		CIRCUIT VOLTAGE:		20.4	
		% VOLTAGE DROP		1.40%	
		VOLTAGE @ END OF LINE		20.12	
		MIN. OPERATIONAL		17	
		VOLTAGE OF DEVICES			

NOTIFICATION CIRCUIT #		2			
#	DEVICE TYPE	(FT)	AMPS OF DEVICE	TOTAL AMPS @ DEVICE	VOLTAGE DROP @ DEVICE
V2-1	SPEAKER/STROBE 30cd	80	0.063	0.719	0.190
V2-2	SPEAKER/STROBE 30cd	60	0.063	0.656	0.130
V2-3	SPEAKER/STROBE 30cd	25	0.063	0.593	0.049
V2-4	SPEAKER/STROBE 15cd	50	0.043	0.530	0.088
V2-5	SPEAKER/STROBE 75cd	75	0.111	0.487	0.121
V2-6	SPEAKER/STROBE 75cd	40	0.111	0.376	0.050
V2-7	SPEAKER/STROBE 75cd	5	0.111	0.265	0.004
V2-8	SPEAKER/STROBE 75cd	40	0.111	0.154	0.020
V2-9	SPEAKER/STROBE 15cd	30	0.043	0.043	0.004
WIRE GAU 12		TOTAL CIRCUIT AMPS:		0.719	
		TOTAL VOLTAGE DROP:		0.657	
		CIRCUIT VOLTAGE:		20.4	
		% VOLTAGE DROP		3.22%	
		VOLTAGE @ END OF LINE		19.74	
		MIN. OPERATIONAL		17	
		VOLTAGE OF DEVICES			

NOTIFICATION CIRCUIT #		4			
#	DEVICE TYPE	(FT)	AMPS OF DEVICE	TOTAL AMPS @ DEVICE	VOLTAGE DROP @ DEVICE
V4-1	SPEAKER/STROBE 30cd	200	0.063	0.407	0.269
V4-2	SPEAKER/STROBE 15cd	30	0.043	0.344	0.034
V4-3	SPEAKER/STROBE 15cd	30	0.043	0.301	0.030
V4-4	SPEAKER/STROBE 15cd	15	0.043	0.258	0.013
V4-5	SPEAKER/STROBE 15cd	30	0.043	0.215	0.021
V4-6	SPEAKER/STROBE 15cd	20	0.043	0.172	0.011
V4-7	SPEAKER/STROBE 15cd	25	0.043	0.129	0.011
V4-8	SPEAKER/STROBE 15cd	10	0.043	0.086	0.003
V4-9	SPEAKER/STROBE 15cd	80	0.043	0.043	0.011
V4-10	SPEAKER/STROBE 30cd	45	0.063	0.043	0.011
V4-11	SPEAKER/STROBE 15cd	35	0.043	0.043	0.011
WIRE GAU 12		TOTAL CIRCUIT AMPS:		0.407	
		TOTAL VOLTAGE DROP:		0.404	
		CIRCUIT VOLTAGE:		20.4	
		% VOLTAGE DROP		1.98%	
		VOLTAGE @ END OF LINE		20.00	
		MIN. OPERATIONAL		17	
		VOLTAGE OF DEVICES			

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120540 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 3/9/2023

REVISIONS	DATE
1ST DSA SUBMITTAL	11/01/2022
DSA BACKCHECK SUBMITTAL	03/08/2023

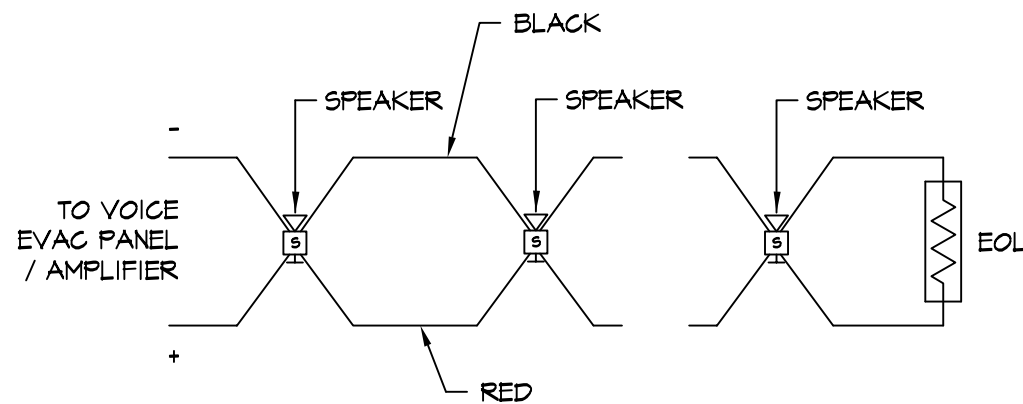

American Consulting Engineers
Electrical, Inc.
1500 The Alameda, Suite 200
San Jose, CA 95126
JOB #EK22105.00
408/236-1312
Fax: 408/236-1314



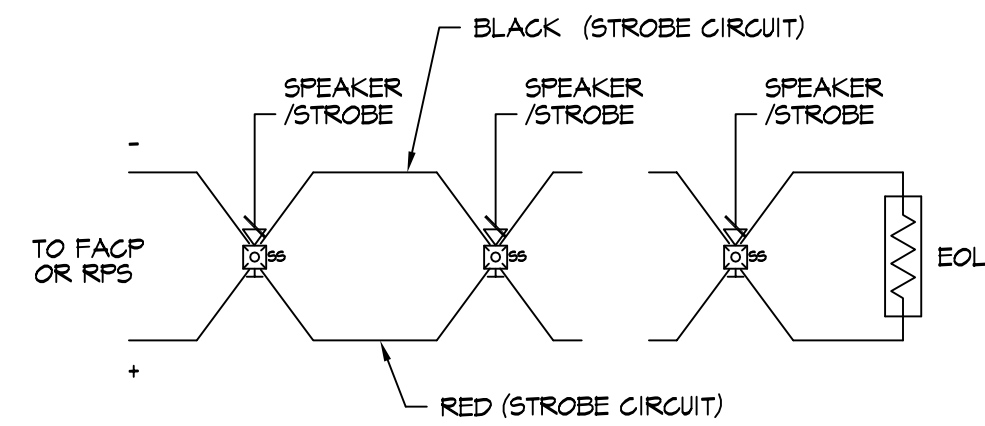
YOUTH ACTIVITY CENTER BUILDING
FIRE ALARM UPGRADE
AT CABRILLO MIDDLE SCHOOL
2550 CABRILLO AVE.
SANTA CLARA, CA 95051

SHEET TITLE
FIRE ALARM VOLTAGE
DROP CALCULATIONS

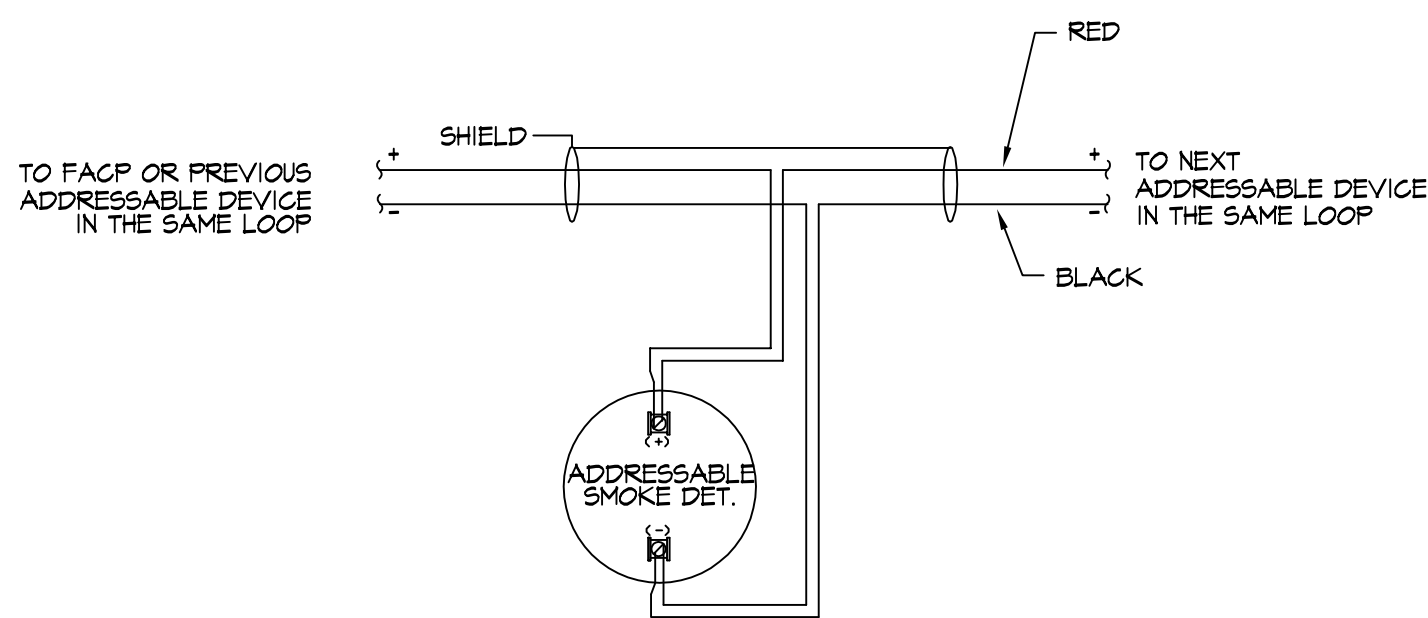
DRAWN
ACEE
CHECKED
JULIAC/AM
DATE
03/08/2023
SCALE
AS NOTED
JOB NO.
EK22105.00
SHEET
FA5.2
OF SHEETS



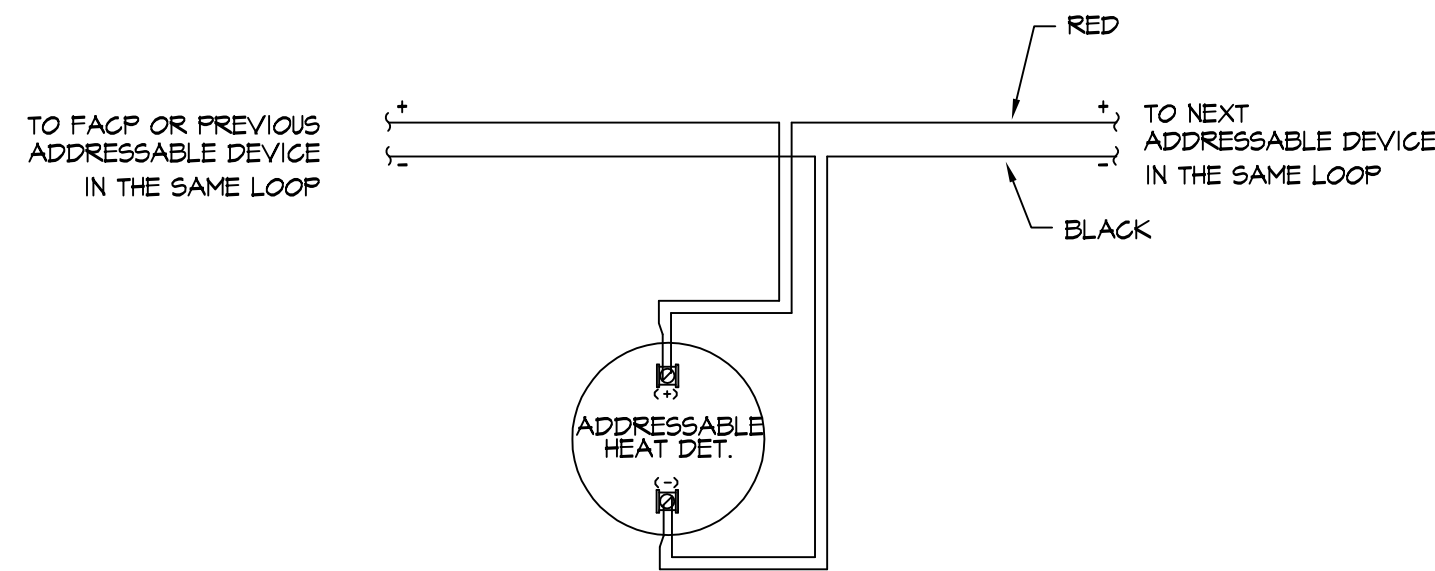
TYPICAL AUDIBLE DEVICE WIRING DIAGRAM



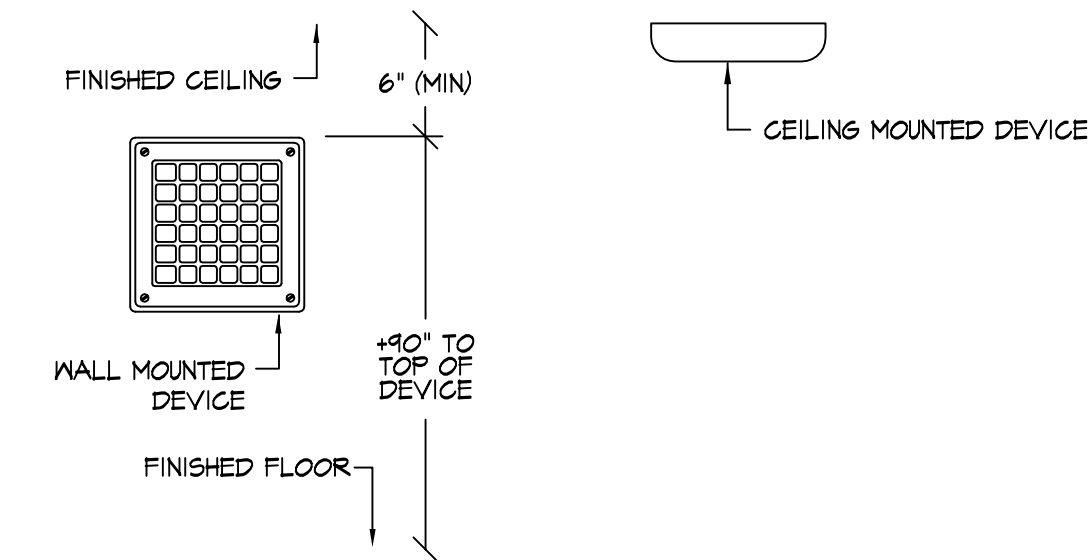
TYPICAL AUDIBLE/VISUAL DEVICE WIRING DIAGRAM



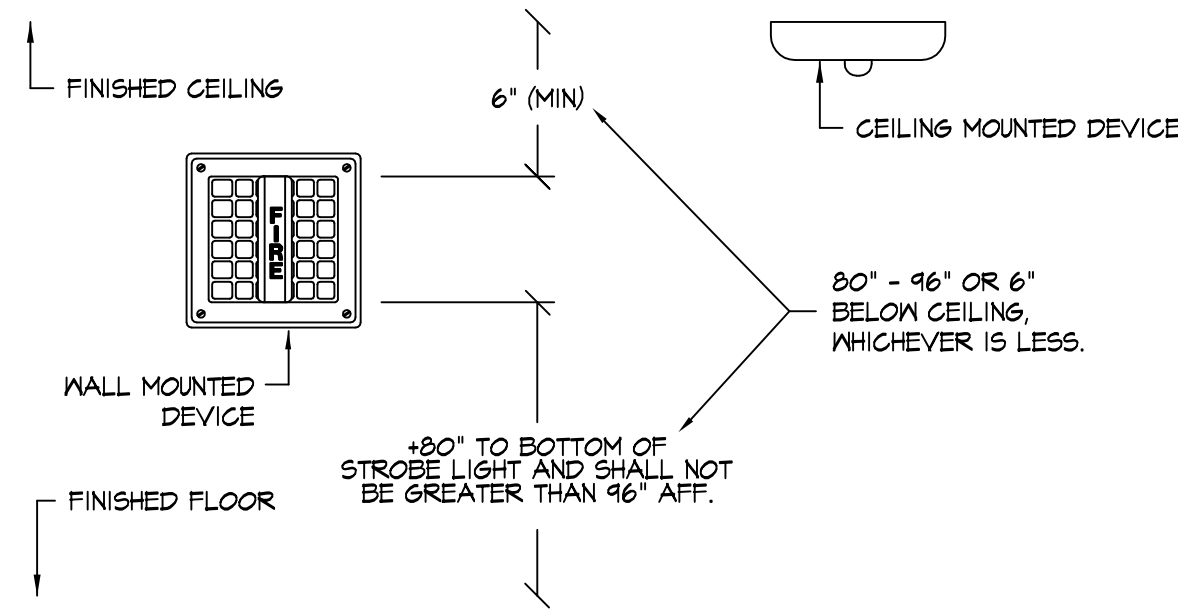
TYPICAL SMOKE DETECTOR WIRING DIAGRAM



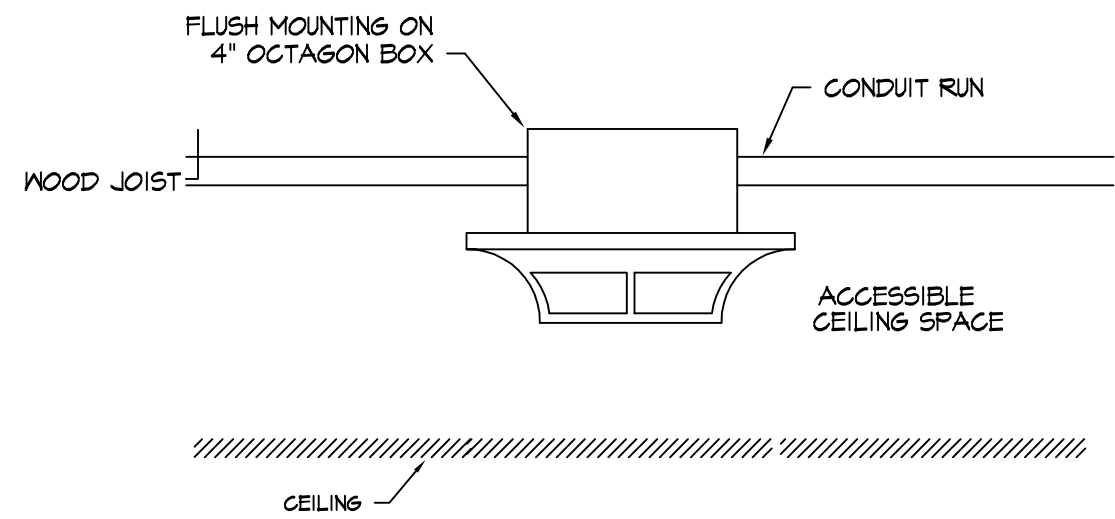
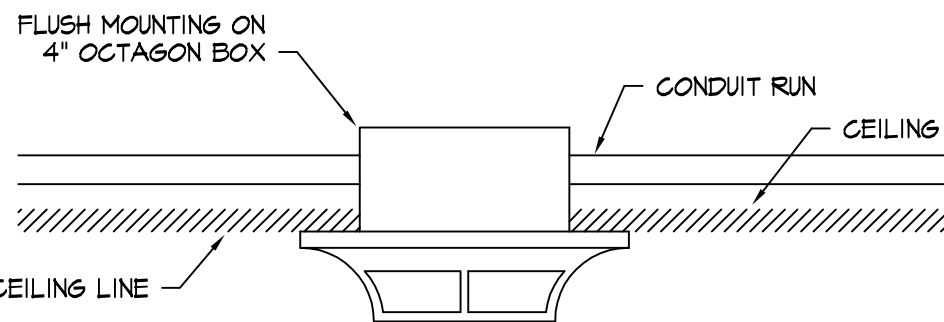
TYPICAL ADDRESSABLE ATTIC HEAT DETECTOR WIRING DIAGRAM



NOTE: SURFACE MOUNTED HORN SHALL BE PROVIDED WITH THE MANUFACTURERS RECOMMENDED SURFACE MOUNTED BACKBOX. OUTSIDE BACKBOXES SHALL BE RATED FOR SUCH USE.



NOTE: SURFACE MOUNTED DEVICES SHALL BE PROVIDED WITH THE MANUFACTURERS RECOMMENDED SURFACE MOUNTED BACKBOX.



AUDIBLE DEVICE WIRING AND INSTALLATION DETAIL

1

FA6.1

SCALE: NOT TO SCALE

AUDIBLE/VISUAL DEVICE WIRING AND INSTALLATION DETAIL

2

FA6.1

SCALE: NOT TO SCALE

ADDRESSABLE SMOKE DETECTOR WIRING DETAIL

3

FA6.1

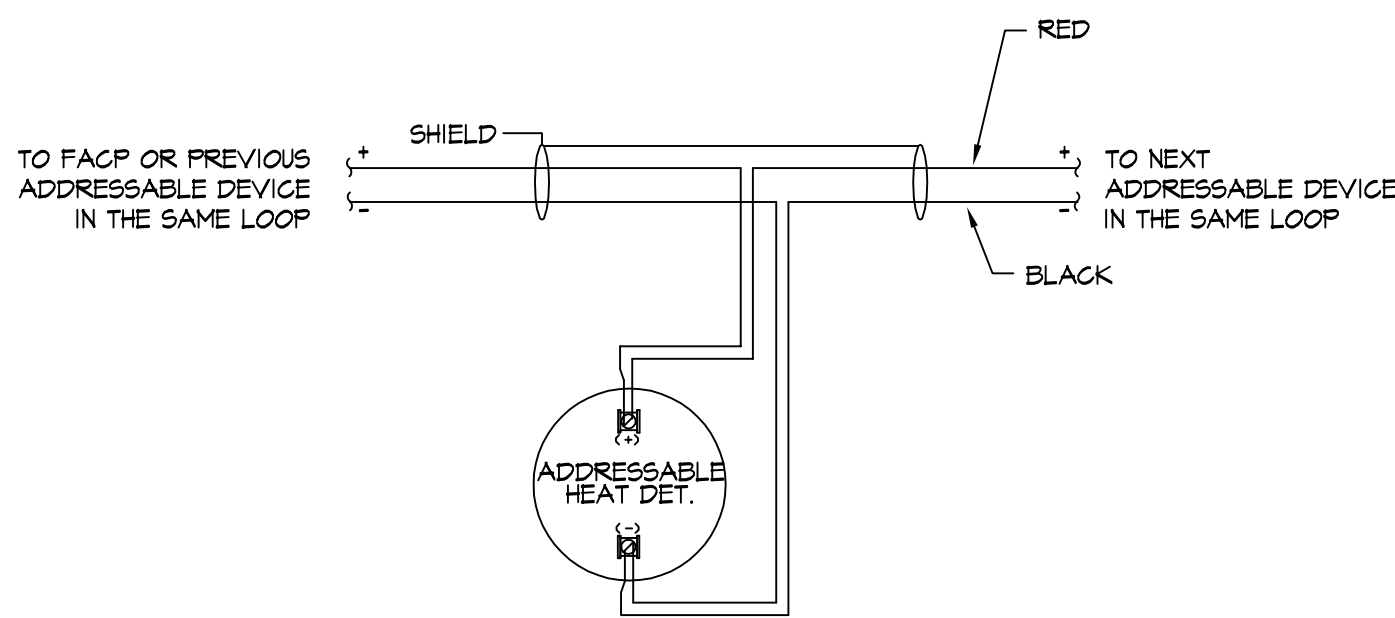
SCALE: NOT TO SCALE

ADDRESSABLE HEAT DETECTOR WIRING DETAIL (ABOVE CEILING)

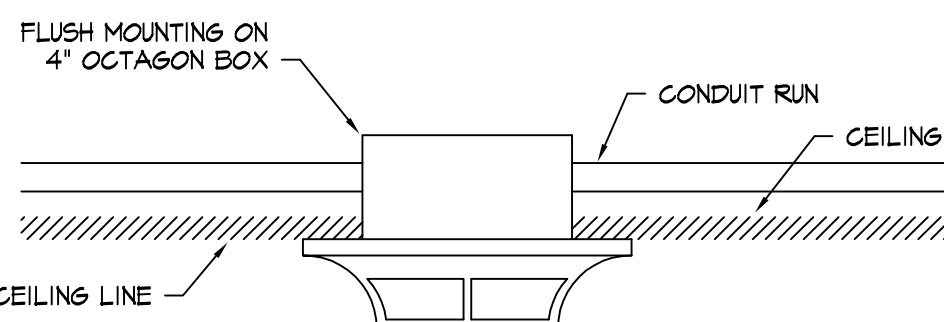
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FA6.1

SCALE: NOT TO SCALE



TYPICAL HEAT DETECTOR WIRING DIAGRAM

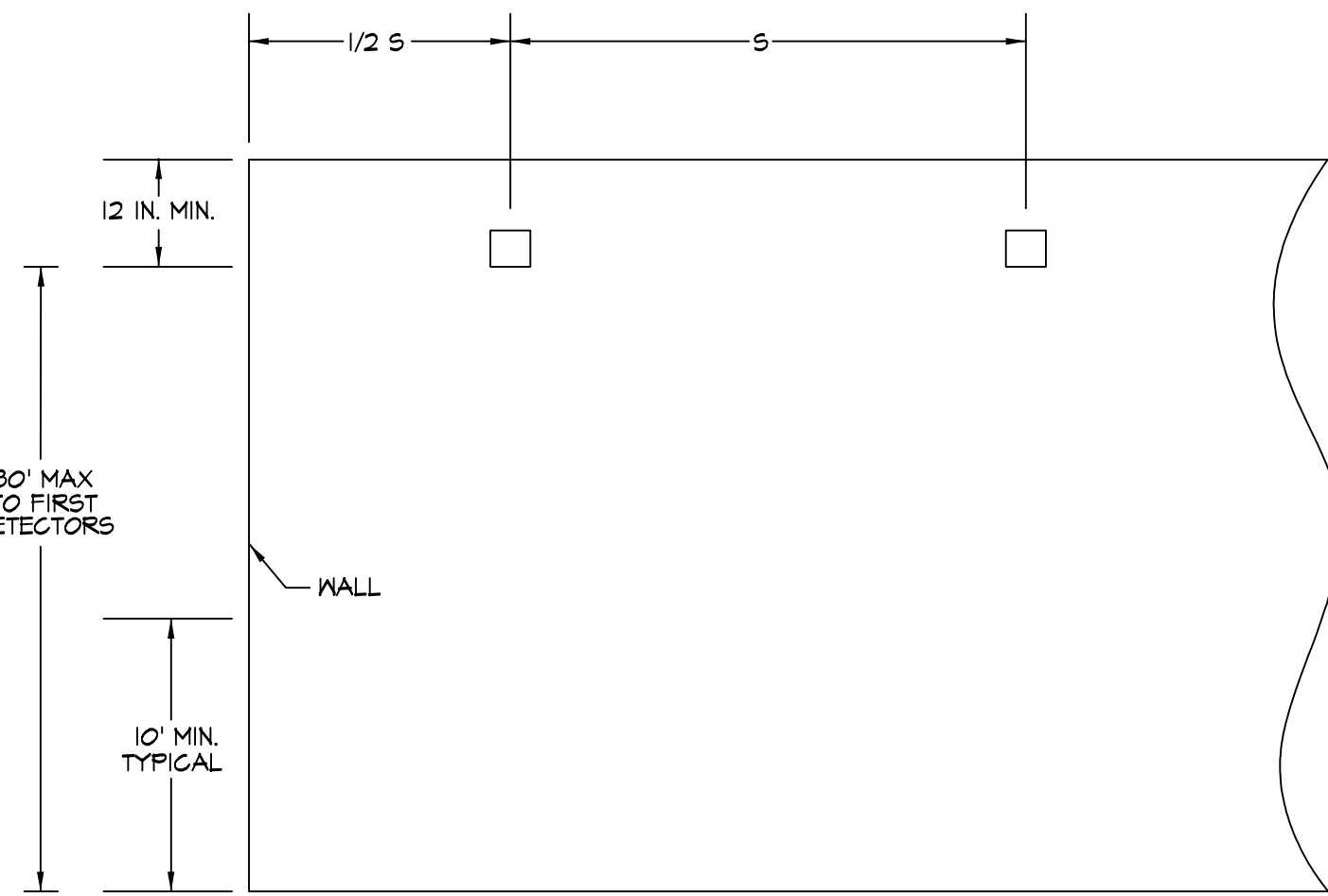


ADDRESSABLE HEAT DETECTOR WIRING DETAIL

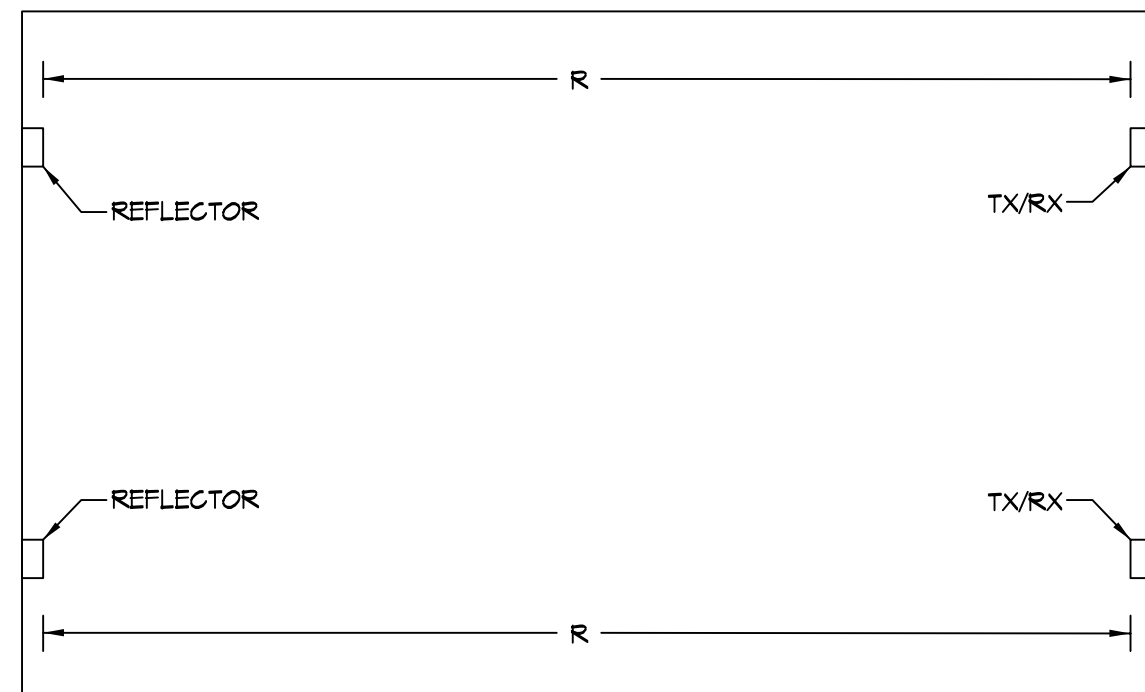
5

FA6.1

SCALE: NOT TO SCALE



SPACING FOR SMOOTH CEILING (SIDE VIEW):



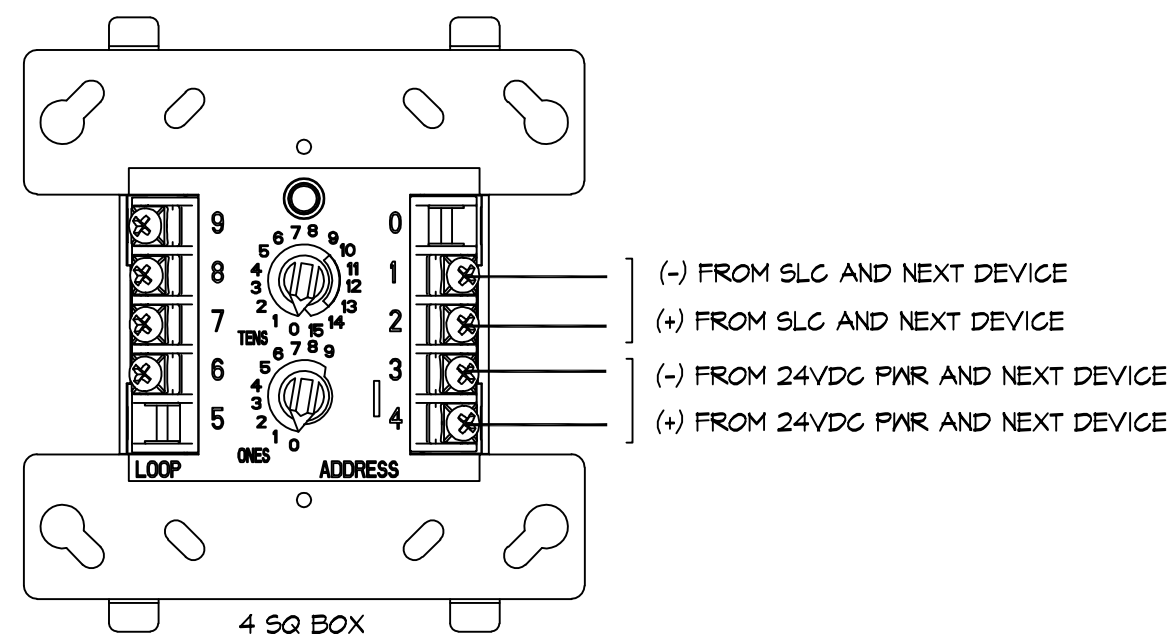
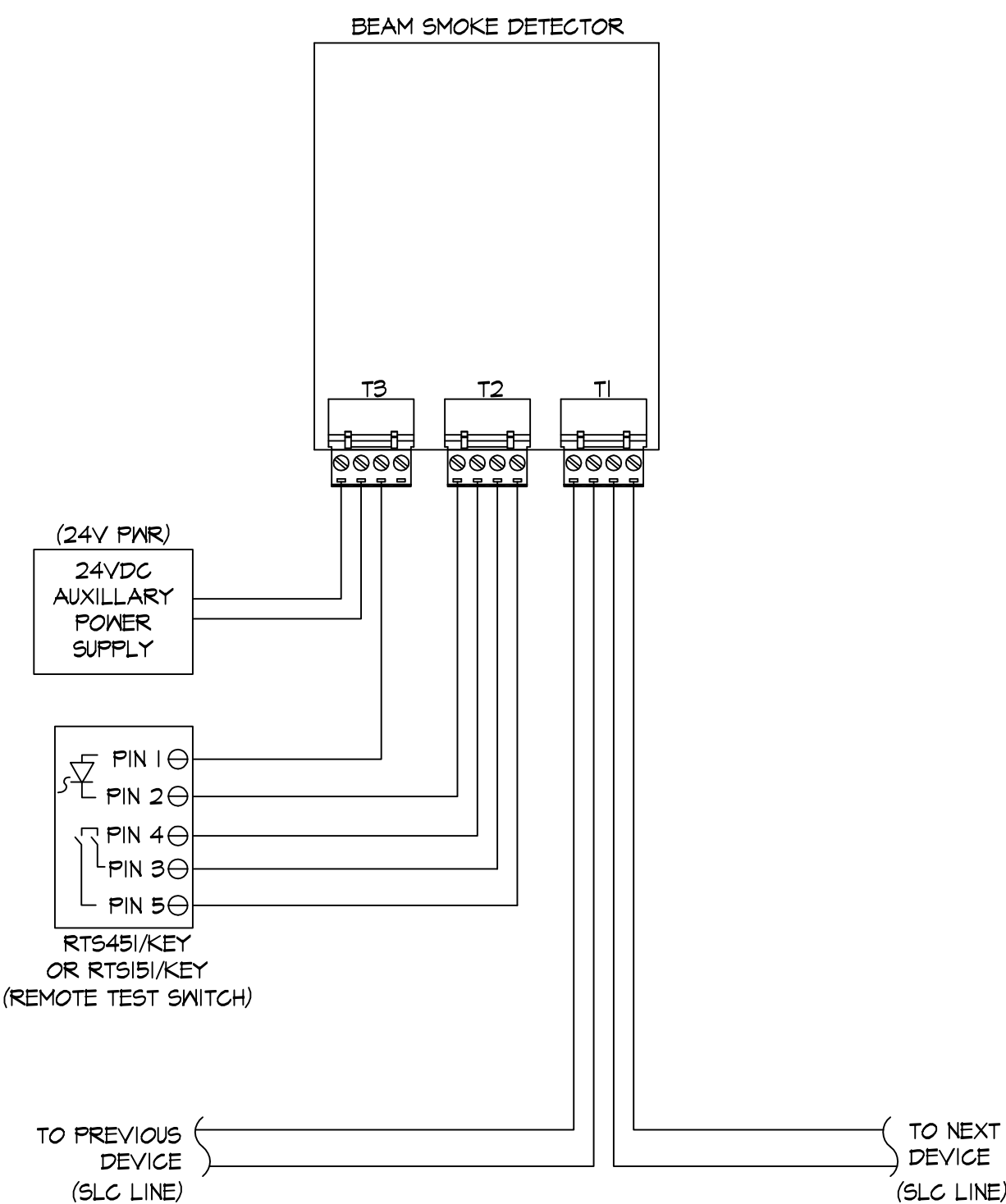
RANGE FOR SMOOTH CEILING (TOP VIEW):

BEAM SMOKE DETECTOR/REFLECTOR (WITH REMOTE TEST SWITCH) DEVICE WIRING AND INSTALLATION DETAIL

6

FA6.1

NOT TO SCALE

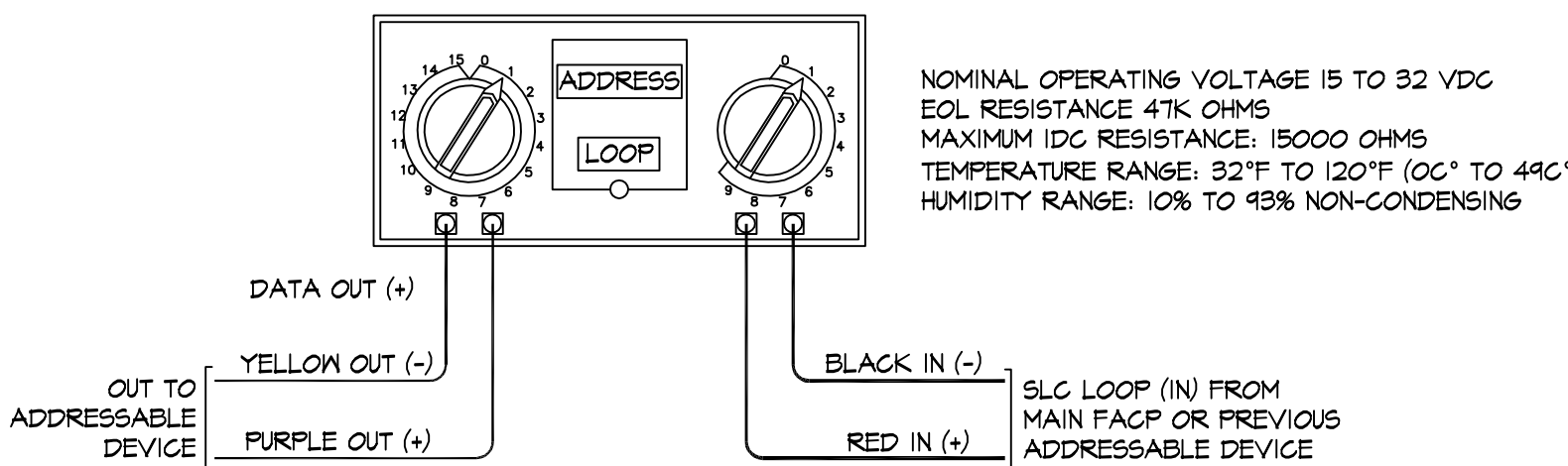


RELAY CONTROL MODULE WIRING DETAIL

7

FA6.1

SCALE: NOT TO SCALE



MONITOR MODULE WIRING DETAIL

8

FA6.1

SCALE: NOT TO SCALE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120540 INC.
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1ST DSA SUBMITTAL	11/01/2022
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1500 The Americas Drive
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JOB #EK22105.00
408/236-1313
Fax: 408/236-1314



YOUTH ACTIVITY CENTER BUILDING
FIRE ALARM UPGRADE
AT CABRILLO MIDDLE SCHOOL
2550 CABRILLO AVE.
SANTA CLARA, CA 95051

FIRE ALARM DETAILS

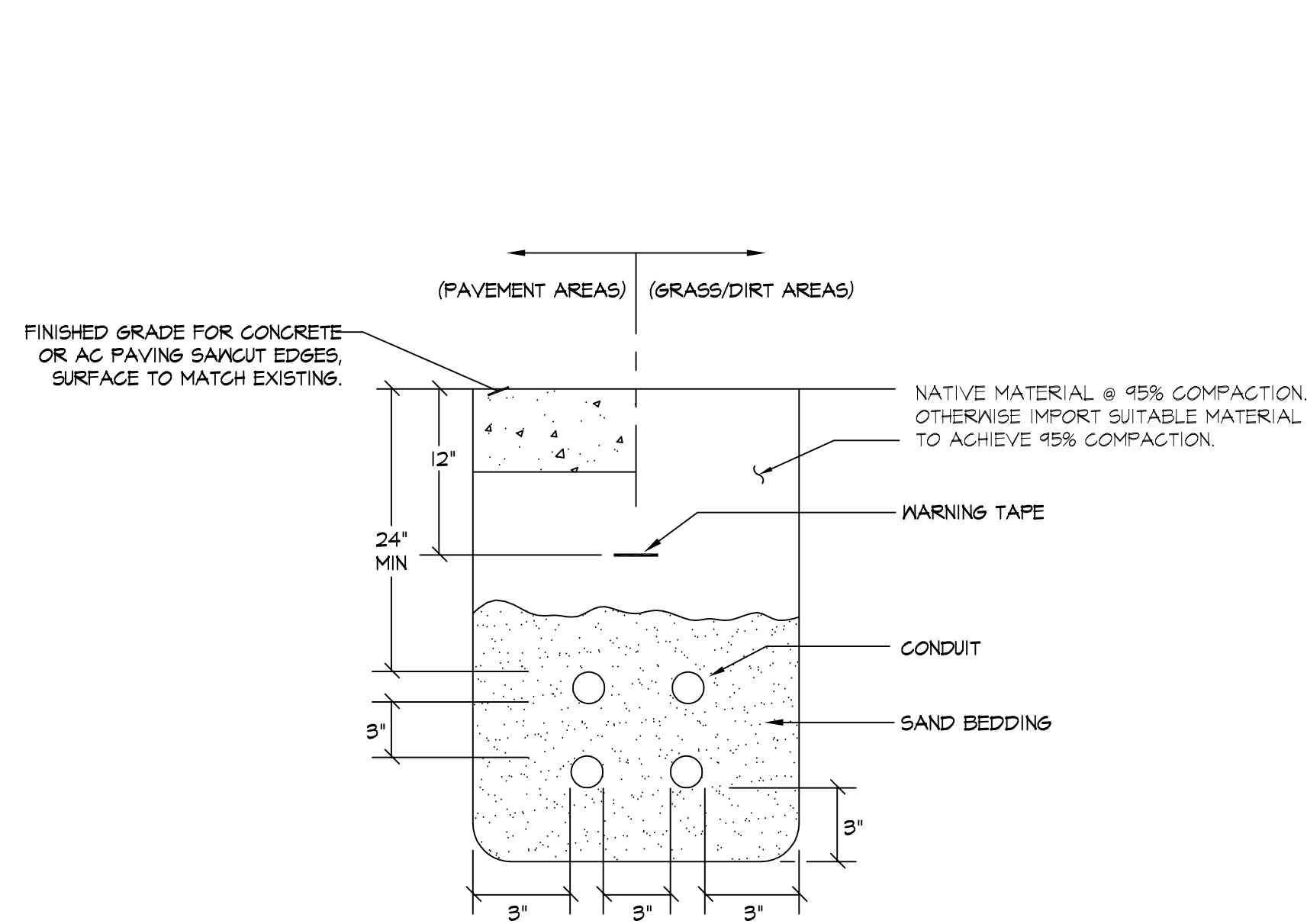
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DRAWN ACEE
CHECKED JULIAC/AM
DATE 03/08/2023
SCALE AS NOTED
JOB NO. EK22105.00
SHEET

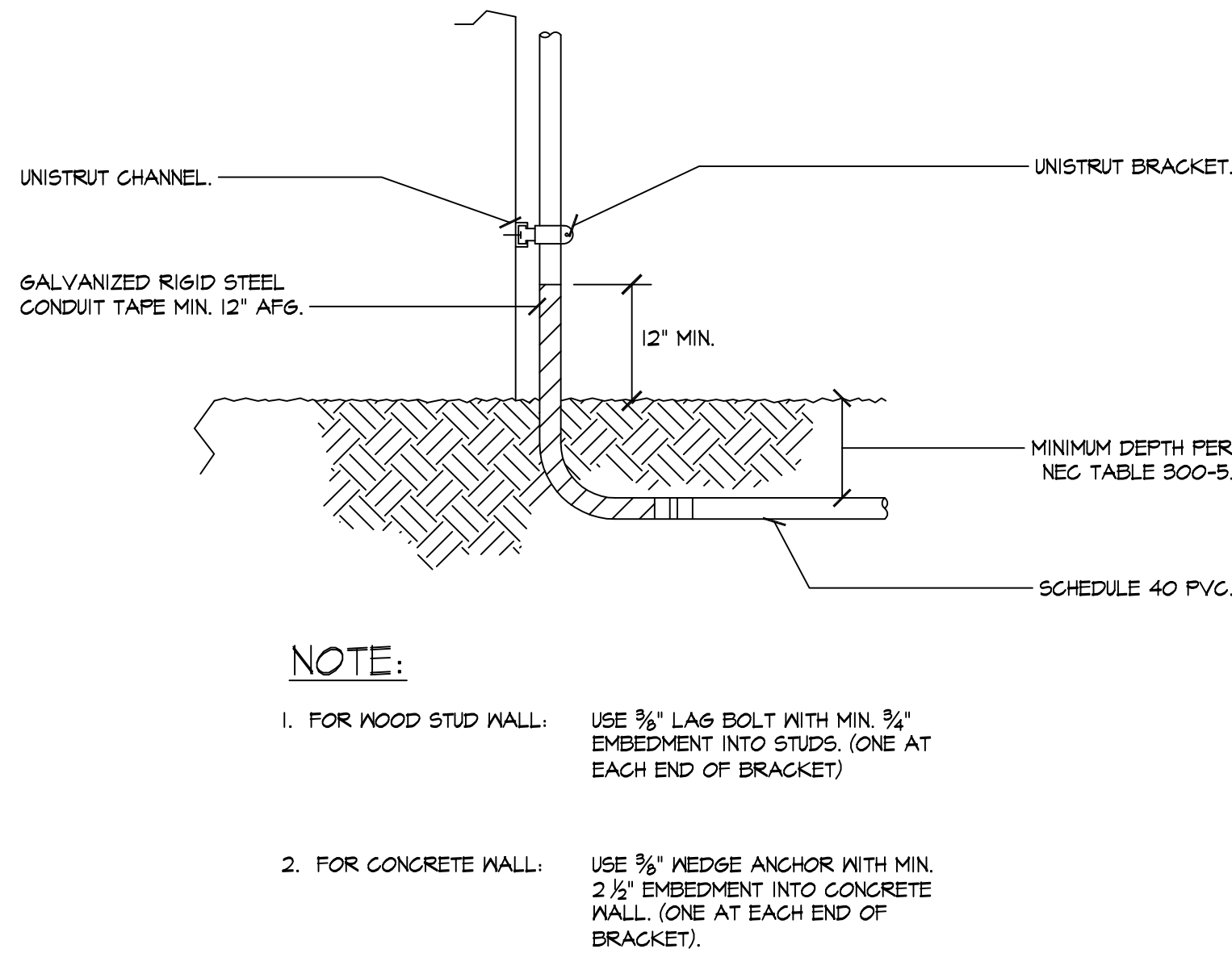
FA6.1

OF

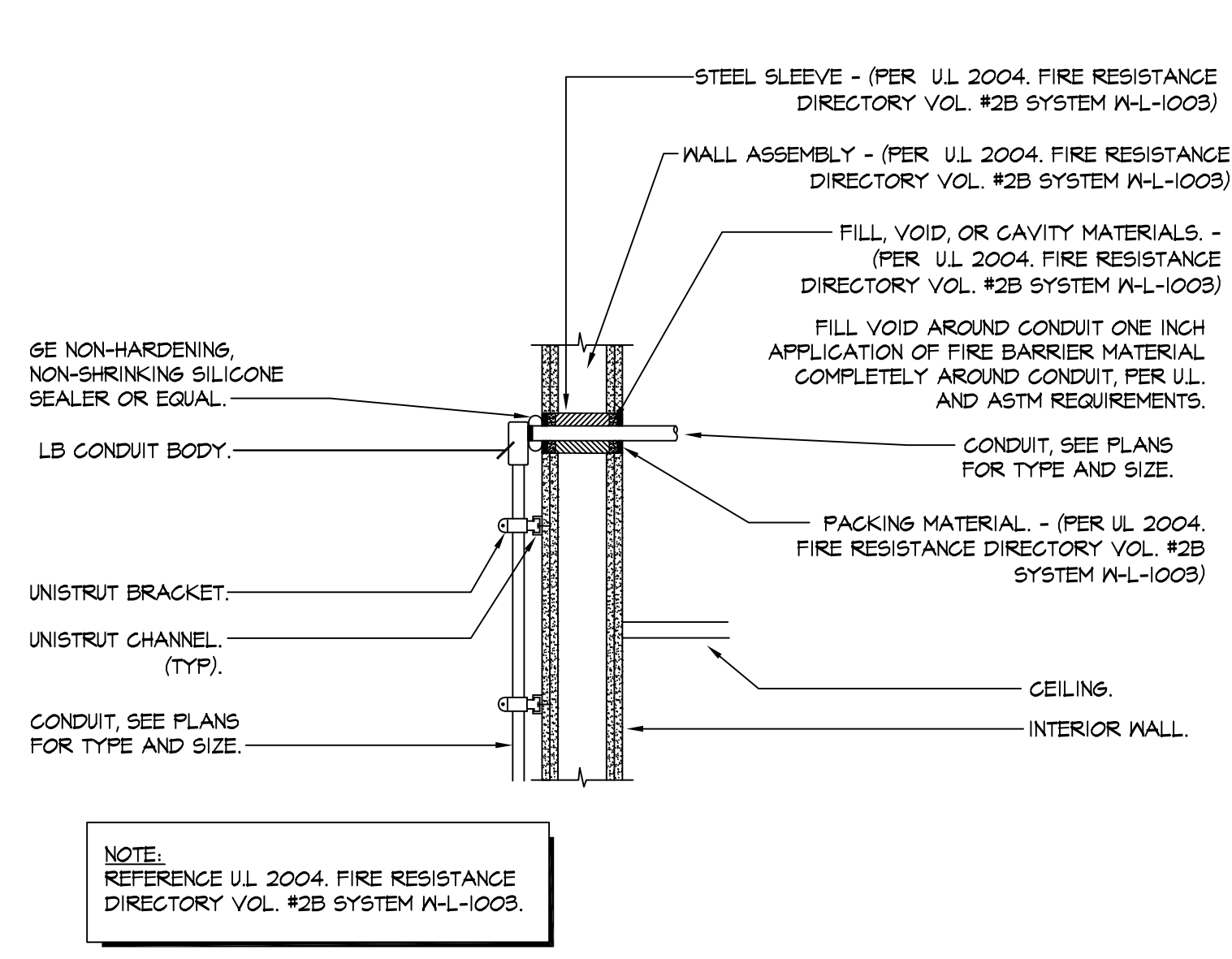
SHEETS



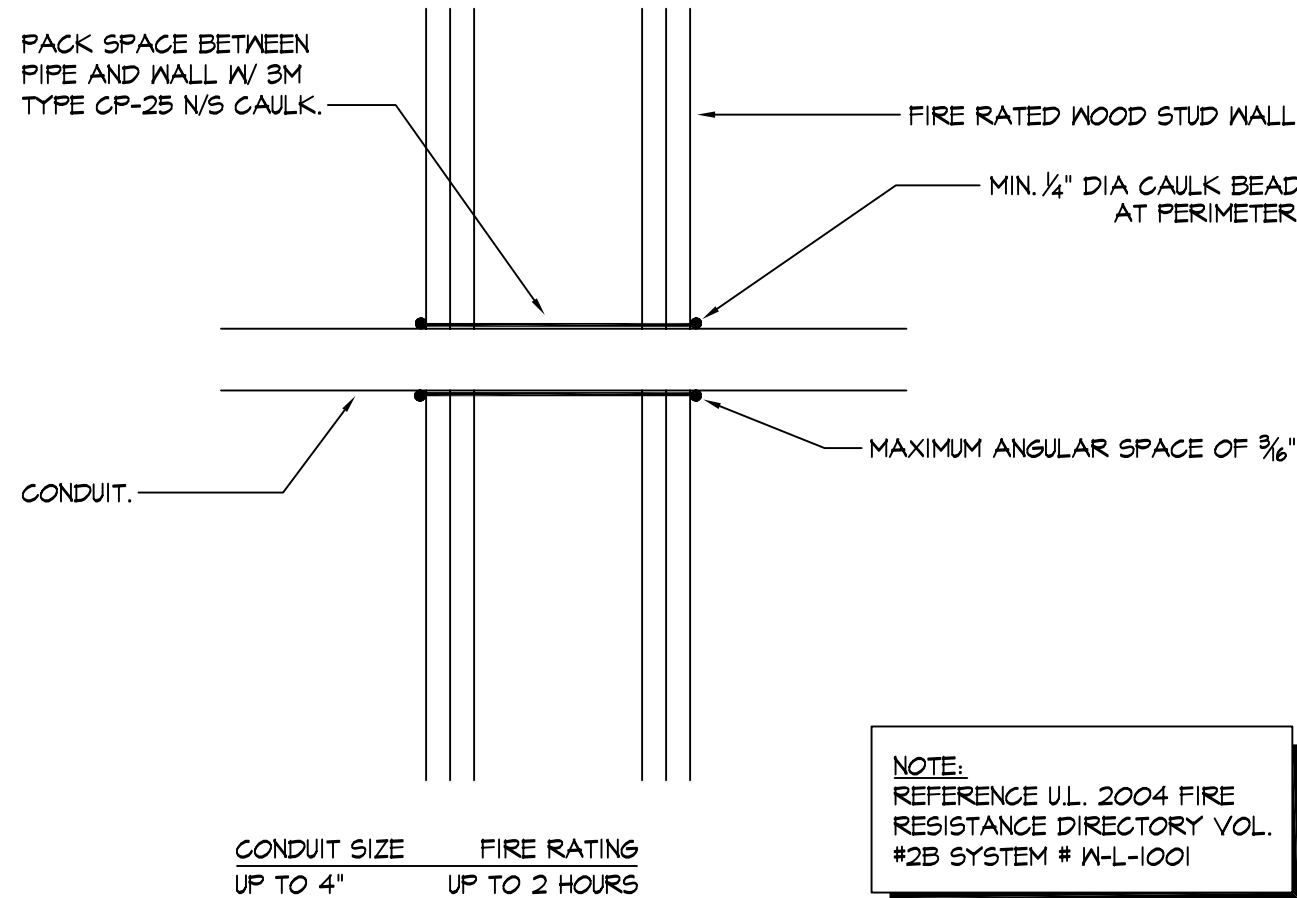
1 **TYPICAL TRENCH DETAIL**
FA6.2 SCALE: NONE



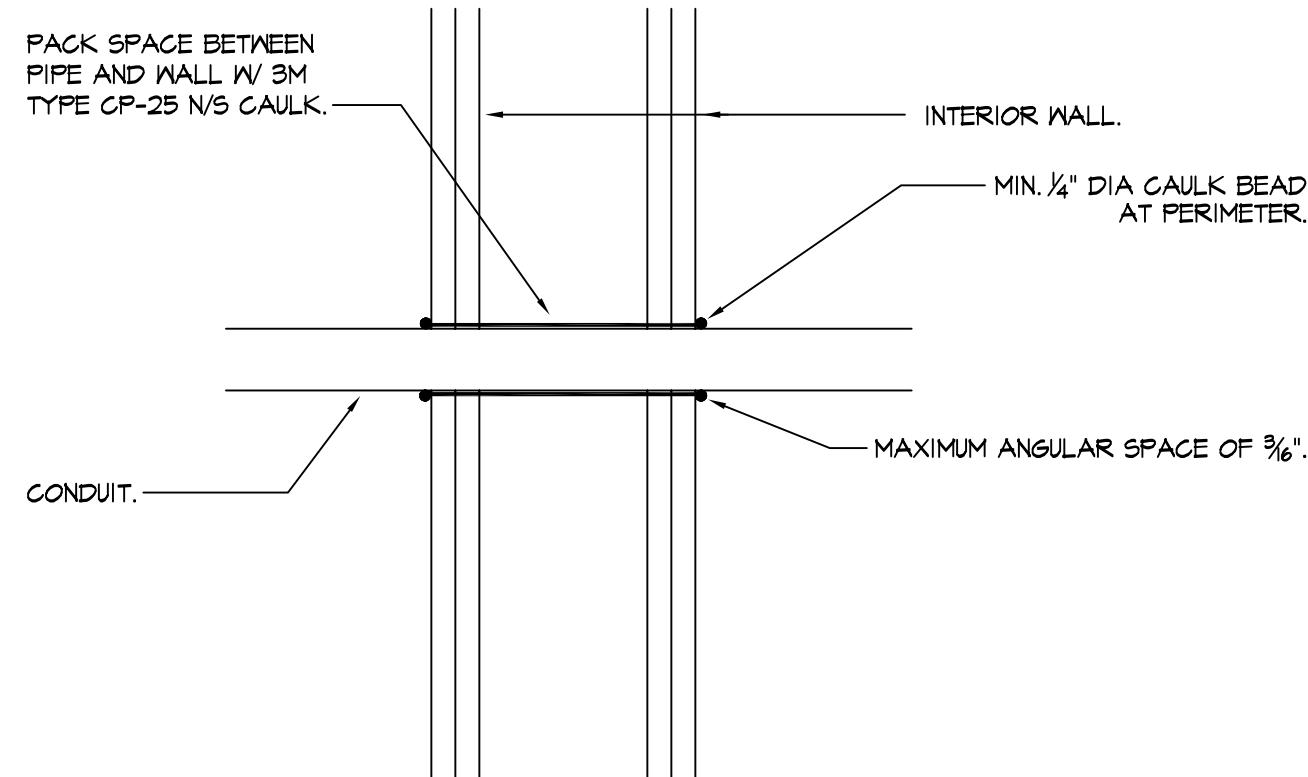
2 **UNDERGROUND CONDUIT RISER DETAIL**
FA6.2 NOT TO SCALE



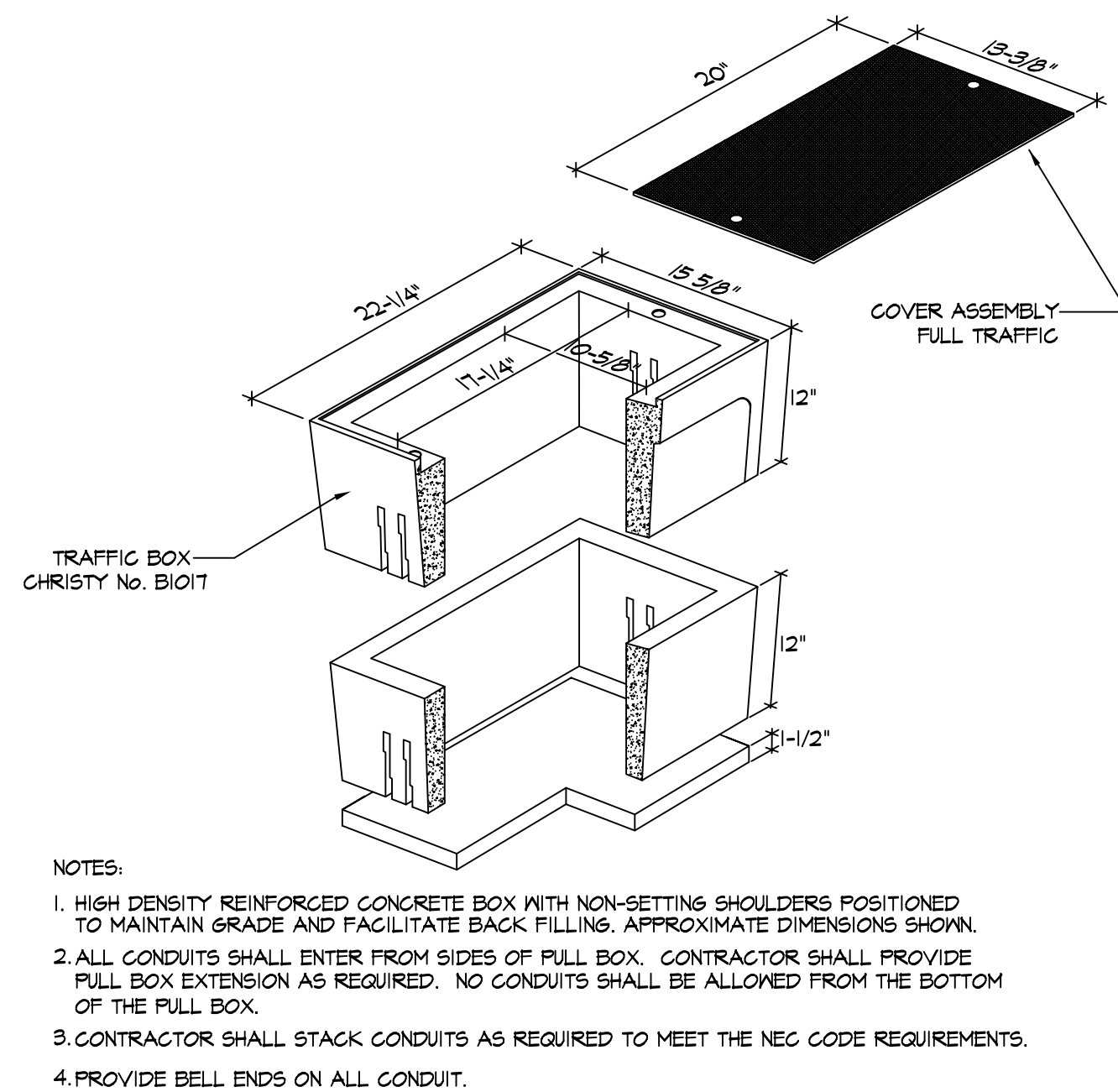
3 **CONDUIT RISER AND WALL PENETRATION**
FA6.2 NOT TO SCALE



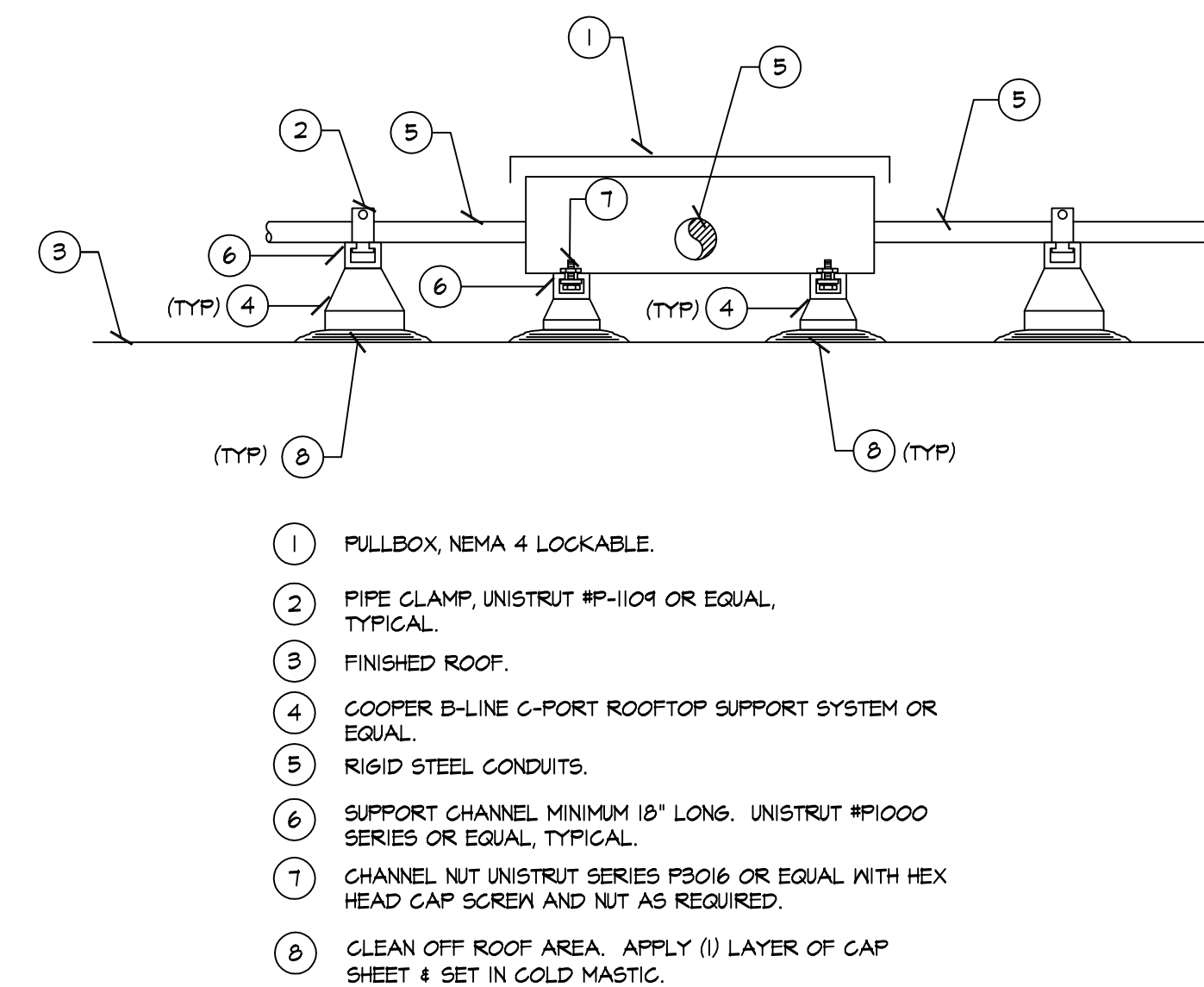
4 **CONDUIT THROUGH ONE HOUR RATED FIRE WALL**
FA6.2 NOT TO SCALE



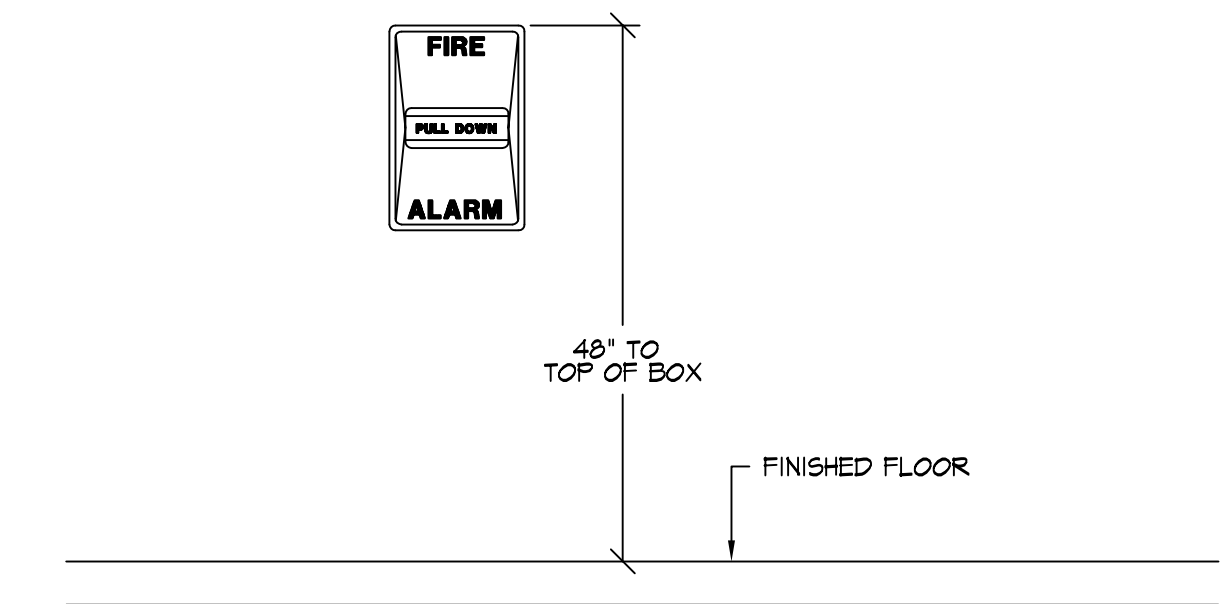
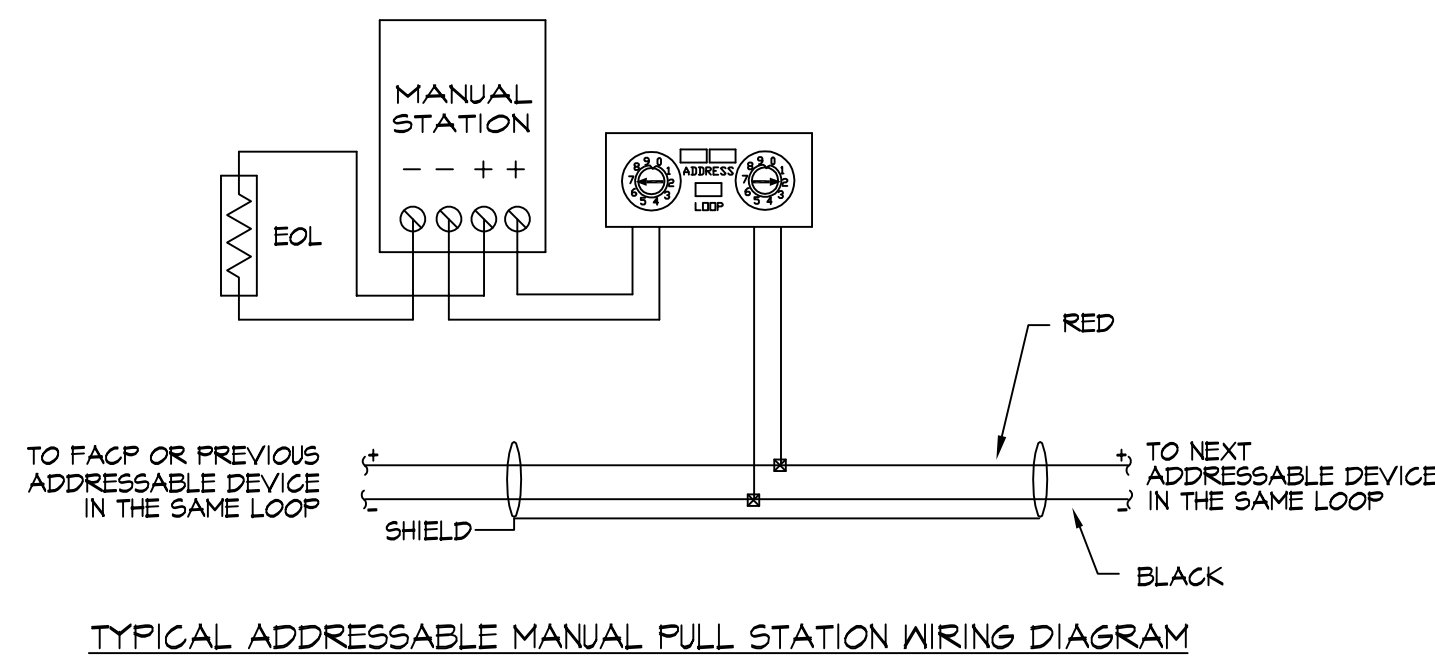
5 **CONDUIT THROUGH WALL DETAIL**
FA6.2 NOT TO SCALE



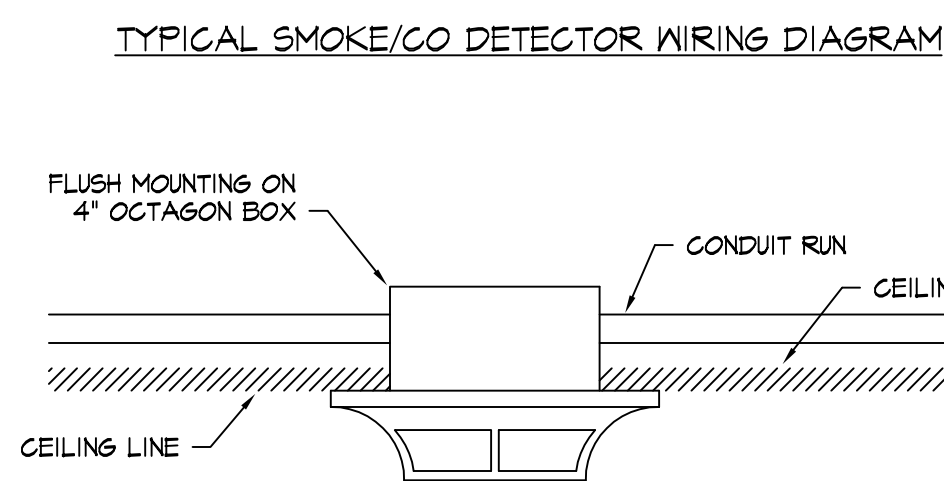
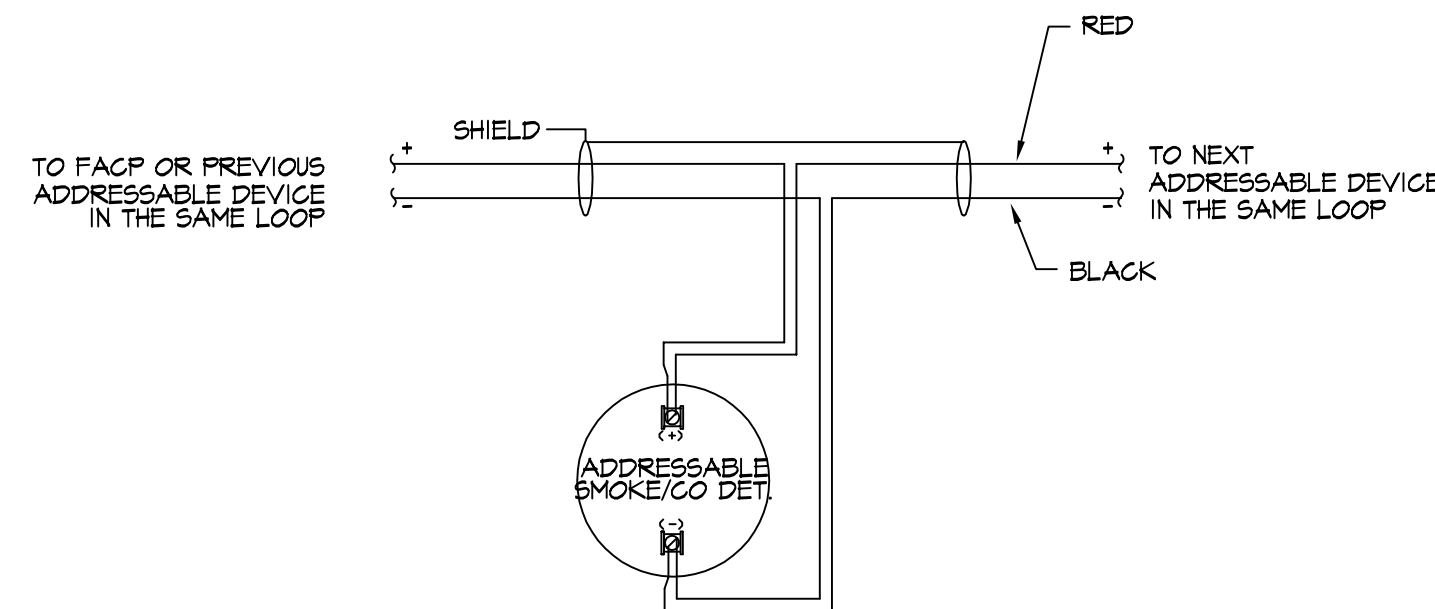
6 **B1017 ELECTRICAL VAULT**
E6.2 NOT TO SCALE (FULL TRAFFIC COVER)



7 **NEMA-4 PULLBOX ON ROOF DETAIL**
FA6.2 NOT TO SCALE



8 **ADDRESSABLE MANUAL PULL STATION WIRING AND INSTALLATION DETAIL**
FA6.2 NOT TO SCALE



9 **ADDRESSABLE SMOKE/CO DETECTOR WIRING DETAIL**
FA6.2 SCALE: NOT TO SCALE

REVISIONS	DATE
1ST DSA SUBMITTAL	11/01/2022
DSA BACKCHECK SUBMITTAL	03/08/2023



YOUTH ACTIVITY CENTER BUILDING
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SANTA CLARA, CA 95051

SHEET TITLE
FIRE ALARM DETAILS

DRAWN ACEE
CHECKED JULIAC/AM
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SCALE AS NOTED
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SHEET

FA6.2