# San Rafael City Schools



# SRCS Terra Linda HS Fire Alarm Upgrade

320 Nova Albion Way, San Rafael, CA 94903

**DSA Submittal** 

7/28/2023





DSA FILE: 21-H1 DSA #: 01-121113 PTN #: 65466-47

2023-SR001-003

#### 1. DSA APPROVED PLANS AND SPECIFICATIONS

THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE DSA APPROVED PLANS AND SPECIFICATIONS. THE DSA APPROVED PLANS AND SPECIFICATIONS SHALL NOT BE CHANGED OR MODIFIED WITHOUT THE APPROVAL OF THE DIVISION OF THE STATE ARCHITECT (DSA) PER SECTION 4-338, PART 1, TITLE 24, C.C.R. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN

2. ADDITIONAL DSA REQUIREMENTS ALL SECTION NUMBERS BELOW REFER TO PART 1, CHAPTER 4, PART 1, TITLE 24,

(A) CHANGES TO THE DSA APPROVED PLANS AND SPECIFICATIONS BY ADDENDA AND CONSTRUCTION CHANGE DOCUMENTS PER SECTION SHALL BE SUBMITTED AND APPROVED BY DSA PER SECTION 4-338.

(B) CLASS 3 DSA CERTIFIED INSPECTOR EMPLOYED BY THE DISTRICT AND APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF WORK PER SECTION 4-333(B) AND 4-342.

(C) A DSA ACCEPTED TESTING LABORATORY EMPLOYED BY THE DISTRICT SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT PER **SECTION 4-335.** 

(D) SPECIAL INSPECTION PER SECTION 4-333(C) AND 4-335.

(b) DUTIES OF CONTRACTOR PER SECTION 4-343.

ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT (CCD).

(E) CONTRACTOR SHALL SUBMIT VERIFIED REPORTS PER SECTION 4-336 AND 4-343(C). (F) ADMINISTRATION OF CONSTRUCTION PER PART 1, TITLE 24, C.C.R. (a) DUTIES OF ARCHITECT, STRUCTURAL ENGINEER, OR PROFESSIONAL ENGINEER PER SECTION 4-333(A) AND 4-341.

(c) VERIFIED REPORTS PER SECTION 4-336. (G) A COPY OF PART I AND II OF TITLE 24 SHALL BE KEPT AND AVAILABLE IN THE FIELD DURING CONSTRUCTION.

(H) DSA SHALL BE NOTIFIED ON START OF CONSTRUCTION PER SECTION 4-331. (I) SUPERVISION BY THE DIVISION OF THE STATE ARCHITECT PER SECTION 4-334.

(J) DSA IS NOT SUBJECT TO ARBITRATION.

(K) ALL DSA FEES SHALL BE PAID FOR BY OWNER.

(L) GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

#### 3. SPECIFICATIONS

THE SPECIFICATIONS ARE A VITAL PART OF THESE CONTRACT DOCUMENTS, THEY ARE FOUND IN THE BOUND PROJECT MANUAL. THE CONTRACTOR AND THEIR PERSONNEL SHALL BECOME INTIMATELY FAMILIAR WITH THE SPECIFICATIONS PRIOR TO BIDDING THE PROJECT AND STARTING ANY CONSTRUCTION.

4. DIMENSIONS (A) DIMENSIONS SHALL GOVERN ON WORKING DRAWINGS. DO NOT SCALE DRAWINGS. (B) ALL DIMENSIONS ARE APPROXIMATE DUE TO THE AS-BUILT CONDITIONS VARYING FROM ACTUAL FIELD CONDITIONS. ALL DIMENSIONS ARE TO BE FIELD VERIFIED PRIOR TO COMMENCING WORK.

5. OF THE SAME CHARACTER IN THE EVENT CERTAIN FEATURES OF THE CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS OR CALLED FOR IN THE NOTES OR SPECIFICATIONS, THEN THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS FOR SIMILAR CONDITIONS THAT ARE SHOWN OR CALLED FOR.

6. CONFLICTS BETWEEN DRAWINGS & SPECIFICATIONS SHOULD CONFLICTS OCCUR BETWEEN THE DRAWINGS AND SPECIFICATIONS. DRAWINGS SHALL GOVERN IN MATTERS OF DIMENSION OR QUANTITY: SPECIFICATIONS SHALL GOVERN IN MATTERS OF MATERIALS OR FINISHES.

7. MOST EXPENSIVE REQUIREMENT IN CASE OF DISCREPANCIES OR CONFLICTS IN INFORMATION OR REQUIREMENTS WITHIN THE DRAWINGS, WITHIN THE SPECIFICATIONS, OR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE MOST EXPENSIVE REQUIREMENT SHOWN OR SPECIFIED SHALL BE THE BASIS OF THE CONTRACT AND NOTED IN THE BID.

8. SUBCONTRACTORS & CONSTRUCTION DOCUMENTS (A) THE GENERAL CONTRACTOR SHALL PROVIDE OR MAKE AVAILABLE A COMPLETE SET OF CONSTRUCTION DOCUMENTS [INCLUDING DRAWINGS AND SPECIFICATIONS] TO EVERY SUBCONTRACTOR BIDDING ANY PORTION OF THIS PROJECT. (B) THE CONSTRUCTION DOCUMENTS SHALL NOT BE SEPARATED INTO DISCIPLINES (ARCHITECTURAL, MECHANICAL, ELECTRICAL, ETC.) FOR THE PURPOSES OF SUBCONTRACTOR BIDDING.

(C) THE GENERAL CONTRACTOR SHALL REQUIRE BIDDING SUBCONTRACTOR TO REVIEW THE ENTIRE SET OF CONSTRUCTION DOCUMENTS TO OBTAIN CLARITY ON THE COMPLETE SCOPE OF THEIR WORK, AND REFER TO CROSS DISCIPLINE DRAWINGS FOR FULL COORDINATION OF WORK WITH OTHER TRADES, AND TO BE AWARE OF ALL WORK WHICH DOES NOT APPEAR WITHIN THE PARTICULAR DISCIPLINES DRAWINGS FOR THE SUBCONTRACTOR TRADE. (D) FURTHERMORE, THE GENERAL CONTRACTOR SHALL ENSURE THAT EACH

SUBCONTRACTOR WORKING ON THE PROJECT MAINTAINS A FULL SET OF THE CONSTRUCTION DOCUMENTS THROUGH OUT THE CONSTRUCTION OF THE PROJECT. 9. PLANS AVAILABLE ON SITE

(A) DSA APPROVED PLANS SHALL BE KEPT IN A PLAN BOX IN THE FIELD OFFICE AND SHALL NOT BE USED BY WORKERS.

(B) ALL CONSTRUCTION SETS SHALL BE KEPT UP TO DATE, AND REFLECT THE SAME INFORMATION AS THE GENERAL CONTRACTOR'S SET.

(C) THE CONTRACTOR SHALL ALSO MAINTAIN, IN GOOD CONDITION, ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CONSTRUCTION CHANGE DOCUMENTS ON THE PREMISES AT ALL TIMES. THESE ARE TO BE UNDER THE CARE OF THE JOB SUPERINTENDENT.

**10. REVIEW PLANS & EXISTING SITE CONDITIONS** THE CONTRACTOR SHALL THOROUGHLY REVIEW PLANS AND EXISTING SITE CONDITIONS AND NOTIFY ARCHITECT OF ANY DISCREPANCIES, ERRORS, OR OMISSIONS PRIOR TO CONSTRUCTION,

11. VERIFY ALL EXISTING CONDITIONS

PRIOR TO CONSTRUCTION AND GRADING, VERIFY ALL EXISTING CONDITIONS AND CONTACT UTILITY COMPANIES AND AFFECTED CITY AGENCIES. CONTACT "UNDERGROUND SERVICE ALERT."

12. CONTRACTOR'S RESPONSIBILITIES (A) NEITHER THE ARCHITECT, NOR THE ENGINEERS, NOR THE OWNER SHALL BE

RESPONSIBLE FOR: CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONTRACTOR; SAFETY PRECAUTIONS AND PROGRAMS OF CONTRACTOR; THE ACTS OR OMISSIONS OF CONTRACTOR, OR THE FAILURE OF CONTRACTOR TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

(B) GENERAL CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND FIELD VERIFYING DEMOLITION REQUIREMENTS IN RELATION TO CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION REQUIRED TO INSTALL NEW WORK, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY SHORING. BRACING AND SUPPORT SYSTEMS NECESSARY TO INSTALL NEW WORK. THE ARCHITECT IS TO BE NOTIFIED OF ANY AND ALL CONFLICTS, DISCREPANCIES OR PROBLEMS.

(C) CONTRACTOR TO REPAIR AND PATCH ALL AREAS DISTURBED DUE TO THIS PROJECT'S SCOPE OF WORK.

#### **PROJECT TEAM**

OWNER SAN RAFAEL CITY SCHOOLS 310 NOVA ALBION WAY SAN RAFAEL, CALIFORNIA 94903 TEL (415) 492-3200

#### ARCHITECT OF RECORD HARLEY ELLIS DEVEREAUX 417 MONTGOMERY STREET SUITE 400 SAN FRANCISCO, CA 94104 TEL (415) 981-2345

ELECTRICAL ENGINEER OF RECORD O'MAHONY & MYER 4340 REDWOOD HWY, SUITE 245 SAN RAFAEL, CA 94903 TEL (415) 492-0420

(D) WORK NOTED AS "O.F.C.I." (OWNER-FURNISH, CONTRACTOR-INSTALL) SHALL MEET ALL APPLICABLE CODES & REGULATORY REQUIREMENTS, AND SHALL BE INSTALLED & FULLY OPERATIONAL PRIOR TO FINAL APPROVAL & OCCUPANCY OF THIS PROJECT.

ATTACHMENTS SUBJECT TO DSA APPROVAL.

13. SAFETY

(E) CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF WORK "BY OTHERS".

(A) CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR SAFETY ON OR ABOUT THE CONSTRUCTION SITE IN ACCORDANCE WITH APPLICABLE LAWS AND CODE, AND SHALL OBSERVE SAFETY PROVISIONS OF THE LATEST MANUAL OF ACCIDENT PREVENTION PUBLISHED BY THE ASSOCIATION OF GENERAL CONTRACTORS OF AMERICA.

(B) COMPLIANCE WITH CFC CHAPTER 33 FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION, AND CBC CHAPTER 33 SAFEGUARDS DURING CONSTRUCTION WILL BE ENFORCED.

14. EXISTING UTILITIES & PROPERTY IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, WHETHER SHOWN HEREIN OR NOT, AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL THE EXPENSE FOR REPAIR OR REPLACEMENT OF UTILITIES AND/OR OTHER PROPERTY DAMAGED BY OPERATIONS IN CONJUNCTION WITH THE EXECUTION OF WORK.

15. ERRORS, INCONSISTENCIES, OR OMISSIONS THE CONTRACTOR SHALL REPORT TO THE ARCHITECT ANY ERRORS, INCONSISTENCIES, OR OMISSIONS HE MAY DISCOVER. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTING ANY ERROR AFTER THE START OF CONSTRUCTION WHICH HAS NOT BEEN BROUGHT TO THE ATTENTION OF THE ARCHITECT. THE MEANS OF CORRECTING ANY ERROR SHALL BE FIRST APPROVED BY THE OWNER AND DSA.

16. FIELD CONFIRMATION OF DISCREPANCIES FIELD CONFIRMATION OF DISCREPANCIES SHALL BE RECORDED ON A REPRODUCIBLE DOCUMENT AND IMMEDIATELY TRANSMITTED TO ARCHITECT FOR PROJECT RECORD, COORDINATION, AND NECESSARY RESOLUTION PRIOR TO CONTINUING WORK.

**17. MATERIAL & PRODUCT INSTALLATION** (A) INSTALL ALL MATERIALS AND PRODUCTS IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE ICC REPORTS.

(B) USE OF ANY MATERIAL CONTAINING ASBESTOS IS PROHIBITED.

(C) ALL ITEMS NOTED TO BE SALVAGED SHALL BE RETURNED TO THE OWNER. **18. STRUCTURAL MEMBERS** 

NO STRUCTURAL MEMBERS SHALL BE CUT TO ACCEPT PIPES, VENTS, DUCTS, ETC., EXCEPT AS DETAILED OR SPECIFIED HEREIN OR AS APPROVED BY THE STRUCTURAL ENGINEER AND DSA IN WRITING.

**19. EXTERIOR OPENINGS** EXTERIOR OPENINGS SHALL COMPLY WITH ALL SECURITY REQUIREMENTS AS OUTLINED IN ALL LOCAL BUILDING CODES AND/OR ORDINANCES.

20. SECURING THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE SECURITY OF THE SITE WHILE THE JOB IS IN PROGRESS AND UNTIL THE JOB IS COMPLETE. 21. MAINTAINING THE SITE

CONTRACTOR SHALL MAINTAIN THE SITE IN A CLEAN AND ORDERLY MANNER. ALL DEBRIS SHALL BE REMOVED FROM PREMISES.

22. A COMPLETELY FINISHED PROJECT (A) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL WORK RÉQUIRED FOR A COMPLETELY FINISHED PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK FURNISHED BY SUBCONTRACTORS.

(B) UPON COMPLETION OF THE PROJECT, THE GENERAL CONTRACTOR SHALL SUBMIT CERTIFICATES OF INSPECTION OF SATISFACTORY COMPLETION, AND OPERATION AND MAINTENANCE INSTRUCTIONS OF ALL EQUIPMENT TO THE OWNER.

23. IN ACCORDANCE WITH TITLE 24, C.C.R. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS FOR ALL CONSTRUCTION TO BE IN ACCORDANCE WITH TITLE 24, C.C.R. SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH THE SAID TITLE 24, C.C.R. A CONSTRUCTION CHANGE DOCUMENT DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY D.S.A. BEFORE PROCEEDING WITH THE WORK.

24. SUBMITTALS (A) ALL SUBMITTALS & SHOP DRAWINGS SHALL BE REVIEWED, STAMPED APPROVED BY THE GENERAL CONTRACTOR PRIOR TO ISSUING TO THE ARCHITECT. NO DOCUMENTS FROM SUBCONTRACTORS SHALL BE SUBMITTED DIRECTLY TO THE ARCHITECT OR TO THE ARCHITECTS CONSULTANTS.

(B) THE ARCHITECT'S APPROVAL OF SHOP DRAWINGS SHALL NOT RELIEVE THE GÉNERAL CONTRACTOR FROM RESPONSIBILITY FOR DEVIATIONS FROM DRAWINGS OR SPECIFICATIONS UNLESS HE HAS (IN WRITING) CALLED THE ARCHITECT'S ATTENTION TO SUCH DEVIATIONS AT THE TIME OF SUBMISSION NOR SHALL IT RELIEVE HIM OF RESPONSIBILITY FOR ERRORS OF ANY SORT IN THE SHOP DRAWINGS.

(C) THE CONTRACTOR SHALL NOTE THAT THERE SHALL BE NO SUBSTITUTIONS FOR ANY MATERIAL UNLESS SPECIFIC MANUFACTURERS ARE APPROVED BY THE ARCHITECT, WHERE "APPROVED EQUAL" IS USED. IT SHALL BE UNDERSTOOD THAT THE SUBSTITUTE SHALL BE BY JUDGMENT AND APPROVAL OF THE ARCHITECT AND APPROVAL SHALL BE MADE PRIOR TO MATERIAL PROCUREMENT.

(D) THE CONTRACTOR SHALL SUBMIT ALL PERTINENT SHOP DRAWINGS AND COLOR SAMPLES (INCLUDING CASEWORK) FOR THE ARCHITECT'S REVIEW. ALLOWING ADEQUATE TIME FOR REVIEW AND CORRECTIVE ACTION, SHOULD IT BE REQUIRED. BY SUBMITTING SHOP DRAWINGS, THE CONTRACTOR THEREBY REPRESENTS THAT HE HAS VERIFIED ALL FIELD MEASUREMENTS. METHODS OF ACCESS TO THE POINT OF INSTALLATION AND SIMILAR FIELD CRITERIA FOR CABINETRY/MILLWORK AND ALL PREFABRICATED ASSEMBLIES OTHER THEN BUILDING STANDARD WORK.

25. HAZARDOUS MATERIALS OR TOXIC SUBSTANCES THE ARCHITECT HAS NO RESPONSIBILITY FOR THE DISCOVERY. PRESENCE. HANDLING, REMOVAL OR DISPOSAL OF, OR EXPOSURE OF PERSONS TO, HAZARDOUS MATERIALS OR TOXIC SUBSTANCES IN ANY FORM AT THE PROJECT SITE, INCLUDING BUT NOT LIMITED TO ASBESTOS, ASBESTOS PRODUCTS, POLYCHLORINATED

BIPHENYL (PCB), LEAD PAINT OR OTHER TOXIC SUBSTANCES. THE FACT THAT THESE DOCUMENTS DO NOT INDICATE THE PRESENCE OF OR REMOVAL OR CONTAINMENT OF THE FOREGOING IS NOT INTENDED TO INDICATE THAT THESE MATERIALS OR SUBSTANCES, AMONG OTHERS, ARE NOT PRESENT AND ARE NOT REQUIRED TO BE REMOVED OR CONTAINED IN COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

26. LOCAL ORDINANCES GRADING PLANS, STORM AND SANITARY DRAINAGE IMPROVEMENTS, ROAD ACCESS REQUIREMENTS, AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

27. AUTOMATED EXTERNAL DEFIBRILATORS (OFCI) TO BE PROVIDED BY DISTRICT PER CODE REQUIREMENTS, OFCI

DEFERRED APPROVAL

- NO DEFERRED APPROVALS ARE A PART OF THIS PROJECT

#### BID ALTERNATES

- NO BID ALTERNATES ARE A PART OF THIS PROJECT

PROJECT DESCRIPTION

**BUILDING CONSTRUCTION/MODIFICATION - NONE** SITE WORK - NONE

THIS PROJECT IS LIMITED TO AN UPGRADE OF THE CAMPUS WIDE FIRE ALARM SYSTEM. SEE ATTACHED FIRE ALARM DRAWINGS FOR A FULL DESCRIPTION OF THE SCOPE.

FOR ARCHITECTS/ENGINEERS WHO UTILIZE PLANS. INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS, PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS (Application No. \_\_\_\_\_ File No. \_\_\_\_\_ The drawings or sheets listed on the cover or index sheet This drawing, page of specifications/calculations have been prepared by other design professionals or consultants who are licensed and/or authorized to prepare such drawings in this state. It has been examined by me for: 1) design intent and appears to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications prepared by me, and 2) coordination with my plans and specifications and is acceptable for incorporation into the construction of this project. The Statement of General Conformance "shall not be construed as relieving me of my rights, duties, and responsibilities under Sections 17302 and 81138 of the Education Code and Sections 4-336, 4-341 and 4-344" of Title 24, Part 1. (Title 24, Part 1, Section 4-317 (b)) I certify that: 🛛 All drawings or sheets listed on the cover or index sheet This drawing or page is/are in general conformance and is/are in general conformance and X have been coordinated have been coordinated Date Date Signature Signature Architect or Engineer delegated responsibility Architect or Engineer designated to be in general

for this portion of the work.

Expiration Date

Print Name

License Numbe

Statement of General Conformance

APPLICABLE CODES

responsible charge

License Number

Print Name

2022 CALIFORNIA BUILDING CODE (CBC) PART 2, TITLE 24, (CCR) 2022 CALIFORNIA GREEN BUILDING CODE PART 11, TITLE 24, (CCR) 2022 CALIFORNIA FIRE CODE (CFC) PART 9, TITLE 24 (CCR) 2022 CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24 (CCR) 2022 CALIFORNIA PLUMBING CODE (CPC) PART 5, TITLE 24 (CCR) 2022 CALIFORNIA ELECTRICAL CODE (CEC) PART 3, TITLE 24 (CCR) 2022 CALIFORNIA ENERGY CODE (CEC) PART 6, TITLE 24, (CCR) 2022 CALIFORNIA ADMINISTRATIVE CODE (CAC) PART 1, TITLE 24 (CCR) CCR TITLE 19 PUBLIC SAFETY DIVISION 1 STATE FIRE MARSHAL

Expiration Date

INCLUDING ANY CODES REFERRED TO BY THE ABOVE,

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODES. LIFE SAFETY CODE 101 AND OTHER NFPA PAMPHLETS. REGULATIONS THAT RELATE TO THE LICENSING OF HEALTH FACILITIES, SUCH AS TITLE 22, DIVISION 5, CHAPTER 1, 2, 3, 4, AND 5

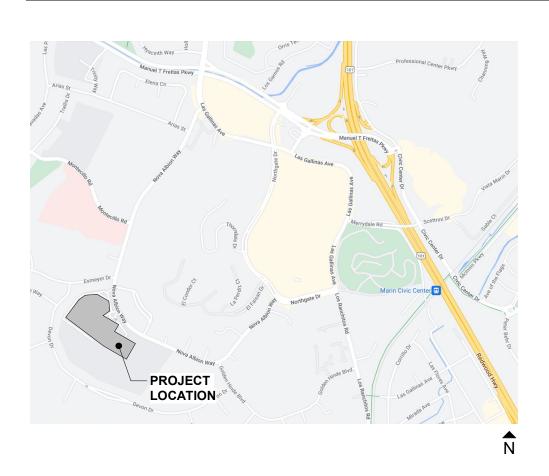
THE ABOVE CODES AND REGULATIONS REFER TO THE LATEST EDITION OR REVISION IN FORCE ON THE DATE OF THE CONTRACT, UNLESS OTHERWISE STATED, NOTHING ON THE DRAWINGS IS TO BE CONSTRUED AS REQUIRING OR PERMITTING WORK THAT IS CONTRARY TO THE LISTED CODES AND REGULATIONS, OR OTHER LOCAL STATE OR FEDERAL CODES OR REGULATIONS WHICH MAY BE APPLICABLE.

**PROJECT DESCRIPTION** 

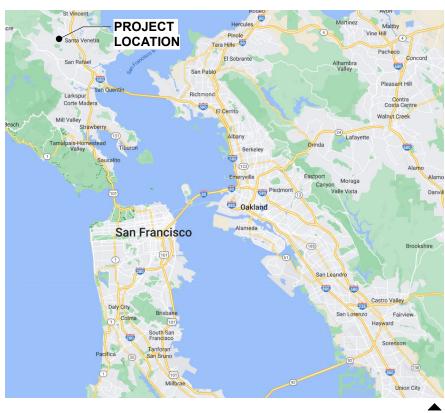
THIS PROJECT IS LIMITED TO UPGRADING CAMPUS WIDE FIRE ALARM SYSTEMS ONLY. CONSOLIDATE AND REPLACE OLD DEVICES AND BRING THE ENTIRE CAMPUS UP TO CURRENT FIRE ALARM REQUIREMENTS. SEE FIRE ALARM DRAWINGS TO FULL DESCRIPTION OF SCOPE. CONTRACTOR TO PATCH AND REPAIR ANY DAMAGED FINISHES TO MATCH (E) ADJACENT THAT ARE A RESULT OF THE FIRE ALARM UPGRADE WORK. THERE IS NO NEW SITE OR BUILDING CONSTRUCTION OR MODIFICATIONS TO EXISTING BUILDING ENVELOPE, LOCATIOIN, SQUARE FOOTAGE, USE OR CCUPANCY.

	SHEET INDEX
SHEET NUMBER	SHEET NAME
GENERAL	
G-000	COVERSHEET
G-001	PROJECT INFORMATION AND SHEET INDEX
G-011	CAMPUS SITE PLAN
ARCHITECTURAL	
A-001	ARCHITECTURAL GENERAL NOTES & ABBREVIATIONS
A-002	MOUNTING HEIGHTS
FIRE ALARM	
E001	GENERAL NOTES, LIST OF DRAWINGS & SYMBOLS
FE001	FIRE ALARM EQUIPMENT LIST
FE101	SITE PLAN - FIRE ALARM
FE301A	LEVEL 1 - FLOOR PLAN - FIRE ALARM - BLDG A & C
FE301B	LEVEL 1 - FLOOR PLAN - FIRE ALARM - BLDG M
FE301C	LEVEL 1 - FLOOR PLAN - FIRE ALARM - BLDG E
FE301D	LEVEL 1 - FLOOR PLAN - FIRE ALARM - BLDG L
FE301E	LEVEL 1 - FLOOR PLAN - FIRE ALARM - BLDG I
FE301F	FLOOR PLAN - FIRE ALARM - BLDG D & S
FE301G	FLOOR PLAN - FIRE ALARM - BLDG P
FE301H	FLOOR PLAN - FIRE ALARM - BLDG H
FE301K	FLOOR PLAN - FIRE ALARM - BLDG K & Q/R
FE302A	LEVEL 2 - FLOOR PLAN - FIRE ALARM - BLDG A & C
FE302B	LEVEL 2 - FLOOR PLAN - FIRE ALARM - BLDG M
FE302C	LEVEL 2 - FLOOR PLAN - FIRE ALARM - BLDG E
FE302D	LEVEL 2 - FLOOR PLAN - FIRE ALARM - BLDG L
FE501	RISER DIAGRAM - FIRE ALARM
FE502	RISER DIAGRAM - FIRE ALARM
FE503	RISER DIAGRAM - FIRE ALARM
FE504	RISER DIAGRAM - FIRE ALARM
FE505	RISER DIAGRAM - FIRE ALARM
FE601	FIRE ALARM SCHEDULES
FE602	FIRE ALARM SCHEDULES
FE603	FIRE ALARM SCHEDULES
FE701	DETAILS

### VICINITY MAP



#### AREA MAP







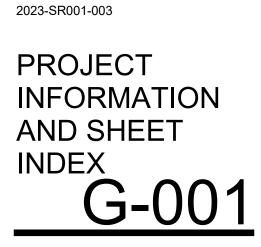
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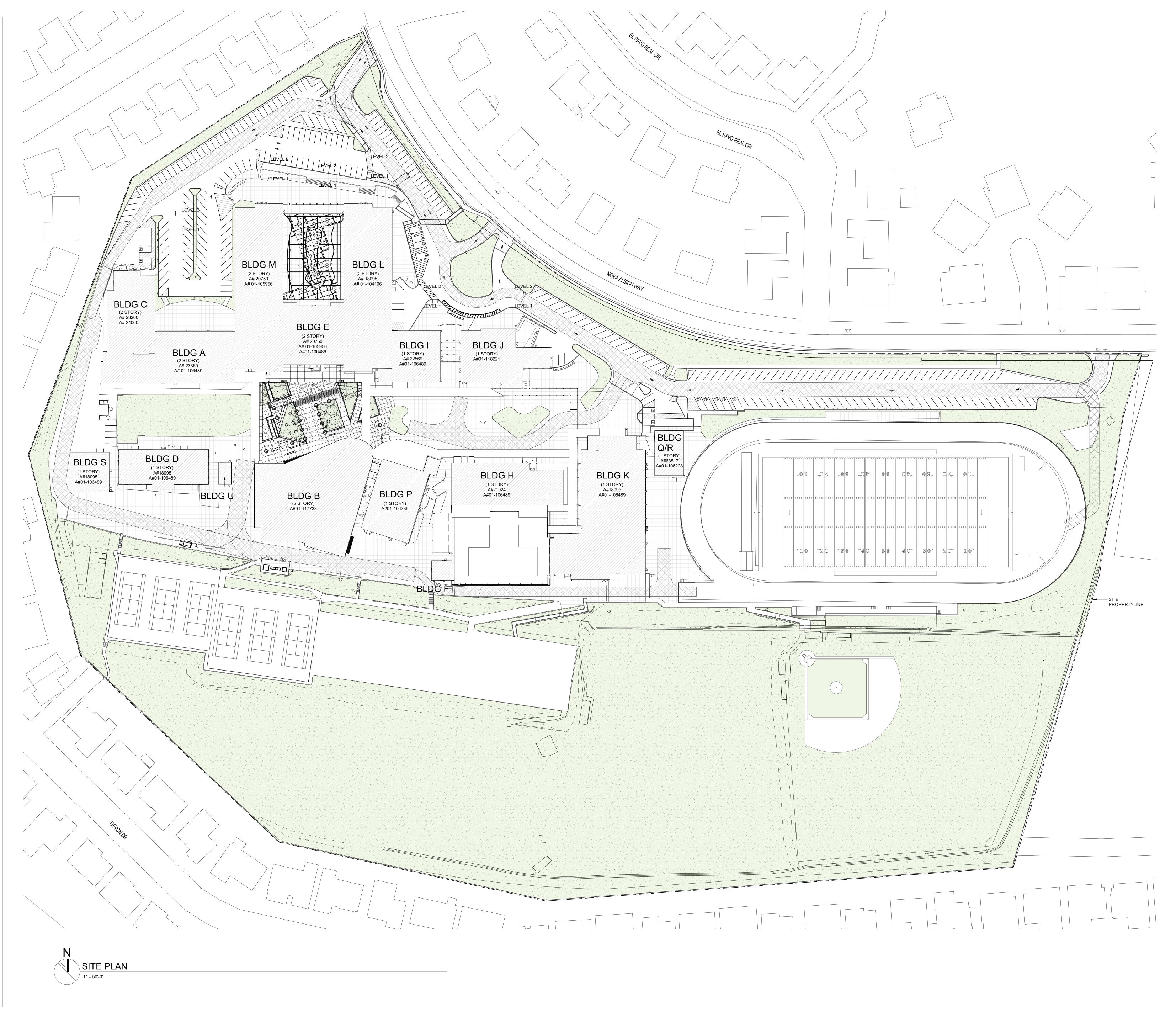
320 Nova Albion Way, San Rafael, CA 94903

Date Issued For 7/28/2023 DSA Submittal



Suite 400 San Francisco, California 94104 USA (415) 981-2345 WWW.HED.DESIGN







SRCS Terra Linda HS Fire Alarm Upgrade

320 Nova Albion Way, San Rafael, CA 94903

DateIssued For7/28/2023DSA Submittal





#### **GENERAL NOTES**

- 1. THE CONSTRUCTION CONTRACT IS FOR A COMPLETE AND FULLY FUNCTIONING INSTALLATION. THESE DOCUMENTS DESCRIBE THE DESIGN INTENT AND SPECIFIC REQUIREMENTS OF THE INSTALLATION. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL. THESE DOCUMENTS ARE NOT MEANT TO SHOW EVERY ITEM REQUIRED TO CONSTRUCT THE WORK. ITEMS SUCH AS, BUT NOT LIMITED TO, FASTENERS, CONNECTORS, FILLERS, MISCELLANEOUS CLOSURE ELEMENTS, ANCILLARY CONTROL WIRING AND POWER WHERE REQUIRED FOR THE CONTROL OR OPERATION OF THE PROVIDED EQUIPMENT, ETC. ARE NOT ALWAYS SHOWN BUT ARE CONSIDERED TO BE INCLUDED IN THE SCOPE OF THE WORK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A FULLY FUNCTIONING INSTALLATION WHICH MEETS THE DESIGN INTENT, INCLUDING
- THESE DOCUMENTS DESCRIBE WORK UNDER A SINGLE CONSTRUCTION CONTRACT. THE USE OF SUB-CONTRACTORS IS THE ELECTION OF THE GENERAL CONTRACTOR. IT IS NOT THE INTENT OF THE DOCUMENTS TO DIVIDE THE WORK AMONG SUB-CONTRACTORS. WHERE THE DOCUMENTS IDENTIFY WORK WITH SUCH NOTES AS "NOT IN MECHANICAL WORK" OR "NOT IN ELECTRICAL WORK" OR "SEE STRUCTURAL DRAWINGS." IT MEANS THAT THE WORK IS NOT FURTHER DESCRIBED OR SPECIFIED ON THE DRAWING WHERE SUCH NOTES APPEAR; IT DOES NOT PRECLUDE THE CONTRACTOR FROM DELEGATING THE WORK TO ENTITIES OF HIS ELECTION. IN ADDITION, THE DIVISION OF THE CONTRACT DOCUMENTS INTO ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND MECHANICAL OR OTHER DESIGN DISCIPLINES IS FOR CONVENIENCE ONLY, AND IS NOT INTENDED TO DIVIDE THE WORK AMONG VARIOUS SUB-CONTRACTORS, OR IMPLY THAT ALL OF THE WORK FOR A PARTICULAR TRADE IS SHOWN ONLY IN THOSE DRAWINGS OR SPECIFICATIONS.
- REFERENCE TO "CONTRACTOR" IN THESE DOCUMENTS SHALL BE INTERPRETED AS REFERRING TO THE GENERAL CONTRACTOR OR TO ANY SUB-CONTRACTOR TO THE GENERAL CONTRACTOR, COLLECTIVELY OR AS INDIVIDUAL ENTITIES. FURTHER, REFERENCE TO A PARTICULAR SUB-CONTRACTOR IS FOR CONVENIENCE ONLY, AND IS NOT INTENDED TO LIMIT THE SCOPE OF THE WORK TO THAT TRADE OR LIMIT THE RESPONSIBILITIES OF THE GENERAL CONTRACTOR TO COORDINATE THE WORK OF ALL TRADES AS DEFINED BY THE OWNER/CONTRACTOR AGREEMENT.
- 4. THE DRAWINGS AND PROJECT MANUAL ESTABLISH DETAILED MINIMUM REQUIREMENTS FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT. PARTIAL OR OUTDATED SETS OF CONTRACT DOCUMENTS SHOULD NOT BE DISTRIBUTED OR UTILIZED.
- 5. WORK IS TO COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES AND REGULATIONS IN FORCE AT THE TIME OF CONSTRUCTION.
- 6. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FEES FOR PERMITS PRIOR TO STARTING CONSTRUCTION. PERMITS ARE TO BE POSTED IN A CONSPICUOUS PLACE ON THE PROJECT SITE AS REQUIRED BY AUTHORITY HAVING JURISDICTION.
- UNLESS SPECIFICALLY NOTED AS BEING RE-USED, MATERIALS FURNISHED AT THE JOB SITE SHALL BE NEW AND FREE FROM DEFECTS, AND SHALL BE STORED AT THE SITE IN SUCH A MANNER AS TO PROTECT THEM FROM DAMAGE. ALL WORK SHALL BE BEST PRACTICE OF EACH TRADE.
- 8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETELY COORDINATE WORK AS REQUIRED TO MEET THE DESIGN INTENT AS DEFINED BY THE DOCUMENTS. THE CONTRACTOR SHALL LAY OUT AND SEQUENCE THE INSTALLATION OF WORK SO THAT THE DIFFERENT SYSTEMS DO NOT OBSTRUCT INSTALLATION OF SUBSEQUENT WORK. IN GENERAL, SYSTEMS INSTALLED FIRST SHOULD BE AS HIGH AND AS TIGHT TO THE STRUCTURE AS POSSIBLE TO ALLOW SPACE FOR SYSTEMS WHICH FOLLOW.
- 9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND SUB-CONTRACTORS TO REVIEW DRAWINGS, PROJECT MANUAL, ADDENDA, BULLETINS, ETC, IN ORDER, TO ENSURE COMPLETE COORDINATION OF WORK. FAILURE TO REVIEW AND COORDINATE ALL CONTRACT DOCUMENTS BY THE GENERAL CONTRACTOR WITH THE SUB-CONTRACTORS FOR APPLICABLE PORTIONS OF THE WORK DOES NOT RELIEVE ANY PARTY FROM PROVIDING MATERIALS AND WORK REQUIRED FOR A COMPLETE INSTALLATION.
- 10. THE PROJECT MANUAL, WHICH INCLUDES THE GENERAL CONDITIONS, SUPPLEMENTAL CONDITIONS, AND TECHNICAL SPECIFICATIONS, AND THE DRAWINGS, ARE COMPLIMENTARY AND TOGETHER DESCRIBE THE PROJECT REQUIREMENTS. WHERE THERE ARE DISCREPANCIES BETWEEN THE PROJECT MANUAL AND THE DRAWINGS, THE CONTRACTOR SHALL ADVISE THE ARCHITECT OF SUCH AND REQUEST CLARIFICATION. IN GENERAL, THE PROJECT MANUAL TAKES PRECEDENCE OVER DRAWINGS. LARGE SCALE DETAILS TAKE PRECEDENCE OVER SMALL SCALE DETAILS.
- 11. THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL VISIT THE SITE PRIOR TO BIDDING IN ORDER TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND THE IMPACT OF THE PROPOSED WORK INDICATED ON THE DRAWINGS AND SPECIFICATIONS ON THESE CONDITIONS. ANY QUESTIONS REGARDING THE COORDINATION OF NEW WORK WITH EXISTING CONDITIONS MUST BE SUBMITTED TO THE ARCHITECT IN WRITING PRIOR TO THE BID SUBMISSION AND WITH ADEQUATE TIME FOR RESPONSE TO ALL BIDDERS. THE ARCHITECT WILL RESPOND TO TIMELY QUESTIONS WITH A WRITTEN RESPONSE TO ALL BIDDERS.
- 12. ALL WORK NOTED "NIC" IS NOT IN CONTRACT, CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS ON SITE PER REQUIREMENT ESTABLISHED BY OWNER.
- 13. EXISTING DIMENSIONS AND CONDITIONS INDICATED IN THESE DOCUMENTS ARE FROM ELECTRONIC CAD INFORMATION PROVIDED BY THE OWNER AND ARE ASSUMED TO BE ACCURATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF SUCH INFORMATION PRIOR TO THE START OF CONSTRUCTION. AND ADVISE THE ARCHITECT OF ANY DEVIATIONS OR CONFLICTS WITH THE INFORMATION SHOWN ON THE DRAWINGS.
- 14. DRAWINGS ARE NOT TO BE SCALED. CONTRACTOR SHALL REFER TO THE DIMENSIONS INDICATED OR THE ACTUAL SIZES OF CONSTRUCTION ITEMS. WHERE NO DIMENSION OR METHODS OF DETERMINING A LOCATION EXISTS, VERIFY DIMENSION WITH ARCHITECT PRIOR TO LAYOUT AND INSTALLATION.
- 15. THE DRAWINGS AND REFERENCED DETAILS HAVE BEEN DIMENSIONED IN ORDER TO ESTABLISH THE CONTROL AND GUIDELINES FOR FIELD LAYOUT. WHERE DISCREPANCIES EXIST BETWEEN THE DRAWINGS AND FIELD CONDITIONS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF SUCH PRIOR TO START OF WORK.
- 16. DIMENSIONS ON DOCUMENTS ARE TO FACE OF FINISH MATERIALS UNLESS OTHERWISE INDICATED.
- 17. WHERE DIMENSIONS INDICATED ARE NOTED AS VERIFY IN FIELD (VIF) THE DIMENSION SHOWN IS THE BASIS OF DESIGN, BUT MAY DIFFER FROM ACTUAL CONDITIONS. CONTRACTOR SHALL VERIFY THESE DIMENSIONS WHILE LAYING OUT THE WORK AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING. WHERE DIMENSIONS ARE NOTED AS "+/-" FIELD DIMENSIONS MAY VARY FROM THE NOTED DIMENSIONS BY MINOR AMOUNTS. DISCREPANCIES OF MORE THAN 1" SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CONFIRMATION. DIMENSIONS NOTED AS "HOLD" OR "CLEAR" ARE TO BE ACCURATE TO WITHIN 1/4".
- 18. DETAILS ARE KEYED TO THE PLANS AT TYPICAL LOCATIONS. TYPICAL DETAILS APPLY TO ALL LOCATIONS WHICH ARE SIMILAR BUT ARE NOT NECESSARILY KEYED TO EVERY LOCATION TO WHICH THEY APPLY. CONTRACTOR IS RESPONSIBLE TO COORDINATE THE LOCATION OF ALL TYPICAL DETAILS AND INSTALL THE WORK INDICATED. FEATURES NOT SHOWN IN THEIR ENTIRETY SHALL BE COMPLETELY PROVIDED AS IF SHOWN IN FULL. IF DISCREPANCIES EXIST, CONTRACTOR IS TO REQUEST CLARIFICATION BY THE ARCHITECT OF SUCH CONDITIONS.
- 19. FINISH FLOOR ELEVATIONS REFER TO TOP OF CONCRETE SLAB, UNLESS NOTED OTHERWISE. WHERE CONCRETE SLAB IS DEPRESSED TO ACCOMMODATE SETTING BEDS, RAISED ACCESS FLOOR, OR OTHER SIMILAR FLOOR ASSEMBLIES, FINISH FLOOR ELEVATIONS ARE TO TOP OF FINISH FLOOR ASSEMBLY INDICATED.
- 20. FIRE RATING "TAPES" INDICATED ON FLOOR PLANS SHOW EXTENT OF FIRE RATED PARTITIONS, BARRIERS AND FIRE WALLS, RATING IN A PARTITION SHALL BE CONTINUOUS AND SHALL CONTINUE OVER DOORS AND OVER AND BELOW WINDOWS WHETHER OR NOT THEY ARE SHOWN AS SUCH ON THE PLANS. REFER TO PARTITION DETAILS FOR REQUIREMENTS OF THE RATED ASSEMBLIES.
- 21. VERIFY AND COORDINATE SIZES, LOCATION AND MOUNTING REQUIREMENTS OF ALL EQUIPMENT AND FIXTURES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE REQUIRED BLOCKING, BACKING, SLEEVES, ETC. FOR A COMPLETE, NEAT INSTALLATION. COORDINATE INSTALLATION OF ALL SLEEVES AND OPENINGS AS REQUIRED THROUGH ALL EXISTING OR NEW CONSTRUCTION.

BUT NOT LIMITED TO THE SPECIFIC REQUIREMENTS IN THESE DOCUMENTS.

- 22. DETAILS INDICATE DESIGN INTENT OF WORK IN PLACE. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB CONDITIONS OR DIMENSIONS AND ARE TO BE INCLUDED AS PART OF THE WORK.
- 23. PROVIDE PROTECTION FOR PEDESTRIANS OR OCCUPANTS OF ADJACENT AREAS OF THE BUILDING AS NECESSARY AND AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. 24. MAINTAIN THE PREMISES CLEAN AND FREE OF TRASH AND DEBRIS. PROTECT
- PROJECT, THE SITE, AND PERSONAL PROPERTY FROM DAMAGE. 25. PROTECT WORK AREAS AND EXISTING ADJACENT AREAS, INCLUDING EXISTING UTILITIES, FROM DAMAGE. REPAIR, REPLACE, OR PATCH ANY DAMAGE DUE TO CONSTRUCTION. REPAIRED CONSTRUCTION IS SUBJECT TO REVIEW AND ACCEPTANCE BY ARCHITECT.
- 26. PROVIDE REQUIRED TEMPORARY UTILITIES, BRACING, SUPPORTS, SHORING, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN ADEQUACY AND SAFETY OF ERECTION. 27. CONTRACTOR SHALL MAINTAIN CURRENT UPDATED RECORD DRAWINGS AND
- SPECIFICATIONS ON SITE AT ALL TIMES. 28. CONTRACTOR IS RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION. INCLUDING BUT NOT LIMITED TO SITE SAFETY AND SECURITY FOR WORKERS AND GENERAL MEMBERS OF THE PUBLIC.
- 29. METAL FABRICATIONS AND SUPPORT ASSEMBLIES WHETHER SHOWN OR NOT SHALL BE PROVIDED FOR THE STRUCTURAL SUPPORT OF MISCELLANEOUS ELEMENTS. GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ENGINEERED STRUCTURAL ASSEMBLIES AND CALCULATIONS SHOWING COMPLIANCE WITH CODE REQUIREMENTS AND ACCOUNTING FOR STATIC AND DYNAMIC LOADS INCLUDING ANY WIND OR SEISMIC LOADS. THERMAL MOVEMENT OF SUPPORTING STRUCTURE AND DIMENSIONAL TOLERANCES OF THE BUILDING.
- 30. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL STIFFENERS, BRACING, BACK-UP PLATES AND SUPPORTING BRACKETS REQUIRED FOR APPROPRIATE INSTALLATION OF ALL TOILET ROOM ACCESSORIES AND PARTITIONS, AND ALL WALL MOUNTED OR SUSPENDED MECHANICAL, ELECTRICAL OR MISCELLANEOUS EQUIPMENT.
- 31. PIPE SLEEVES IN MECHANICAL EQUIPMENT ROOMS EXTEND 2" ABOVE THE FLOOR LINE. FILL THE ANNULAR SPACES OF PIPE SLEEVES THROUGH THE FLOOR OR THROUGH RATED WALLS WITH FIRE SAFING AND SMOKE SEAL COMPOUND AS INDICATED ON THE SPECIFICATION, AND AS APPROVED BY THE AUTHORITY HAVING JURISDICTION.
- 32. SIZES OF MECHANICAL EQUIPMENT PADS AND BASES SHOWN ON PLAN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY DIMENSIONS OF ALL PADS AND BASES WITH THE APPROPRIATE EQUIPMENT MANUFACTURERS. CONTRACTOR SHALL COORDINATE MOUNTINGS WITH APPROPRIATE EQUIPMENT MANUFACTURERS. PADS AND BASES SHALL BE INDICATED ON SUBMITTALS AND BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO LAY-OUT OF REINFORCING STEEL OR STEEL DECK.
- 33. PROVIDE ACCESS PANELS FOR MECHANICAL AND ELECTRICAL EQUIPMENT AS REQUIRED BY APPLICABLE CODES. ALL ACCESS PANELS IN GYP BOARD SHALL BE CONCEALED, MUD-IN TYPE. ELECTRICAL J-BOXES, PLUMBING CLEANOUTS, FIRE DAMPERS AND OTHER SIMILAR ITEMS REQUIRING ACCESS ARE NOT TO BE LOCATED ABOVE GYPSUM BOARD OR SIMILAR NON-ACCESSIBLE CEILING.

### ABBREVIATIONS

EF

ADJ AFF ADJACENT, ADJUSTABLE ABOVE FINISHED FLOOR ALT ALTERNATE BLDG BUILDING CIP CAST-IN-PLACE CONSTRUCTION JOINT, CONTROL JOINT CJ CENTERLINE CLG CEILING CLR CLEAR, CLEARANCE CONCRETE MASONRY UNIT(S) CMU COL COLUMN CONC CONCRETE DET DETAIL DRINKING FOUNTAIN DF DIA DIAMETER DIM DIMENSION DN DOWN DWG DRAWING EA FACH EXHAUST FAN EXPANSION JOINT EJ ELEVATION (GRADE) EWC ELECTRIC WATER COOLER EXIST EXISTING EXP EXPOSED EXT EXTERIOR FLOOR DRAIN FD FIRE EXTINGUISHER FE FEC FIRE EXTINGUISHER CABINET FFE FURNITURE, FIXTURES & EQUIPMENT FIN FINISH, FINISHED FIRE RATED, FIRE RETARDANT FR FRTW FIRE RETARDANT TREATED WOOD GA GAUGE GALV GALVANIZED GYP BD GYPSUM BOARD HM HOLLOW METAL HORIZ HORIZONTAL INT INTERIOR MAX MAXIMUM MFR MANUFACTURER MIN MINIMUM MASONRY OPENING MO NIC NOT IN CONTRACT NOM NOMINAL NTS NOT TO SCALE OC ON CENTER OWNER FURNISHED CONTRACTOR INSTALLED OFCI OFOI OWNER FURNISHED OWNER INSTALLED OH OPPOSITE HAND OPP OPPOSITE PL PROPERTY LINE PRESERVATIVE PRESSURE TREATED PPT PR PAIR PSF PER SQUARE FOOT RD ROOF DRAIN SF SQUARE FOOT SIM SIMILAR SPEC SPECIFICATIONS TYP TYPICAL UNDERWRITER'S LABORATORIES UON UNLESS OTHERWISE NOTED VERT VERTICAL

VERIFY IN FIELD WITH WITHOUT

UI

VIF

W/O

W/



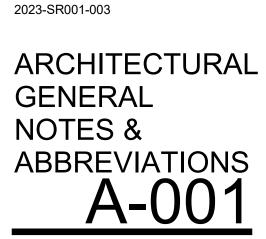
94903

SRCS Terra Linda HS Fire Alarm Upgrade

320 Nova Albion Way, San Rafael, CA 94903

Date Issued For 7/28/2023 DSA Submittal

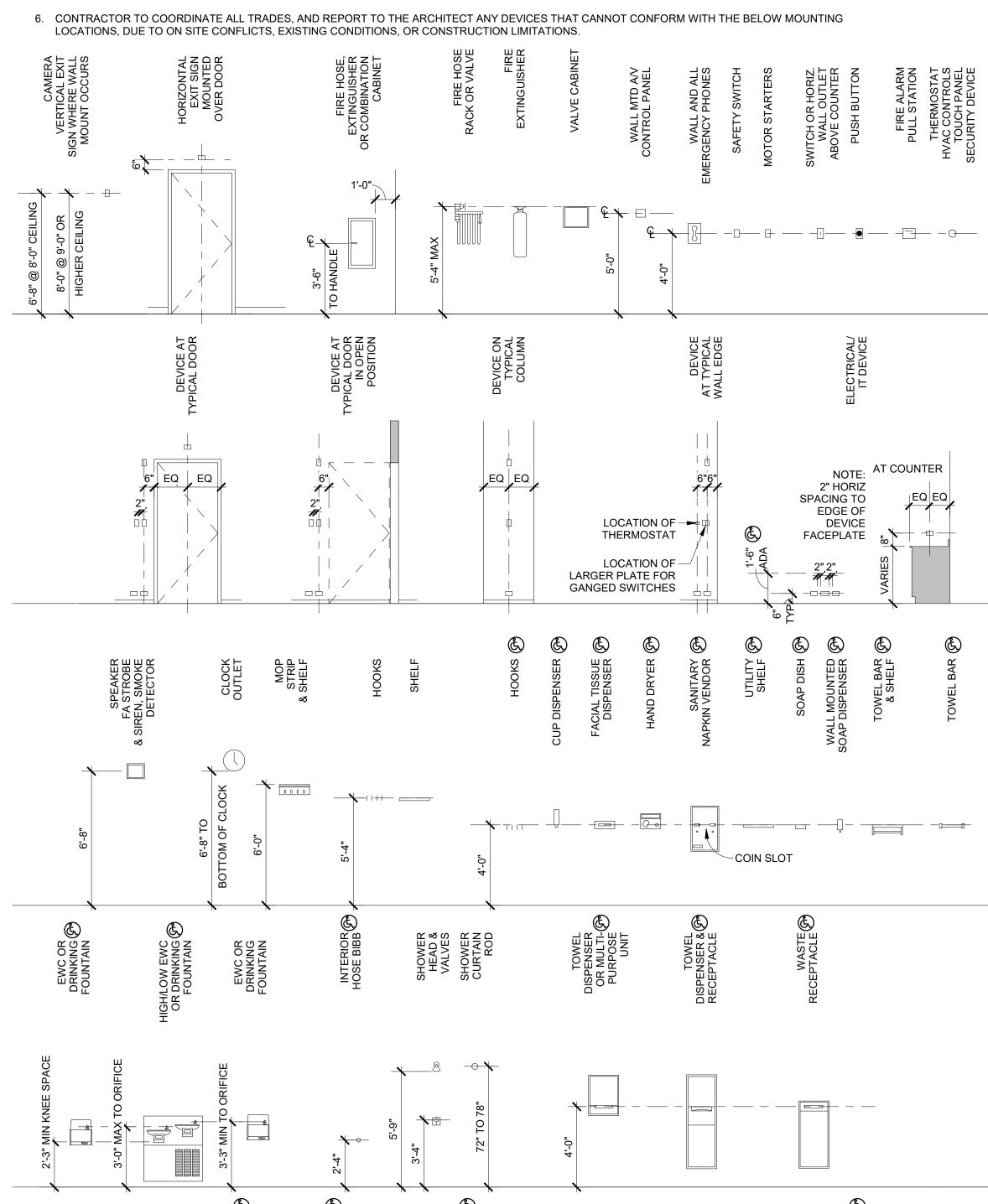


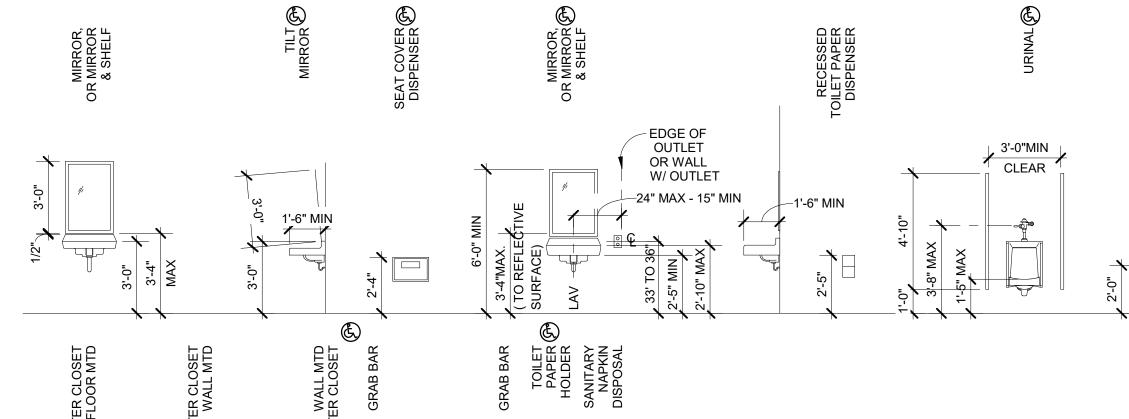


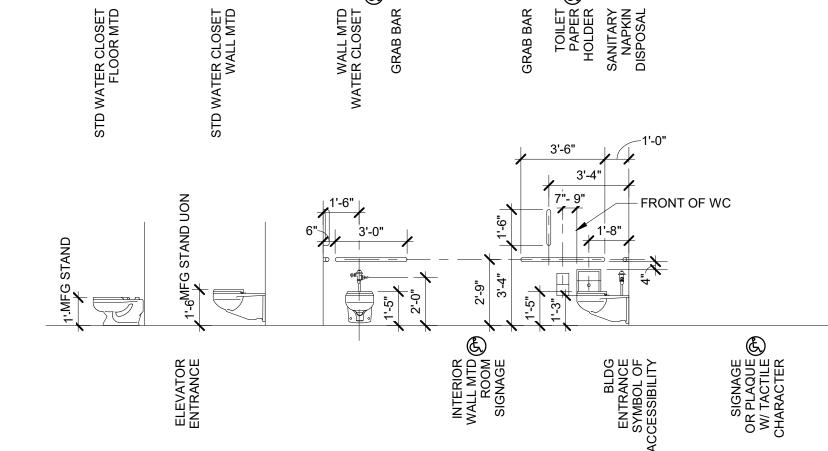
#### MOUNTING HEIGHTS

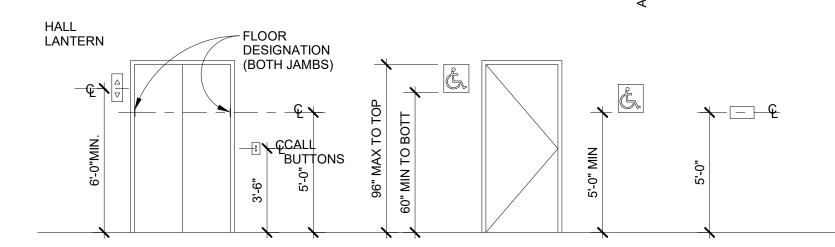
NOTES: 1. WHERE ARCHITECTURAL AND MEP/IT/AV/SEC MOUNTING CONDITIONS CONFLICT, ARCH MOUNTING CONDITIONS ON THIS SHEET SUPERSEDE OTHER

- SHEETS. 2. MOUNTING CONDITIONS INDICATED ON INTERIOR ELEVATIONS SUPERSEDE THIS SHEET WHERE DIMENSIONED.
- 3. ALL DEVICES IN THE SAME WALL PLANE WITHIN 4'-0" (OR 3 STUD BAYS) TO STACK VERTICALLY AND MOUNT HORIZONTALLY AS SHOWN BELOW, WHEN ADJACENT TO A DOOR FRAME, WALL EDGE, IN A COLUMN OR IN A WALLPANEL.
- 4. MOUNTING DIMENSIONS SHOW ACCESSIBLE AND NON-ACCESSIBLE CONDITIONS. WHEN ONLY ONE OPTION IS SHOWN ALL ITEMS IN PROJECT SHALL BE ACCESSIBLE. WHEN ITEMS CAN BE ACCESSIBLE OR NON ACCESSIBLE DRAWINGS SHALL INDICATE LOCATION OF ACCESSIBLE ITEMS BY THIS
- SYMBOL 🕃 5. COORDINATE ITEMS SHOWN ON THIS DRAWING WITH PLANS AND SPECIFICATIONS FOR ACTUAL ITEMS USED ON THIS PROJECT. EVERY ITEM SHOWN
- ON THIS DRAWING MAY NOT BE USED ON THIS PROJECT.









San Rafael City Schools SAN RAFAEL **CITY SCHOOLS** 

320 Nova Albion Way, San Rafael, CA 94903

SRCS Terra Linda HS Fire Alarm Upgrade

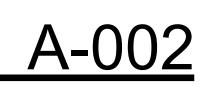
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## 2023-SR001-003 MOUNTING HEIGHTS



E	LECTRICAL SYMBOLS LIST
	MAIN SWITCHBOARD, DISTRIBUTION PANEL, OR MOTOR CONTROL CENTER
	SURFACE MOUNTED PANELBOARD OR EQUIPMENT AS NOTED ON DRAWINGS. 6' - 6" TO TOP
	FLUSH MOUNTED PANELBOARD OR EQUIPMENT AS NOTED
	ON DRAWINGS. 6' - 6" TO TOP. FLUSH IN GRADE PULLBOX. CHRISTY (OR EQUAL) WITH SIZE
	AS REQUIRED.
	SURFACE MOUNTED EQUIPMENT, AS NOTED ON PLANS
	FLUSH MOUNTED EQUIPMENT, AS NOTED ON PLANS
	CONDUIT AND WIRE CONCEALED IN CEILING OR WALL CONDUIT AND WIRE UNDERGROUND, OR CONCEALED
	UNDER SLAB
	CONDUIT AND WIRE RUN EXPOSED, PAINTED TO MATCH ALL ADJACENT FINISHES WITHIN FINISHED SPACES
	HOMERUN TO PANELBOARD OR TERMINAL BOARD, AS NOTED ON PLANS
	CROSSMARKS INDICATE QUANTITY OF #12 CONDUCTORS PLUS PARITY SIZED GROUND CONDUCTOR. NO HASHMARKS INDICATES (2) #12 PLUS PARITY SIZED GROUND CONDUCTOR. GROUND WIRE
(#10)	WIRE SIZE 10 AWG FOR ALL CONDUCTORS, INCLUDING GROUND WIRE THROUGHOUT THE COMPLETE CIRCUIT
<b>=</b>	20A 3PG 125V DUPLEX RECEPTACLE, UP 18" U.O.N 'WP' INDICATES WEATHERPROOF.
<b>#</b>	20A 3PG 125V DOUBLE DUPLEX RECEPTACLE, UP 18" U.O.N.
<b>#</b>	20A 3PG 125V DUPLEX RECEPTACLE, MOUNTED ABOVE COUNTER.
$\Rightarrow$	20A 3PG 125V DUPLEX RECEPTACLE, FLUSH CEILING MOUNT.
	SURFACE MOUNTED WIREMOLD RACEWAY WITH RECEPTACLES AS INDICATED ON PLANS
$\boxtimes$	SURFACE MOUNTED WIREMOLD RACEWAY RISER
4	DATA OUTLET, WALL MOUNTED, UP 18" U.O.N.
4	DATA OUTLET, WALL MOUNTED, MOUNTED ABOVE COUNTER.
1	PROJECT NUMBERED NOTE, OR SHEET NUMBERED, AS NOTED ON PLAN.
$\odot$	COPPER GROUND ROD, 10' L x 3/4"Ø, <u>SEE</u> SPECS
∫ <u>3P</u>	CIRCUIT BREAKER, INDICATES 100 AMP, 3 POLE
$\overbrace{-}^{M}$	UTILITY METER
$\Delta$	CONDUCTOR LANDING LUGS
	CONDUIT TURN DOWN
	CONDUIT TURN UP
	CONTINUATION
	CONDUIT STUB
(4004N)	ELECTRICAL FEEDER TAG, PER COPPER FEEDER SCHEDULE
F 1	MECHANICAL EQUIPMENT DESIGNATION, REFER TO MECHANICAL PLANS.
PNL LA	ELECTRICAL EQUIPMENT TAG: -EQUIPMENT PREFIX "PNL", "DP", "SWBD", "XFMR", "FA", "IDF" -EQUIPMENT NAME
	DETAIL OR SHEET REFERENCE CALLOUT. INDICATES DETAIL 1, SHEET E-0.1. WHEN ADJACENT EQUIPMENT, APPLIES TO EQUIPMENT IDENTIFIED ONLY.
	DETAIL OR SHEET REFERENCE CALLOUT. INDICATES DETAIL 1, SHEET E-0.1. WHEN ADJACENT EQUIPMENT, APPLIES TO TYPICAL EQUIPMENT SERIES.
	SEE FE-0.01 FOR FIRE ALARM SYMBOLS
BRAN	NCH CIRCUIT NOMENCLATURE
EXAMPLE LA1-3	S: 1-POLE BRANCH CIRCUIT TO CB
LA1-1,3,5	
LA1-[1,3]	2-POLE BRANCH CIRCUIT TO COMMON CB
LA1-[1,3,5]	3-POLE BRANCH CIRCUIT TO COMMON CB

	GENERAL DEMOLITION
1.	THE EXISTING FIRE ALARM SYSTEMS IN AREAS C COMPLETELY REMOVED AND REPLACED WITH N THE DRAWINGS AND SPECIFICATIONS. REMOVE ALARM CABLING TROUGH-OUT. EXISTING FIRE A MAY BE RE-UTILIZED WHERE FEASIBLE.
2.	THE CONTRACTOR SHALL VERIFY IN THE FIELD A DIMENSIONS AND EXISTING CONDITIONS. THE IN THE DRAWINGS REGARDING EXISTING ELECTRIC AND BRANCH CIRCUITS IS THE RESULT OF FIELD ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, AS A GUIDE FOR USE IN VERIFICATIO
3.	CARE SHALL BE TAKEN IN ORDER TO IDENTIFY A EXISTING FIRE ALARM WORK THAT IS TO REMAIN
4.	ENSURE RECONNECTION OF EXISTING DEVICES HAVE BEEN INTERRUPTED BY DEMOLITION BY PI CONNECTION TO ANOTHER EXISTING TO REMAIN PANEL.
5.	THE ELECTRICAL CONTRACTOR SHALL REVISE A ADDRESSABLE DEVICE NUMBERING AND SYSTEI TO CORRESPOND TO ACTUAL CONDITIONS AFTE AND NEW WORK IS COMPLETED.
6.	REMOVE ALL ABANDONED FIRE ALARM WIRE TH
7.	WHEN ELECTRICAL EQUIPMENT OR DEVICE IS RI EXISTING WALL OR CEILING WHICH IS TO REMAIN ABANDONED OPENINGS TO MATCH EXISTING FIN
8.	IT SHALL BE THE RESPONSIBILITY OF THIS CONT MAINTAIN CONTINUITY OF ALL ELECTRICAL SYST ETC. REQUIRING TO REMAIN IN OPERATION. "MA CONTINUITY" (OR "INTERCEPT AND EXTEND") SH REROUTING OF CONDUIT, WIRE, ETC. AS REQUIR
9.	THE ELECTRICAL CONTRACTOR SHALL COORDIN OWNER PRIOR TO REMOVAL OF FIRE ALARM EQ TURN OVER REMOVED EQUIPMENT THAT THE O' IN AS-FOUND CONDITION. EQUIPMENT THAT IS T OVER SHALL BE BOXED AND TAGGED TO IDENTI EQUIPMENT. EQUIPMENT TO BE TEMPORARILY THE CONSTRUCTION SHALL BE CLEANED AND R ORIGINAL CONDITION OR AS REQUIRED.
10.	IF ANY EQUIPMENT THAT IS SCHEDULED TO REM IS DAMAGED BY THE CONTRACTOR, IT SHALL BE ORIGINAL CONDITION SATISFACTORY TO THE OV CONTRACTOR'S EXPENSE.
	ANCHORAGE NOT
EU	
	ECTRICAL ANCHORAGE NOTES:
ALI PE DO BR PR	L ELECTRICAL COMPONENTS SHALL BE ANCHORE R THE DETAILS ON THE DSA APPROVED CONSTRI CUMENTS. THE FOLLOWING COMPONENTS SHAL ACED TO MEET THE FORCE AND DISPLACEMENT
ALI PE DO BR PR	L ELECTRICAL COMPONENTS SHALL BE ANCHORE R THE DETAILS ON THE DSA APPROVED CONSTRU- DCUMENTS. THE FOLLOWING COMPONENTS SHALL ACED TO MEET THE FORCE AND DISPLACEMENT ESCRIBED IN THE 2019 CBC SECTIONS 1617A.1.18 17A.1.26 AND ASCE 7-16, CHAPTER 13, 26, AND 30. 1. ALL PERMANENT EQUIPMENT AND COMPONE 2. TEMPORARY, MOVABLE OR MOBILE EQUIPME PERMANENTLY ATTACHED (e.g. HARD WIRED UTILITY SERVICES SUCH AS ELECTRICITY, GA "PERMANENTLY ATTACHED" SHALL INCLUDE CONNECTIONS EXCEPT PLUGS FOR 110/220 RECEPTACLES HAVING A FLEXIBLE CABLE. 3. TEMPORARY, MOVABLE OR MOBILE EQUIPME HEAVIER THAN 400 POUNDS OR HAS A CENT LOCATED 4 FEET OR MORE ABOVE THE ADJA ROOF LEVEL THAT DIRECTLY SUPPORT THE
ALI PEOBR PR 161 THT DECOBE CO	<ul> <li>L ELECTRICAL COMPONENTS SHALL BE ANCHORE R THE DETAILS ON THE DSA APPROVED CONSTRUCT CUMENTS. THE FOLLOWING COMPONENTS SHALL ACED TO MEET THE FORCE AND DISPLACEMENT ESCRIBED IN THE 2019 CBC SECTIONS 1617A.1.18</li> <li>17A.1.26 AND ASCE 7-16, CHAPTER 13, 26, AND 30.</li> <li>1. ALL PERMANENT EQUIPMENT AND COMPONI PERMANENTLY ATTACHED (e.g. HARD WIRED UTILITY SERVICES SUCH AS ELECTRICITY, G/ "PERMANENTLY ATTACHED" SHALL INCLUDE CONNECTIONS EXCEPT PLUGS FOR 110/220 V RECEPTACLES HAVING A FLEXIBLE CABLE.</li> <li>3. TEMPORARY, MOVABLE OR MOBILE EQUIPMI HEAVIER THAN 400 POUNDS OR HAS A CENT LOCATED 4 FEET OR MORE ABOVE THE ADJ/ ROOF LEVEL THAT DIRECTLY SUPPORT THE REQUIRED TO BE RESTRAINED IN A MANNER DSA.</li> <li>E FOLLOWING ELECTRICAL COMPONENTS SHALL TACHED TO THE STRUCTURE, BUT NEED NOT DEI SIGN COMPLIANCE WITH THE REFERENCES NOTE MPONENTS SHALL HAVE FLEXIBLE CONNECTIONS TWEEN THE COMPONENT AND ASSOCIATED CON</li> </ul>
ALI PEOBR PR 161 THT DEOBE CO	<ul> <li>L ELECTRICAL COMPONENTS SHALL BE ANCHORE R THE DETAILS ON THE DSA APPROVED CONSTRUCTIONENTS. THE FOLLOWING COMPONENTS SHALL ACED TO MEET THE FORCE AND DISPLACEMENT ESCRIBED IN THE 2019 CBC SECTIONS 1617A.1.18 17A.1.26 AND ASCE 7-16, CHAPTER 13, 26, AND 30.</li> <li>1. ALL PERMANENT EQUIPMENT AND COMPONING PERMANENTLY ATTACHED (e.g. HARD WIRED UTILITY SERVICES SUCH AS ELECTRICITY, G/ "PERMANENTLY ATTACHED" SHALL INCLUDE CONNECTIONS EXCEPT PLUGS FOR 110/220 ' RECEPTACLES HAVING A FLEXIBLE CABLE.</li> <li>3. TEMPORARY, MOVABLE OR MOBILE EQUIPMIN HEAVIER THAN 400 POUNDS OR HAS A CENT LOCATED 4 FEET OR MORE ABOVE THE ADJ/R ROOF LEVEL THAT DIRECTLY SUPPORT THE REQUIRED TO BE RESTRAINED IN A MANNER DSA.</li> <li>E FOLLOWING ELECTRICAL COMPONENTS SHALL TACHED TO THE STRUCTURE, BUT NEED NOT DEN SIGN COMPLIANCE WITH THE REFERENCES NOTE MPONENTS SHALL HAVE FLEXIBLE CONNECTIONS TWEEN THE COMPONENT AND ASSOCIATED CON INNECTIONS MUST ALLOW MOVEMENT IN BOTH TO NGITUDINAL DIRECTIONS.</li> <li>A. COMPONENT WEIGHING LESS THAN 400 POU CENTER OF MASS LOCATED 4 FEET OR LESS ADJACENT FLOOR OR ROOF LEVEL THAT DIR THE COMPONENT.</li> <li>B. COMPONENTS WEIGHING LESS THAN 20 POU CASE OF DISTRIBUTED SYSTEMS, LESS THAN</li> </ul>
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STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYST NOTED BELOW. WHEN BRACING AND ATTACHMENTS PREAPPROVED INSTALLATION GUIDE (eg., OSHPD OP OR LATER), COPIES OF THE BRACING SYSTEM INSTAL MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOF OF AND DURING THE HANGING AND BRACING OF THE SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE BRACE LOADS.

ELECTRICAL DISTRIBUTION SYSTEMS ARE: [X] - OPTION 1: DETAILED ON THE APPROVED DRA PROJECT SPECIFIC NOTES AND DETAI [] - OPTION 2: SHALL COMPLY WITH THE APPLICA APPROVAL (OPM #).

N NOTES		ABBREVIATIONS
S OF WORK SHALL BE	AFF	ABOVE FINISHED FLOOR
NEW AS SHOWN ON	AFF	ABOVE FINISHED FLOOR
ALARM CONDUITS		CONDUIT
D ALL LINES, LEVELS,	CATV	
E INFORMATION ON RICAL EQUIPMENT	CATV	CIRCUIT BREAKER
ELD SURVEY AND IS E. IT IS INTENDED,	СО	CONDUIT ONLY
FION ONLY.	cu	COPPER
Y AND PROTECT ALL AIN.		
ES WHOSE CIRCUITS	DP	DISTRIBUTION PANEL ELECTRICAL CONTRACTOR
PROVIDING NEW	E.C.	
AIN DEVICE OR		EQUIPMENT GROUNDING CONDUCTOR
	EM	EMERGENCY
TER ALL DEMOLITION	EMS	
		EQUIPMENT
	EXT	EXTERIOR
REMOVED FROM AN AIN, PATCH	(E)	EXISTING
FINISH.	(ER)	EXISTING EQUIPMENT TO BE RELOCATED
NTRACTOR TO STEMS, EQUIPMENT,	(EX)	EXISTING EQUIPMENT TO BE DEMOLISHED
MAINTAINING SHALL CONSIST OF	FA	FIRE ALARM
UIRED.	FMC	FLEXIBLE METALLIC CONDUIT
DINATE WITH THE	FO	FIBER OPTIC
OWNER REQUESTS, S TO BE TURNED	FTL	FEED THROUGH LUGS
TIFY THE SPECIFIC Y REMOVED DUE TO	G.E.C.	GROUNDING ELECTRODE CONDUCTOR
RE-INSTALLED IN ITS	GFI	GROUND FAULT CIRCUIT INTERRUPTING TYPE RECEPTACLE
EMAIN IN OPERATION	INV	INVERTER, EM LIGHTING OR PHOTOVOLTAIC.
BE REPLACED TO ITS	IDF	INTERMEDIATE DISTRIBUTION FRAME
OWNER AT	L	LOCKABLE
ſES	LTG	LIGHTING
	LV	LOW VOLTAGE
	мс	METAL CLAD CABLING
RED AND INSTALLED	МСВ	MAIN CIRCUIT BREAKER
ALL BE ANCHORED OR	MDF	MAIN DISTRIBUTION FRAME
18 THROUGH	MFGR	MANUFACTURER
NENTS.	MLO	MAIN LUGS ONLY
MENT THAT IS ED) TO THE BUILDING	MTD	MOUNTED
GÁS OR WATER. DE ALL ELECTRICAL	(N)	NEW
20 VOLT		NATIONAL ELECTRICAL CODE
MENT WHICH IS	NEU	NEUTRAL
DJACENT FLOOR OR	NIEC	NOT IN ELECTRICAL CONTRACT
ER APPROVED BY	OAH	OVERALL HEIGHT
LL BE BE POSITIVELY		OWNER FURNISHED, CONTRACTOR INSTALLED
EMONSTRATE	P	INDICATES FIXTURES ON PHOTOCELL CONTROL
TED ABOVE. THESE	PA	PUBLIC ADDRESS
NDUIT. FLEXIBLE TRANSVERSE AND	PA	
OUNDS AND HAVING A SS ABOVE THE		SEE ARCHITECTURAL DRAWINGS
DIRECTLY SUPPORT	SIG	SIGNAL SYSTEM
OUNDS, OR IN THE IAN 5 POUNDS PER	SPD	
OOF OR FLOOR OR	STC	SIGNAL TERMINAL CABINET
NTS SHALL BE		SWITCHBOARD
FESSIONAL IN AL ENGINEER	TELE	TELEPHONE
AND EQUIPMENT	UFER	CONCRETE ENCASED CU G.E.C.
IE ABOVE	UON	UNLESS OTHERWISE NOTED
•TE:	UG	UNDERGROUND
RACED TO COMPLY	VAV	VAV BOX, <u>SEE</u> MECHANICAL DIVISION DRAWINGS FOR LOCATIONS. PROVIDE TOGGLE TYPE DISCONNECT SWITCH.
RACED TO COMPLY RIBED IN ASCE 7-16 13.6.5, 13.6.6, 13.6.7,	WP	WEATHER PROOF, NEMA 3R. EQUALS "WHILE IN USE" TYPE
.1.25, AND 1617A.1.26.		WHEN APPLIED TO EXTERIOR POWER RECEPTACLES
IMENTS TO THE SYSTEM ARE AS NTS ARE BASED ON A OPM FOR 2013 CBC TALLATION GUIDE OR RIOR TO THE START THE DISTRIBUTION ORD SHALL VERIFY T THE HANGER AND	XFMR	TRANSFORMER
DRAWINGS WITH TAILS. LICABLE OSHPD PRE-		

IOR TO BID THE CONTRACTOR SHALL EQUATELY DETERMINE ALL PRE-EXIS T OF SUBMITTING A BID, THE CONTRA VE COMPLIED WITH THE FOREGOING NDITIONS, AND TO HAVE MADE ALLOV EPARING THE BID.	TING CONDITIONS. BY TH CTOR WILL BE DEEMED T , TO HAVE ACCEPTED SUC
OVIDE PARITY SIZED GREEN GROUNE NDUITS, BRANCH CIRCUITS (LIGHTING MERUNS. PROVIDE ADDITIONAL ISOL IH YELLOW STRIPE, TO ALL ISOLATED	G & POWER) AND ATED GROUND, GREEN
OVIDE PULLROPE IN ALL EMPTY CONI OJECT.	DUITS THROUGHOUT THE
ORDINATE TRENCHING WITH OWNER FORE BEGINNING WORK.	AND OTHER TRADES
CONDUIT PENETRATIONS THROUGH DORS SHALL BE SEALED AND EQUIPP NETRATION ASSEMBLIES TO MAINTAII TING.	ED WITH U.L. LISTED FIRE
NOT INSTALL ANY OUTLETS BACK TO MOUNTABLE PARTITIONS.	) BACK IN STUD WALLS OF
E CONTRACTOR SHALL VERIFY ALL EX PES BEFORE ORDERING OF DEVICES.	
CUITRY AND CONDUIT ROUTING SHO GRAMMATIC ONLY. THIS CONTRACT COMING COMPLETELY FAMILIAR WITH RUCTURAL CONDITIONS AND LIMITAT PROVIDE ALL LABOR, TOOLS AND MA ODUCE A COMPLETELY CONCEALED DICATED ON THE PLANS.	OR IS RESPONSIBLE FOR I THE ARCHITECTURAL AN IONS IN THE BUILDING ANI ITERIALS REQUIRED TO
INTAIN "AS-BUILT" RECORDS AT ALL T CATION OF ALL UNDERGROUND AND/ D SERVICES INSTALLED UNDER THIS CUIT IDENTIFICATION WHERE APPLIC ITH "AS-BUILT" DOCUMENTS AS INDICA ECIFICATIONS, AND/OR CALLED FOR I	OR CONCEALED CONDUIT CONTRACT, INCLUDING ABLE. PROVIDE OWNER TED IN THE N THE SPECIFICATIONS.
AWINGS INDICATE THE LOCATION(S) UIPMENT, AND THE CIRCUIT NUMBER SUPPLY THEM. THE CONTRACTOR S MPLETELY CONNECTING ALL ELECTR DICATED ON THE DRAWINGS.	AND PANEL DESIGNATED HALL BE RESPONSIBLE FO
LESS OTHERWISE NOTED, ALL WORK W AND TO BE PROVIDED AND INSTALI NTRACT.	
EQUIPMENT GROUNDING SHALL CO	
LEXTERIOR CONDUIT ABOVE GRADE, UNTED CONDUIT, SHALL BE GALVANI LEXPOSED THREADS WITH GALVANIZ RFACE MOUNTED RACEWAYS AND PU RROUNDING CONDITIONS, AS DIRECT	ZED RIGID STEEL. COAT ING PAINT. PAINT ALL JLLBOXES TO MATCH
ELECTRICAL WORK SHALL BE CARR TH THE LATEST EDITION OF THE N.E.C CAL CODES AND REQUIREMENTS.	
L CONDUIT SHALL BE CONCEALED, UN	
PECTION FEES. E CONTRACTOR SHALL VERIFY ALL CI E ARCHITECTURAL DRAWINGS PRIOR	
CONDUIT CONNECTORS TO OUTLET ALL HAVE INSULATED THROATS (MAN EGRAL PART OF THE CONNECTOR).	OR JUNCTION BOXES
CIRCUITS IN ALL JUNCTION BOXES A EARLY IDENTIFIED BY MEANS OF "EZ" UIVALENT, TO IDENTIFY THE CIRCUIT PPLYING THE CONDUCTOR. ALL JUNG BELED PER SPECIFICATIONS.	ND DEVICES SHALL BE NUMBERING TAGS OR NUMBER OR RELAY
SURFACE MOUNTED POWER AND SI EAS SHALL BE "WIREMOLD" TYPE, WI RFACE MOUNTED STEEL JUNCTION B T ACCEPTABLE UNLESS SPECIFICALL AWINGS AS AN EXPOSED INTERIOR C	TH MATCHING RACEWAYS OXES AND/OR EMT ARE Y IDENTIFIED ON THE
LOCATIONS OF BARE METAL SURFA XES, PANEL COVERS, AND RELATED F TALLED IN FINISHED AREAS (BOTH IN ALL BE FINISH PAINTED TO MATCH TH EY ARE MOUNTED TO (AFTER INSTALI CLUDE DIFFERENT COLORS AS REQUI RIPING OR OTHER BUILDING FEATURE UIPMENT IS ATTACHED AND VISIBLE. X LOCATION(S) AND ROUTING OF EXF E ARCHITECT PRIOR TO ROUGH-IN.	FITTINGS OR ACCESSORIE TERIOR AND EXTERIOR) IE SURFACE TO WHICH LATION). PAINTING SHALL RED TO MATCH EXISTING ES TO WHICH THE VERIFY EXACT JUNCTION
OVIDE A BLANK COVER PLATE (COLO VICES OR AS SPECIFICALLY CALLED F R ALL JUNCTION BOXES (NEW AND E) IEN NO DEVICE IS INSTALLED.	OR IN SPECIFICATIONS)

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FE301B	LEVEL 1 - FLOOR PLAN - FIRE ALARM - BLDG M
FE301C	LEVEL 1 - FLOOR PLAN - FIRE ALARM - BLDG E
FE301D	LEVEL 1 - FLOOR PLAN - FIRE ALARM - BLDG L
FE301E	LEVEL 1 - FLOOR PLAN - FIRE ALARM - BLDG I
FE301F	FLOOR PLAN - FIRE ALARM - BLDG D & S
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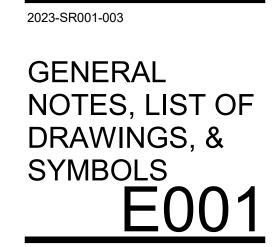
320 Nova Albion Way, San Rafael, CA 94903

SRCS Terra Linda HS Fire Alarm Upgrade

320 Nova Albion Way, San Rafael, CA 94903

DateIssued For7/28/2023DSA Submittal





	SEQUENCE OF OP	EF	RA <sup>-</sup>	ΓΙΟ	)N	M	ΑΤ	RI	X	
					RE	SPO	ISE			
		ANNUNCIATE AT FIRE ALARM CONTROL PANEL (FACP)	ANNUNCIATE AT FIRE ALARM ANNUNCIATOR PANEL (FAAP)	ANNUNCIATE AT OFF-SITE MONITORING STATION	ANNUNCIATE AUDIBLE/VISUAL DEVICES IN ALL AREAS	SHUTDOWN OF APPLICABLE HVAC UNIT AND/OR MOTORIZED DAMPERS	RELEASE APPLICABLE MAGNETICALLY-HELD DOORS	ACTIVATE ELEVATOR RECALL	FACILITY PERSONNEL TO NOTIFY FIRE DEPARTMENT	
	MANUAL PULL STATION	х	x	х	x	x	x	х	х	
)F CES	AREA SMOKE OR HEAT DETECTOR	х	х	х	x	х	х	х	х	
ACTIVATION OF INITIATION DEVICES	SPECIAL EXTINGUISHING ANSUL SYSTEM	х	x	x	x	x	x	х	х	
ACTIVA TIATIO	DUCT SMOKE DETECTOR	х	x	x	x	x	x	х	х	
⊒ 	SPRINKLER FLOW SWITCH	x	х	х	x	x	x	х	х	
MALFUNCTION	INITIATION CIRCUITS NOTIFICATION APPLIANCE CIRCUITS FIRE ALARM CONTROL PANEL (FACP) FIRE ALARM ANNUNICATOR PANEL (FAAP) FIRE ALARM EXTENDER PANEL (FAEP) OR REMOTE AMPLIFIER	x x x x x	x x x x x	x x x x x						
	POWER FAILURE	х	х	х						
SOTRY HES	SPRINKLER TAMPER SWITCH	X	X	X						
SUPERVISOTRY SWITCHES	POST INDICATOR VALVE	X X	X X	X						
<u> </u>										
1. AC CC AF (N IN 2. UF MC AT 3. WI AC AT AC FII AT	SEQUENCE OF OP CTIVATION OF ANY INITIATION DEVIC DATEOL PANEL IN ALARM MODE AND PLIANCES. THE FIRE ALARM CONTR ON-ADDRESSABLE) OR DEVICE (ADD TIATION DEVICE(S). PON ALARM CONDITION, AUTO-DIALE DITORING STATION, AND AUTHORIZ DITORING STATION, AND AUTHORIZ DITIVATION OF ANOTHER INITIATION IN NEL BACK IN ALARM CONDITION AND DIFICATION APPLIANCES. ILURE OF THE FIRE ALARM SYSTEM IPPLY SHALL PLACE THE FIRE ALAR DIDITION, RESULTING IN AN AUDIBL RE ALARM CONTROL PANEL ONLY. T THE CONTROL PANEL, BUT THE VIS UTIL THE FAILED CONDITIONS ARE C	E WI COL F COL F COL F COL F COL F COL F COL F E COL F COL COL COL COL COL COL COL COL COL COL	LL PL LL AC PANE SSAB O NO SCHO ATE E CUA HE N E FIR CE W ILL A MPOR D VIS AUDIE ALA	LACE TIVA L SH LE) ( TIFY COL EVAC FION OTIF RE AL /ILL F GAIN NENT ROL I SUAL BLE A RM V	THE ATE A ATE A ALL DF TH PERS UAT PLA FICAT ARW PLAC I ACT S, W PANE (LEI ALAR VILL	FIRI ALL N DISP HE AC OFF SONT ION N. TION I COT IVAT VIRIN EL IN D) AL M M/ REM	E ALA IOTIF LAY CTIVA -SITE NEL S OF S APPI NTRC IE CO E AL G OF TRO ARM AY BI AIN A	ARM ICAT THE ATEC BHAL TUDE LIAN( DL PA DNTF L X PON UBLE AT 1 E SIL ACTIN		

UPON TROUBLE CONDITION, AUTO-DIALER TO NOTIFY THE OFF-SITE MONITORING STATION, AND AUTHORIZED SCHOOL PERSONNEL SHALL NOTIFY THE AUTHORIZED TECHNICIAN TO CORRECT THE TROUBLE CONDITION.

1.	FINAL FIRE ALARM TEST SHALL BE MADE RECORD (IOR). LOCAL FIRE AUTHORITY S TIME OF FINAL ALARM TESTING AND SHA TESTING WHEN ABLE. DSA/ARCHITECT/E NOTIFIED A MINIMUM OF (48) HOURS PRIC AND/OR TESTING.

- FIRE ALARM CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2. MONITORING SHALL BE TESTED AND VERIFIED AS SENDING THE CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT AND/OR PROVISIONS
- UNDERGROUND AND EXTERIOR CONDUITS SHALL HAVE WATERTIGHT FITTINGS.
- 4. FIRE ALARM DEVICE MOUNTING HEIGHTS: a. <u>PULL STATION</u>: 48" TO TOP OF OPERATOR ABOVE FINISHED FLOOR b. <u>SPEAKER INTERIOR/EXTERIOR</u>: 90" MIN. TO TOP OF DEVICE ABOVE FINISHED FLOOR, OR 100" MAX TO TOP OF DEVICE, BUT NOT LESS THAN 6" FROM CEILING.
- WALL MOUNTED STROBE OR SPEAKER/STROBE: BETWEEN 80" TO BOTTOM OF DEVICE LENS TO +96" TO TOP OF DEVICE LENS ABOVE FINISH FLOOR, BUT NOT LESS THAN 6" FROM CEILING.
- d. <u>CONTROL PANELS / ANNUNCIATORS</u>: 48" TO BOTTOM OF EQUIPMENT. AUDIBLE FIRE ALARM SYSTEM LEVEL SHALL BE AT LEAST 15dBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL IN ALL OCCUPIABLE AREAS, OR 5 dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, MEASURED AT 5 FEET
- AT 10 FEET, OR MORE THAN 110dBA AT THE MINIMUM HEARING DISTANCE. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL THREE
- DISTINCTIVE FIRE ALARM SOUND PER NFPA 72. APPLICABLE CODES:
- a. CBC 2019; CEC 2019; CMC 2019; CFC 2019. b. STATE FIRE MARSHAL TITLE 19, PUBLIC SAFETY. c. NFPA 72, 2016 EDITION W/CA AMENDMENTS, FIRE ALARM CODE.
- STROBES SHALL FLASH AT A RATE NOT EXCEEDING TWO FLASHES PER SECOND, AND NOT LESS THAN ONE FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELA. VISUAL DEVICES WITHIN 55 FEET OF EACH OTHER SHALL BE SYNCHRONIZED.
- FIRE ALARM CONTRACTOR SHALL PROVIDE A COPY OF NFPA 72 SYSTEM RECORD OF COMPLETION, SYSTEM RECORD OF INSPECTION AND TESTING, AND THE "EMERGENCY COMMUNICATIONS SUPPLEMENTARY RECORD OF COMPLETION", TO THE INSPECTOR OF RECORD IOR/DSA, SCHOOL DISTRICT, ARCHITECT AND LOCAL FIRE AUTHORITY.
- 10. POWER SERVICE TO THE FACP, REMOTE POWER SUPPLIES, AND CENTRAL STATION AUTO DIALER SHALL BE ON A DEDICATED BRANCH CIRCUIT WITH A RED MARKING AND IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL".
- . INSTALL ALL WIRING IN CONDUIT. MIN. 3/4" CONDUIT. ALL FIRE ALARM SYSTEM WIRING SHALL BE FPL (FIRE POWER LIMITED) OR FPLP (FIRE POWER LIMITED PLENUM RATED) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.
- 13. ALL FIRE ALARM COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICES/EQPT. SHALL EXCEED 20LBS. WITHOUT SPECIAL MOUNTING DETAILS.
- 14. INSTALLATION OF SYSTEM SHALL NOT BE STARTED UNTIL COMPLETE SET OF CONSTRUCTION DOCUMENTS (WITH DEVICE TYPES AND LISTINGS) HAVE BEEN REVIEWED AND APPROVED BY DSA.
- 15. A STAMPED SET OF APPROVED PLANS SHALL BE ON THE JOB SITE AT ALL TIMES AND SHALL BE USED FOR INSTALLATION.
- 16. ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND ARCHITECT/ENGINEER OF RECORD.
- 17. THE CONTRACTOR SHALL INSTALL AND ADJUST ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
- 18. SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1 FOOT FROM FIRE SPRINKLER HEADS OR 3 FEET FROM ANY SUPPLY DIFFUSER. IN AREAS OF CONSTRUCTION OR POSSIBLE DAMAGE /CONTAMINATION, INSTALLED DEVICES SHALL BE COVERED UNTIL AREA IS READY TO BE TURNED OVER TO THE OWNER.
- 19. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE ALARM DEVICE. DO NOT SPLICE WIRE. THERE MUST BE AT LEAST 6" OF WIRE LEAD FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC FOR PROPER VOLUME WITH INSTALLED WIRING AND DEVICES.
- 0. SUPERVISING STATION: AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72, AS AMENDED BY CFC CHAPTER 80. THE SUPERVISION STATION SHALL BE LISTED AS EITHER UUFX OR UUJS BY UNDERWRITERS LABORATORY OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 3011.
- 21. A DOCUMENTATION CABINET SHALL BE INSTALLED ADJACENT TO THE FACP IN THE MAIN ELECTRICAL ROOM (NFPA 72, 7.7.2.1). SPACE AGE ELECTRONICS INC, ACERBOX FAD SERIES (#SSU00685 OR EQUAL).
- 22. ALL RECORD DOCUMENTATION SHALL BE STORED IN THE DOCUMENTATION CABINET (NFPA 72, 7.7.2.3): PROVIDE NAMEPLATE "FIRE ALARM SYSTEM RECORD DOCUMENTS" (NFPA 72, 7.7.2.5).
- 23. FIRE ALARM MANUAL PULLSTATIONS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72 17.14.5 AND SHALL MEET THE CALIFORNIA ACCESSIBILITY REQUIREMENTS OUTLINED IN THE CBC ("CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE TO ACTIVATE THE CONTROLS SHALL BE NO GREATER THAN 5 POUNDS OF FORCE". REFER TO DSA ACCESSIBILITY STAFF FOR QUESTIONS OR CLARIFICATION.)
- 24. EXISTING CO DETECTION ALARM DOES NOT SEND GENERAL ALARM OR DIAL OUT. PROVIDES A TEMPORAL SOUND AT LOCAL SITE OF CO DETECTION & A TROUBLE NOTICE ON ANNUNCIATOR PANEL.

#### **GENERAL FIRE ALARM NOTES**

E WITH THE DSA INSPECTOR OF SHALL BE NOTIFIED OF DATE AND ALL ASSIST/WITNESS SUCH ENGINEER AND OWNER SHALL BE RIOR TO THE FINAL INSPECTION

ABOVE THE FLOOR. AUDIBLE SIGNALS SHALL NOT BE LESS THAN 75dBA

12. CONDUIT AND WIRING SHALL BE PER MANUFACTURERS REQUIREMENTS.

SYMBOL	DESCRIPTION	MANUFACTURER & MODEL NUMBER	CSFM LISTING NUMBER
XLSV	(E) REMOTE FIRE ALARM CONTROL PANEL (FOR REFERENCE ONLY)	SIEMENS FIREFINDER XLSV	7165-0067:0222
FAEP	FIRE ALARM EXPANDER PANEL	NOTIFIER ACPS-610 W/ CAB-PS1 CABINET	7135-0067:0221
RAMP	FIRE ALARM REMOTE AMPLIFIER	SIEMENS EBA2004A1	7300-0067:0274
$\langle M \rangle$	ADDRESSABLE MONITOR MODULE	SIEMENS XTRI-S	7300-0067:0501
$\overline{\mathbb{R}}$	ADDRESSABLE RELAY MODULE	SIEMENS XTRI-R	7300-0067:0501
<u>s</u>	ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	SIEMENS FDO421	7272-0067-0258
(H)	ADDRESSABLE THERMAL FIRE DETECTOR	SIEMENS FDT421	7270-0067:0262
	ADDRESSABLE SMOKE DETECTOR BASE	SIEMENS DB-11	7300-00_67:0134
F	ADDRESSABLE PULL STATION	SIEMENS XMS-S	7150-0067:0512
	VISUAL STROBE, WALL MOUNT, SELECTABLE CANDELA	WHEELOCK	7320-0785:0502
	UL 1971 PUBLIC MODE NOTIFICATION, VISUAL DEVICE	#LSTW3	15cd
Sp	OF 1971 FOREIG MODE NOTIFICATION, VISUAE DEVICE	#231003	30cd
			75cd
			110cd
	VISUAL STROBE, CEILING MOUNT, SELECTABLE CANDELA	WHEELOCK	7320-0785:0502
0	UL 1971 PUBLIC MODE NOTIFICATION	#LSTWC3	15cd
dSp			7165-0067:0222         7135-0067:0221         7300-0067:0274         7300-0067:0501         7300-0067:0501         7272-0067-0258         7270-0067:0262         7300-0067:0512         7300-0067:0512         7300-0067:0512         7300-0067:0512         7320-0785:0502         15cd         30cd         75cd         110cd         7320-0785:0502         15cd         30cd         75cd         110cd         7320-0785:0502         STROBE CKT: 15cc         STROBE CKT: 10c         7320-0785:0502         STROBE CKT: 10c         7320-0785:0502         STROBE CKT: 10c         7320-0785:0502         STROBE CKT: 10c         7320-0785:0502         STROBE CKT: 110c         7320-0785:0502         15cd         30cd         7320-1653:0201         7320-1653:0201         7300-0553:0110
-0-			75cd
			110cd
	COMBINATION VISUAL STROBE AND SPEAKER (1W TAP), WALL	WHEELOCK	7320-0785:0502
	MOUNT, SELECTABLE CANDELA	#LSPSTW3	STROBE CKT: 15cd
VÞ	UL 1971 PUBLIC MODE NOTIFICATION, VISUAL DEVICE		STROBE CKT: 30cd
			STROBE CKT: 75cd
			STROBE CKT: 110cd
	COMBINATION VISUAL STROBE AND SPEAKER (1W TAP), CEILING	WHEELOCK	7320-0785:0502
$\nabla$	MOUNT, SELECTABLE CANDELA	#LSPSTWC3	15cd
٩Ų̈́	UL 1971 PUBLIC MODE NOTIFICATION		30cd
Δ			75cd
			110cd
S⊲	AUDIBLE SPEAKER (1W), WALL MOUNT	WHEELOCK #LSPKW	7320-1653:0505
PSQ	OUTDOOR RATED, AUDIBLE SPEAKER (1W), WALL MOUNT	SYSTEM SENSOR #SPRK	7320-1653:0201
	DOCUMENT CABINET (LOCATE BELOW/ADJACENT 'FACP')	SPACE AGE SRD ACE-11	7300-0553:0110
HE SYST SA AS S PPROVA	O CONTRACTORS: TEM DESIGN IS BASED ON THE PRODUCTS SHOWN ON THIS FIRE ALA UCH. DEVIATIONS FROM THE APPROVED DESIGN (FOR MANUFACTU AL BY THE ARCHITECT. HOWEVER, IT SHALL BE THE CONTRACTOR'S DDSA FOR RE-APPROVAL.	RER OR DEVICE LAYOUTS) MA	Y BE ALLOWED WITH T

DETECTOR SUBSCRIPT LEGEND:

"c" - DETECTOR TO BE LOCATED WITHIN ACCESSIBLE CEILING SPACE "p" - DETECTOR TO BE LOCATED WITHIN 36" OF CEILING PEAK

l			FIRE ALARM WIRING LEGEND
l	TAG	DESCRIPTION	CABLING
l	А	INITIATION CIRCUIT	(2) #16 TWISTED/UNSHIELDED - WESTPENN 990S (OR WESTPENN AQC225 (WET))
l	В	STROBE NOTIFICATION CIRCUIT(S)	(2) #12 THHN/THWN
l	С	SPEAKER NOTIFICATION CIRCUIT(S)	(2) #16 TWISTED/UNSHIELDED AUDIO CABLE - WESTPENN 991 (OR WESTPENN AQC294 (WET))
l	D	24V AUX POWER CIRCUIT	(2) #14 TWISTED/UNSHIELDED - WESTPENN 994S (OR WESTPENN AQC226 (WET))
	E	REMOTE AUDIO AMPLIFIER WIRING	(1) 6-STRAND MM (OM4) OR SM (OS2) FIBER OPTIC CABLE. CABLING SHALL BE LISTED FOR WET LOCATION FIBER TYPE TO MATCH FIBER MODULES IN EQUIPMENT.

NOTE: CONTRACTOR SHALL VERIFY EXACT CABLE/WIRE TYPES WITH SYSTEM MANUFACTURER PRIOR TO ROUGH-IN. INSTALL WIRING IN 3/4" CONDUIT MIN.

## FIRE ALARM SYSTEM DESCRIPTION

- THE FIRE ALARM SYSTEM SHALL BE AN AUTOMATIC ADDRESSABLE SYSTEM WITH STYLE 4, CLASS B WIRING FOR IDC'S, NAC'S, AND SLC'S WITH EMERGENCY VOICE / ALARM COMMUNICATIONS.
- PROVIDE COMPLETE PROGRAMMING, AND ALL NECESSARY DEVICES FOR COMPLETE SYSTEM.
- CIRCUIT PATHWAY SURVIVABILITY SHALL BE LEVEL 1.
- PROVIDE AND INSTALL NEW EQUIPMENT, DEVICES AND REQUIRED MODULES AND PROVIDE CONNECTIONS COMPLETE FOR A FULLY FUNCTIONING EXPANSION OF THE EXISTING FIRE ALARM SYSTEM.
- THE NAME OF THE SPECIFIC PERSON RESPONSIBLE FOR THE SYSTEM DESIGN IS JUSTIN KIRK (O'MAHONY & MYER).
- SYSTEM INSTALLATION SHALL BE BY A LICENSED ELECTRICAL OR FIRE ALARM CONTRACTOR WITH A CALIFORNIA C-10 LICENSE, REGULARLY ENGAGED IN THE INSTALLATION AND COMMISSIONING OF FIRE ALARM SYSTEMS TO NFPA 72 STANDARDS. INSTALLING CONTRACTOR'S NAME AND CONTACT INFORMATION SHALL BE LISTED IN THE NFPA CLOSE OUT DOCUMENTATION AT COMPLETION OF PROJECT.

### FIRE ALARM SCOPE OF WORK

- THE INTENT OF THIS PROJECT IS TO PROVIDE A COMPLETE FIRE ALARM SYSTEM UPGRADE AT THE EXISTING TERRA LINDA HIGH SCHOOL CAMPUS IN SAN RAFAEL, SEE SITE PLAN FE101 FOR APPLICABLE BUILDINGS.
- PROVIDE ALL PROGRAMMING REQUIRED TO INTEGRATE THE TWO EXISTING BUILDINGS WHICH ARE TO REMAIN, ALREADY HAVING VOICE EVACUATION TYPE SEIMENS SYSTEMS.
- THIS CONTRACTOR SHALL PROVIDE ALL WORK SHOWN ON THIS SET OF DRAWINGS AND SHALL PROVIDE THE REQUIRED SERVICES FOR SIEMENS SHOP DRAWINGS (REQUIRED BY SIEMENS). FINAL SYSTEM PROGRAMMING SHALL BE DONE BASED ON THE
- ACTUAL PHYSICAL ROOM NAMES AND NUMBERS USED AT THE SITE (IF DIFFERENT FROM THE INFORMATION PROVIDED ON THE DSA APPROVED PLANS).
- INSPECTION AND TESTING SHALL BE PER NFPA 72 14.4.10. FOR EXISTING SYSTEMS TO REMAIN, PERFORM TESTING FOR UP TO 10% OF THE EXISTING INITIATING DEVICES THROUGH-OUT THE CAMPUS.



94903

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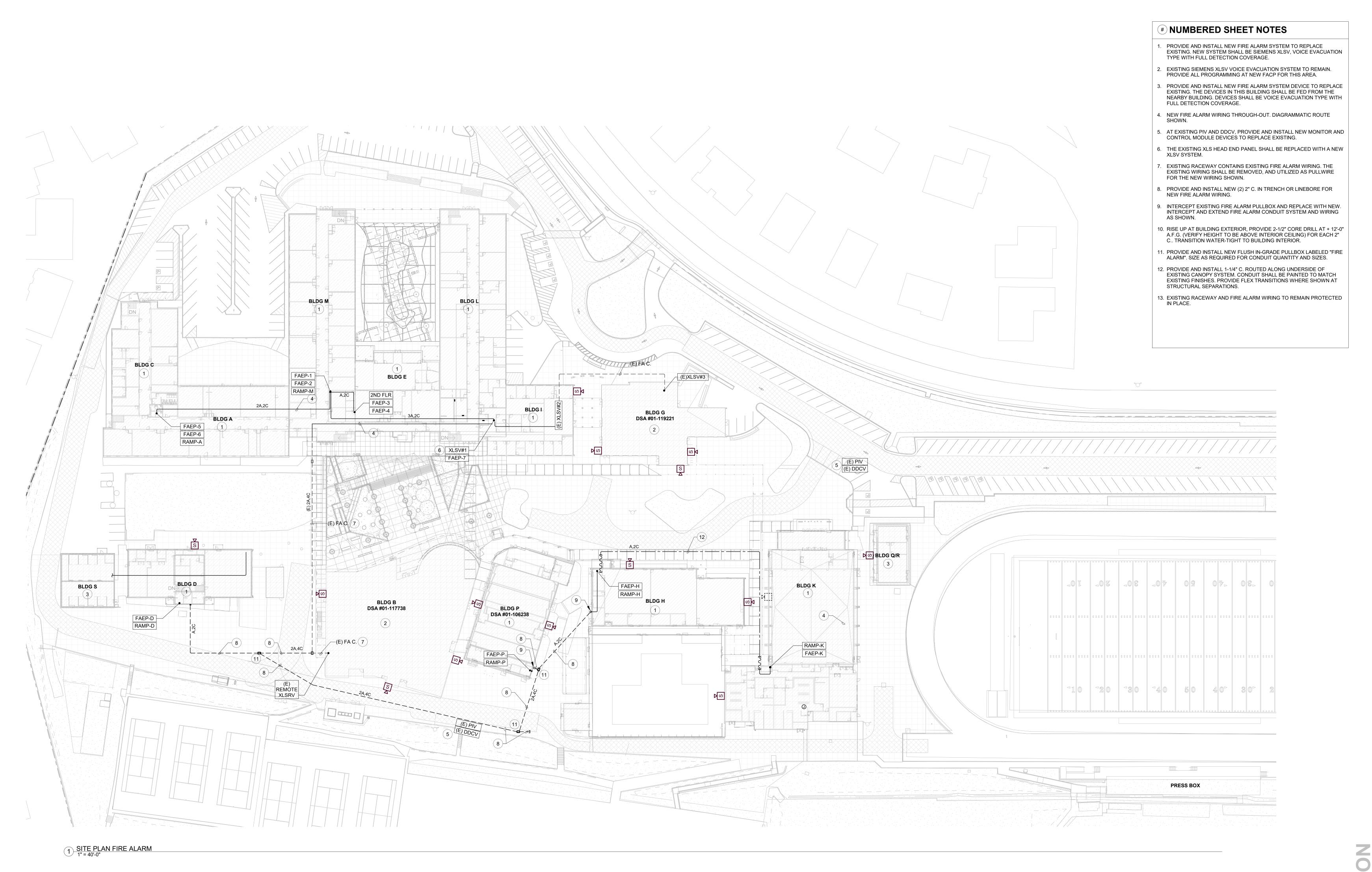
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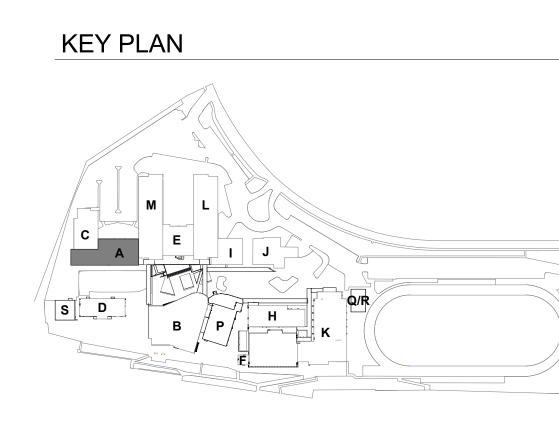


EQUIPMENT

**FE001** 

LIST





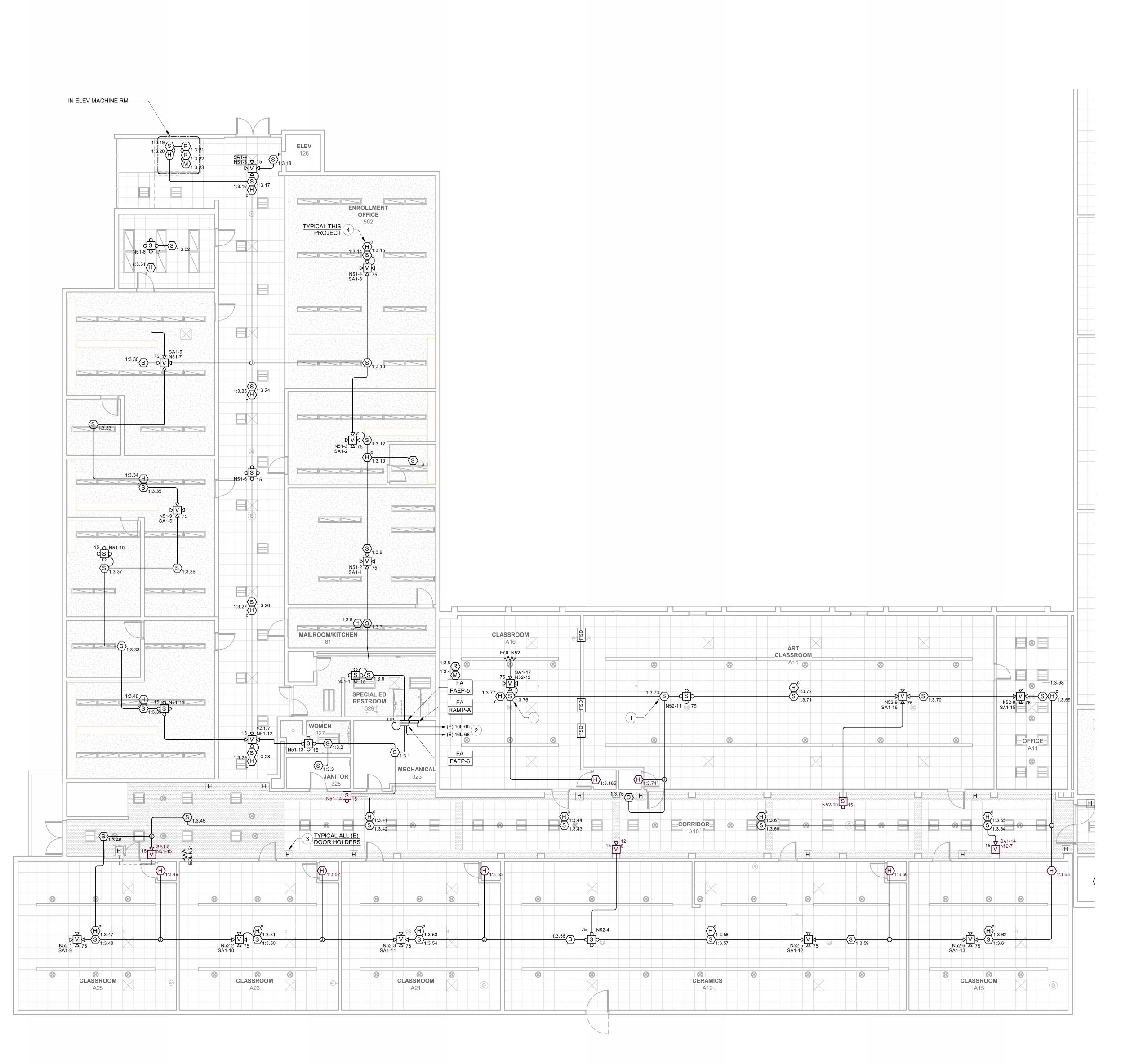


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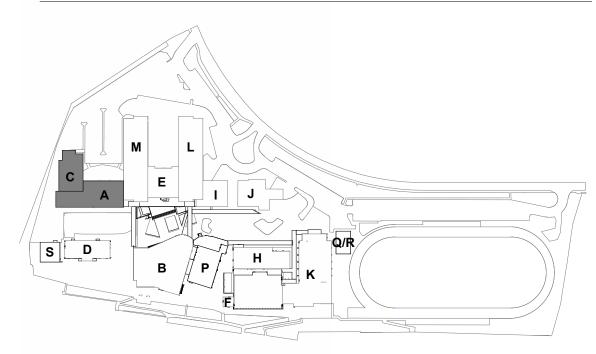


- I. PROVIDE AND INSTALL NEW DETECTOR RELAY BASE TO REPLACE EXISTING. DEVICE SHALL CLOSE FIRE SMOKE DAMPER UPON LOCAL AREA DETECTION. INTERCEPT EXISTING WIRING TO FSD, RECONNECT COMPLETE AND TEST OPERATION.
- 2. RECONNECT EXISTING BRANCH CIRCUIT(S) COMPLETE TO EQUIPMENT SHOWN.
- 3. ALL EXISTING DOOR HOLDERS SHALL BE PROTECTED IN PLACE, AND THIER EXISTING WIRING BACK TO NEAREST POWER SUPPLY. THE POWER SUPPLY SHALL BE REPLACED, AND THE DOOR HOLDER CIRCUIT SHALL BE RECONNECT COMPLETE TO NEW EQUIPMENT AND TESTED.
- TYPICAL THIS PROJECT, WHERE ABOVE CEILING HEAT DETECTORS ARE LOCATED AT HARD LID CEILINGS, 12"X12" ACCESS HATCH SHALL BE PROVIDED AND LABELED (HEAT DETECTOR - "####") WHERE "####" IS THE DEVICE ID.

### LINETYPE LEGEND

- EXISTING CEILING/WALL DEVICE TO BE REMOVED\*
- NEW CEILING/WALL DEVICE AT NEW LOCATION. EXTEND CONDUIT AS REQUIRED.
- NEW CEILING/WALL DEVICE AT EXISTING LOCATION\*\*
  - \* REFER TO GENERAL DEMOLITION NOTES FOR REQUIREMENTS
  - \*\* PROVIDE BOX EXTENSION TO ALLOW FOR INCREASED DEPTH OF SPEAKER DEVICE

#### KEY PLAN





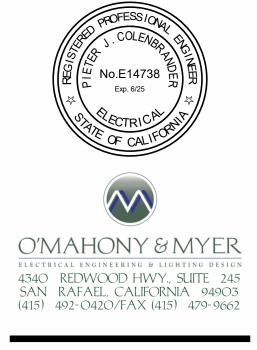
## San Rafael City Schools

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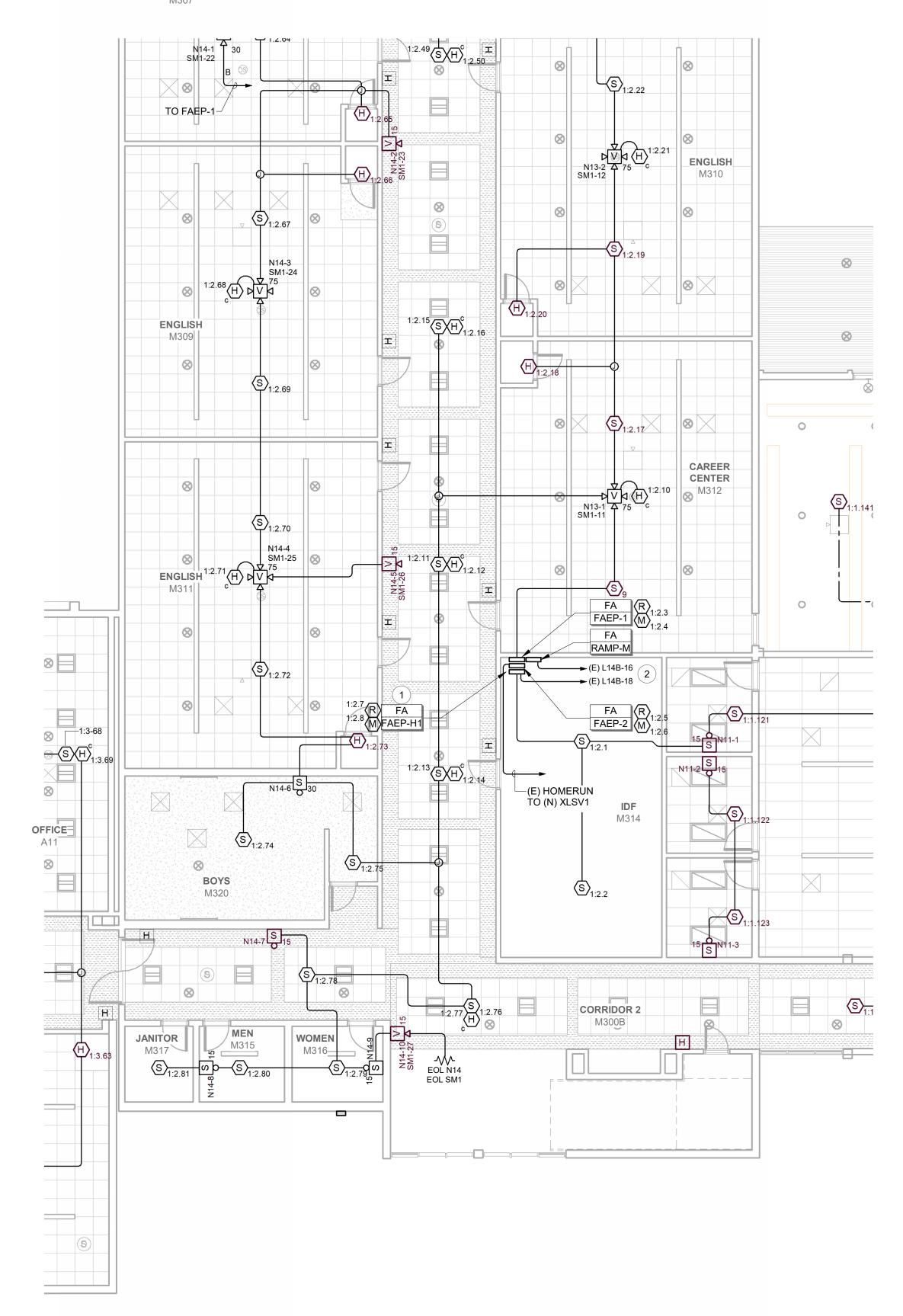
417 Montgomery Street Suite 400 San Francisco, California 94104 USA (415) 981-2345 WWW.HED.DESIGN

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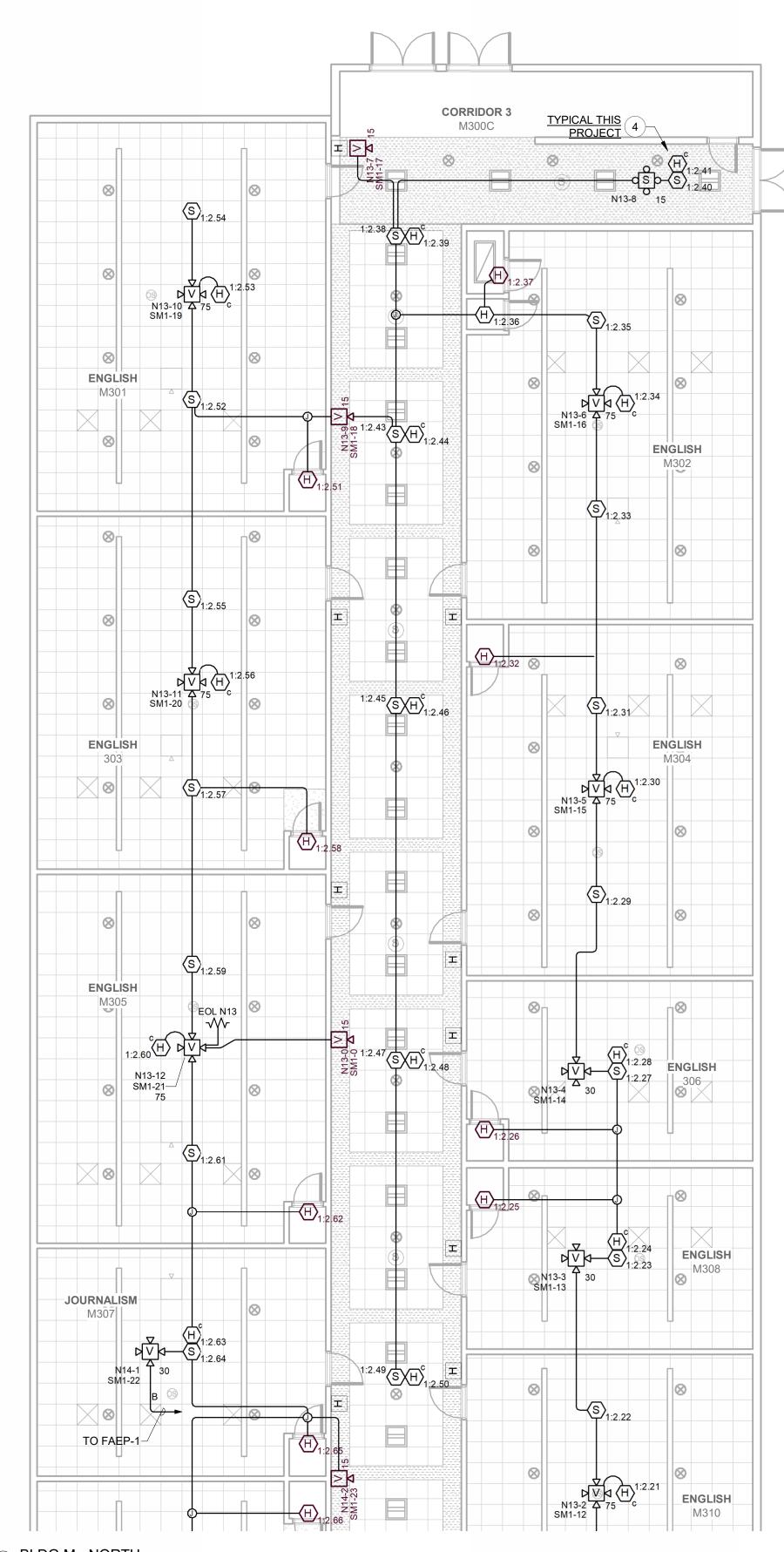
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#### 2 BLDG M - SOUTH 1/8" = 1'-0"



JOURNALISM M307



1 BLDG M - NORTH 1/8" = 1'-0"

#### **# NUMBERED SHEET NOTES**

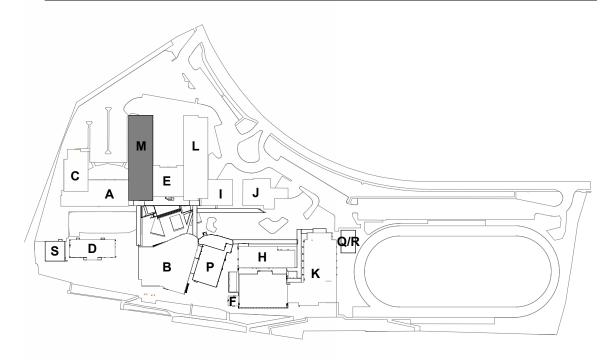
TESTED.

- INTERCEPT EXISTING DOOR HOLDER CIRCUITS AND EXTEND TO NEW POWER SUPPLY. PROGRAM MODULES TO RELEASE MAGNETIC HOLDERS UPON ACTIVATION OF ALARM.
   RECONNECT EXISTING BRANCH CIRCUIT(S) COMPLETE TO EQUIPMENT SHOWN.
- ALL EXISTING DOOR HOLDERS SHALL BE PROTECTED IN PLACE, AND THEIR EXISTING WIRING BACK TO NEAREST POWER SUPPLY. THE POWER SUPPLY SHALL BE REPLACED, AND THE DOOR HOLDER CIRCUIT SHALL BE RECONNECT COMPLETE TO NEW EQUIPMENT AND
- 4. TYPICAL THIS PROJECT, WHERE ABOVE CEILING HEAT DETECTORS ARE LOCATED AT HARD LID CEILINGS, 12"X12" ACCESS HATCH SHALL BE PROVIDED AND LABELED (HEAT DETECTOR - "####"") WHERE "####" IS THE DEVICE ID.

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### KEY PLAN





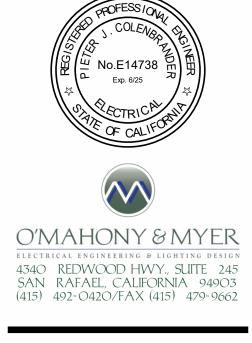
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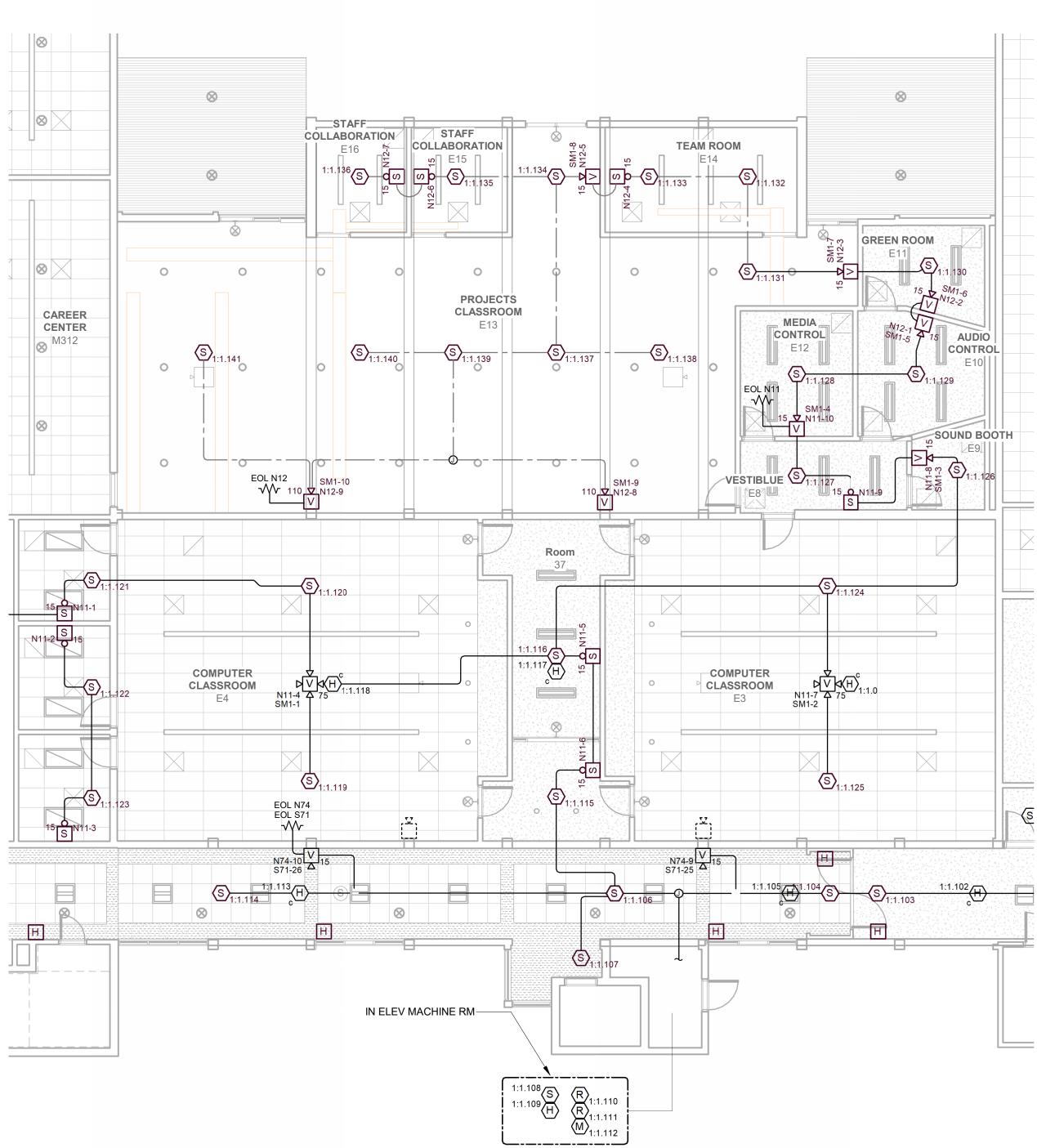
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1 BLDG E 1/8" = 1'-0"



**Room** L109

Room 110A

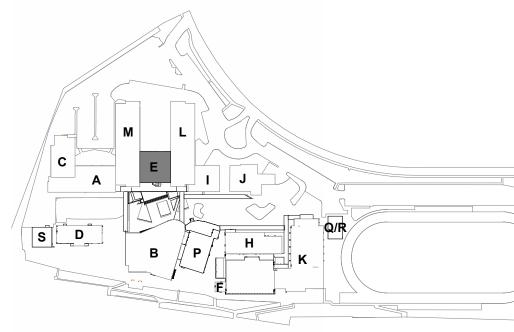
> Room L119

FSD

### LINETYPE LEGEND

- $\bigcirc$  []]  $\Rightarrow$  EXISTING CEILING/WALL DEVICE TO BE REMOVED\*
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#### KEY PLAN



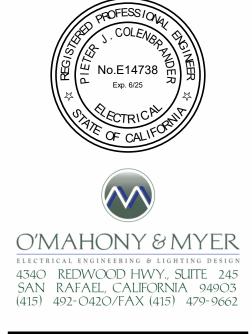


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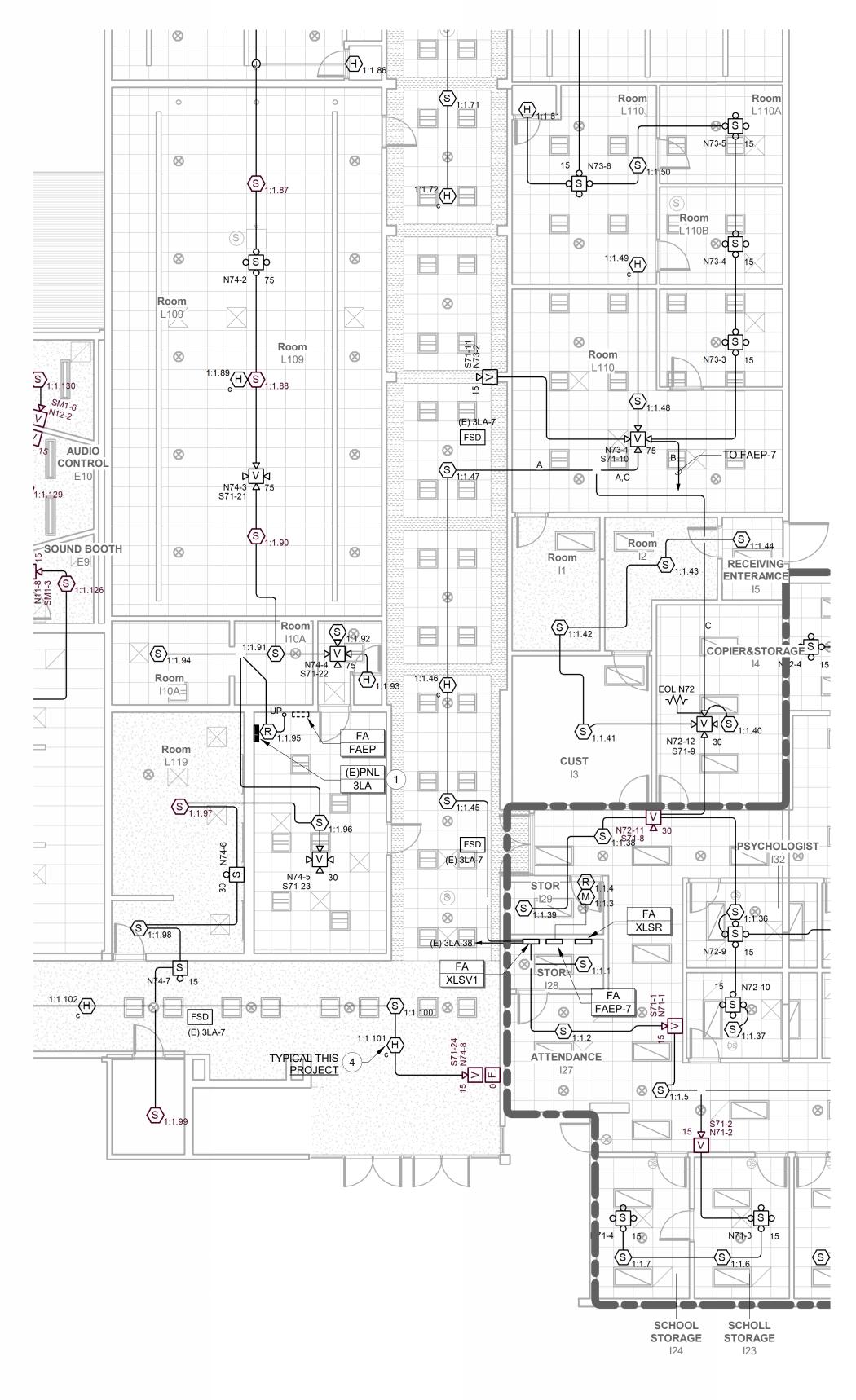
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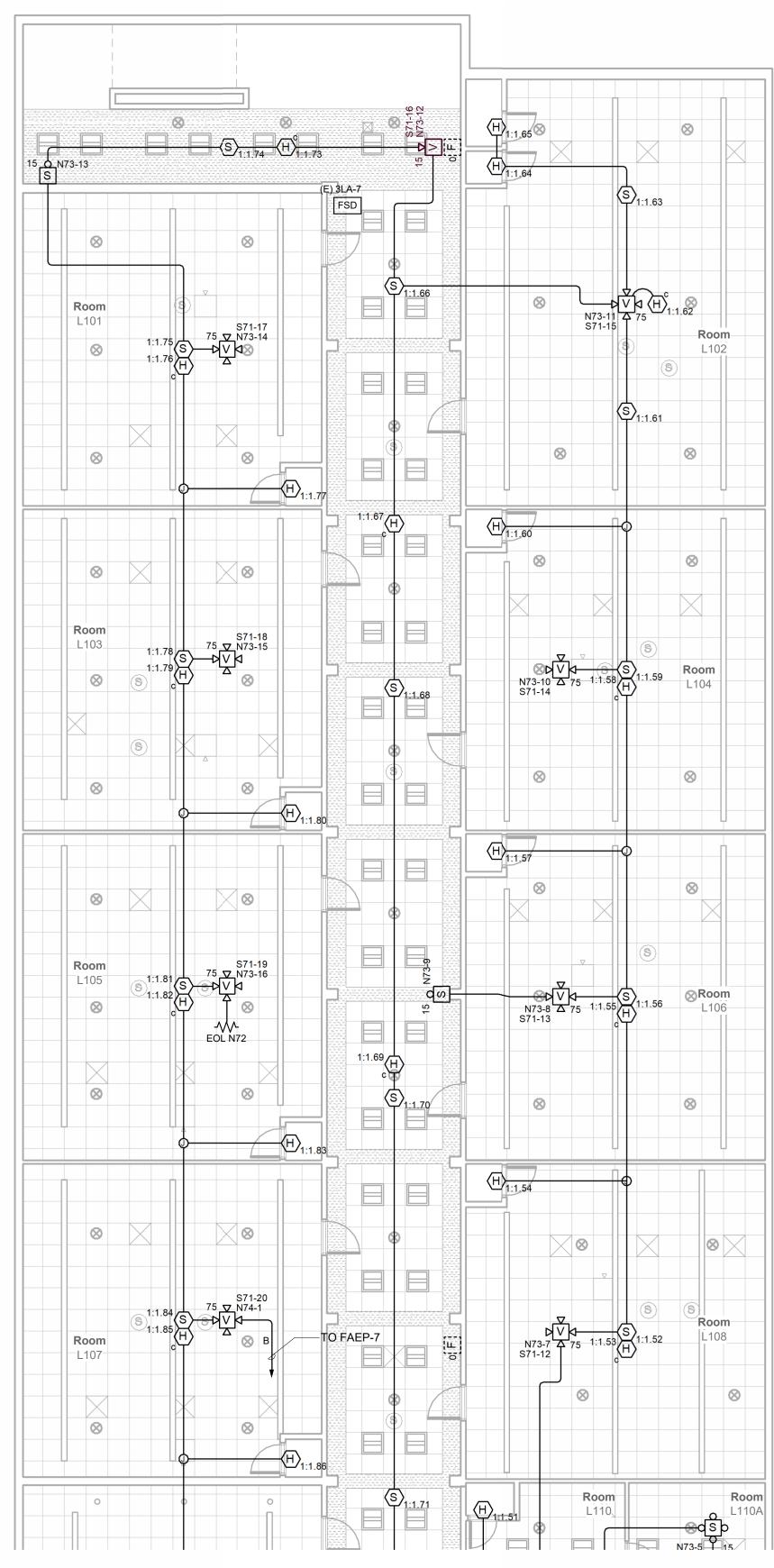


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2023-SR001-003 D LEVEL 1 -FLOOR PLAN -FIRE ALARM -BLDG E FE301C



2 BLDG L - SOUTH 1/8" = 1'-0"



1 BLDG L - NORTH 1/8" = 1'-0"

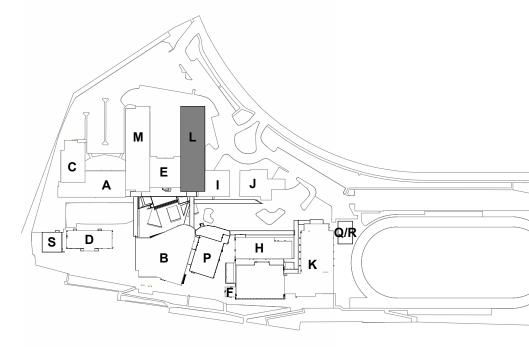
#### **# NUMBERED SHEET NOTES**

- 1. INTERCEPT EXISTING BRANCH CIRCUIT TO FSD'S SHOWN AT THIS LEVEL. PROVIDE AND INSTALL RELAY MODULE TO FACILITATE FSD CLOSURE UPON ACTIVATION OF ALARM. 2. NOT USED
- 3. NOT USED
- TYPICAL THIS PROJECT, WHERE ABOVE CEILING HEAT DETECTORS ARE LOCATED AT HARD LID CEILINGS, 12"X12" ACCESS HATCH SHALL BE PROVIDED AND LABELED (HEAT DETECTOR "#####") WHERE "#####" IS THE DEVICE ID.

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- EXISTING CEILING/WALL DEVICE TO BE REMOVED\*
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#### KEY PLAN





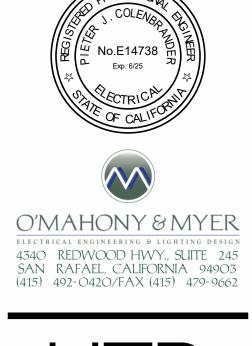


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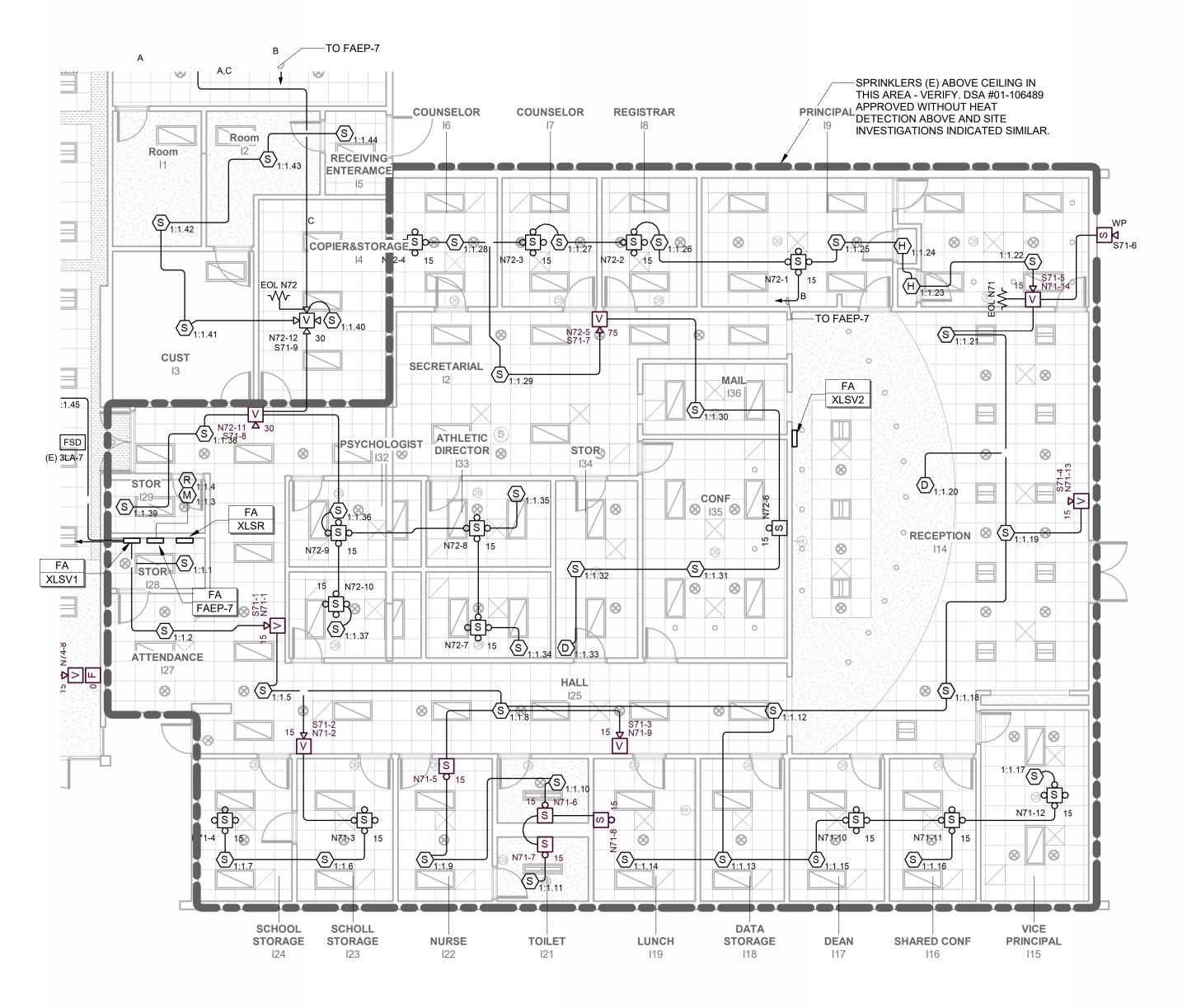


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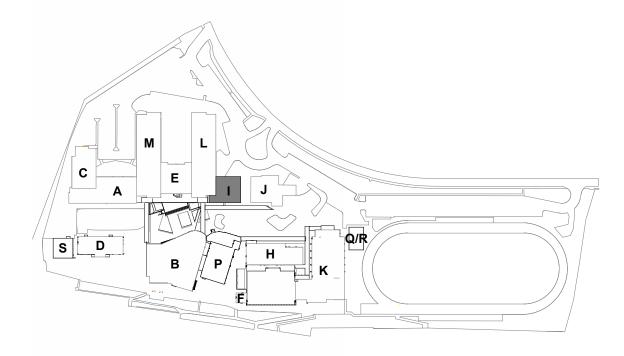


1 BLDG I 1/8" = 1'-0"

#### LINETYPE LEGEND

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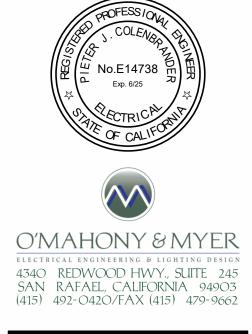


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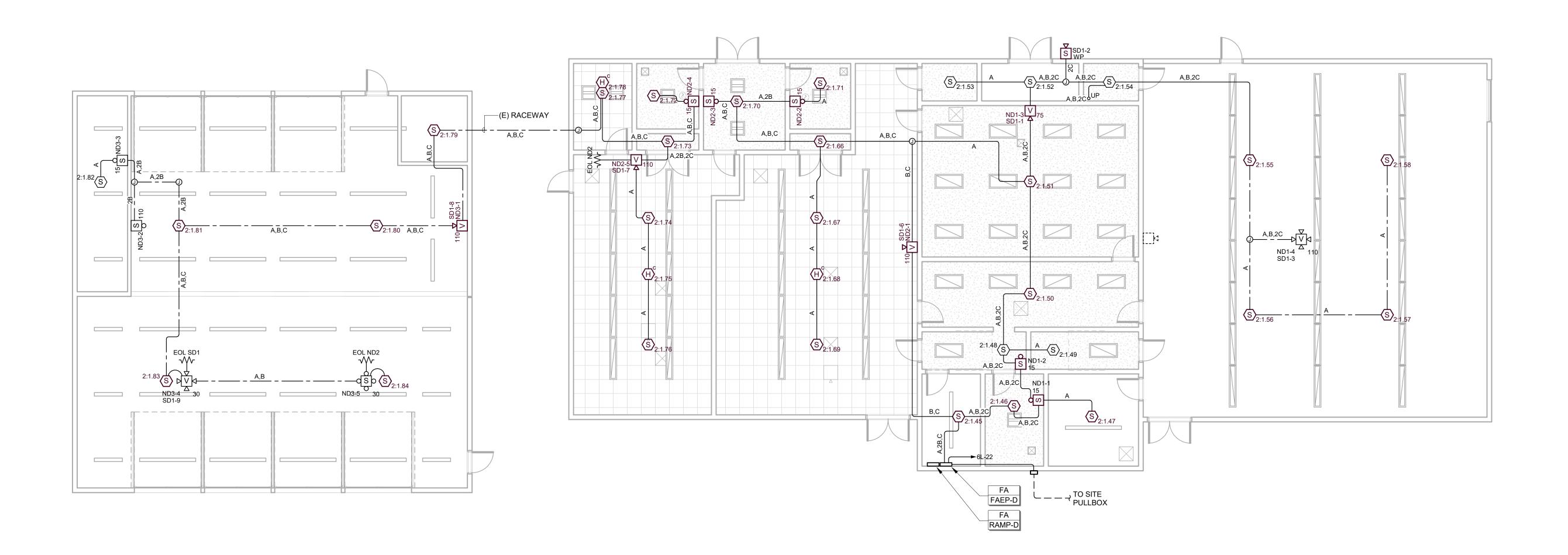
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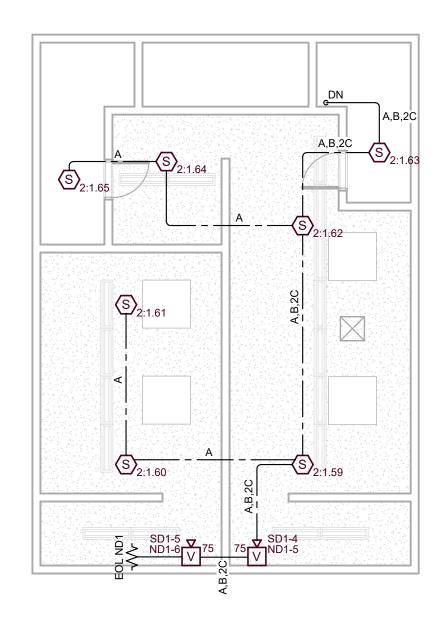


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1 BUILDING S & D 1/8" = 1'-0"





2 LVL2 - BLDG D 1/8" = 1'-0"

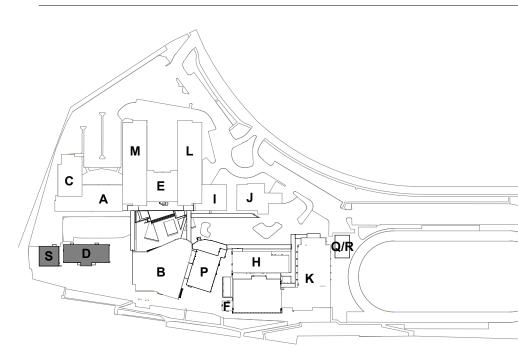
#### **# NUMBERED SHEET NOTES**

1. RECONNECT EXISTING BRANCH CIRCUIT(S) COMPLETE TO EQUIPMENT SHOWN

#### LINETYPE LEGEND

- EILING CEILING/WALL DEVICE TO BE REMOVED\*
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#### KEY PLAN





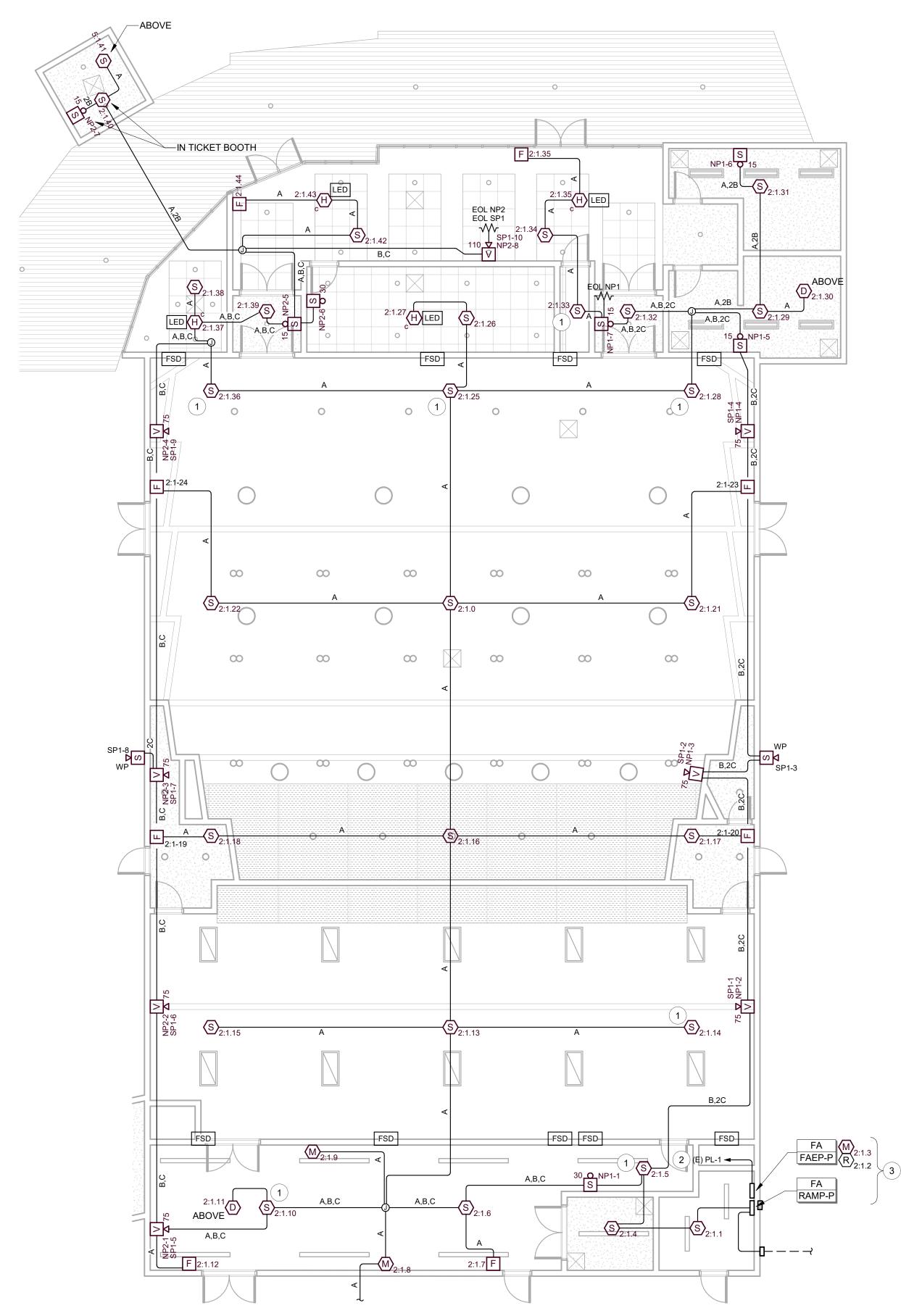


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1 BUILDING P 1/8" = 1'-0"



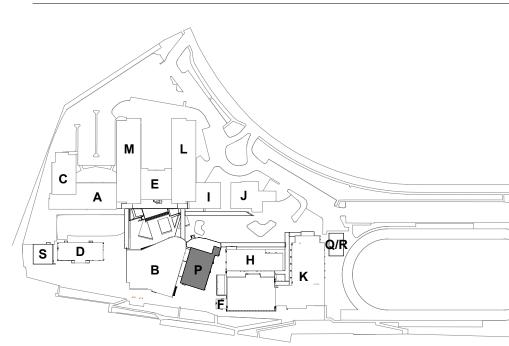
#### **# NUMBERED SHEET NOTES**

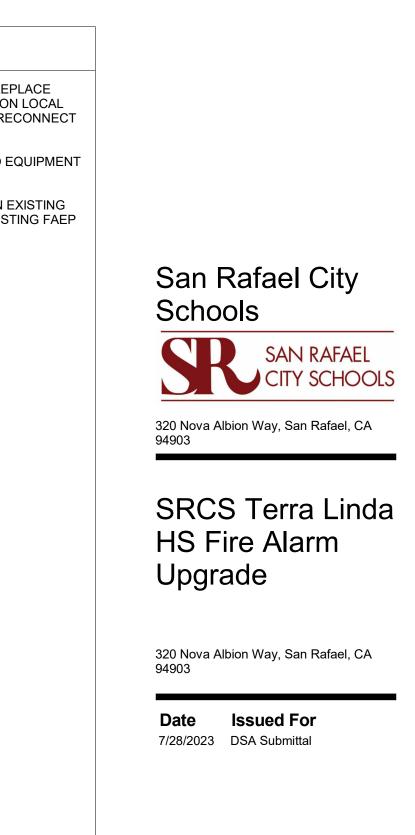
- 1. PROVIDE AND INSTALL NEW DETECTOR RELAY BASE TO REPLACE EXISTING. DEVICE SHALL CLOSE FIRE SMOKE DAMPER UPON LOCAL AREA DETECTION. INTERCEPT EXISTING WIRING TO FSD, RECONNECT COMPLETE AND TEST OPERATION.
- 2. RECONNECT EXISTING BRANCH CIRCUIT(S) COMPLETE TO EQUIPMENT SHOWN
- 3. EQUIPMENT LOCATIONS TO BE DETERMINED. THERE IS AN EXISTING CONFLICT IN THIS SPACE THAT DOES NOT ALLOW THE EXISTING FAEP TO OPEN.

### LINETYPE LEGEND

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### KEY PLAN

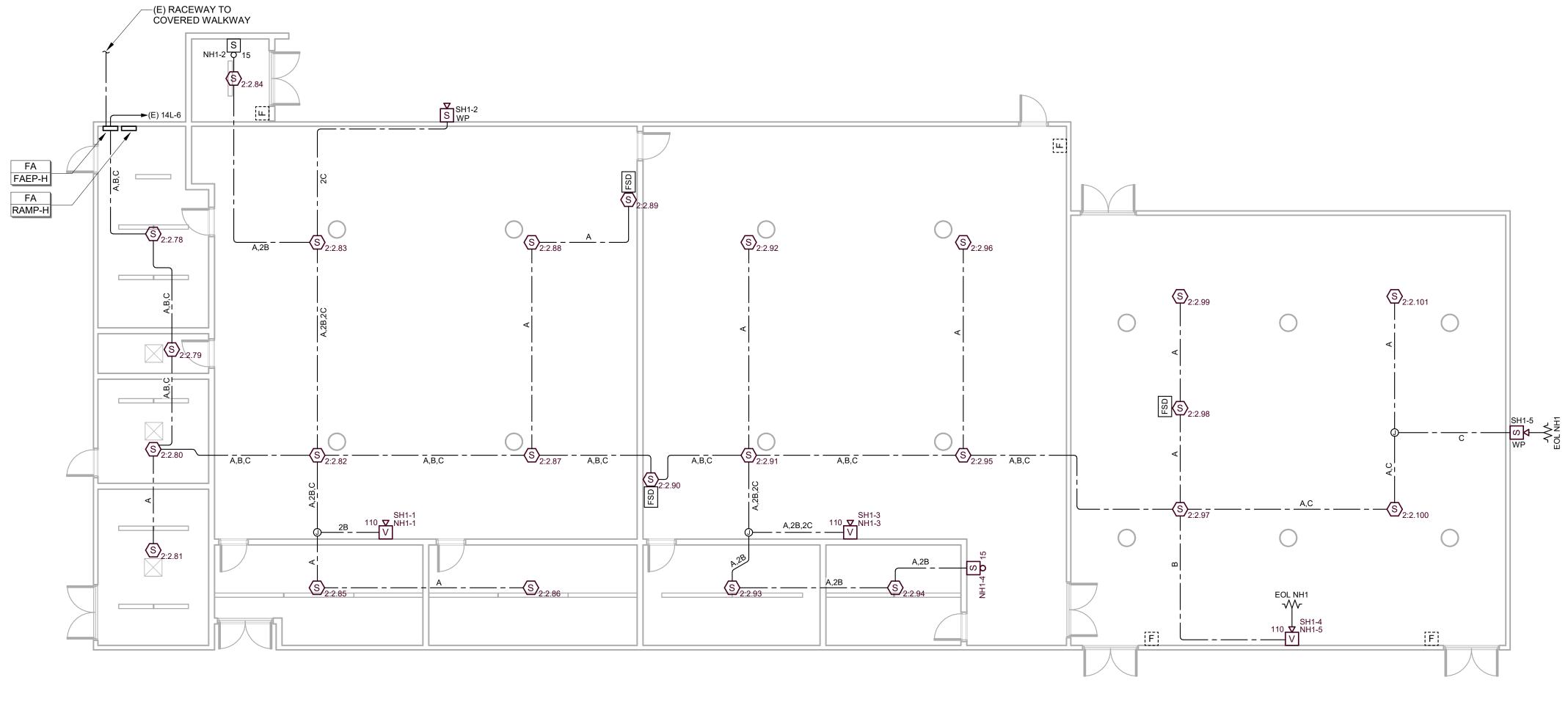








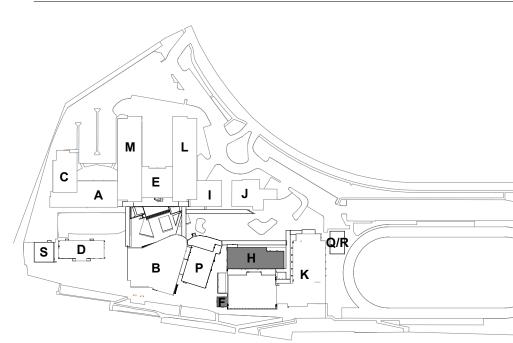
1 BUILDING H 1/8" = 1'-0"



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### KEY PLAN





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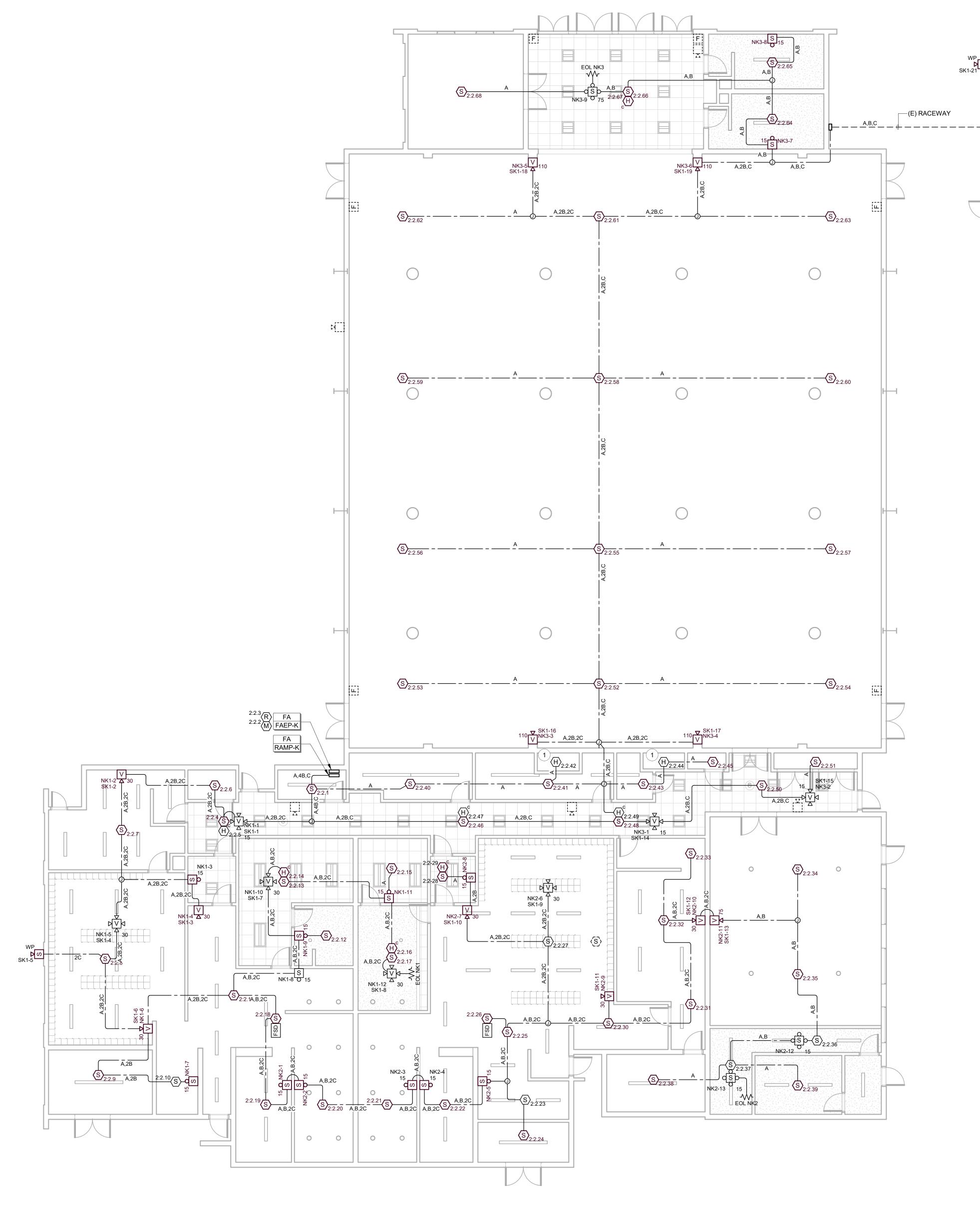
320 Nova Albion Way, San Rafael, CA 94903

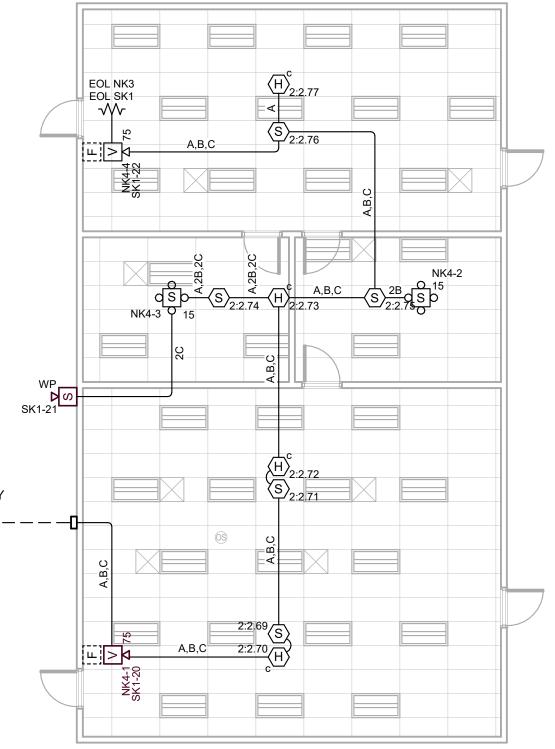
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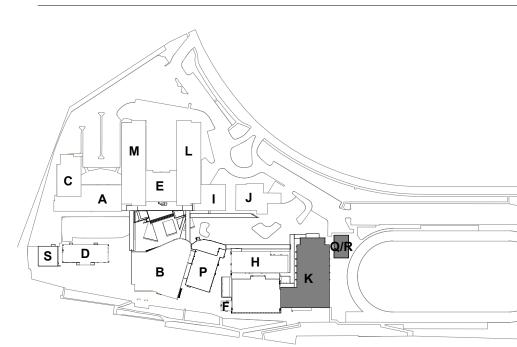


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#### LINETYPE LEGEND

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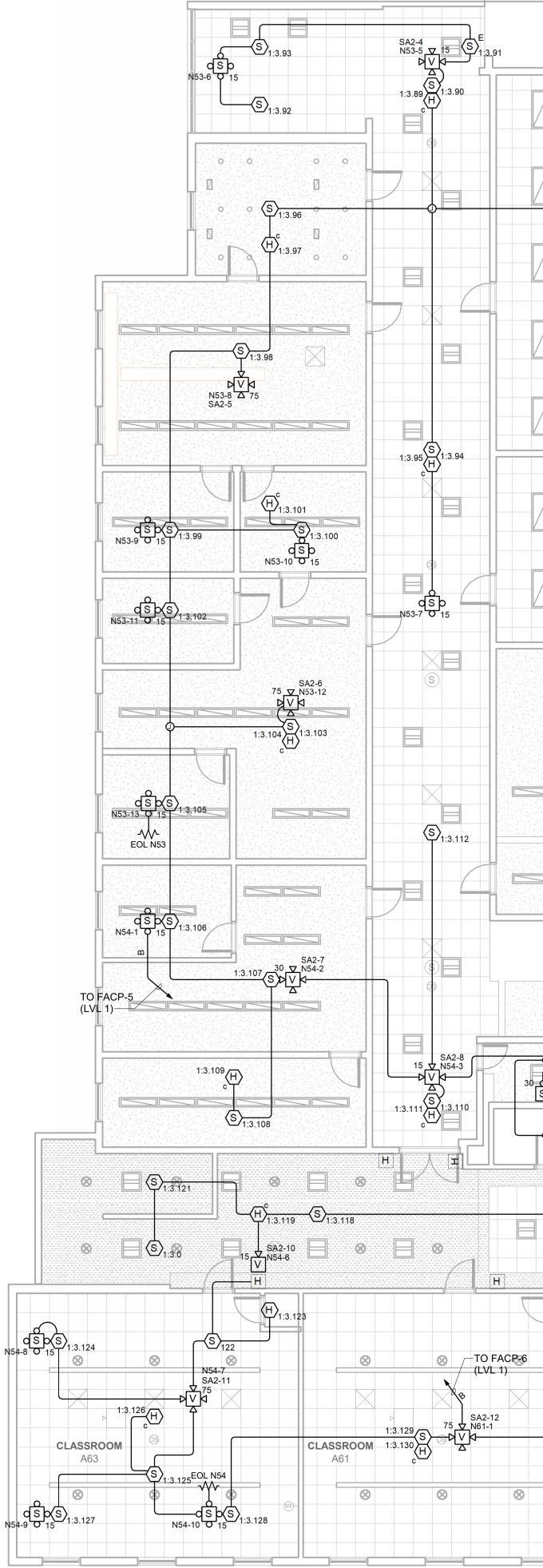
#### KEY PLAN





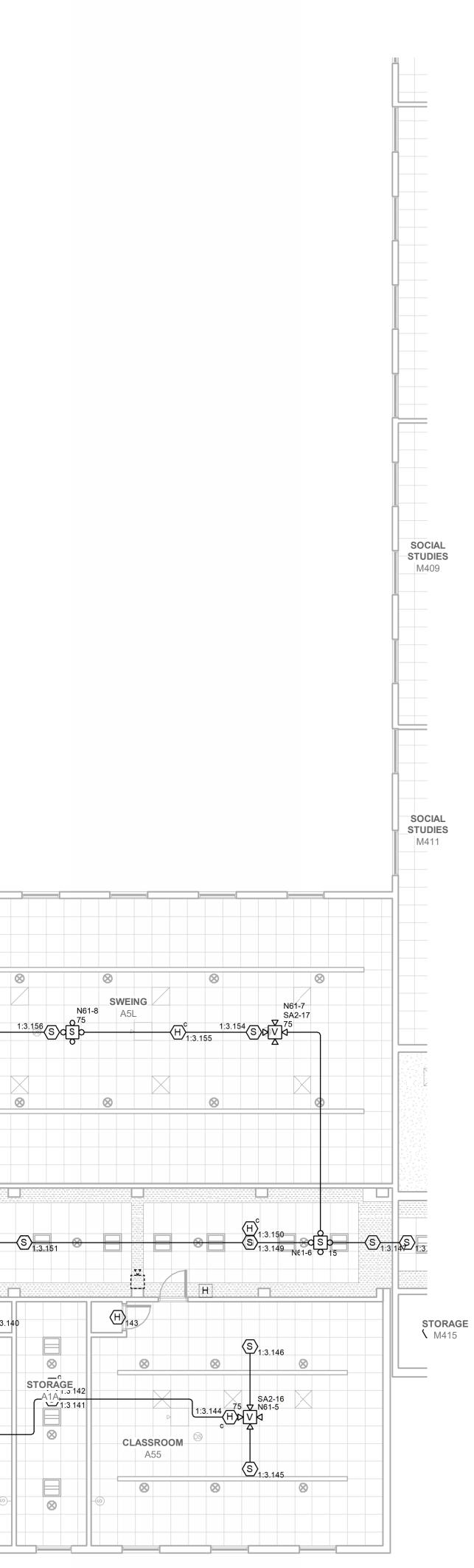






1 LVL 2 - BLDG A & C 1/8" = 1'-0"

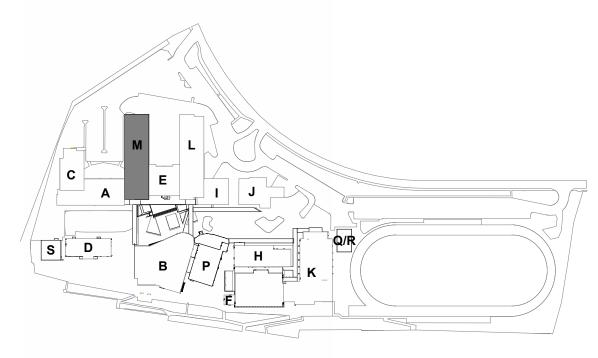
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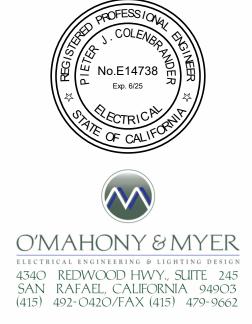


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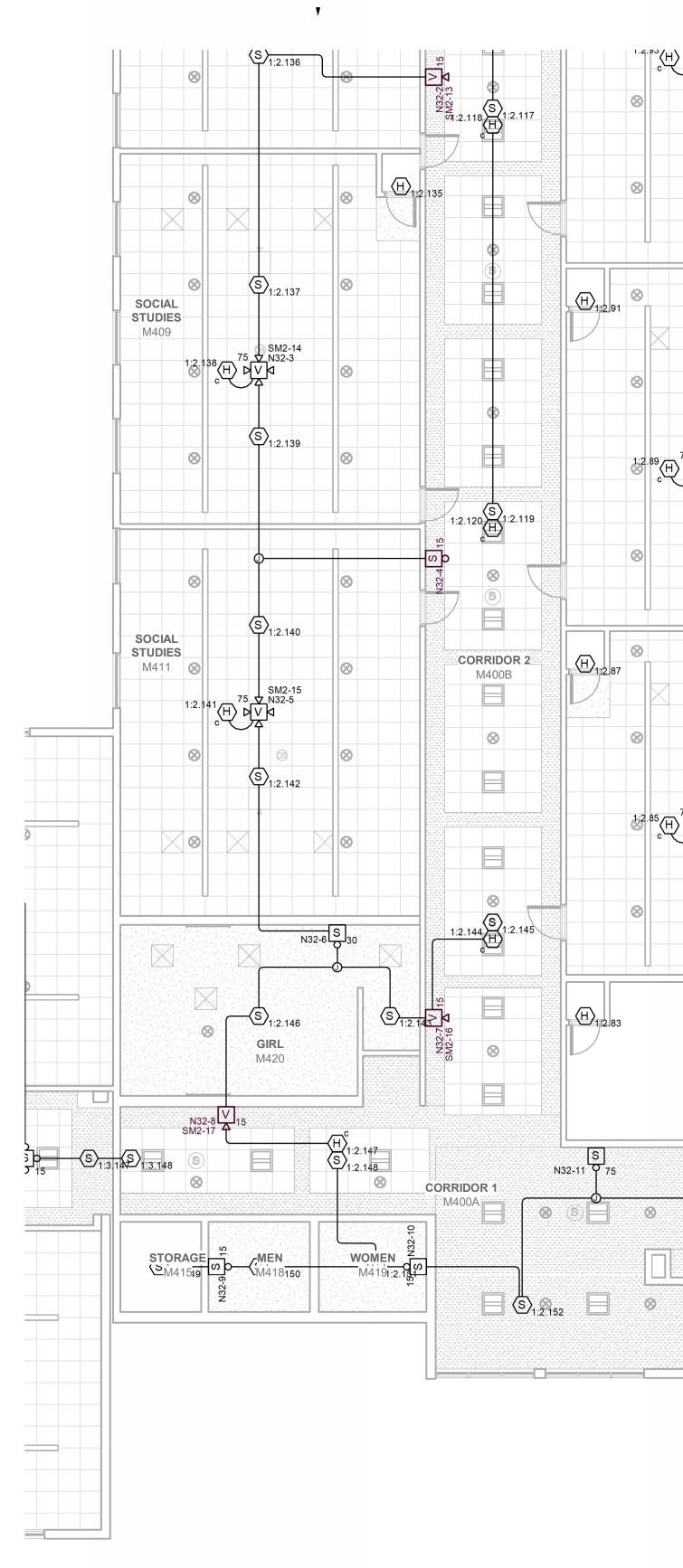


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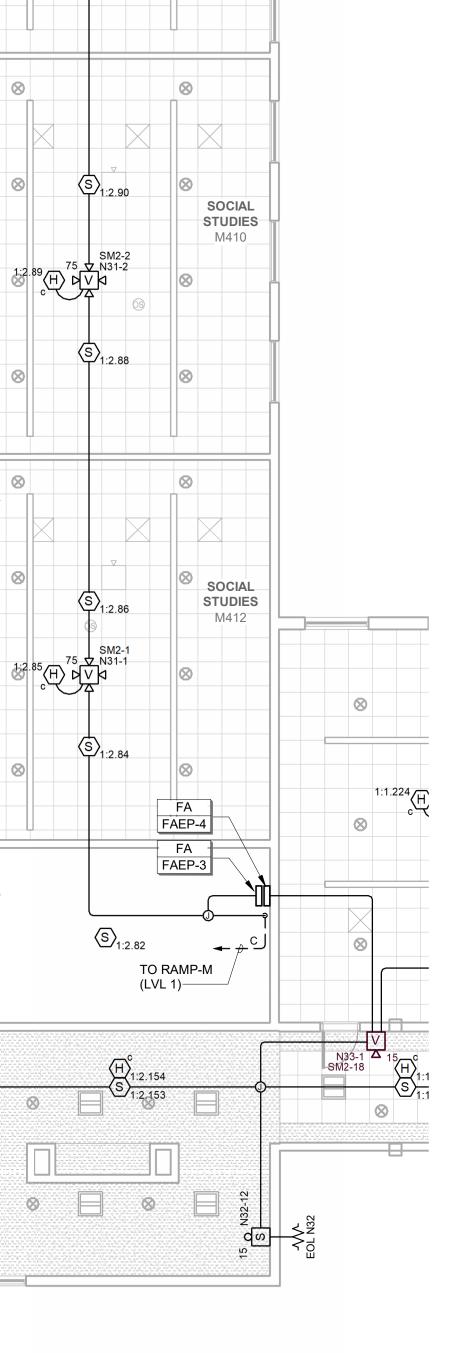
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D LEVEL 2 -FLOOR PLAN -FIRE ALARM -BLDG A & C FE302A

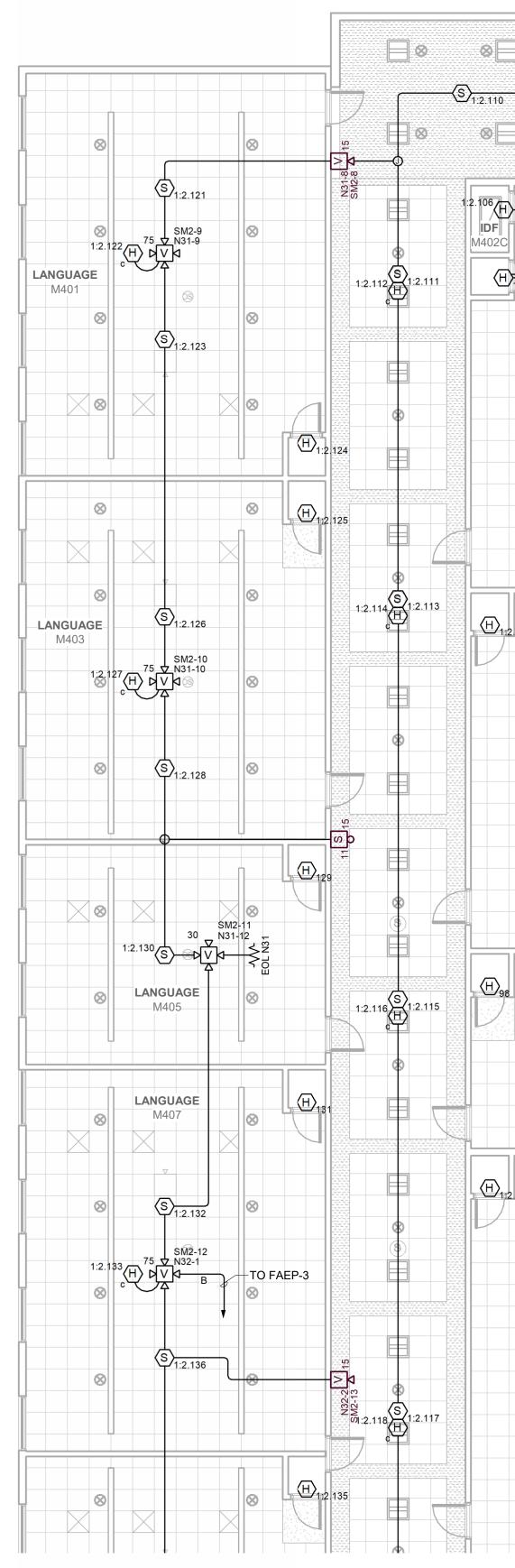


B TO FAEP-3

2 LVL 2 - BLDG M - SOUTH 1/8" = 1'-0"



SOCIAL STUDIES M408



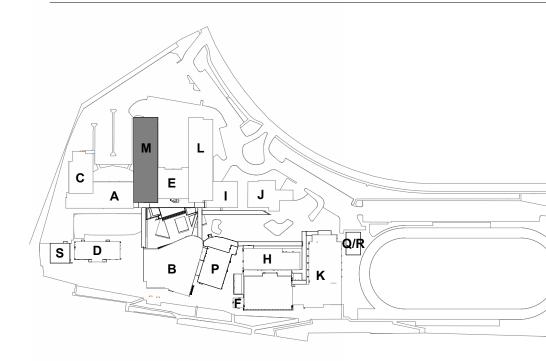
1 <u>LVL 2 - BLDG M - NORTH</u> 1/8" = 1'-0"

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#### LINETYPE LEGEND

- EXISTING CEILING/WALL DEVICE TO BE REMOVED\*
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  - \*\* PROVIDE BOX EXTENSION TO ALLOW FOR INCREASED DEPTH OF SPEAKER DEVICE

#### KEY PLAN





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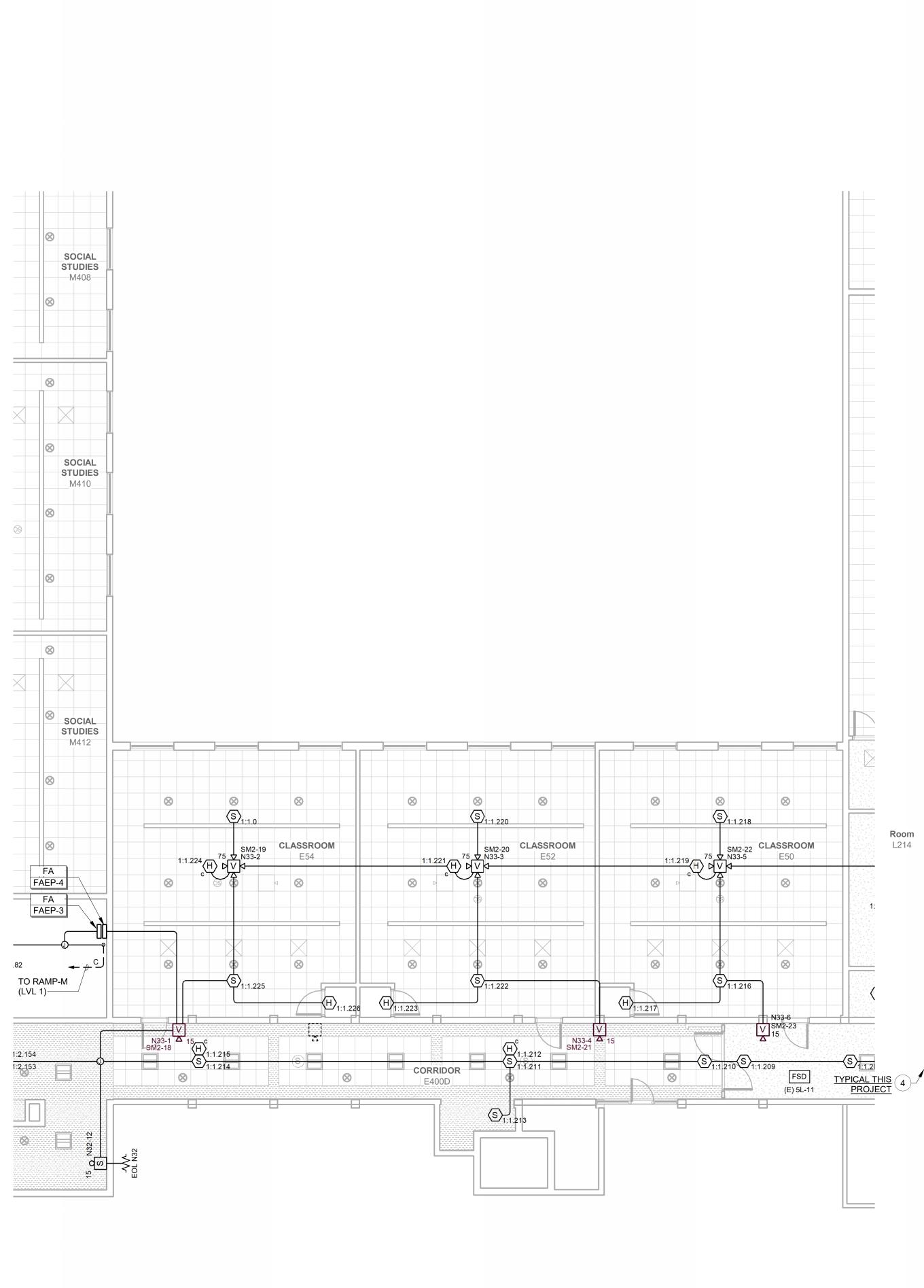


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1) <u>LVL 2 - BLDG E</u> 1/8" = 1'-0"

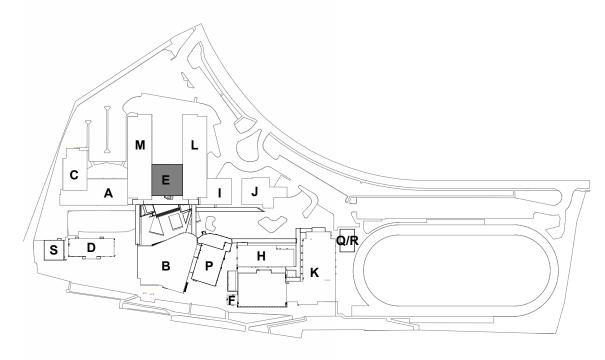
Room

L214

### LINETYPE LEGEND

- EXISTING CEILING/WALL DEVICE TO BE REMOVED\*
- NEW CEILING/WALL DEVICE AT NEW LOCATION. EXTEND CONDUIT AS REQUIRED.
- NEW CEILING/WALL DEVICE AT EXISTING LOCATION\*\*
  - \* REFER TO GENERAL DEMOLITION NOTES FOR REQUIREMENTS
  - \*\* PROVIDE BOX EXTENSION TO ALLOW FOR INCREASED DEPTH OF SPEAKER DEVICE

### KEY PLAN





320 Nova Albion Way, San Rafael, CA 94903

SRCS Terra Linda HS Fire Alarm Upgrade

320 Nova Albion Way, San Rafael, CA 94903

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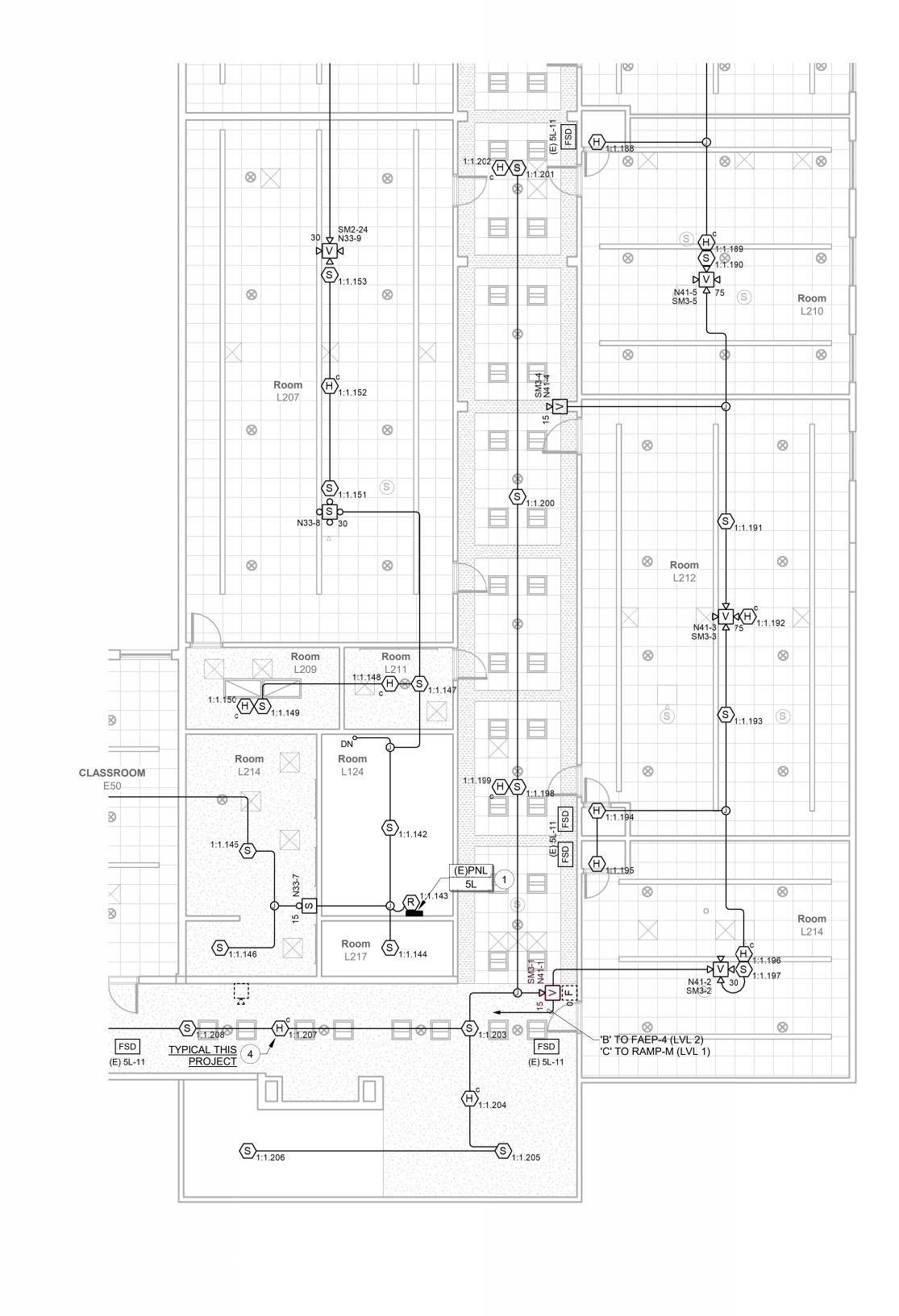
417 Montgomery Street Suite 400 San Francisco, California (415) 981-2345 WWW.HED.DESIGN



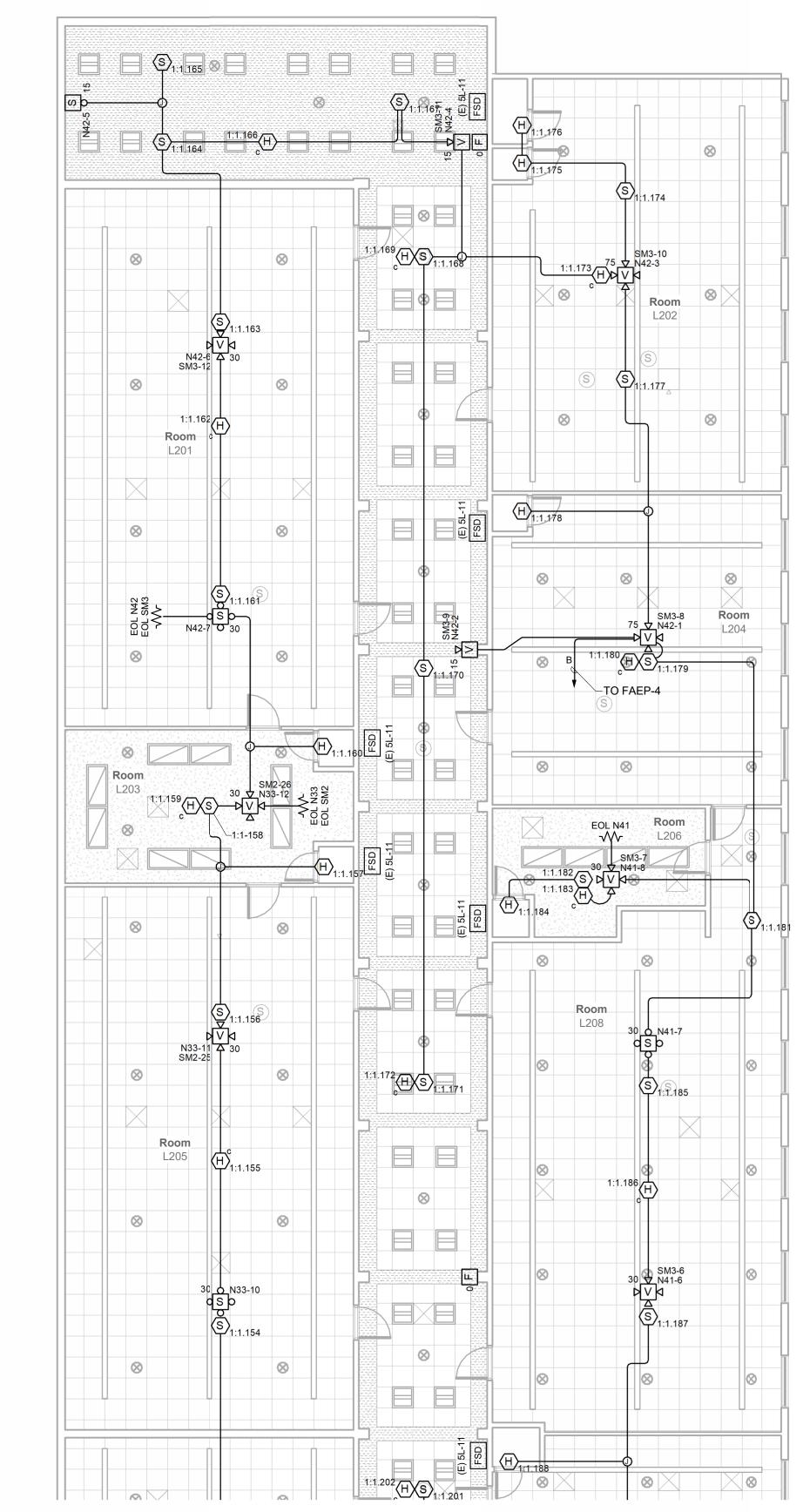
Ζ

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2023-SR001-003 EVEL 2 -FLOOR PLAN -FIRE ALARM -BLDG E FE302C



2 LVL 2 - BLDG L - SOUTH 1/8" = 1'-0"

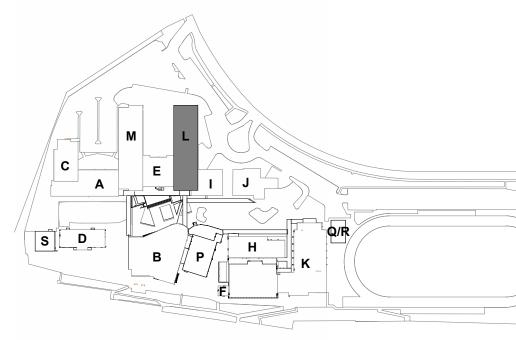


1 <u>LVL 2 - BLDG L - NORTH</u> 1/8" = 1'-0"

### LINETYPE LEGEND

- $\bigcirc$  []]  $\Rightarrow$  EXISTING CEILING/WALL DEVICE TO BE REMOVED\*
- NEW CEILING/WALL DEVICE AT NEW LOCATION. EXTEND CONDUIT AS REQUIRED.
- NEW CEILING/WALL DEVICE AT EXISTING LOCATION\*\*
  - \* REFER TO GENERAL DEMOLITION NOTES FOR REQUIREMENTS
  - \*\* PROVIDE BOX EXTENSION TO ALLOW FOR INCREASED DEPTH OF SPEAKER DEVICE

### KEY PLAN



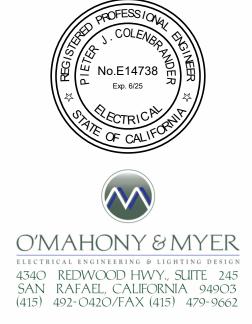


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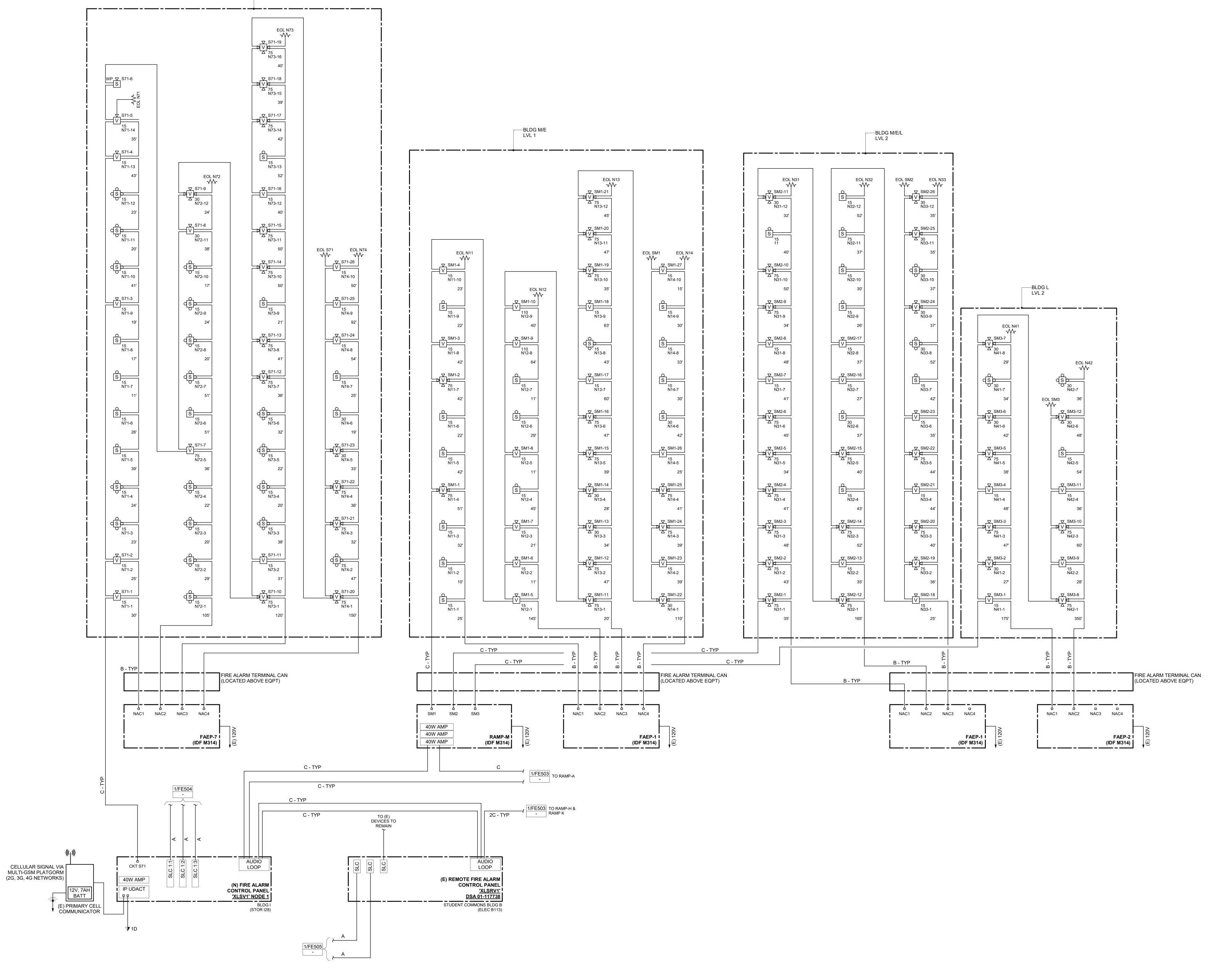




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2023-SR001-003 OLEVEL 2 -FIRE ALARM -BLDG L FE302D BLDG I/L LVL 1

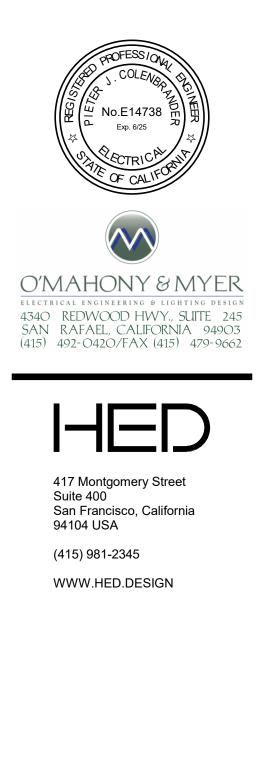




SRCS Terra Linda HS Fire Alarm Upgrade

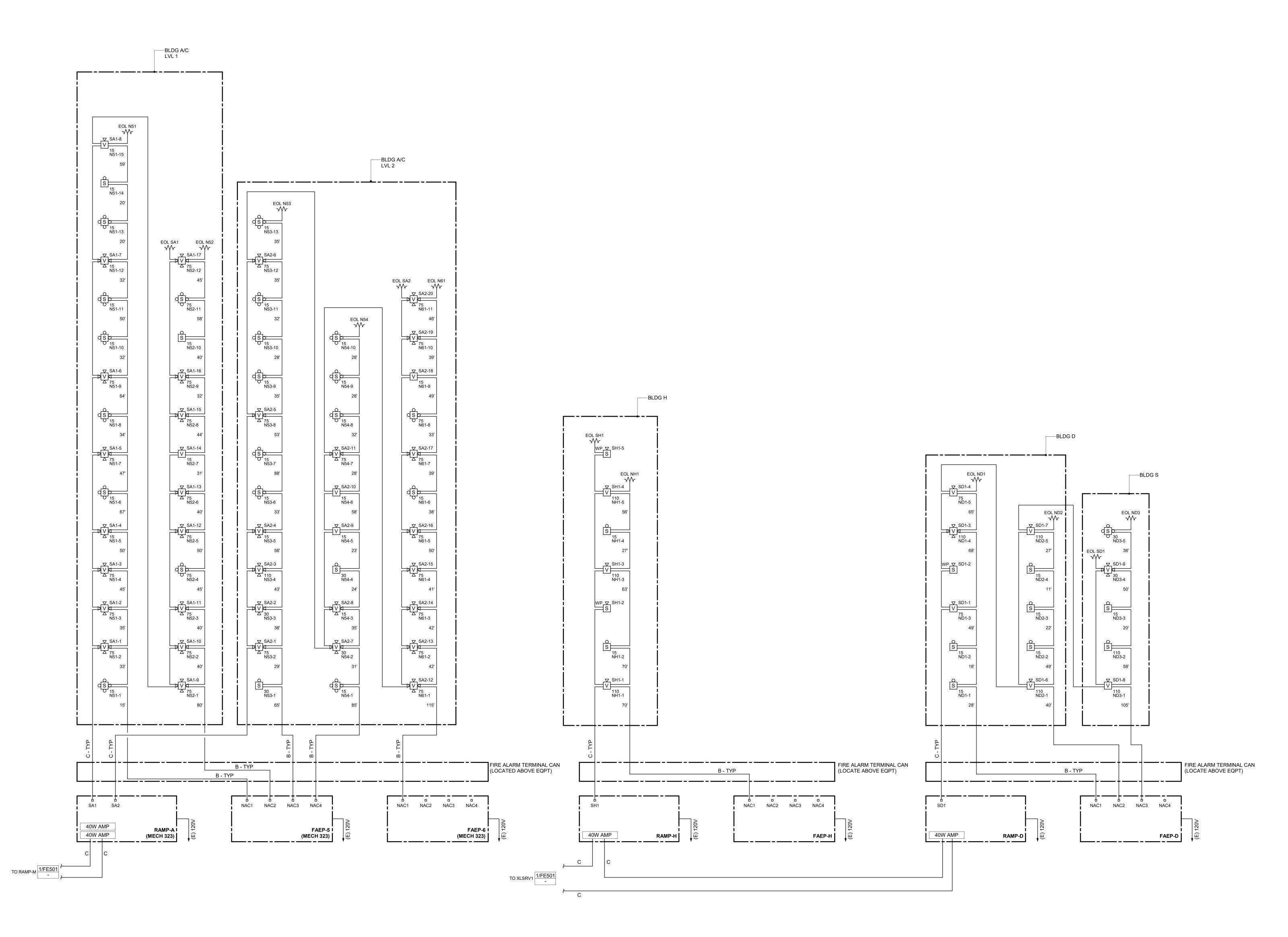
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#### 1 FA RISER - NAC CIRCUITS NO SCALE





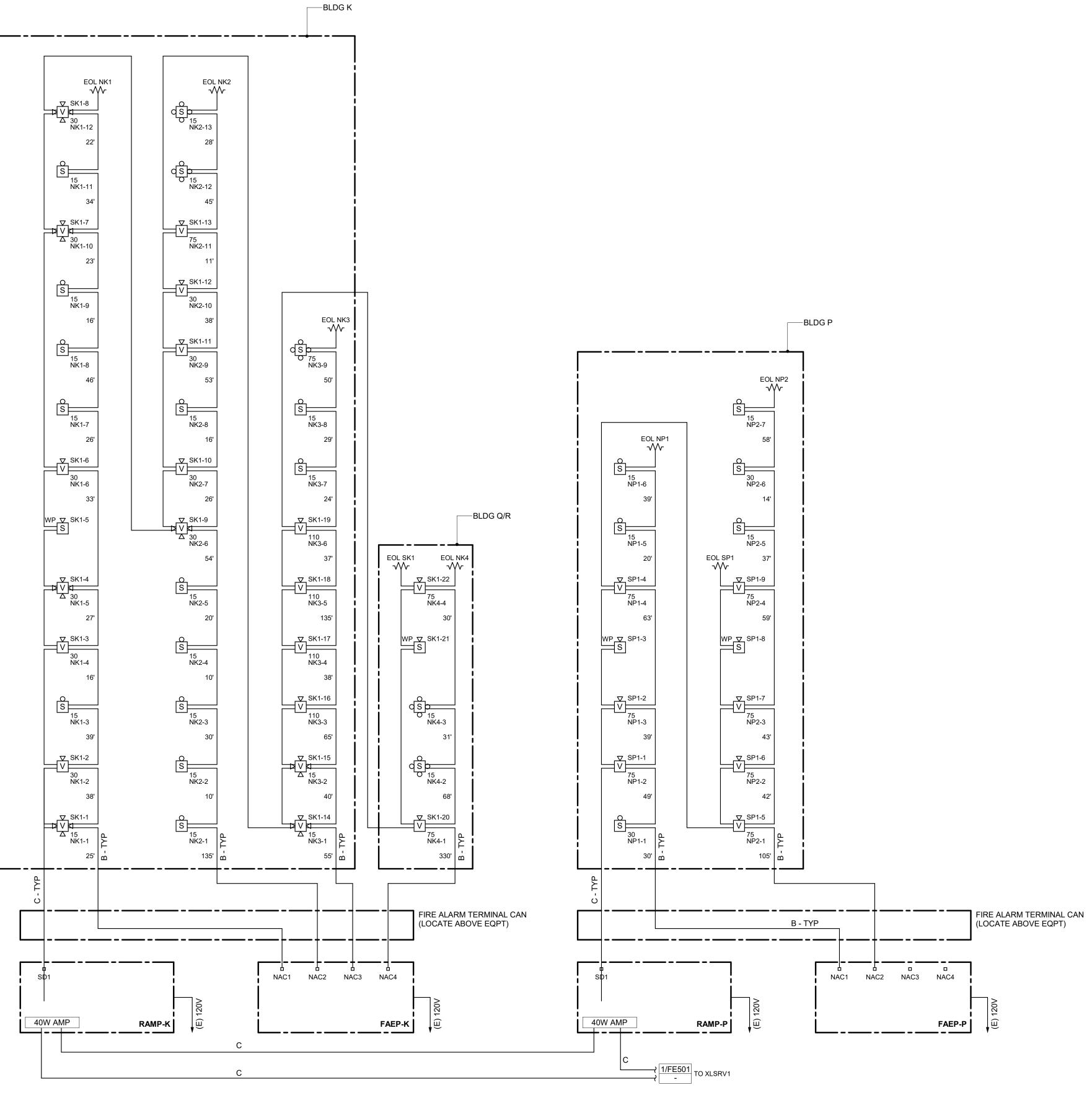
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RISER DIAGRAM - FIRE ALARM



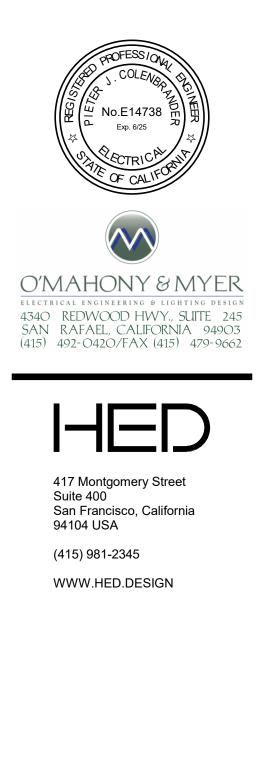




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$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$(H) \xrightarrow{H} (C) \xrightarrow{H} ($	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
$(S)_{1:1.19} (S)_{1:1.22} (S)_{1:1.59} (H)_{1:1.62}^{c} (S)_{1:1.99} (H)_{1:1.102}^{c} (S)_{1:1.139} (S)_{1:1.142} (S)_{1:1.179} (S)_{1:1.182} (H)_{1:1.219}^{c} (S)_{1:1.222}$	$(S)_{1:2.19}$ $(S)_{1:2.22}$ $(S)_{1:2.59}$ $(H)_{1:2.62}$ $(S)_{1:2.99}$ $(H)_{1:2.102}$ $(S)_{1:2.139}$ $(S)_{1:2.142}$	$(S)_{1:3.19}$ $(R)_{1:3.22}$ $(S)_{1:3.59}$ $(H)_{1:3.62}$ $(S)_{1:3.99}$ $(S)_{1:3.102}$ $(H)_{1:3.139}$ $(H)_{1:3.142}$
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$(H)_{1:2.18} (S)_{1:2.23} (H)_{1:2.58} (H)_{1:2.63} (H)_{98} (S)_{1:2.103} (H)_{1:2.138} (S)_{1:2.143}$	$(S)_{1:3.18}$ $(M)_{1:3.23}$ $(H)_{1:3.58}$ $(H)_{1:3.63}$ $(S)_{1:3.98}$ $(S)_{1:3.103}$ $(S)_{1:3.138}$ $(H)_{143}$
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$(S)_{1:3.17}$ $(S)_{1:3.24}$ $(S)_{1:3.57}$ $(S)_{1:3.64}$ $(H)_{1:3.97}^{c}$ $(H)_{1:3.104}^{c}$ $(H)_{1:3.137}^{c}$ $(H)_{1:3.144}^{c}$
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$(H)^{c}_{1:2.16} (H)^{c}_{1:2.25} (H)^{c}_{1:2.56} (H)_{1:2.65} (S)_{1:2.96} (H)_{1:2.105} (S)_{1:2.136} (S)_{1:2.145}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c c} & & \\ \hline \\ & \\ \\ & \\ \\ \end{array} \end{array} $	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$(S)_{1:2.13} \qquad (H)_{1:2.28}^{c} \qquad (H)_{1:2.53}^{c} \qquad (H)_{1:2.68}^{c} \qquad (H)_{1:2.93}^{c} \qquad (S)_{1:2.108} \qquad (H)_{1:2.133}^{c} \qquad (S)_{1:2.148}$	$(S)_{1:3.13}$ $(S)_{1:3.28}$ $(H)_{1:3.53}$ $(S)_{1:3.68}$ $(S)_{1:3.93}$ $(S)_{1:3.108}$ $(S)_{1:3.133}$ $(S)_{1:3.148}$
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$(S)_{1:2.11} (H)_{1:2.30}^{c} (H)_{1:2.51} (S)_{1:2.70} (H)_{1:2.91} (S)_{1:2.110} (H)_{131} (S)_{1:2.150}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$ \begin{array}{c c} & & \\ \hline S \\ 1:1.9 \end{array}  \begin{array}{c c} S \\ 1:1.32 \end{array}  \begin{array}{c c} H \\ H \\ 1:1.49 \end{array}  \begin{array}{c c} H \\ H \\ 1:1.72 \end{array}  \begin{array}{c c} H \\ H \\ 1:1.89 \end{array}  \begin{array}{c c} H \\ H \\ 1:1.12 \end{array}  \begin{array}{c c} S \\ H \\ 1:1.129 \end{array}  \begin{array}{c c} H \\ H \\ H \\ 1:1.152 \end{array}  \begin{array}{c c} H \\ H \\ 1:1.169 \end{array}  \begin{array}{c c} H \\ H \\ 1:1.192 \end{array}  \begin{array}{c c} S \\ H \\ 1:1.192 \end{array}  \begin{array}{c c} S \\ H \\ 1:1.192 \end{array}$	$(S)_{9}$ $(H)_{1:2.32}$ $(S)_{1:2.49}$ $(S)_{1:2.72}$ $(H)_{1:2.89}$ $(H)_{1:2.112}$ $(H)_{129}$ $(S)_{1:2.152}$	$(S)_{1:3.9}$ $(S)_{1:3.32}$ $(H)_{1:3.49}$ $(H)_{1:3.72}$ $(H)_{1:3.89}$ $(S)_{1:3.112}$ $(S)_{1:3.129}$ $(S)_{1:3.129}$ $(S)_{1:3.129}$ $(S)_{1:3.129}$ $(S)_{1:3.129}$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$(M)_{1:2.8} \qquad (S)_{1:2.33} \qquad (H)_{1:2.48}^{c} \qquad (H)_{1:2.73} \qquad (S)_{1:2.88} \qquad (S)_{1:2.113} \qquad (S)_{1:2.128} \qquad (S)_{1:2.128} \qquad (S)_{1:2.153}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$ \begin{array}{c c} & & \\ \hline \\ & \\ \end{array} \end{array} \begin{array}{c} \\ 1:1.7 \end{array} \qquad \begin{array}{c} \\ \\ \\ \end{array} \end{array} \begin{array}{c} \\ \\ \\ 1:1.34 \end{array} \qquad \begin{array}{c} \\ \\ \\ \end{array} \end{array} \begin{array}{c} \\ \\ \\ \\ 1:1.47 \end{array} \qquad \begin{array}{c} \\ \\ \\ \end{array} \end{array} \begin{array}{c} \\ \\ \\ \\ \end{array} \end{array} \begin{array}{c} \\ \\ \\ \\ \end{array} \begin{array}{c} \\ \\ \\ \\ \end{array} \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \end{array} \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \\ \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \end{array} \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \\ \end{array} \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \end{array} \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	$\begin{array}{c} \left( \begin{array}{c} R \\ 1:2.7 \end{array} \right) \\ \left( \begin{array}{c} H \\ 1:2.34 \end{array} \right) \\ \left( \begin{array}{c} S \\ 1:2.47 \end{array} \right) \\ \left( \begin{array}{c} S \\ 1:2.74 \end{array} \right) \\ \left( \begin{array}{c} H \\ 1:2.87 \end{array} \right) \\ \left( \begin{array}{c} H \\ 1:2.114 \end{array} \right) \\ \left( \begin{array}{c} H \\ 1:2.127 \end{array} \right) \\ \left( \begin{array}{c} H \\ 1:2.154 \end{array} \right) \\ \left( \begin{array}{$	$(S)_{1:3.7} \qquad (H)_{1:3.34}^{c} \qquad (H)_{1:3.47} \qquad (H)_{1:3.74} \qquad (H)_{1:3.87} \qquad (S)_{1:3.114} \qquad (S)_{1:3.127} \qquad (S)_{1:3.154}$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$(M)_{1:2.6} \qquad (S)_{1:2.35} \qquad (H)_{1:2.46}^{c} \qquad (S)_{1:2.75} \qquad (S)_{1:2.86} \qquad (S)_{1:2.115} \qquad (S)_{1:2.126}$	$(S)_{1:3.6}$ $(S)_{1:3.35}$ $(S)_{1:3.46}$ $(D)_{1:3.75}$ $(S)_{1:3.86}$ $(S)_{1:3.115}$ $(H)_{1:3.126}^{c}$ $(H)_{1:3.155}^{c}$
$(S)_{1:1.5}$ $(S)_{1:1.36}$ $(S)_{1:1.45}$ $(H)_{1:1.76}$ $(H)_{1:1.85}$ $(S)_{1:1.125}$ $(S)_{1:1.156}$ $(S)_{1:1.165}$ $(H)_{1:1.196}$ $(S)_{1:1.196}$ $(S)_{1:1.196}$ $(S)_{1:1.205}$	$\begin{array}{c c} R \\ 1:2.5 \end{array} \qquad \begin{array}{c} H \\ 1:2.36 \end{array} \qquad \begin{array}{c} S \\ 1:2.45 \end{array} \qquad \begin{array}{c} S \\ 1:2.76 \end{array} \qquad \begin{array}{c} S \\ 1:2.76 \end{array} \qquad \begin{array}{c} H \\ 1:2.85 \end{array} \qquad \begin{array}{c} H \\ 1:2.85 \end{array} \qquad \begin{array}{c} H \\ 1:2.116 \end{array} \qquad \begin{array}{c} H \\ 1:2.125 \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$(M)_{1:2.4} \qquad (H)_{1:2.37} \qquad (H)_{1:2.44}^{c} \qquad (H)_{1:2.77}^{c} \qquad (S)_{1:2.84} \qquad (S)_{1:2.117} \qquad (H)_{1:2.124}$	$(M)_{1:3.4} \qquad (S)_{1:3.37} \qquad (H)_{1:3.44}^{c} \qquad (H)_{1:3.77}^{c} \qquad (H)_{1:3.84}^{c} \qquad (H)_{1:3.117}^{c} \qquad (S)_{1:3.124} \qquad (H)_{1:3.157}^{c} \qquad (H)_{1:3.164}^{c}$
$(M)_{1:1.3} \qquad (S)_{1:1.43} \qquad (S)_{1:1.43} \qquad (S)_{1:1.78} \qquad (H)_{1:1.83} \qquad (H)_{1:1.18} \qquad (S)_{1:1.123} \qquad (S)_{1:1.158} \qquad (S)_{1:1.163} \qquad (S)_{1:1.198} \qquad (S)_{1:1.203}$	$\begin{array}{c c} (R) \\ 1:2.3 \end{array}  \begin{array}{c c} (S) \\ 1:2.38 \end{array}  \begin{array}{c c} (S) \\ 1:2.43 \end{array}  \begin{array}{c c} (S) \\ 1:2.78 \end{array}  \begin{array}{c c} (S) \\ 1:2.78 \end{array}  \begin{array}{c c} (H) \\ 1:2.83 \end{array}  \begin{array}{c c} (H) \\ 1:2.118 \end{array}  \begin{array}{c c} (S) \\ 1:2.123 \end{array}$	$(S)_{1:3.3}$ $(S)_{1:3.38}$ $(S)_{1:3.43}$ $(S)_{1:3.78}$ $(S)_{1:3.83}$ $(S)_{1:3.118}$ $(H)_{1:3.123}$ $(S)_{1:3.158}$ $(H)_{163}$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$(S)_{1:2.2} \qquad (H)_{1:2.39}^{c} \qquad (H)_{1:2.39}^{c} \qquad (S)_{1:2.79} \qquad (S)_{1:2.82} \qquad (S)_{1:2.119} \qquad (H)_{1:2.122}^{c}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$(S)_{1:1,1} \qquad (S)_{1:1,40} \qquad (S)_{1:1,41} \qquad (H)_{1:1,80} \qquad (S)_{1:1,81} \qquad (S)_{1:1,120} \qquad (S)_{1:1,121} \qquad (H)_{1:1,160} \qquad (S)_{1:1,161} \qquad (S)_{1:1,200} \qquad (S)_{1:1,201} \qquad (S$	$(S)_{1:2.1}$ $(S)_{1:2.40}$ $(H)_{1:2.41}$ $(S)_{1:2.80}$ $(S)_{1:2.81}$ $(H)_{1:2.120}$ $(S)_{1:2.121}$	$(S)_{1:3.1} \qquad (H)_{1:3.40}^{c} \qquad (H)_{1:3.41}^{c} \qquad (H)_{1:3.80}^{c} \qquad (H)_{1:3.81}^{c} \qquad (S)_{1:3.121}^{c} \qquad (S)_{1:3.121}^{c} \qquad (H)_{1:3.160}^{c} \qquad (S)_{1:3.161}^{c} \qquad (H)_{1:3.161}^{c} \qquad (H)_{1:3.161}^$
1/FE501 - TO XLSV1	L 1/FE501 - TO XLSV1	1/FE501 - TO XLSV1

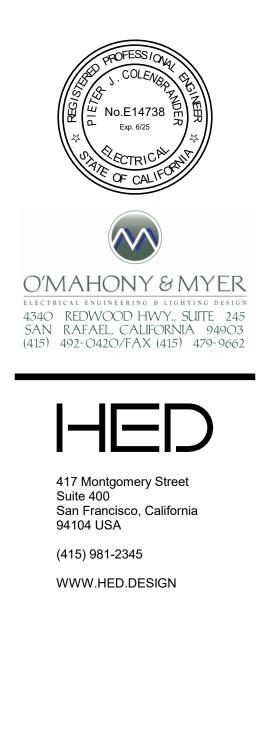
1 FA RISER - NODE 1 - LOOP 1,2,3 NO SCALE



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## (S) 2:2.100 (S) 2:2.101

(S) 12:2.99

## 2:2.98

(S) 2:2.97

## (S) 12:2.96

(S) 12:2.95

(S) 12:2.94

## 2:2.92

2:2.91

2:2.90

## 2:2.89

2:2.88

2:2.87

## 2:2.86

2:2.85

⟨S⟩ Ţ 2:2.84

## 2:2.83

2:2.82



SRCS Terra Linda HS Fire Alarm Upgrade

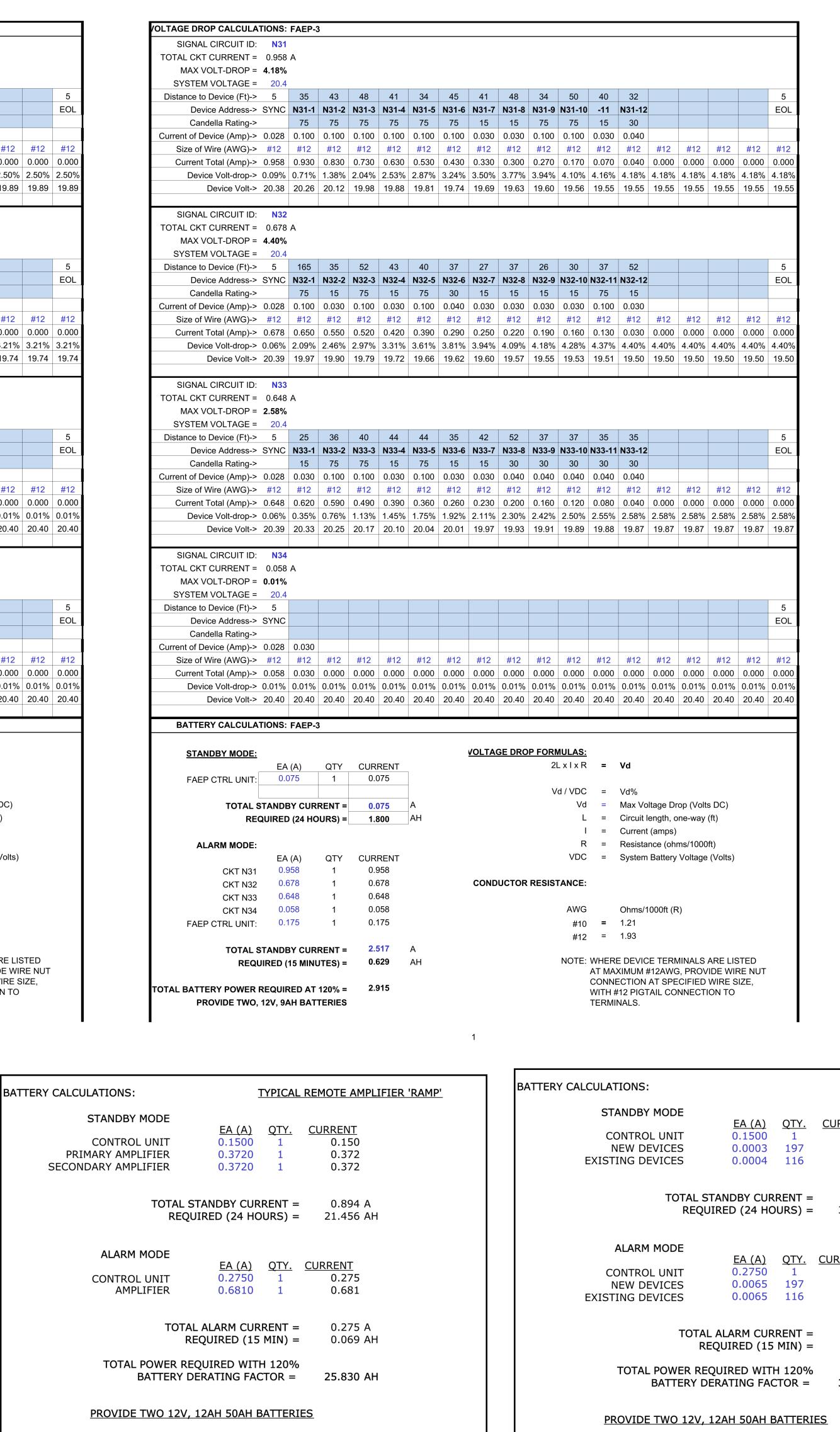
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©2022 2023-SR001-003 **RISER DIAGRAM** - FIRE ALARM FE505

	TIONS:	FAEP-4	+													
SIGNAL CIRCUIT ID:	N41	•														
TOTAL CKT CURRENT = MAX VOLT-DROP =		А														
SYSTEM VOLTAGE =																
Distance to Device (Ft)->	5	175	27	47	48	38	42	34	29							
Device Address->	SYNC	N41-1	N41-2	N41-3	N41-4	N41-5	N41-6	N41-7	N41-8							
Candella Rating->		15	30	75	15	75	30	30	30							
Current of Device (Amp)->		0.030		0.100	0.030	0.100		0.040	0.040							
Size of Wire (AWG)->		#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12
Current Total (Amp)->		0.420	0.390	0.350	0.250 2.17%	0.220	0.120 2.42%	0.080	0.040 2.50%	0.000	0.000	0.000	0.000	0.000	0.000 2.50%	0.000
Device Volt-drop-> Device Volt->		20.11	20.07	20.00		2.33%	2.42%	2.46 <i>%</i> 19.89	2.50% 19.89	2.50% 19.89	2.50% 19.89	2.50% 19.89	19.89	2.50%	2.50% 19.89	2.50% 19.89
SIGNAL CIRCUIT ID: TOTAL CKT CURRENT =	<b>N42</b> 0.398															
MAX VOLT-DROP =		~														
SYSTEM VOLTAGE =																
Distance to Device (Ft)->	5	350	28	60	36	54	48	36								
Device Address->	SYNC	N42-1	N42-2	N42-3	N42-4	N42-5	N42-6	N42-7								
Candella Rating->		75	15	75	15	15	30	30								
Current of Device (Amp)->		0.100		0.100		0.030	0.040	0.040								
Size of Wire (AWG)-> Current Total (Amp)->		#12 0.370	#12 0.270	#12 0.240	#12 0.140	#12 0.110	#12 0.080	#12 0.040	#12 0.000	#12 0.000	#12 0.000	#12 0.000	#12 0.000	#12 0.000	#12 0.000	#12 0.000
Device Volt-drop->												3.21%				
Device Volt->		19.89	19.86	19.81	19.79	19.77	19.75	19.74	19.74	19.74		19.74	19.74	19.74	19.74	19.74
SIGNAL CIRCUIT ID:																
TOTAL CKT CURRENT =		A														
MAX VOLT-DROP = SYSTEM VOLTAGE =																
Distance to Device (Ft)->	<u>20.4</u> 5															
Device Address->																
Candella Rating->																
Current of Device (Amp)->	0.028	0.030														
Size of Wire (AWG)->	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12
Current Total (Amp)->		0.030		0.000		0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Device Volt-drop->												0.01%				
Device Volt->	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40
SIGNAL CIRCUIT ID:																
TOTAL CKT CURRENT =	0.058	А														
MAX VOLT-DROP =	0.01%															
SYSTEM VOLTAGE =	20.4															
Distance to Device (Ft)->	5															
Device Address->	SYNC															
Candella Rating-> Current of Device (Amp)->	0 028	0.030														
Size of Wire (AWG)->		#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12
Current Total (Amp)->		0.030		0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Device Volt-drop->		0.01%	0.01%	0.01%	0.01%	0.01%				0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Device Volt->	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40
BATTERY CALCULA	TIONS	FAFD_/	1													
DATIENT GALGOLA			•													
STANDBY MODE:								VOLTAC	<u>GE DRO</u>	P FORM	IULAS:					
		(A)	QTY		RENT	1				21	_ x I x R	=	Vd			
FAEP CTRL UNIT:	0.0	)75	1	0.0	)75	-										
TOTALS				0.0	75	^				V	d / VDC Vd		Vd%	ltage Dr	on (Valt	
		) (24 HO			075 300	A AH					L			ength, o	• •	,
											I	=	Current		j	(***)
ALARM MODE:											R	=	Resista	nce (ohr	ns/1000	)ft)
		(A)	QTY		RENT						VDC	=	System	Battery	Voltage	e (Volts)
CKT N41		148	1		48											
CKT N42		398 059	1		398 NE 9			COND	UCTOR	RESIST	ANCE:					
CKT		)58 )58	1		)58 )58						AWG		Ohme/1		2	
CKT FAEP CTRL UNIT:		175	1 1		175						400G #10		1.21	000ft (R	•)	
THE OTTLE UNIT.	0.1	-	•	5.1	-						#10 #12		1.93			
TOTALS	STANDE		RENT =	1.1	37	А										
		15 MINI	TES  =	0.2	284	AH					NOTE:	WHERE				
REQ	JIRED (		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									AT	VIN #1 18 # 1	440 41410		//
													XIMUM # ECTION			
TOTAL BATTERY POWER	REQUIF	RED AT	120% =		501							CONNE WITH #	ECTION 12 PIG1	AT SPE	CIFIED	WIRE
	REQUIF	RED AT	120% =		501							CONNE	ECTION 12 PIG1	AT SPE	CIFIED	WIRE



	SIGNAL CIRCUIT ID:	N11																
	TOTAL CKT CURRENT =		A															
	MAX VOLT-DROP = SYSTEM VOLTAGE =	1.45% 20.4																
	Distance to Device (Ft)->	5	25	10	32	51	42	22	42	42	22	23						
	Device Address->	SYNC	N11-1	N11-2	N11-3	N11-4	N11-5	N11-6	N11-7	N11-8	N11-9	N11-10						
	Candella Rating->		15	15	15	75	15	15	75	15	15	15						
	Current of Device (Amp)->											0.030						
	Size of Wire (AWG)->		#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12
ŀ	Current Total (Amp)->								0.190			0.030	0.000		0.000	0.000	0.000	0.000
	Device Volt-drop-> Device Volt->											1.45%	1.45%	1.45% 20.10			1.45%	1.45%
		20100	20100	20.00	20120	20122	20110	20110	20110	20111	20111	20110	20110	20110	20110	20110		
	SIGNAL CIRCUIT ID:	N12																
	TOTAL CKT CURRENT =	0.628	A															
	MAX VOLT-DROP = SYSTEM VOLTAGE =	<b>3.53%</b> 20.4																
	Distance to Device (Ft)->	<u>20.4</u> 5	145	11	21	45	11	29	11	64	40							
	Device Address->	-						N12-6										
ŀ	Candella Rating->	01110	15	15	15	15	15	15	15	110	110							
ľ	Current of Device (Amp)->	0.028	0.030	0.030	0.030				0.030	0.195								
l	Size of Wire (AWG)->	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12
l	Current Total (Amp)->	0.628	0.600	0.570	0.540	0.510	0.480	0.450	0.420	0.390	0.195	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Device Volt-drop->	0.06%	1.71%	1.82%	2.04%	2.47%	2.57%	2.82%	2.91%	3.38%	3.53%	3.53%	3.53%	3.53%	3.53%	3.53%	3.53%	3.53%
	Device Volt->	20.39	20.05	20.03	19.98	19.90	19.88	19.82	19.81	19.71	19.68	19.68	19.68	19.68	19.68	19.68	19.68	19.68
		614.0																
	SIGNAL CIRCUIT ID: TOTAL CKT CURRENT =	N13 0.898	Δ															
	MAX VOLT-DROP =		~															
	SYSTEM VOLTAGE =	20.4																
	Distance to Device (Ft)->	5	20	47	34	28	39	47	60	43	63	35	47	45				
	Device Address->	SYNC	N13-1	N13-2	N13-3	N13-4	N13-5	N13-6	N13-7	N13-8	N13-9	N13-10	N13-11	N13-12				
	Candella Rating->		75	75	30	30	75	75	15	15	15	75	75	75				
	Current of Device (Amp)->	0.028	0.100	0.100	0.040	0.040	0.100	0.100	0.030	0.030	0.030	0.100	0.100	0.100				
L	Size of Wire (AWG)->	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12
	Current Total (Amp)->				0.670			0.490	0.390	0.360	0.330	0.300	0.200	0.100	0.000	0.000	0.000	0.00
	Device Volt-drop->						2.30%							4.33%			4.33%	4.33%
	Device Volt->	20.38	20.32	20.18	20.09	20.02	19.93	19.84	19.75	19.69	19.61	19.57	19.53	19.52	19.52	19.52	19.52	19.52
		NIAA																
	SIGNAL CIRCUIT ID: TOTAL CKT CURRENT =	N14 0.488																
	MAX VOLT-DROP =		~															
	SYSTEM VOLTAGE =	20.4																
	Distance to Device (Ft)->	5	110	39	39	41	25	42	30	33	30	15						
I	Device Address->	SYNC	N14-1	N14-2	N14-3	N14-4	N14-5	N14-6	N14-7	N14-8	N14-9	N14-10						
	Candella Rating->		30	15	75	75	15	30	15	15	15	15						
	Current of Device (Amp)->	0.028	0.040	0.030	0.100	0.100	0.030	0.040	0.030	0.030	0.030	0.030						
	Size of Wire (AWG)->	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12
	Current Total (Amp)->		0.460		0.390				0.120	0.090		0.030	0.000	0.000	0.000	0.000	0.000	0.000
	Device Volt-drop->																	2.21%
	Device Volt->	20.39	20.20	20.13	20.07	20.03	20.01	19.98	19.97	19.96	19.95	19.95	19.95	19.95	19.95	19.95	19.95	19.9
		TIONO		1														
	BATTERY CALCULA	10113:	FAEP-	1														
	STANDBY MODE:								VOLTA	<u>GE DRO</u>		<u>IULAS:</u>						
	r		(A)	QTY		RENT	٦				21	x I x R	=	Vd				
	FAEP CTRL UNIT:	0.0	)75	1	0.0	075	_				.,							
							_				V	d / VDC		Vd%	14- <b>-</b>			
Ļ	TOTAL S					075	A					Vd		Max Vo	•	• •	,	
	REC	JUIRED	) (24 HC	)URS) =	1.8	800	AH					L	=		-	one-way	(11)	
												R		Current Resista			ft)	
			(A)	QTY	CLIP	RENT						VDC	=		•	Voltage	,	
	ALARM MODE:	Ę۵		1		468						. 20				2	(	
		EA 0.4	168	•		628			COND	UCTOR	RESIST	ANCE:						
	CKT N11	0.4	468 628	1						• •								
	CKT N11 CKT N12	0.4 0.6		1 1	0.8	898						AWG		Ohms/1		•		
	CKT N11 CKT N12 CKT N13	0.4 0.6 0.8	628			898 488										()		
	CKT N11 CKT N12 CKT N13 CKT N14	0.4 0.6 0.8 0.4	528 398	1	0.4							#10	=	1.21		()		
	CKT N11 CKT N12 CKT N13	0.4 0.6 0.8 0.4	528 398 488	1 1	0.4	488						#10 #12				()		
	CKT N11 CKT N12 CKT N13 CKT N14	0.4 0.6 0.8 0.4	528 398 488 175	1 1 1	0.4 0.1	488	A							1.21		()		
	CKT N11 CKT N12 CKT N13 CKT N14 FAEP CTRL UNIT: <b>TOTAL S</b>	0.4 0.6 0.2 0.7	528 398 488 175 <b>BY CUR</b>	1 1 1	0.4 0.5 <b>2.</b> 0	488 175	A AH					#12 NOTE:	= WHERI	1.21 1.93 E DEVIC	ETERN	/INALS .		
	CKT N11 CKT N12 CKT N13 CKT N14 FAEP CTRL UNIT: <b>TOTAL S</b>	0.4 0.6 0.2 0.7	528 398 488 175 <b>BY CUR</b>	1 1 1 RENT =	0.4 0.7 <b>2.</b> ( <b>0.</b> (	488 175 6 <b>57</b> 6 <b>64</b>						#12 NOTE:	= WHERI AT MAX	1.21 1.93 E DEVIC XIMUM #	E TERN #12AWG	/INALS 6, PROV	IDE WIF	RE NU
	CKT N11 CKT N12 CKT N13 CKT N14 FAEP CTRL UNIT: <b>TOTAL S</b>	0.2 0.6 0.2 0.7 5TANDE JIRED ( REQUIF	528 398 488 175 3Y CUR 15 MINU RED AT	1 1 8 8 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0.4 0.1 <b>2.</b> 0 <b>0.</b> 0	488 175 6 <b>57</b>						#12 NOTE:	= WHERI AT MAX CONNE	1.21 1.93 E DEVIC XIMUM # ECTION #12 PIGT	E TERM #12AWC AT SPE	/INALS G, PROV CIFIED	'IDE WIF WIRE S	RE NU

XLSVRV	BATTERY CALCULATIONS: XLSV #1
<u>URRENT</u> 1.178 0.059 0.044	STANDBY MODE         EA (A)         QTY.         CURRENT           CONTROL UNIT         0.1500         1         1.178           NEW DEVICES         0.0003         554         0.166           EXISTING DEVICES         0.0004         0         0.0000
1.281 A 30.748 AH	TOTAL STANDBY CURRENT = 1.344 A REQUIRED (24 HOURS) = 32.261 AH
<u>JRRENT</u> 2.754 1.281 0.754	ALARM MODE         EA (A)         QTY.         CURRENT           CONTROL UNIT         0.2750         1         2.754           NEW DEVICES         0.0065         554         3.601           EXISTING DEVICES         0.0065         0         0.000
4.789 A 1.197 AH	TOTAL ALARM CURRENT = 6.355 A REQUIRED (15 MIN) = 1.589 AH
38.335 AH	TOTAL POWER REQUIRED WITH 120% BATTERY DERATING FACTOR = 40.619 AH
	PROVIDE TWO 12V, 12AH 50AH BATTERIES



SRCS Terra Linda HS Fire Alarm Upgrade

320 Nova Albion Way, San Rafael, CA 94903

DateIssued For7/28/2023DSA Submittal



FIRE ALARM SCHEDULES

SIGNAL CIRCUIT ID:N71TOTAL CKT CURRENT =0.448 A	SIGNAL CIRCUIT ID: N61
TOTAL CKT CURRENT = 0.448 A	_
	TOTAL CKT CURRENT = 0.128 A
MAX VOLT-DROP = 1.58%	MAX VOLT-DROP = 0.23%
SYSTEM VOLTAGE = 20.4	SYSTEM VOLTAGE = 20.4
Distance to Device (Ft)->       5       30       25       23       24       39       26       11       17       19       41       20       23       43       35       5	Distance to Device (Ft)->       5       115       42       42       41       50       38       39       33       49       39       46       5
Device Address-> SYNC         N71-1         N71-2         N71-3         N71-4         N71-5         N71-6         N71-7         N71-8         N71-9         N71-10         N71-12         N71-13         N71-14         EOL           Candella Rating->         15 <td>Device Address-&gt; SYNC       N61-1       N61-2       N61-3       N61-4       N61-6       N61-6       N61-9       N61-9       N61-11       M61-11       M61-11</td>	Device Address-> SYNC       N61-1       N61-2       N61-3       N61-4       N61-6       N61-6       N61-9       N61-9       N61-11       M61-11
Current of Device (Amp)-> 0.028         0.030	Current of Device (Amp)->         0.028         0.100         Image: Contract of the second
Size of Wire (AWG)-> #12 #12 #12 #12 #12 #12 #12 #12 #12 #12	Size of Wire (AWG)-> #12 #12 #12 #12 #12 #12 #12 #12 #12 #12
Current Total (Amp)-> 0.448 0.420 0.390 0.360 0.360 0.330 0.300 0.270 0.240 0.210 0.180 0.150 0.120 0.090 0.060 0.030 0.000 0.000 0.000 0.000	Current Total (Amp)-> 0.128 0.100 0.000
Device Volt-drop-> 0.04% 0.28% 0.47% 0.62% 0.77% 0.99% 1.13% 1.18% 1.24% 1.31% 1.42% 1.47% 1.51% 1.56% 1.58% 1.58% 1.58% 1.58% 1.58%	Device Volt-drop-> 0.01% 0.23%
Device Volt-> 20.39 20.34 20.31 20.27 20.24 20.20 20.17 20.16 20.15 20.13 20.11 20.10 20.09 20.08 20.08 20.08 20.08 20.08 20.08	Device Volt-> 20.40 20.35 20.3
SIGNAL CIRCUIT ID: N72	SIGNAL CIRCUIT ID:
TOTAL CKT CURRENT = 0.478 A	TOTAL CKT CURRENT = 0.058 A
MAX VOLT-DROP = 2.35%	MAX VOLT-DROP = 0.01%
SYSTEM VOLTAGE = 20.4	SYSTEM VOLTAGE = 20.4
Distance to Device (Ft)-> 5 105 29 20 22 36 51 51 20 24 17 38 24 6 6 5	Distance to Device (Ft)->       5       Image: Sector of the sect
Device Address->         SYNC         N72-1         N72-2         N72-3         N72-4         N72-5         N72-6         N72-7         N72-8         N72-9         N72-11         N72-12         EOL	Device Address-> SYNC EDUCE ADDRESS -> SYNC
Candella Rating->       15       15       15       75       15       15       15       15       30       30       0       0       0         Current of Davies (Amp) > 0.028       0.030       0.030       0.030       0.030       0.030       0.030       0.030       0.030       0.030       0.040       0.040       0.040	Candella Rating->         Current of Device (Amp.) > 0.028         0.030         Current of Device (Amp.) > 0.028         Current of Device (Amp.
Current of Device (Amp)-> 0.028       0.030       0.030       0.030       0.030       0.030       0.030       0.030       0.030       0.030       0.040       0.040       Image: Constraint of the second seco	Current of Device (Amp)-> 0.028       0.030       Image: Constraint of the second seco
Current Total (Amp)->       0.478       0.420       0.390       0.360       0.330       0.230       0.200       0.110       0.140       0.110       0.080       0.000       0.000       0.000       0.000       0.000       0.000	Current Total (Amp)->       0.058       0.030       0.00
Device Volt-drop-> 0.05%       0.94%       1.17%       1.32%       1.47%       1.69%       1.91%       2.11%       2.17%       2.23%       2.35%       2.35%       2.35%       2.35%       2.35%       2.35%	Device Volt-drop-> 0.01%         0.0
Device Volt-> 20.39 20.21 20.16 20.13 20.10 20.05 20.01 19.97 19.96 19.94 19.94 19.93 19.92 19.92 19.92 19.92 19.92 19.92 19.92	Device Volt-> 20.40 20.4
SIGNAL CIRCUIT ID: N73	
TOTAL CKT CURRENT = 1.068 A MAX VOLT-DROP = <b>8.18%</b>	TOTAL CKT CURRENT = 0.058 A MAX VOLT-DROP = 0.01%
SYSTEM VOLTAGE = 20.4	SYSTEM VOLTAGE = 20.4
Distance to Device (Ft)->       5       120       31       38       20       22       32       36       41       21       50       50       40       52       42       39       40       5	Distance to Device (Ft)->         5         6         6         6         6         6         6         5
Device Address-> SYNC N73-1 N73-2 N73-3 N73-4 N73-5 N73-6 N73-6 N73-7 N73-8 N73-8 N73-9 N73-10 N73-10 N73-12 N73-12 N73-13 N73-14 N73-15 N73-16 EOL	Device Address-> SYNC A A A A A A A A A A A A A A A A A A A
Candella Rating->       75       15       15       15       15       75       75       15       15       75       75	Candella Rating->
Current of Device (Amp)->         0.028         0.100         0.030         0.030         0.030         0.030         0.100         0.100         0.100         0.030         0.100         0.100	Current of Device (Amp)-> 0.028         0.030
Size of Wire (AWG)->       #12	Size of Wire (AWG)->       #12
Current Total (Amp)->       1.068       1.040       0.940       0.910       0.880       0.850       0.790       0.690       0.590       0.460       0.360       0.300       0.200       0.100       0.000         Device Volt-drop->       0.10%       2.46%       3.01%       3.67%       4.00%       4.35%       4.85%       5.39%       5.92%       6.16%       6.69%       7.12%       7.40%       7.72%       7.96%       8.11%       8.18%	Current Total (Amp)-> 0.058       0.030       0.000 <t< td=""></t<>
Device Volt-Volt-20.38       19.90       19.79       19.65       19.58       19.51       19.41       19.30       19.19       19.14       19.04       18.95       18.82       18.78       18.75       18.73	Device Volt-alop-2 0.01%       0
SIGNAL CIRCUIT ID: N74	
TOTAL CKT CURRENT = 0.628 A MAX VOLT-DROP = 3.12%	TOTAL CKT CURRENT = 0.058 A MAX VOLT-DROP = 0.01%
MAX VOL1-DROP = 3.12% $SYSTEM VOLTAGE = 20.4$	MAX VOLT-DROP = 0.01% $SYSTEM VOLTAGE = 20.4$
Distance to Device (Ft)->       5       150       47       32       36       33       19       25       54       92       50       Image: Second secon	Distance to Device (Ft)-> 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Device Address-> SYNC N74-1 N74-2 N74-3 N74-3 N74-5 N74-6 N74-7 N74-8 N74-8 N74-9 N74-10 M74-10 M7	Device Address-> SYNC A A A A A A A A A A A A A A A A A A A
Candella Rating->       75       75       75       30       30       15       15       15       6       7<	Candella Rating->         Image: Candella Rating (Condella Rating)         Image: Candella Rating)         Image: Candella Rating (Condella Rating)         Image: Candella Rating)         Im
Current of Device (Amp)-> 0.028         0.100         0.100         0.100         0.040         0.040         0.030         0.030         0.030	Current of Device (Amp)-> 0.028         0.030
Size of Wire (AWG)->       #12	Size of Wire (AWG)->       #12
Current Total (Amp)-> 0.628       0.600       0.500       0.400       0.300       0.200       0.160       0.120       0.090       0.060       0.000 <t< td=""><td>Current Total (Amp)-&gt; 0.058       0.030       0.000       <t< td=""></t<></td></t<>	Current Total (Amp)-> 0.058       0.030       0.000 <t< td=""></t<>
Device Volt-drop-> 0.06% 1.76% 2.21% 2.45% 2.65% 2.76% 2.64% 2.69% 2.69% 3.09% 3.12\% 3.12\%	Device Volt-> 20.40       20.40<
BATTERY CALCULATIONS: FAEP-7	BATTERY CALCULATIONS: FAEP-6
STANDBY MODE: VOLTAGE DROP FORMULAS:	STANDBY MODE: VOLTAGE DROP FORMULAS:
STANDBY MODE:       VOLTAGE DROP FORMULAS:         EA (A)       QTY       CURRENT       2L x I x R       = Vd	STANDBY MODE:VOLTAGE DROP FORMULAS:EA (A)QTYCURRENT2L x I x R=Vd
FAEP CTRL UNIT: 0.075 1 0.075	FAEP CTRL UNIT: 0.075 1 0.075
Vd / VDC = Vd%	Vd / VDC = Vd%
TOTAL STANDBY CURRENT =0.075AVd=Max Voltage Drop (Volts DC)	TOTAL STANDBY CURRENT =0.075AVd=Max Voltage Drop (Volts DC)
REQUIRED (24 HOURS) =       1.800       AH       L       =       Circuit length, one-way (ft)	REQUIRED (24 HOURS) = 1.800 AH L = Circuit length, one-way (ft)
I = Current (amps)	I = Current (amps)
ALARM MODE:R = Resistance (ohms/1000ft)EA (A)QTYCURRENTVDC = System Battery Voltage (Volts)	ALARM MODE:R=Resistance (ohms/1000ft)EA (A)QTYCURRENTVDC=System Battery Voltage (Volts)
CKT N71 0.448 1 0.448	$CKT N61  0.128 \qquad 1 \qquad 0.128 \qquad 0.128$
CKT N72         0.478         1         0.478         CONDUCTOR RESISTANCE:	CKT0.05810.058CONDUCTOR RESISTANCE:
CKT N73 1.068 1 1.068	CKT 0.058 1 0.058
CKT N74         0.628         1         0.628         AWG         Ohms/1000ft (R)	CKT         0.058         1         0.058         AWG         Ohms/1000ft (R)
FAEP CTRL UNIT:       0.175       1       0.175       #10       =       1.21	FAEP CTRL UNIT:         0.175         1         0.175         #10         =         1.21
#12 = 1.93	#12 = 1.93
TOTAL STANDBY CURRENT = $2.797$ A	TOTAL STANDBY CURRENT =0.477AREQUIRED (15 MINUTES) =0.119AHNOTE: WHERE DEVICE TERMINALS ARE LISTED
REQUIRED (15 MINUTES) - 0.699 AH NOTE: WHERE DEVICE TERMINALS ARE LISTED	
REQUIRED (15 MINUTES) =       0.699       AH       NOTE: WHERE DEVICE TERMINALS ARE LISTED         AT MAXIMUM #12AWG, PROVIDE WIRE NUT	AT MAXIMUM #12AWG, PROVIDE WIRE NUT

1

		FAEP-	)															
SIGNAL CIRCUIT ID:	N51																	
TOTAL CKT CURRENT =	1.103	А																
MAX VOLT-DROP =	5.04%																	
SYSTEM VOLTAGE =	20.4																	
Distance to Device (Ft)->	5	15	33	35	45	50	67	47	34	64	32	50	32	20	20	59		
Device Address->	SYNC	N51-1	N51-2	N51-3	N51-4	N51-5	N51-6	N51-7	N51-8	N51-9	N51-10	N51-11	N51-12	N51-13	N51-14	N51-15		
Candella Rating->		15	75	75	75	15	15	75	15	75	15	15	15	15	15	15		
Current of Device (Amp)->	0.028		0.155	0.155	0.155		0.030	0.155	0.030			0.030		0.030	0.030	0.030		
Size of Wire (AWG)->		#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	
Current Total (Amp)->			1.045	0.890	0.735		0.550	0.520	0.365			0.150		0.090	0.060	0.030	0.000	(
													4.95%		5.01%			-
Device Volt-drop->						2.83%			4.22%									-
Device Volt->	20.38	20.32	20.18	20.06	19.94	19.82	19.68	19.59	19.54	19.46	19.43	19.41	19.39	19.38	19.38	19.37	19.37	-
SIGNAL CIRCUIT ID:	N52																	
TOTAL CKT CURRENT =																		
		A																
MAX VOLT-DROP =																		
SYSTEM VOLTAGE =	20.4		10	40	45	50	40	0.1			40	50	45					
Distance to Device (Ft)->	5	80	40	40	45	50	40	31	44	32	40	58	45					
Device Address->	SYNC			N52-3	N52-4								N52-12					
Candella Rating->		75	75	75	75	75	75	15	75	75	15	75	75					
Current of Device (Amp)->	0.028	0.155	0.155	0.155	0.155	0.155	0.155	0.030	0.155	0.155	0.030	0.155	0.155					
Size of Wire (AWG)->	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	
Current Total (Amp)->	1.638	1.610	1.455	1.300	1.145	0.990	0.835	0.680	0.650	0.495	0.340	0.310	0.155	0.000	0.000	0.000	0.000	(
Device Volt-drop->	0.15%	2.59%	3.69%	4.68%	5.65%	6.59%	7.22%	7.62%	8.16%	8.46%	8.72%	9.06%	9.19%	9.19%	9.19%	9.19%	9.19%	g
Device Volt->	20.37	19.87	19.65	19.45	19.25	19.06	18.93	18.85	18.74	18.67	18.62	18.55	18.53	18.53	18.53	18.53	18.53	
SIGNAL CIRCUIT ID:	N53																	
TOTAL CKT CURRENT =																		
MAX VOLT-DROP =																		
SYSTEM VOLTAGE =																		
Distance to Device (Ft)->	5	65	29	38	43	56	33	88	53	35	28	32	35	35				
Device Address->				N53-3									N53-12					
Candella Rating->	01110	30	75	30	110	15	15	15	75	15	15	15	75	15				
Current of Device (Amp)->	0 028			0.053	0.248	0.030	0.030	0.030	0.155	0.030		0.030		0.030				
		#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	
Size of Wire (AWG)->																		-
Current Total (Amp)->				0.821	0.768		0.490	0.460						0.030	0.000	0.000	0.000	(
Device Volt-drop->																		
Device Volt->	20.38	20.12	20.02	19.90	19.77	19.66	19.59	19.44	19.35	19.31	19.29	19.26	19.23	19.23	19.23	19.23	19.23	·
SIGNAL CIRCUIT ID:	N54																	
TOTAL CKT CURRENT =	0.486																	
TOTAL CKT CURRENT = MAX VOLT-DROP =	0.486 <b>2.11%</b>																	
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE =	0.486 <b>2.11%</b> 20.4	A																
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)->	0.486 <b>2.11%</b> 20.4 5	A 85	31	35	24	23	58	28	32	28	28							
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address->	0.486 <b>2.11%</b> 20.4 5	A 85 <b>N54-1</b>	N54-2	N54-3	N54-4	N54-5	N54-6	N54-7	N54-8	N54-9	N54-10							
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating->	0.486 <b>2.11%</b> 20.4 5 SYNC	A 85 <b>N54-1</b> 15	<b>N54-2</b> 30	<b>N54-3</b> 15	<b>N54-4</b> 30	<b>N54-5</b> 15	<b>N54-6</b> 15	<b>N54-7</b> 75	<b>N54-8</b> 15	<b>N54-9</b> 15	<b>N54-10</b> 15							
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address->	0.486 <b>2.11%</b> 20.4 5 SYNC	A 85 <b>N54-1</b> 15 0.030	<b>N54-2</b> 30 0.053	<b>N54-3</b> 15 0.030	<b>N54-4</b> 30 0.040	<b>N54-5</b> 15 0.030	<b>N54-6</b> 15 0.030	<b>N54-7</b> 75 0.155	<b>N54-8</b> 15 0.030	<b>N54-9</b> 15 0.030	<b>N54-10</b> 15 0.030							
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating->	0.486 2.11% 20.4 5 SYNC 0.028	A 85 <b>N54-1</b> 15	<b>N54-2</b> 30	<b>N54-3</b> 15	<b>N54-4</b> 30	<b>N54-5</b> 15	<b>N54-6</b> 15	<b>N54-7</b> 75	<b>N54-8</b> 15	<b>N54-9</b> 15	<b>N54-10</b> 15	#12	#12	#12	#12	#12	#12	
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)->	0.486 2.11% 20.4 5 SYNC 0.028 #12	A 85 <b>N54-1</b> 15 0.030 #12	<b>N54-2</b> 30 0.053 #12	<b>N54-3</b> 15 0.030	<b>N54-4</b> 30 0.040	<b>N54-5</b> 15 0.030	<b>N54-6</b> 15 0.030 #12	<b>N54-7</b> 75 0.155	<b>N54-8</b> 15 0.030 #12	<b>N54-9</b> 15 0.030 #12	N54-10 15 0.030 #12			#12 0.000	#12 0.000	#12 0.000	#12	
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)->	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486	A 85 <b>N54-1</b> 15 0.030 #12 0.458	<b>N54-2</b> 30 0.053 #12 0.428	<b>N54-3</b> 15 0.030 #12 0.375	<b>N54-4</b> 30 0.040 #12 0.345	<b>N54-5</b> 15 0.030 #12 0.305	<b>N54-6</b> 15 0.030 #12 0.275	<b>N54-7</b> 75 0.155 #12 0.245	<b>N54-8</b> 15 0.030 #12 0.090	<b>N54-9</b> 15 0.030 #12 0.060	N54-10 15 0.030 #12 0.030	#12 0.000	0.000	0.000	0.000		0.000	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)->	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05%	A 85 <b>N54-1</b> 15 0.030 #12 0.458 0.78%	N54-2 30 0.053 #12 0.428 1.03%	N54-3 15 0.030 #12 0.375 1.28%	<b>N54-4</b> 30 0.040 #12 0.345	N54-5 15 0.030 #12 0.305 1.57%	<b>N54-6</b> 15 0.030 #12 0.275	<b>N54-7</b> 75 0.155 #12 0.245	N54-8 15 0.030 #12 0.090 2.06%	N54-9 15 0.030 #12 0.060 2.09%	N54-10 15 0.030 #12 0.030 2.11%	#12 0.000	0.000 2.11%	0.000	0.000	0.000	0.000	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop->	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05%	A 85 <b>N54-1</b> 15 0.030 #12 0.458 0.78%	N54-2 30 0.053 #12 0.428 1.03%	N54-3 15 0.030 #12 0.375 1.28%	<b>N54-4</b> 30 0.040 #12 0.345 1.44%	N54-5 15 0.030 #12 0.305 1.57%	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00%	N54-8 15 0.030 #12 0.090 2.06%	<b>N54-9</b> 15 0.030 #12 0.060 2.09%	N54-10 15 0.030 #12 0.030 2.11%	#12 0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop->	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39	A 85 <b>N54-1</b> 15 0.030 #12 0.458 0.78% 20.24	N54-2 30 0.053 #12 0.428 1.03% 20.19	N54-3 15 0.030 #12 0.375 1.28%	<b>N54-4</b> 30 0.040 #12 0.345 1.44%	N54-5 15 0.030 #12 0.305 1.57%	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00%	N54-8 15 0.030 #12 0.090 2.06%	<b>N54-9</b> 15 0.030 #12 0.060 2.09%	N54-10 15 0.030 #12 0.030 2.11%	#12 0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt->	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39	A 85 <b>N54-1</b> 15 0.030 #12 0.458 0.78% 20.24	N54-2 30 0.053 #12 0.428 1.03% 20.19	N54-3 15 0.030 #12 0.375 1.28%	<b>N54-4</b> 30 0.040 #12 0.345 1.44%	N54-5 15 0.030 #12 0.305 1.57%	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00%	N54-8 15 0.030 #12 0.090 2.06%	<b>N54-9</b> 15 0.030 #12 0.060 2.09%	N54-10 15 0.030 #12 0.030 2.11%	#12 0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt->	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39	A 85 <b>N54-1</b> 15 0.030 #12 0.458 0.78% 20.24	N54-2 30 0.053 #12 0.428 1.03% 20.19	N54-3 15 0.030 #12 0.375 1.28%	<b>N54-4</b> 30 0.040 #12 0.345 1.44%	N54-5 15 0.030 #12 0.305 1.57%	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06%	N54-9 15 0.030 #12 0.060 2.09% 19.97	N54-10 15 0.030 #12 0.030 2.11% 19.97	#12 0.000 2.11% 19.97	0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt->	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS:	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5	N54-2 30 0.053 #12 0.428 1.03% 20.19	N54-3 15 0.030 #12 0.375 1.28% 20.14	<b>N54-4</b> 30 0.040 #12 0.345 1.44%	N54-5 15 0.030 #12 0.305 1.57%	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97	N54-10 15 0.030 #12 0.030 2.11% 19.97	#12 0.000 2.11% 19.97	0.000 2.11% 19.97	0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt->	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS:	A 85 <b>N54-1</b> 15 0.030 #12 0.458 0.78% 20.24	N54-2 30 0.053 #12 0.428 1.03% 20.19	N54-3 15 0.030 #12 0.375 1.28% 20.14	N54-4 30 0.040 #12 0.345 1.44% 20.11	N54-5 15 0.030 #12 0.305 1.57%	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97	N54-10 15 0.030 #12 0.030 2.11% 19.97	#12 0.000 2.11% 19.97	0.000 2.11% 19.97	0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt->	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS:	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5	N54-2 30 0.053 #12 0.428 1.03% 20.19 5	N54-3 15 0.030 #12 0.375 1.28% 20.14	N54-4 30 0.040 #12 0.345 1.44% 20.11	N54-5 15 0.030 #12 0.305 1.57%	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 PFORI	N54-10 15 0.030 #12 0.030 2.11% 19.97	#12 0.000 2.11% 19.97	0.000 2.11% 19.97	0.000 2.11%	0.000 2.11%	0.000 2.11%	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> BATTERY CALCULA STANDBY MODE: FAEP CTRL UNIT:	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 5 FAEP-5 (A) 075	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 QTY 1	N54-3 15 0.030 #12 0.375 1.28% 20.14	N54-4 30 0.040 #12 0.345 1.44% 20.11 RENT 075	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 PFORI	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: L x I x R	#12 0.000 2.11% 19.97 = =	0.000 2.11% 19.97 Vd Vd%	0.000 2.11% 19.97	0.000 2.11% 19.97	0.000 2.11% 19.97	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> EXTERY CALCULA	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 75 BY CUR	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 QTY 1 RENT =	N54-3 15 0.030 #12 0.375 1.28% 20.14 CURI 0.0	N54-4 30 0.040 #12 0.345 1.44% 20.11 20.11 RENT 075	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 PFORI	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: L x I x R d / VDC	#12 0.000 2.11% 19.97 = = =	0.000 2.11% 19.97 Vd Vd% Max Vo	0.000 2.11% 19.97	0.000 2.11% 19.97	0.000 2.11% 19.97 s DC)	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> EXTERY CALCULA	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 75 BY CUR	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 QTY 1	N54-3 15 0.030 #12 0.375 1.28% 20.14 CURI 0.0	N54-4 30 0.040 #12 0.345 1.44% 20.11 RENT 075	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 PFORI	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: L x I x R d / VDC	#12 0.000 2.11% 19.97 = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I	0.000 2.11% 19.97	0.000 2.11% 19.97	0.000 2.11% 19.97 s DC)	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt-> <b>BATTERY CALCULA</b> FAEP CTRL UNIT: TOTAL S	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 75 BY CUR	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 QTY 1 RENT =	N54-3 15 0.030 #12 0.375 1.28% 20.14 CURI 0.0	N54-4 30 0.040 #12 0.345 1.44% 20.11 20.11 RENT 075	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 PFORI	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: L x I x R d / VDC Vd L I I	#12 0.000 2.11% 19.97 = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current	0.000 2.11% 19.97	0.000 2.11% 19.97	0.000 2.11% 19.97 s DC) (ft)	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> EXTERY CALCULA	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0 STANDE	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 75 BY CUR 0 (24 HC)	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 C QTY 1 RENT = DURS) =	N54-3 15 0.030 #12 0.375 1.28% 20.14 CURI 0.0	N54-4 30 0.040 #12 0.345 1.44% 20.11 20.11 RENT 075 300	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 PFORI	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: X I x R d / VDC Vd L I R	#12 0.000 2.11% 19.97 = = = = = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current Resista	0.000 2.11% 19.97 length, o t (amps) ince (ohr	0.000 2.11% 19.97 rop (Volt one-way ms/1000	0.000 2.11% 19.97 s DC) (ft)	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt-> <b>BATTERY CALCULA</b> STANDBY MODE: FAEP CTRL UNIT: TOTAL S REA	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0 STANDE QUIRED	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 075 BY CUR 0 (24 HC	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 CATY 1 RENT = DURS) =	N54-3 15 0.030 #12 0.375 1.28% 20.14 20.14	N54-4 30 0.040 #12 0.345 1.44% 20.11 20.11 75 75 300 RENT	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 PFORI	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: L x I x R d / VDC Vd L I I	#12 0.000 2.11% 19.97 = = = = = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current Resista	0.000 2.11% 19.97	0.000 2.11% 19.97 rop (Volt one-way ms/1000	0.000 2.11% 19.97 s DC) (ft)	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt-> BATTERY CALCULA STANDBY MODE: FAEP CTRL UNIT: FAEP CTRL UNIT: CTAL S REC	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0 STANDE QUIRED	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 075 BY CUR 0 (24 HC	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 QTY 1 RENT = DURS) =	N54-3 15 0.030 #12 0.375 1.28% 20.14 CURI 0.0 0.0 1.8 CURI 1.7	N54-4 30 0.040 #12 0.345 1.44% 20.11 20.11 75 75 300 RENT 103	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 2 <b>P FORI</b> 2 V	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: X I x R d / VDC Vd L I R VDC	#12 0.000 2.11% 19.97 = = = = = = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current Resista	0.000 2.11% 19.97 length, o t (amps) ince (ohr	0.000 2.11% 19.97 rop (Volt one-way ms/1000	0.000 2.11% 19.97 s DC) (ft)	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt-S BATTERY CALCULA STANDBY MODE: FAEP CTRL UNIT: FAEP CTRL UNIT: CALARM MODE: CKT N51 CKT N51	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0 STANDE QUIRED EA 1.1	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 075 BY CUR 0 (24 HC 0 (24 HC) 0 (24 HC) 0 (3) 0 (3)	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 CATY 1 CATY 1 CATY 1 CATY 1 1 CATY 1 1 CATY 1 1 CATY 1 1 CATY 1 1 CATY CATY CATY CATY CATY CATY CATY CATY CATY CATY CATY CATY CATY	N54-3 15 0.030 #12 0.375 1.28% 20.14 20.14 0.0 0.0 0.0 1.8 CURI 1.7 1.6	N54-4 30 0.040 #12 0.345 1.44% 20.11 20.11 75 75 300 RENT 103 538	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 2 <b>P FORI</b> 2 V	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: X I x R d / VDC Vd L I R VDC	#12 0.000 2.11% 19.97 = = = = = = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current Resista	0.000 2.11% 19.97 length, o t (amps) ince (ohr	0.000 2.11% 19.97 rop (Volt one-way ms/1000	0.000 2.11% 19.97 s DC) (ft)	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt-S EATTERY CALCULA STANDBY MODE: FAEP CTRL UNIT: FAEP CTRL UNIT: CALARM MODE: CKT N51 CKT N52 CKT N53	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0 STANDE QUIRED	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 075 BY CUR 0 (24 HC 0 (24 HC 0 (24 HC) 0	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 QTY 1 RENT = DURS) = QTY 1 1 1 1	N54-3 15 0.030 #12 0.375 1.28% 20.14 20.14 CURI 0.0 <b>0.0</b> 1.8 CURI 1.7 1.6 1.0	N54-4 30 0.040 #12 0.345 1.44% 20.11 20.11 75 75 300 RENT 103 538 044	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 2 <b>P FORI</b> 2 V	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: X I x R d / VDC Vd L X I x R VDC TANCE:	#12 0.000 2.11% 19.97 = = = = = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current Resista System	0.000 2.11% 19.97 ength, ot (amps) nce (ohr Battery	0.000 2.11% 19.97 one-way ms/1000 Voltage	0.000 2.11% 19.97 s DC) (ft)	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt-drop-> FAEP CTRL UNIT: FAEP CTRL UNIT: FAEP CTRL UNIT: CKT N51 CKT N51 CKT N52 CKT N53	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0 STANDE QUIRED EA 1.1 1.6 1.0 0.2	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 075 SY CUR 0 (24 HC 03 538 044 486	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 QTY 1 RENT = PURS) = QTY 1 1 1 1 1 1	N54-3 15 0.030 #12 0.375 1.28% 20.14 20.14 0.0 0.0 1.2 0.0 0.0 1.2 1.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	N54-4 30 0.040 #12 0.345 1.44% 20.11 RENT 075 300 RENT 103 538 044 486	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 2 <b>P FORI</b> 2 V	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: X I x R d / VDC Vd L X I x R VDC TANCE: AWG	#12 0.000 2.11% 19.97 = = = = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current Resista System	0.000 2.11% 19.97 length, o t (amps) ince (ohr	0.000 2.11% 19.97 one-way ms/1000 Voltage	0.000 2.11% 19.97 s DC) (ft)	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt-S EATTERY CALCULA STANDBY MODE: FAEP CTRL UNIT: FAEP CTRL UNIT: CALARM MODE: CKT N51 CKT N52 CKT N53	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0 STANDE QUIRED EA 1.1 1.6 1.0 0.2	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 075 BY CUR 0 (24 HC 0 (24 HC 0 (24 HC) 0	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 QTY 1 RENT = DURS) = QTY 1 1 1 1	N54-3 15 0.030 #12 0.375 1.28% 20.14 20.14 0.0 0.0 1.2 0.0 0.0 1.2 1.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	N54-4 30 0.040 #12 0.345 1.44% 20.11 20.11 75 75 300 RENT 103 538 044	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 2 <b>P FORI</b> 2 V	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: X I x R d / VDC Vd L X I x R VDC TANCE: AWG #10	#12 0.000 2.11% 19.97 = = = = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current Resista System Ohms/1 1.21	0.000 2.11% 19.97 ength, ot (amps) nce (ohr Battery	0.000 2.11% 19.97 one-way ms/1000 Voltage	0.000 2.11% 19.97 s DC) (ft)	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt-drop-> FAEP CTRL UNIT: FAEP CTRL UNIT: FAEP CTRL UNIT: CKT N51 CKT N51 CKT N52 CKT N53	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0 STANDE QUIRED EA 1.1 1.6 1.0 0.2	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 075 SY CUR 0 (24 HC 03 538 044 486	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 QTY 1 RENT = PURS) = QTY 1 1 1 1 1 1	N54-3 15 0.030 #12 0.375 1.28% 20.14 CURI 0.0 0.0 1.2 CURI 1.1 1.0 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0	N54-4 30 0.040 #12 0.345 1.44% 20.11 RENT 075 300 RENT 103 538 044 486 175	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 2 <b>P FORI</b> 2 V	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: X I x R d / VDC Vd L X I x R VDC TANCE: AWG	#12 0.000 2.11% 19.97 = = = = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current Resista System	0.000 2.11% 19.97 ength, ot (amps) nce (ohr Battery	0.000 2.11% 19.97 one-way ms/1000 Voltage	0.000 2.11% 19.97 s DC) (ft)	0.000 2.11%	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt-drop-> FAEP CTRL UNIT: FAEP CTRL UNIT: FAEP CTRL UNIT: CKT N51 CKT N51 CKT N52 CKT N53	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0 STANDE QUIRED EA 1.1 1.6 1.0 0.2	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 075 BY CUR 0 (24 HC 0 (24 HC 0 (3) 0 (24 HC 0 (3) 0 (3) 0 (3) 0 (3) 0 (3) 0 (3) 0 (3) 0 (3) 0 (4) 103 0 (3) 0 (4) 103 0 (3) 0 (4) 103 0 (4) 103 0 (4) 103 0 (4) 103 0 (4) 103 0 (4) 103 0 (4) 105 0	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 CATY 1 CATY 1 1 1 1 1 1 1 1	N54-3 15 0.030 #12 0.375 1.28% 20.14 CURI 0.0 0.0 1.2 CURI 1.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	N54-4 30 0.040 #12 0.345 1.44% 20.11 RENT 075 300 RENT 103 538 044 486	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 2 <b>P FORI</b> 2 V	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: X I x R VDC Vd L X I x R VDC TANCE: AWG #10 #12	#12 0.000 2.11% 19.97 = = = = = = = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current Resista System Ohms/1 1.21 1.93	0.000 2.11% 19.97 Ilength, ot (amps) ince (ohr Battery	0.000 2.11% 19.97 one-way ms/1000 Voltage	0.000 2.11% 19.97 s DC) (ft) (ft) e (Volts)	0.000 2.11% 19.97	(
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt-drop-> EATTERY CALCULA STANDBY MODE: FAEP CTRL UNIT: FAEP CTRL UNIT: CKT N51 CKT N51 CKT N53 CKT N54 FAEP CTRL UNIT:	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0 STANDE QUIRED EA 1.1 1.6 1.0 0.4 8 STANDE	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 075 BY CUR 0 (24 HC 0 (24 HC 0 (24 HC 0 (24 HC 0 (24 HC) 0 (2	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 CATY 1 CATY 1 1 1 1 1 1 1 1	N54-3 15 0.030 #12 0.375 1.28% 20.14 CURI 0.0 0.0 1.2 CURI 0.0 0.0 1.2 0.0 0.0 0.0 1.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	N54-4 30 0.040 #12 0.345 1.44% 20.11 RENT 075 300 RENT 103 538 044 486 175	N54-5 15 0.030 #12 0.305 1.57% 20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 2 <b>P FORI</b> 2 V	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: X I x R VDC Vd L X I x R VDC TANCE: AWG #10 #12	#12 0.000 2.11% 19.97 = = = = = = = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current Resista System Ohms/1 1.21 1.93 E DEVIC	0.000 2.11% 19.97 bltage Dr length, o t (amps) ince (ohr b Battery 1000ft (F	0.000 2.11% 19.97 rop (Volt one-way ms/1000 Voltage	0.000 2.11% 19.97 s DC) (ft) oft) e (Volts)	0.000 2.11% 19.97	
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt-drop-> EATTERY CALCULA BATTERY CALCULA STANDBY MODE: FAEP CTRL UNIT: CKT N51 CKT N51 CKT N52 CKT N53 CKT N54 FAEP CTRL UNIT:	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0 STANDE QUIRED EA 1.1 1.6 1.0 0.4 8 STANDE	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 075 BY CUR 0 (24 HC 0 (24 HC 0 (24 HC 0 (24 HC 0 (24 HC) 0 (2	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 QTY 1 RENT = QTY 1 1 1 1 1 1 1 1 1 1 1	N54-3 15 0.030 #12 0.375 1.28% 20.14 CURI 0.0 0.0 1.2 CURI 0.0 0.0 1.2 0.0 0.0 0.0 1.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	N54-4 30 0.040 #12 0.345 1.44% 20.11 RENT 075 075 300 RENT 103 538 044 486 175 446	N54-5         15         0.030         #12         0.305         1.57%         20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 2 <b>P FORI</b> 2 V	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: X I x R VDC Vd L X I x R VDC TANCE: AWG #10 #12	#12 0.000 2.11% 19.97 = = = = = = = = = = = = = = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current Resista System Ohms/1 1.21 1.93 E DEVIC XIMUM 3	0.000 2.11% 19.97 bltage Dr length, o t (amps) ince (ohr b Battery 1000ft (F	0.000 2.11% 19.97 rop (Volt one-way ms/1000 Voltage R)	0.000 2.11% 19.97 (ft) (ft) (ft) (Volts) ARE LIS /IDE WIF	0.000 2.11% 19.97	((2))
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE = Distance to Device (Ft)-> Device Address-> Candella Rating-> Current of Device (Amp)-> Size of Wire (AWG)-> Current Total (Amp)-> Device Volt-drop-> Device Volt-drop-> Device Volt-drop-> EATTERY CALCULA BATTERY CALCULA STANDBY MODE: FAEP CTRL UNIT: CKT N51 CKT N51 CKT N52 CKT N53 CKT N54 FAEP CTRL UNIT:	0.486 2.11% 20.4 5 SYNC 0.028 #12 0.486 0.05% 20.39 TIONS: EA 0.0 STANDE QUIRED C EA 1.1 1.6 1.0 0.4 0.1	A 85 N54-1 15 0.030 #12 0.458 0.78% 20.24 FAEP-5 (A) 075 BY CUR 0 (24 HC 0 (24 HC 0 (24 HC 0 (24 HC 0 (3) 0 (24 HC 0 (3) 0 (24 HC 0 (3) 0 (3)	N54-2 30 0.053 #12 0.428 1.03% 20.19 5 QTY 1 RENT = QTY 1 1 1 1 1 1 1 1 1 1 1 1 1	N54-3 15 0.030 #12 0.375 1.28% 20.14 CURI 0.0 0.0 1.2 CURI 0.0 0.0 1.2 0.0 0.0 1.2 0.0 0.0 1.2 0.0 0.0 0.0 0.0 1.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	N54-4 30 0.040 #12 0.345 1.44% 20.11 RENT 075 075 300 RENT 103 538 044 486 175 446	N54-5         15         0.030         #12         0.305         1.57%         20.08	N54-6 15 0.030 #12 0.275 1.87%	N54-7 75 0.155 #12 0.245 2.00% 19.99	N54-8 15 0.030 #12 0.090 2.06% 19.98	N54-9 15 0.030 #12 0.060 2.09% 19.97 2 <b>P FORI</b> 2 V	N54-10 15 0.030 #12 0.030 2.11% 19.97 MULAS: X I x R VDC Vd L X I x R VDC TANCE: AWG #10 #12	#12 0.000 2.11% 19.97 = = = = = = = = = = = = = = = = = = =	0.000 2.11% 19.97 Vd Vd% Max Vc Circuit I Current Resista System Ohms/1 1.21 1.93 E DEVIC XIMUM 3	0.000 2.11% 19.97 bltage Dr length, o t (amps) ince (ohr battery 1000ft (F 1000ft (F 2E TERN #12AWG AT SPE	0.000 2.11% 19.97 rop (Voltone-way ms/1000 Voltage R) //INALS 6, PROV CCIFIED	0.000 2.11% 19.97 (ft) (ft) (ft) (Volts) ARE LIS (IDE WIF WIRE S	0.000 2.11% 19.97	

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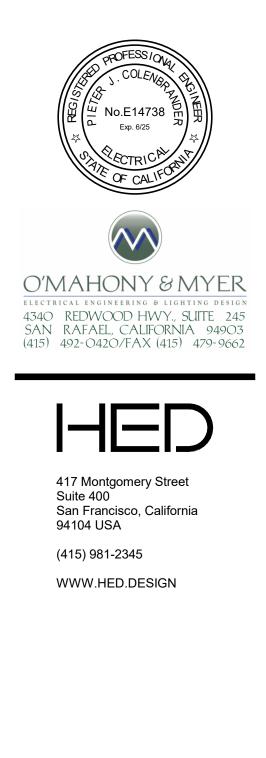
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SRCS Terra Linda HS Fire Alarm Upgrade

320 Nova Albion Way, San Rafael, CA 94903

DateIssued For7/28/2023DSA Submittal



2023-SR001-003 FIRE ALARM SCHEDULES FE602

AGE DROP CALCULATIONS: FAEP-K	/OLTAGE DROP CALCULATIONS: FAEP-P
SIGNAL CIRCUIT ID: NK1	SIGNAL CIRCUIT ID: NP1
DTAL CKT CURRENT = 0.448 A	TOTAL CKT CURRENT = 0.428 A
MAX VOLT-DROP = 1.57%	MAX VOLT-DROP = 1.03%
SYSTEM VOLTAGE = 20.4	SYSTEM VOLTAGE = 20.4
stance to Device (Ft)-> 5 25 38 39 16 27 33 26 46 16 23 34 22 - 6 5	Distance to Device (Ft)->       5       30       49       39       63       20       39
Device Address-> SYNC NK1-1 NK1-2 NK1-3 NK1-4 NK1-5 NK1-6 NK1-7 NK1-8 NK1-9 NK1-10 NK1-11 NK1-12 EOL	Device Address-> SYNC NP1-1 NP1-2 NP1-3 NP1-4 NP1-5 NP1-6
Candella Rating->       15       30       15       30       15       15       15       30       15       30       15       15       15       15       30       15       15       15       15       15       15       30       15	Candella Rating->         30         75         75         15         15         6         7         7         7         15 <t< td=""></t<>
rent of Device (Amp)-> 0.028 0.030 0.040 0.030 0.040 0.040 0.040 0.040 0.030 0.030 0.030 0.030 0.040 0.030 0.040	Current of Device (Amp)-> 0.028 0.040 0.100 0.100 0.100 0.030 0.030
Size of Wire (AWG)-> #12 #12 #12 #12 #12 #12 #12 #12 #12 #12	Size of Wire (AWG)->       #12
Current Total (Amp)-> 0.448 0.420 0.390 0.350 0.320 0.280 0.240 0.240 0.200 0.170 0.140 0.110 0.070 0.040 0.000 0.000 0.000 0.000 0.000 0.000	Current Total (Amp)-> 0.428 0.400 0.360 0.260 0.160 0.060 0.030 0.000
Device Volt-drop-> 0.04% 0.24% 0.52% 0.78% 0.88% 1.02% 1.17% 1.27% 1.42% 1.46% 1.51% 1.55% 1.57% 1.57% 1.57% 1.57% 1.57% 1.57% 1.57%	Device Volt-drop-> 0.04% 0.27% 0.60% 0.79% 0.98% 1.01% 1.03% 1.03% 1.03% 1.03% 1.03% 1.03% 1.03% 1.03% 1.03% 1.03% 1.03% 1.03% 1.03%
Device Volt-> 20.39 20.35 20.29 20.24 20.22 20.19 20.16 20.14 20.11 20.10 20.09 20.08 20.08 20.08 20.08 20.08 20.08 20.08 20.08	Device Volt-> 20.39 20.35 20.28 20.24 20.20 20.19 20
SIGNAL CIRCUIT ID: NK2	SIGNAL CIRCUIT ID: NP2
AL CKT CURRENT = 0.528 A	TOTAL CKT CURRENT = 0.528 A
MAX VOLT-DROP = <b>2.96%</b>	MAX VOLT-DROP = 1.95%
SYSTEM VOLTAGE = 20.4	SYSTEM VOLTAGE = 20.4
tance to Device (Ft)-> 5 135 10 30 10 20 54 26 16 53 38 11 45 28 5	Distance to Device (Ft)-> 5 105 42 43 59 37 14 58
Device Address-> SYNC NK2-1 NK2-2 NK2-3 NK2-4 NK2-5 NK2-6 NK2-7 NK2-8 NK2-9 NK2-10 NK2-11 NK2-12 NK2-13 EOL	Distance to Device (1 ()-2         0         120         40         00         14         10         14 <th< td=""></th<>
Device Address-> STNC       NR2-1       NR2-2       NR2-3       NR2-6       NR2-	Candella Rating->         75         75         75         75         15         30         15         6         6         6         6         6         6         6         6         6         6         6         6         6         6         7         7         7         7         7         7         15         30         15         6         7         7         7         7         7         15
Ant of Device (Amp)-> 0.028       0.030       0.030       0.030       0.040       0.030       0.040       0.040       0.040       0.040       0.040       0.040       0.030       0.030       0.030         Size of Wire (AWC) > #12       #12<	Current of Device (Amp)-> 0.028       0.100       0.100       0.100       0.030       0.040       0.030 </td
Size of Wire (AWG)-> #12 #12 #12 #12 #12 #12 #12 #12 #12 #12	Size of Wire (AWG)->       #12
Current Total (Amp)-> 0.528 0.500 0.470 0.440 0.410 0.380 0.350 0.310 0.270 0.240 0.200 0.160 0.060 0.030 0.000 0.000 0.000 0.000	Current Total (Amp)-> 0.528 0.500 0.400 0.300 0.200 0.100 0.070 0.030 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0
Device Volt-drop-> 0.05% 1.33% 1.42% 1.67% 1.74% 1.89% 2.24% 2.40% 2.48% 2.72% 2.86% 2.90% 2.95% 2.96% 2.96% 2.96% 2.96% 2.96%	Device Volt-drop-> 0.05% 1.04% 1.36% 1.61% 1.83% 1.90% 1.92% 1.95\% 1.95\%
Device Volt-> 20.39 20.13 20.11 20.06 20.04 20.02 19.94 19.91 19.89 19.85 19.82 19.81 19.80 19.80 19.80 19.80 19.80 19.80 19.80	Device Volt-> 20.39 20.19 20.12 20.07 20.03 20.01 20.01 20.00 20
SIGNAL CIRCUIT ID: NK3	SIGNAL CIRCUIT ID:
AL CKT CURRENT = 1.028 A	TOTAL CKT CURRENT = 0.058 A
MAX VOLT-DROP = 5.46%	MAX VOLT-DROP = 0.01%
YSTEM VOLTAGE = 20.4	SYSTEM VOLTAGE = 20.4
ance to Device (Ft)-> 5 55 40 65 38 135 37 24 29 50 50 50 55 55 40 55	Distance to Device (Ft)-> 5
Device Address-> SYNC NK3-1 NK3-2 NK3-3 NK3-4 NK3-5 NK3-6 NK3-7 NK3-8 NK3-9 EOL	Device Address-> SYNC
Candella Rating->         15         15         110         110         110         15         15         75         Image: Contract of the contract o	Candella Rating->
ent of Device (Amp)-> 0.028 0.030 0.030 0.195 0.195 0.195 0.195 0.030 0.030 0.030 0.100	Current of Device (Amp)-> 0.028         0.030         Image: Control of the second seco
Size of Wire (AWG)-> #12 #12 #12 #12 #12 #12 #12 #12 #12 #12	Size of Wire (AWG)->       #12
Current Total (Amp)-> 1.028 1.000 0.970 0.940 0.745 0.550 0.355 0.160 0.130 0.100 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	Current Total (Amp)->       0.058       0.030       0.00
Device Volt-drop-> 0.10% 1.14% 1.87% 3.03% 3.56% 4.97% 5.22% 5.29% 5.36% 5.46\% 5.46\%	Device Volt-drop->         0.01%
Device Volt-> 20.38 20.17 20.02 19.78 19.67 19.39 19.34 19.32 19.31 19.29 19.2	Device Volt-> 20.40 20.4
SIGNAL CIRCUIT ID: NK4	SIGNAL CIRCUIT ID:
TAL CKT CURRENT = 0.288 A	TOTAL CKT CURRENT = 0.058 A
MAX VOLT-DROP = 1.99%	MAX VOLT-DROP = 0.01%
SYSTEM VOLTAGE = 20.4	SYSTEM VOLTAGE = 20.4
stance to Device (Ft)-> 5 330 68 31 30 55	Distance to Device (Ft)->         5         Image: State of the stat
Device Address->         SYNC         NK4-2         NK4-3         NK4-4         EOL	Device Address-> SYNC
	Candella Rating->       Output of Device (Anne) > 0.000       Output o
ent of Device (Amp)-> 0.028 0.100 0.030 0.030 0.100	Current of Device (Amp)-> 0.028         0.030
Size of Wire (AWG)-> #12 #12 #12 #12 #12 #12 #12 #12 #12 #12	Size of Wire (AWG)-> #12 #12 #12 #12 #12 #12 #12 #12 #12 #12
Current Total (Amp)-> 0.288 0.260 0.160 0.130 0.100 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0	Current Total (Amp)-> 0.058 0.030 0.0000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0
Device Volt-drop-> 0.03% 1.65% 1.86% 1.93% 1.99% 1.99% 1.99% 1.99% 1.99% 1.99% 1.99% 1.99% 1.99% 1.99% 1.99% 1.99% 1.99% 1.99% 1.99%	Device Volt-drop-> 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01% 0.01%
Device Volt-> 20.39 20.06 20.02 20.01 19.99 19.99 19.99 19.99 19.99 19.99 19.99 19.99 19.99 19.99 19.99 19.99 19.99 19.99 19.99 19.99 19.99 19.99 19.99	Device Volt-> 20.40 20.4
	BATTERY CALCULATIONS: FAEP-P
BATTERY CALCULATIONS: FAEP-K	
BATTERY CALCULATIONS: FAEP-K           STANDBY MODE:         VOLTAGE DROP FORMULAS:	STANDBY MODE: VOLTAGE DROP FORMULAS:
	STANDBY MODE:       VOLTAGE DROP FORMULAS:         EA (A)       QTY       CURRENT       2L x I x R       =       Vd
STANDBY MODE: VOLTAGE DROP FORMULAS:	
STANDBY MODE:       VOLTAGE DROP FORMULAS:         EA (A)       QTY         CURRENT       2L x I x R         EA (A)       QTY	EA (A) QTY CURRENT 2L x I x R = Vd
STANDBY MODE:         VOLTAGE DROP FORMULAS:           EA (A)         QTY         CURRENT           FAEP CTRL UNIT:         0.075         1         0.075           I         0.075         1         Vd / VDC         =         Vd/VDC	EA (A)       QTY       CURRENT       2L x I x R       =       Vd         FAEP CTRL UNIT:       0.075       1       0.075       Vd / VDC       =       Vd%
STANDBY MODE: $VOLTAGE DROP FORMULAS:$ FAEP CTRL UNIT: $EA (A)$ QTYCURRENT0.07510.075 $I$ 0.0751 $I$ 0.0751 $I$ $I$ $Vd/VDC$ $I$ $I$ $I$ $Vd/VDC$ $I$ <td>EA (A)QTYCURRENT<math>2L \times I \times R</math>=VdFAEP CTRL UNIT:<math>0.075</math>1<math>0.075</math><math>0.075</math><math>Vd / VDC</math>=Vd%TOTAL STANDBY CURRENT =<math>0.075</math>AVd=Max Voltage Drop (Volts DC)</td>	EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT: $0.075$ 1 $0.075$ $0.075$ $Vd / VDC$ =Vd%TOTAL STANDBY CURRENT = $0.075$ AVd=Max Voltage Drop (Volts DC)
VOLTAGE DROP FORMULAS:EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT:0.07510.075 $Vd / VDC$ =Vd%Vd / VDC=Vd%Vd / VDC=Vd%Vd / VDC=Max Voltage Drop (Volts DC)	EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT: $0.075$ 1 $0.075$ $Vd / VDC$ = $Vd\%$ TOTAL STANDBY CURRENT = $0.075$ A $Vd = Max Voltage Drop (Volts DC)$ REQUIRED (24 HOURS) =1.800AHL=Circuit length, one-way (ft)
VOLTAGE DROP FORMULAS:EA (A)QTYCURRENT $2L \times I \times R$ $=$ VdFAEP CTRL UNIT:0.07510.075 $2L \times I \times R$ $=$ VdTOTAL STANDBY CURRENT =0.075AVd / VDC $=$ Vd%REQUIRED (24 HOURS) =1.800AHL $=$ Circuit length, one-way (ft)I $=$ Current (amps)	EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT: $0.075$ 1 $0.075$ $0.075$ $Vd / VDC$ = $Vd\%$ TOTAL STANDBY CURRENT = $0.075$ A $Vd$ =Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) =1.800AHL=Circuit length, one-way (ft)I=Current (amps)
VOLTAGE DROP FORMULAS:STANDBY MODE:EA (A)QTYCURRENT $2L \times I \times R$ $=$ VdFAEP CTRL UNIT:0.07510.075 $Vd / VDC$ $=$ Vd%TOTAL STANDBY CURRENT =0.075AVd $=$ Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) =1.800AHL $=$ Circuit length, one-way (ft)ALARM MODE:R $R$ $R$ Resistance (ohms/1000ft)	EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT:0.07510.075 $Vd / VDC$ =Vd%TOTAL STANDBY CURRENT =0.075AVd=Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) =1.800AHL=Circuit length, one-way (ft)I=Current (amps)R=Resistance (ohms/1000ft)
VOLTAGE DROP FORMULAS:EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT:0.07510.075VdVdVdTOTAL STANDBY CURRENT =0.075AVd=Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) =1.800AHL=Circuit length, one-way (ft)I=Current (amps)IEA (A)QTYCURRENTResistance (ohms/1000ft)EA (A)QTYCURRENTVDC=System Battery Voltage (Volts)	EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT:0.07510.075VdVd/VDC=Vd%TOTAL STANDBY CURRENT =0.075AVd=Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) =1.800AHL=Circuit length, one-way (ft)I=Current (amps)I=Current (amps)ALARM MODE:EA (A)QTYCURRENTVDC=System Battery Voltage (Volts)
VOLTAGE DROP FORMULAS:EA (A)QTYCURRENT $2L \times I \times R$ $=$ VdFAEP CTRL UNIT: $0.075$ 1 $0.075$ $2L \times I \times R$ $=$ VdTOTAL STANDBY CURRENT = $0.075$ AVd / VDC $=$ Vd%TOTAL STANDBY CURRENT = $0.075$ AVd $=$ Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) =1.800AHL $=$ Circuit length, one-way (ft)I $=$ Current (amps)ALARM MODE:EA (A)QTYCURRENTVDC $=$ System Battery Voltage (Volts)CKT NK1 $0.448$ 1 $0.448$ $0.448$ $0.048$ $0.048$ $0.048$	EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT:0.07510.075VdVd / VDCVd/TOTAL STANDBY CURRENT =0.075AVd =Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) =1.800AHL =Circuit length, one-way (ft)I=Current (amps)IEA (A)QTYCURRENTEA (A)QTYCURRENTVDC =System Battery Voltage (Volts)CKT NP10.42810.428VDC =System Battery Voltage (Volts)
VOLTAGE DROP FORMULAS:EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT:0.07510.0752L × I × R=VdTOTAL STANDBY CURRENT =0.075AVd / VDC=Vd%TOTAL STANDBY CURRENT =0.075AVd =Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) =1.800AHL=Circuit length, one-way (ft)I=Current (amps)I=Current (amps)ALARM MODE:R=Resistance (ohms/1000ft)EA (A)QTYCURRENTVDC=System Battery Voltage (Volts)CKT NK10.44810.448CONDUCTOR RESISTANCE:VDC=	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
VOLTAGE DROP FORMULAS:EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT:0.07510.07510.075TOTAL STANDBY CURRENT =0.075AVd / VDC=Vd%TOTAL STANDBY CURRENT =0.075AVd =Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) =1.800AHL=Circuit length, one-way (ft)I=Current (amps)R=Resistance (ohms/1000ft)CKT NK10.44810.448VDC=System Battery Voltage (Volts)CKT NK20.52810.528CONDUCTOR RESISTANCE:VDC=CKT NK31.02811.028VDCII	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
VOLTAGE DROP FORMULAS:EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT: $0.075$ 1 $0.075$ $2L \times I \times R$ =VdTOTAL STANDBY CURRENT = $0.075$ A $Vd$ =Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) =1.800AHL=Circuit length, one-way (ft)I=Current (amps)ALARM MODE:EA (A)QTYCURRENTVDC=EA (A)QTYCURRENTVDC=System Battery Voltage (Volts)CKT NK10.44810.448CONDUCTOR RESISTANCE:System Battery Voltage (Volts)CKT NK31.02810.288AWGOhms/1000ft (R)	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
VOLTAGE DROP FORMULAS:EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT: $0.075$ 1 $0.075$ $2L \times I \times R$ =VdTOTAL STANDBY CURRENT = $0.075$ AVd=Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) = $1.800$ AHL=Circuit length, one-way (ft)I=Current (amps)ALARM MODE:R=Resistance (ohms/1000ft)CKT NK1 $0.448$ 1 $0.448$ CONDUCTOR RESISTANCE:CKT NK3 $1.028$ 1 $0.288$ AWGCKT NK4 $0.288$ 1 $0.288$ AWGFAEP CTRL UNIT: $0.175$ 1 $0.175$ $\#10$ =1 $1.21$ $0.175$ $\#10$ = $1.21$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
VOLTAGE DROP FORMULAS:EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT: $0.075$ 1 $0.075$ $2L \times I \times R$ =VdTOTAL STANDBY CURRENT = $0.075$ AVd=Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) = $1.800$ AHL=Circuit length, one-way (ft)I $=$ Current (amps)ALARM MODE:EA (A)QTYCURRENTVDC=CKT NK1 $0.448$ 1 $0.448$ VDC=CKT NK1 $0.448$ 1 $0.528$ CONDUCTOR RESISTANCE:System Battery Voltage (Volts)CKT NK4 $0.288$ 1 $0.288$ AWGOhms/1000ft (R)FAEP CTRL UNIT: $0.175$ 1 $0.175$ $\#10$ = $1.21$ #12 $=$ $1.93$ $1.93$ $1.93$ $1.928$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
VOLTAGE DROP FORMULAS:EA (A)QTYCURRENTFAEP CTRL UNIT: $0.075$ 1 $0.075$ TOTAL STANDBY CURRENT = $0.075$ AVd=REQUIRED (24 HOURS) = $1.800$ AHL=CKT NK1 $0.448$ 1 $0.448$ CKT NK1 $0.258$ 1 $0.528$ CKT NK3 $1.028$ 1 $0.075$ CKT NK3 $1.028$ $0.075$ CKT NK4 $0.288$ $1<0.288$ CKT NK1 $0.175$ $1<0.175$ TOTAL STANDBY CURRENT = $2.467$ A $AWG$ Ohms/1000ft (R)FAEP CTRL UNIT: $0.175$ A $AWG$ Ohms/1000ft (R)FAEP CTRL UNIT: $0.175$ A $AWG$ CHT NK3 $0.288$ A $AWG$ CHT NK4 $0.288$ A $AWG$ CHT NK4 $0.288$ A $1.93$	EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT: $0.075$ 1 $0.075$ <
VOLTAGE DROP FORMULAS:EA (A)QTYCURRENT $2L \times I \times R = Vd$ FAEP CTRL UNIT: $0.075$ $1$ $0.075$ TOTAL STANDBY CURRENT = $0.075$ A $Vd = Max Voltage Drop (Volts DC)$ REQUIRED (24 HOURS) = $1.800$ AHL = Circuit length, one-way (ft)I $= Current (amps)$ R = Resistance (ohms/1000ft)CKT NK1 $0.448$ $0.448$ CONDUCTOR RESISTANCE:CKT NK2 $0.528$ $1$ $0.528$ CKT NK3 $1.028$ $CONDUCTOR RESISTANCE:$ CKT NK4 $0.288$ $AWG$ CKT NK4 $0.288$ $AWG$ CKT NK4 $0.275$ $1$ TOTAL STANDBY CURRENT $0.617$ CKT NK4 $0.288$ $1$ CKT NK4 $0.175$ $1$ CKT NK4 $0.288$ $1$ CKT NK4 $0.288$ $1$ CKT NK4 $0.288$ $1$ CKT NK4 $0.175$ $1$ CKT NK4 $0.175$ $1$ CKT NK4 $0.288$ $1$ CKT NK4 $0.288$ $1$ CKT NK4 $0.288$ CKT NK4 $0.288$ CKT NK4 $0.288$ CKT NK4 $0.617$ CKT NK4 $0.617$ CKT NK5 $1.93$ CTAL STANDBY CURRENT = $2.467$ CKT NK5 $1.93$ CTAL STANDBY CURRENT = $2.467$ </td <td>EA (A)QTYCURRENT<math>2L \times I \times R</math>=VdFAEP CTRL UNIT:<math>0.075</math>1<math>0.075</math><math>Vd / VDC</math>=<math>Vd\%</math>TOTAL STANDBY CURRENT =<math>0.075</math>A<math>Vd</math>=Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) =<math>1.800</math>AHL=Circuit length, one-way (ft)I=Current (amps)I=Current (amps)ALARM MODE:EA (A)QTYCURRENTVDC=System Battery Voltage (Volts)CKT NP1<math>0.428</math>1<math>0.428</math>CONDUCTOR RESISTANCE:VDC=System Battery Voltage (Volts)CKT NP2<math>0.528</math>1<math>0.058</math>CONDUCTOR RESISTANCE:UIIIICKT<math>0.058</math>1<math>0.058</math>AWGOhms/1000ft (R)IIIIIIIFAEP CTRL UNIT:<math>0.175</math>1<math>0.175</math>#10=1.21II</td>	EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT: $0.075$ 1 $0.075$ $Vd / VDC$ = $Vd\%$ TOTAL STANDBY CURRENT = $0.075$ A $Vd$ =Max Voltage Drop (Volts DC)REQUIRED (24 HOURS) = $1.800$ AHL=Circuit length, one-way (ft)I=Current (amps)I=Current (amps)ALARM MODE:EA (A)QTYCURRENTVDC=System Battery Voltage (Volts)CKT NP1 $0.428$ 1 $0.428$ CONDUCTOR RESISTANCE:VDC=System Battery Voltage (Volts)CKT NP2 $0.528$ 1 $0.058$ CONDUCTOR RESISTANCE:UIIIICKT $0.058$ 1 $0.058$ AWGOhms/1000ft (R)IIIIIIIFAEP CTRL UNIT: $0.175$ 1 $0.175$ #10=1.21II
VOLTAGE DROP FORMULAS:EA (A)QTYCURRENT $2L \times I \times R = Vd$ FAEP CTRL UNIT: $0.075$ $1$ $0.075$ TOTAL STANDBY CURRENT = $0.075$ A $Vd / VDC = Vd\%$ TOTAL STANDBY CURRENT = $0.075$ AREQUIRED (24 HOURS) = $1.800$ AHL=Circuit length, one-way (ft)I=Current (amps)ALARM MODE:R =Resistance (ohms/1000ft)CKT NK1 $0.448$ $0.448$ CKT NK2 $0.528$ $1$ CKT NK3 $1.028$ $1$ CKT NK3 $1.028$ $1$ CKT NK4 $0.288$ $0.288$ FAEP CTRL UNIT: $0.175$ $#10$ TOTAL STANDBY CURRENT $2.467$ CKT NK4 $0.288$ $AWG$ Ohms/1000ft (R)#12 $=$ TOTAL STANDBY CURRENT $2.467$ ANOTE:WHERE DEVICE TERMINALS ARE LISTED AT MAXIMUM #12AWG, PROVIDE WIRE NUT CONNECTION AT SPECIFIED WIRE SIZE.	EA (A)QTYCURRENTFAEP CTRL UNIT: $0.075$ 1 $0.075$ TOTAL STANDBY CURRENT = $0.075$ AREQUIRED (24 HOURS) = $1.800$ AHL=Circuit length, one-way (ft)I=Current (amps)ALARM MODE:EA (A)QTYCURRENTCKT NP1 $0.428$ 1 $0.428$ CKT NP2 $0.528$ 1 $0.528$ CKT $0.058$ 1 $0.058$ CKT $0.058$ 1 $0.058$ CKT $0.058$ 1 $0.058$ CKT $0.058$ 1 $0.175$ FAEP CTRL UNIT: $0.175$ 1 $0.175$ TOTAL STANDBY CURRENT $1.247$ AREQUIRED (15 MINUTES) = $0.312$ AH
EA (A)QTYCURRENT $2L \times 1 \times R$ =VdFAEP CTRL UNIT: $0.075$ 1 $0.075$ $Vd / VDC$ = $Vd / VDC$ = $Vd / VDC$ TOTAL STANDBY CURRENT = $0.075$ A $Vd = Max Voltage Drop (Volts DC)$ $Vd / VDC$ = $Max Voltage Drop (Volts DC)$ REQUIRED (24 HOURS) =1.800AHL=Circuit length, one-way (ft)I=Current (amps)II=Current (amps)ALARM MODE:K=Resistance (ohms/1000ft)VDC=System Battery Voltage (Volts)CKT NK10.44810.4480.528CONDUCTOR RESISTANCE:System Battery Voltage (Volts)CKT NK31.02811.028CONDUCTOR RESISTANCE:VDC=1.21CKT NK40.28810.288AWGOhms/1000ft (R)#12=1.93TOTAL STANDBY CURRENT =2.467ANOTE: WHERE DEVICE TERMINALS ARE LISTED AT MAXIMUM #12AWG, PROVIDE WIRE NUTTMAXIMUM #12AWG, PROVIDE WIRE NUT	EA (A)QTYCURRENT $2L \times I \times R$ =VdFAEP CTRL UNIT: $0.075$ 1 $0.075$ <

SIGNAL CIRCUIT ID:	ND1																	
TOTAL CKT CURRENT =		A																
MAX VOLT-DROP = SYSTEM VOLTAGE =	1.30% 20.4																	
Distance to Device (Ft)->	20.4 5	28	18	49	68	65												
Device Address->	-																	
Candella Rating->		15	15	75	110	75												
Current of Device (Amp)->	0.028	0.030	0.030	0.100	0.195	0.100												
Size of Wire (AWG)->	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	
Current Total (Amp)->					0.295	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Device Volt-drop-> Device Volt->				0.80%	1.18% 20.16								1.30% 20.13					-
SIGNAL CIRCUIT ID:	ND2																	
TOTAL CKT CURRENT =		А																
MAX VOLT-DROP =																		
SYSTEM VOLTAGE =	20.4 5	40	49	22	11	27												
Distance to Device (Ft)-> Device Address->	-																	
Candella Rating->	01110	110	15	15	15	110												
Current of Device (Amp)->	0.028	0.195	0.030	0.030	0.030	0.195												
Size of Wire (AWG)->	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	
Current Total (Amp)->	0.508	0.480	0.285	0.255	0.225	0.195	0.000	0.000			0.000		0.000	0.000	0.000	0.000	0.000	
Device Volt-drop->						0.93%						0.93%		0.93%				
Device Volt->	20.39	20.32	20.26	20.24	20.23	20.21	20.21	20.21	20.21	20.21	20.21	20.21	20.21	20.21	20.21	20.21	20.21	
SIGNAL CIRCUIT ID:																		
TOTAL CKT CURRENT =		A																
MAX VOLT-DROP = SYSTEM VOLTAGE =	<b>1.52%</b>																	
Distance to Device (Ft)->	20.4 5	105	58	20	50	36												
Device Address->	-																	
Candella Rating->		110	110	15	30	30												
Current of Device (Amp)->	0.028	0.195	0.195	0.030	0.040	0.040												
Size of Wire (AWG)->	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	
Current Total (Amp)->					0.080			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Device Volt-drop->																		-
Device Volt->	20.39	20.19	20.12	20.11	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	20.09	
TOTAL CKT CURRENT = MAX VOLT-DROP = SYSTEM VOLTAGE =		A																
Distance to Device (Ft)->	5																	-
Device Address->	SYNC																	-
Candella Rating-> Current of Device (Amp)->	0.028	0.030																
Size of Wire (AWG)->		#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	
Current Total (Amp)->					0.000						0.000		0.000		0.000			-
Device Volt-drop-> Device Volt->	0.01%	0.01%	0.01%	0.01%		0.01%	0.01%	0.01%	0.01%		0.01%	0.01%		0.01%				-
BATTERY CALCULA	TIONS																	
STANDBY MODE:	EA		QTY	1	RENT	7				21 P FORM	L X I X R	=	Vd					
FAEP CTRL UNIT:	0.0	)75	1	0.0	)75	_				V	d / VDC	=	Vd%					
TOTAL S	TANDE	BY CUR	RENT =	0.0	)75	А				-	Vd			ltage Dr	op (Volt	s DC)		
REC	QUIRED	) (24 HC	URS) =	1.8	300	AH					L	=	Circuit	length, o	ne-way	(ft)		
			-								I	=		(amps)				
ALARM MODE:											R			nce (ohi				
	EA		QTY		RENT						VDC	=	System	Battery	Voltage	e (Volts)		
CKT ND1		183 508	1 1		183 508			COND		RESIS								
CKT ND2 CKT ND3		528	1		528			COND	JUICK	NE313								
CKT ND3 CKT		)58	1		)58						AWG		Ohms/1	1000ft (F	<b>(</b> )			
FAEP CTRL UNIT:		175	1		175						#10	=	1.21	(1	,			
TOTAL S	TANDE	BY CUR	RENT =	1.7	/52	A					#12	=	1.93					
REQU	JIRED (	15 MINU	JTES) =	0.4	138	AH					NOTE:		KIMUM ;	#12AWC	G, PROV	IDE WI	RE NUT	
TOTAL BATTERY POWER I PROVIDE TWO,					686								12 PIG	AT SPE FAIL CO			SIZE,	
,													U (EO)					

SIGNAL CIRCUIT ID:	NH1																	
TOTAL CKT CURRENT =	0.673	А																
MAX VOLT-DROP =	2.34%																	
SYSTEM VOLTAGE =	20.4																	
Distance to Device (Ft)->	5	70	70	63	27	56												5
Device Address->	SYNC	NH1-1	NH1-2	NH1-3	NH1-4	NH1-5												EOL
Candella Rating->		110	15	110	15	110												
Current of Device (Amp)->	0.028	0.195	0.030	0.195	0.030	0.195												
Size of Wire (AWG)->	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12	#12
Current Total (Amp)->	0.673	0.645	0.450	0.420	0.225	0.195	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Device Volt-drop->	0.06%	0.92%	1.51%	2.01%	2.13%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%
Device Volt->	20.39	20.21	20.09	19.99	19.97	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92	19.92
BATTERY CALCULA	TIONS:	FAEP-	4															
FAEP CTRL UNIT:		(A) )75	QTY 1	CURI 0.0	RENT )75	]				21	_ x I x R	=	Vd					
		· /	QTY	1		٦				21	_ x I x R	=	Vd					
FAEP CIRL UNIT.	0.0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	0.0	//0					V	d / VDC	=	Vd%					
TOTALS				0.0	75	A				•	Vd	=		ltage Dr	on (Volt	s DC)		
		) (24 HO			800	AH					L	=		ength, c				
		/24110	, on o j =								-	=		(amps)		()		
ALARM MODE:											R	=		nce (ohi		oft)		
<u> </u>	EA	(A)	QTY	CUR	RENT						VDC	=		Battery		,		
CKT NH1		673	1	0.6									•		Ū	· /		
СКТ	0.0	)58	1	0.0	)58	-		COND	UCTOR	RESIST	ANCE:							
СКТ	0.0	)58	1	0.0	)58	-												
СКТ	0.0	)58	1	0.0	)58						<u>AWG</u>		Ohms/1	1000ft (F	<u>R)</u>			
FAEP CTRL UNIT:	0.1	175	1	0.1	75						#10	=	1.21					
											#12	=	1.93					
TOTAL	STANDE	BY CUR	RENT =	1.0	22	A												
REQU	JIRED (	15 MINU	JTES) =	0.2	256	AH										ARE LIS		
	·					-										IDE WIF WIRE S		
						7						CONNE	-UTION	AL SPE	(IHIHI)	VVIRE S		
OTAL BATTERY POWER	REQUIF	RED AT	120% =	2.4	67								12 PIG1				120,	



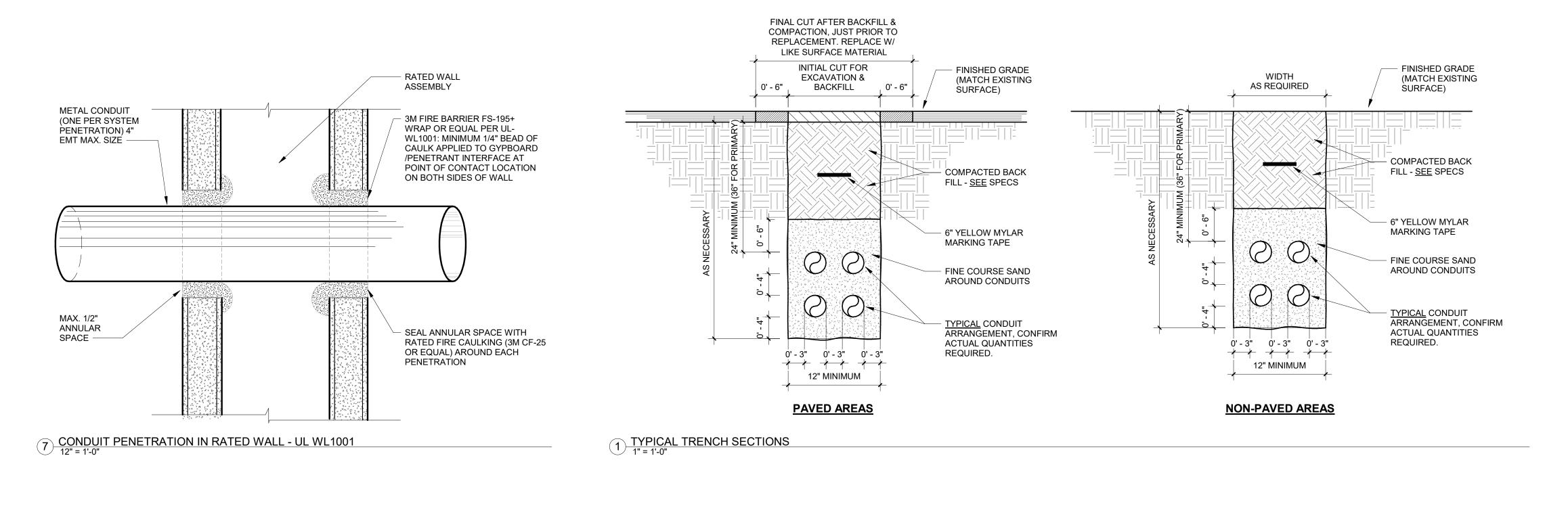
SRCS Terra Linda HS Fire Alarm Upgrade

320 Nova Albion Way, San Rafael, CA 94903

DateIssued For7/28/2023DSA Submittal



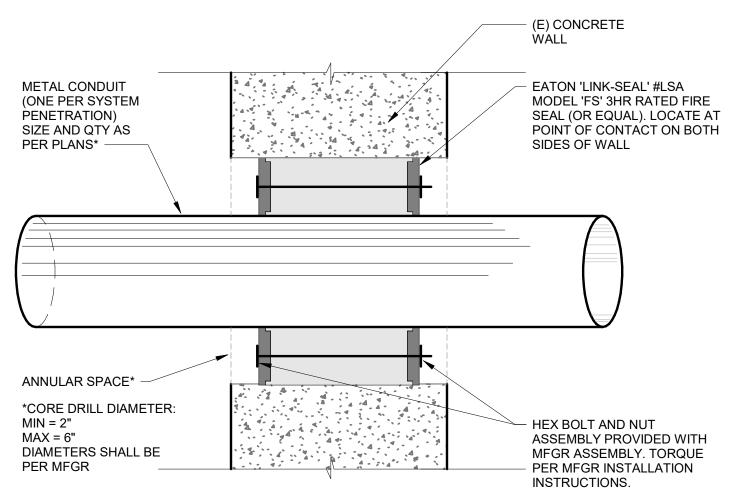
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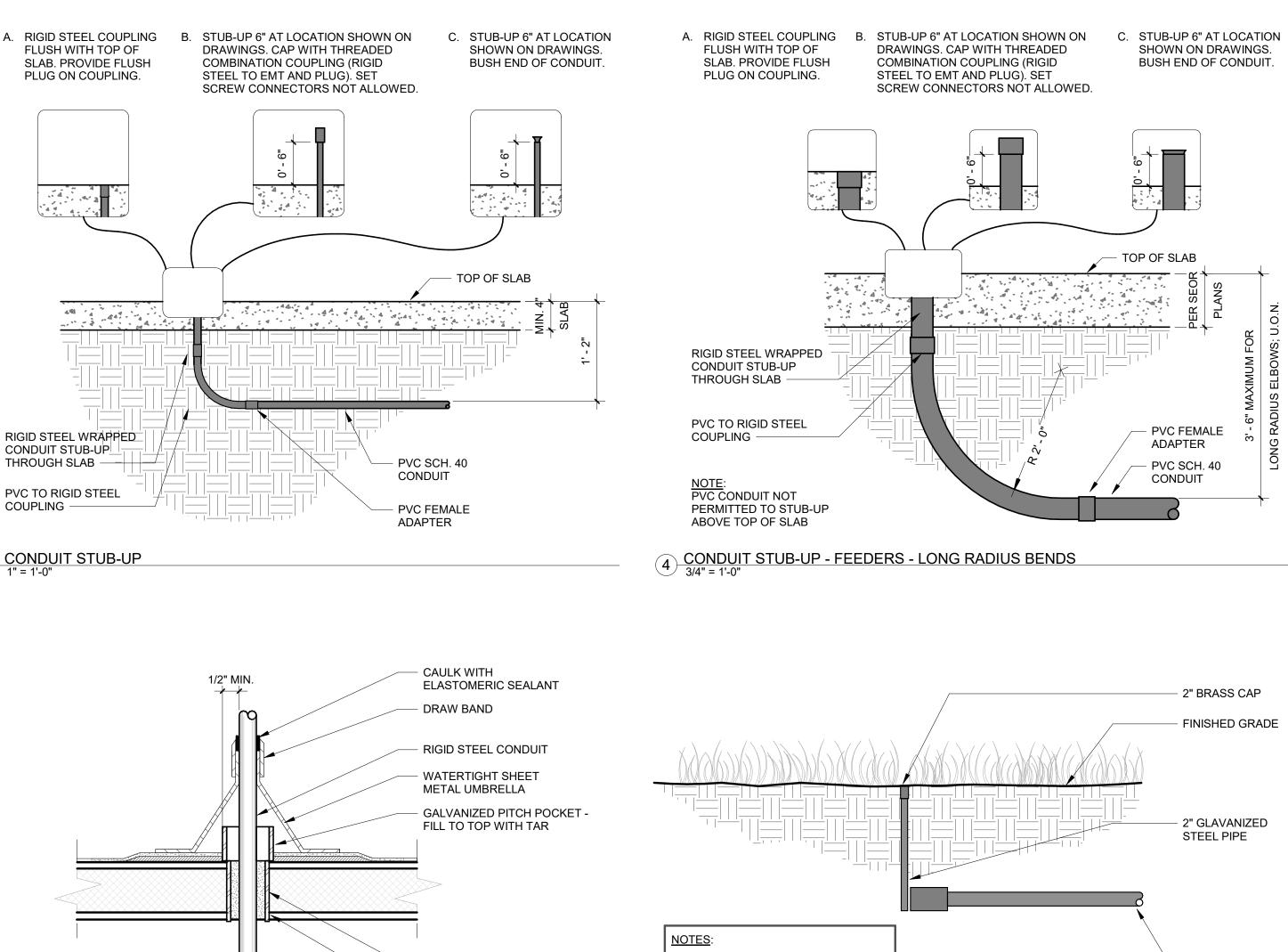
BUSH END OF CONDUIT, <u>TYPICAL</u> -

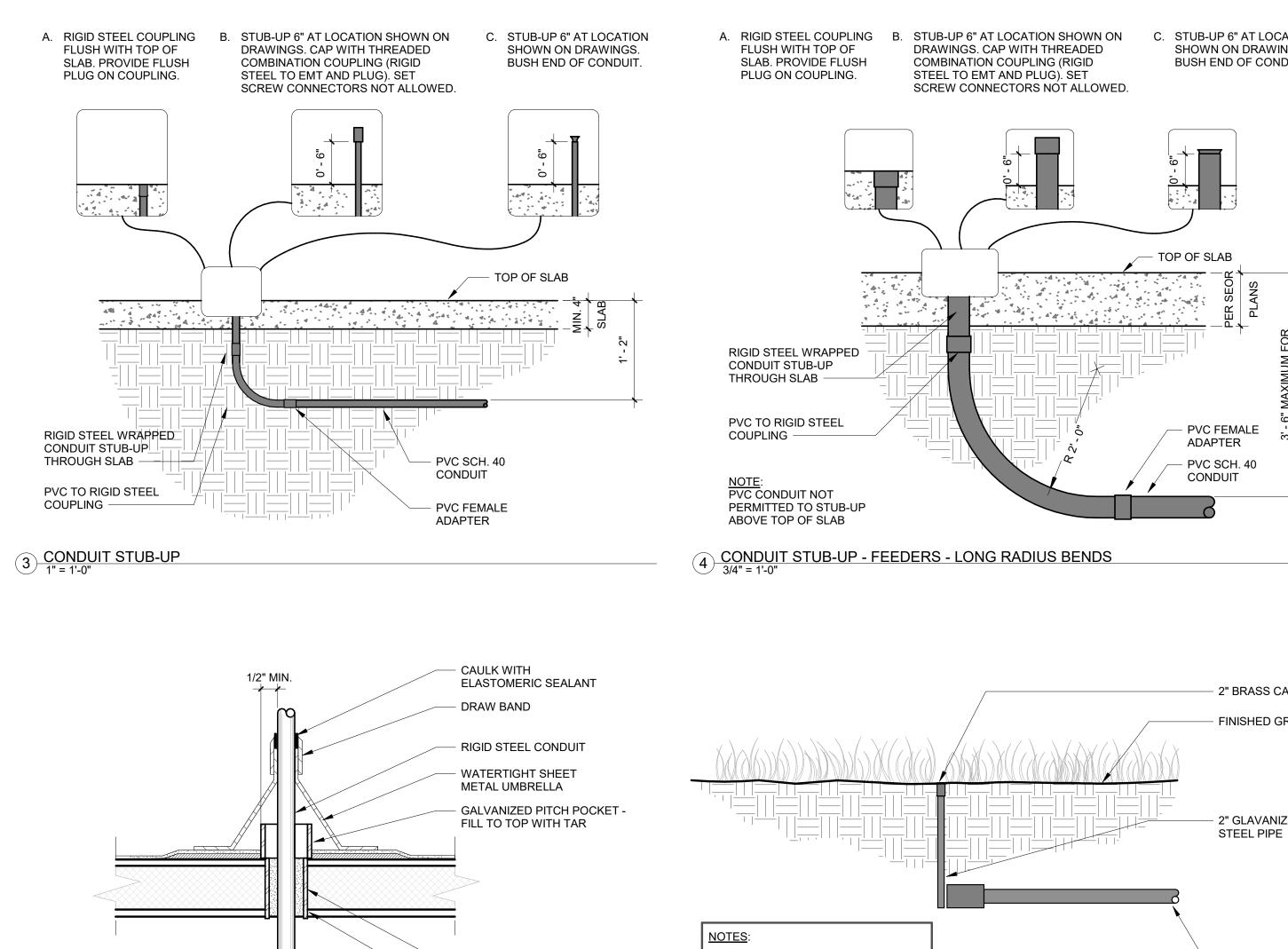
FINISHED PAVED

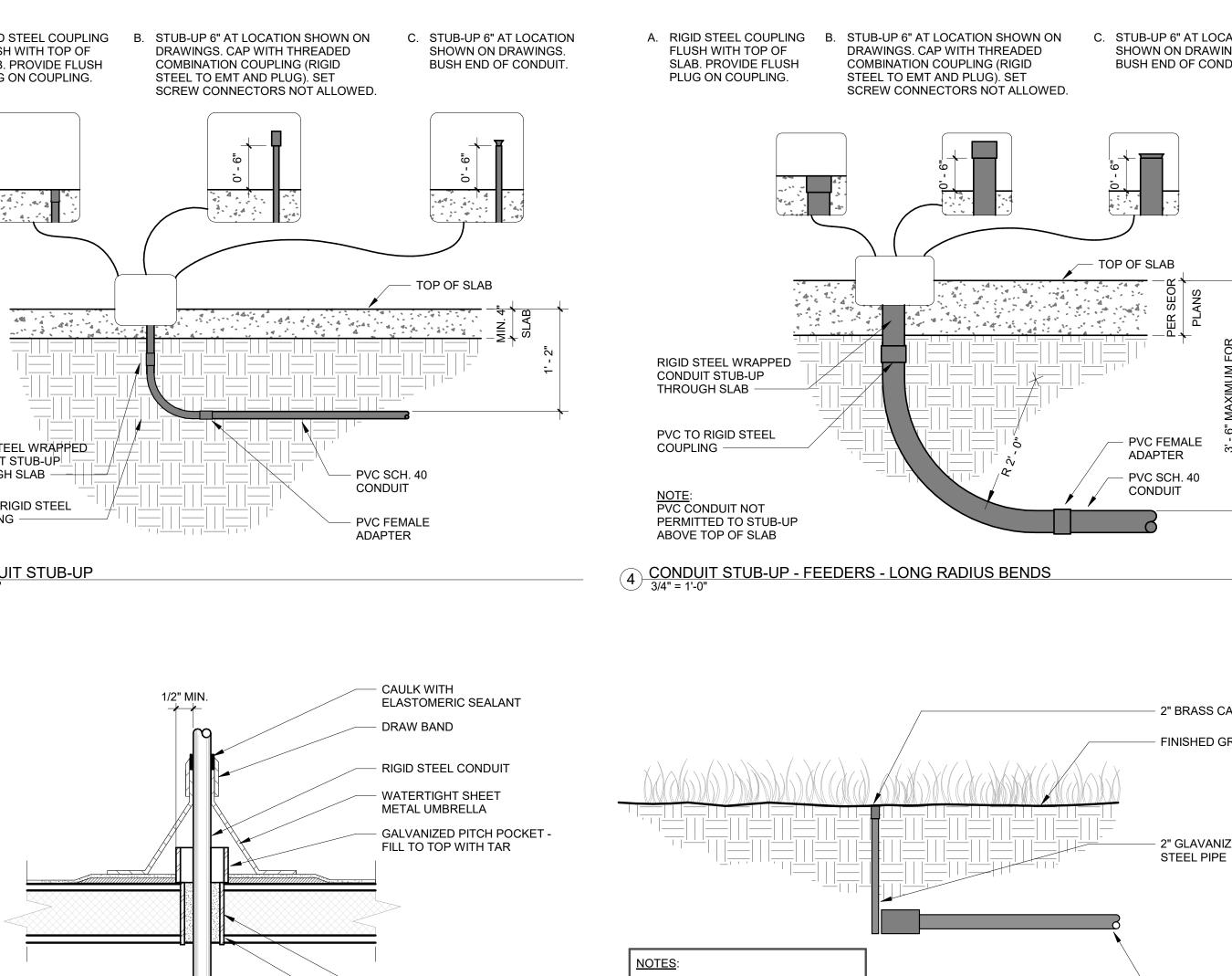
SURFACE GRADE -



8 CONDUIT PENETRATION IN CONCRETE WALL 12" = 1'-0"





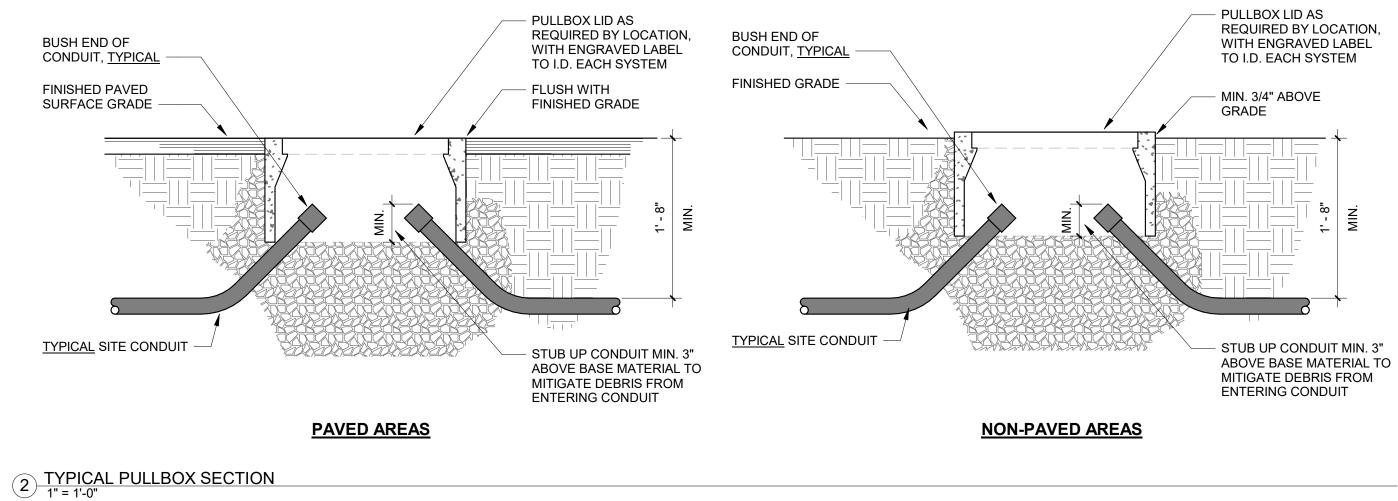


NOTE: COORDINATE INSTALLATION WITH GENERAL CONTRACTOR 5 ROOF PENETRATION DETAIL

- SLEEVE

PENETRATION

- FIBER PACKING AT ROOF



DRAWING SCALE: NOT TO SCALE

ENGRAVE BRASS CAP INDICATING FUNCTION & FINAL DESTINATION

2. RECORD ALL ACTUAL STUB-OUT LOCATIONS ON AS-BUILT DRAWINGS

6 CONDUIT STUB-OUT 1" = 1'-0"



SRCS Terra Linda HS Fire Alarm Upgrade

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Date Issued For

CONDUIT
 STUP-OUT
 WITH CAP



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FE701