



RUHNAU CLARKE

ARCHITECTS

### **GENERAL NOTES**

- 1. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT LOCATION OF UTILITY PANELS, CONDUIT, AND TRANSFORMER WITH RESPECTIVE UTILITY COMPANIES PRIOR TO START OF ANY SITE WORK.
  - THE CONTRACTOR SHALL INSPECT AND VERIFY ALL FIELD CONDITIONS PRIOR TO INSTALLATION OF
- COORDINATE TRENCH ROUTING AND EQUIPMENT LOCATIONS WITH EXISTING CONDITIONS AND NEW
- 4. ALL SITE BRANCH CIRCUIT WIRING SHALL BE #10 AWG. OR LARGER.
- CONTRACTOR SHALL VERIFY EXISTING BUILDING FOOTING PRIOR TO INSTALLATION OF STUB-UP
- CONTRACTOR SHALL UTILIZE 'GPR' GROUND PENETRATING RADAR TO SURVEY AND TRACE ALL

CONDUITS FOR NEW WALL MOUNTED JUNCTION BOX TO AVOID ANY INTERFERENCE.

- EXISTING UNDERGROUND UTILITY LINES IN AREAS WHERE NEW TRENCHING IS PLANNED. CONTRACTOR TO SUBMIT "GPR" REPORT TO PROJECT MANAGER FOR REVIEWING PRIOR TO
- 7. ALL SITE UNDERGROUND CONDUIT TO BE 1" MIN. UNLESS OTHERWISE NOTED.
- 8. SUPPORT CONDUIT(S) EVERY 10'-0" AND WITHIN 3'-0" OF ANY JUNCTION BOX OR TERMINATION.

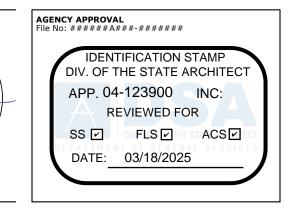
## CONSTRUCTION NOTES

1 ROUTE 2#10 & 1#12 G IN 3/4" CONDUIT FROM EXSITING SITE LIGHTING LUMINAIRE TO NEW LUMINAIRE LOCATION. CONNECT NEW LUMINAIRE TO EXISTING LIGHTING CIRCUIT.

FOR FOOTING DETAIL, SEE:

FOR TRENCHING DETAIL, SEE:







ARCHITECTS

RUHNAU

CLARKE

#### GENERAL NOTES

REFER TO ELECTRICAL LEGENDS AND NOTES SHEET FOR ADDITIONAL DEMOLITION NOTES. CONTRACTOR IS TO USE EXTREME CAUTION WHEN STARTING THE DEMOLITION WORK, THERE ARE MULTIPLE SERVICES FEEDING THIS WORK AREA. CONTRACTOR SHALL MAKE THEIR DUE DILIGENCE IN ARE TO REMAIN. ANY CIRCUITS BEING REMOVED SHALL HAVE ITS SOURCE CORRECTLY LABELED AS 'SPARE' AND SAFE-OFF CIRCUIT BREAKER. ANY CIRCUITS THAT REMAIN ARE TO BE REDLINED AND

## **CONSTRUCTION NOTES**

- EXISTING ELECTRICAL PULLBOX TO BE REMOVED. CONTRACTOR TO FILL HOLE AND RE-COMPACT TO 95%. REMOVE CONDUIT AND CONDUCTORS BACK TO NEAREST BOLLARD TO REMAIN.
- 2 EXISTING BOLLARD TO BE DEMOLISHED.
- (3) EXISTING UNDERGROUND CONDUIT TO BE REMOVED. CONTRACTOR TO FILL HOLE AND RE-COMPACT TO 95%, AND TOP WITH NEW PAVING AS NECESSARY TO MATCH EXISTING SURROUNDING AREA. REMOVE EXISTING CONDUCTORS BACK TO NEAREST BOLLARD TO REMAIN.
- EXISTING UNDERGROUND CONDUIT AND CONDUCTORS TO REMAIN.
- PROVIDE NEW UNDERGROUND PULL BOX AT INTERCEPTION POINT AND EXTEND UNDERGROUND CONDUIT AS SHOWN IN REMODEL SITE PLAN.
- 6 PROVIDE NEW SURFACE MOUNTED PULL BOX AT INTERCEPTION POINT AND EXTEND CONDUIT AS SHOWN IN REMODEL SITE PLAN.
- (7) EXISTING UNDERGROUND POWER VAULT TO REMAIN. (8) EXISTING UNDERGROUND SIGNAL VAULT TO REMAIN.
- (9) EXISTING UNDERGROUND SIGNAL CONDUITS TO BE REMOVED. CONTRACTOR TO FILL HOLE AND RE-COMPACT TO 95%, AND TOP WITH NEW PAVING AS NECESSARY TO MATCH EXISTING SURROUNDING AREA. DISCONNECT AND REMOVE EXISTING SIGNAL CABLING BACK TO HEAD END EQUIPMENT IN
- EXISTING UNDERGROUND CONDUITS TO REMAIN. DISCONNECT AND REMOVE EXISTING SIGNAL CABLING BACK TO HEAD END EQUIPMENT IN BUILDING 'A'.
- EXISTING SURFACE MOUNTED CONDUITS TO REMAIN. DISCONNECT AND REMOVE EXISTING SIGNAL CABLING BACK TO HEAD END EQUIPMENT IN BUILDING 'A'.

ENLARGED ELECTRICAL DEMOLITION SITE PLAN

PROJECT No.: 2/14/2025 11:25:48 AM

─(E) MDF

(E) BLDG T

(E) EMS

**RUHNAUCLARKE.COM** 3775 TENTH STREET, RIVERSIDE CALIFORNIA 92501 (951) 684 4664 / 5751 PALMER WAY, SUITE C, CARLSBAD CALIFORNIA 92010 (760) 438 5899

INDIAN SPRINGS HIGH SCHOOL HEALTH CENTER INDIAN SPRINGS HIGH SCHOOL DEMOLITION SITE PLAN EST-2.1

650 N DEL ROSA DR, SAN BERNARDINO, CA 92410 SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

(E) BLDG P.A.C. 04-114977 04-116949

> (E) PA RACK (A#04-114977)

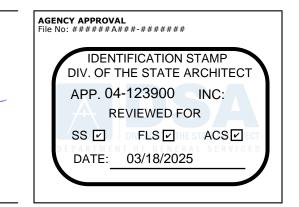
└─(E) IDF RACK

(A#04-114977)

(E) EMS PANEL

(A#04-114977)







#### GENERAL NOTES

- ELECTRICAL CONTRACTOR SHALL VERIFY EXACT LOCATION OF UTILITY PANELS, CONDUIT, AND TRANSFORMER WITH RESPECTIVE UTILITY COMPANIES PRIOR TO START OF ANY SITE WORK.
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- COORDINATE TRENCH ROUTING AND EQUIPMENT LOCATIONS WITH EXISTING CONDITIONS AND NEW
- 4. ALL SITE BRANCH CIRCUIT WIRING SHALL BE #10 AWG. OR LARGER.
- CONTRACTOR SHALL VERIFY EXISTING BUILDING FOOTING PRIOR TO INSTALLATION OF STUB-UP
- CONTRACTOR SHALL UTILIZE 'GPR' GROUND PENETRATING RADAR TO SURVEY AND TRACE ALL EXISTING UNDERGROUND UTILITY LINES IN AREAS WHERE NEW TRENCHING IS PLANNED.

CONDUITS FOR NEW WALL MOUNTED JUNCTION BOX TO AVOID ANY INTERFERENCE.

- 7. ALL SITE UNDERGROUND CONDUIT TO BE 1" MIN. UNLESS OTHERWISE NOTED.
- 8. SUPPORT CONDUIT(S) EVERY 10'-0" AND WITHIN 3'-0" OF ANY JUNCTION BOX OR TERMINATION.

CONTRACTOR TO SUBMIT "GPR" REPORT TO PROJECT MANAGER FOR REVIEWING PRIOR TO

## **CONSTRUCTION NOTES**

- (1) PROVIDE NEW UNDERGROUND POWER PULL BOX AT INTERCEPT POINT.
- PROVIDE NEW CONDUIT AND CONDUCTORS AS NECESSARY TO EXTEND EXISTING LIGHTING CIRCUIT BACK TO EXISTING PANEL 'HA2'. CONDUIT AND CONDUCTOR SIZES SHALL MATCH EXISTING.
- (3) PROVIDE NEW UNDERGROUND SIGNAL PULL BOX AT INTERCEPT POINT.
- (4) PROVIDE NEW SURFACE MOUNTED SIGNAL PULL BOX AT INTERCEPT POINT.
- PROVIDE THE FOLLOWING SURFACE MOUNTED SIGNAL CONDUITS MOUNTED HIGH ON EXTERIOR WALL:
- (1) 4" DATA (1) 3" - PA
- (1) 2" EMS REFER TO DETAIL: (-
- (6) PROVIDE CONDUIT RISER DOWN EXTERIOR WALL AND TRANSITION UNDERGROUND. REFER TO DETAIL: (ED-1.1)
- (7) PROVIDE THE FOLLOWING UNDERGROUND SIGNAL CONDUITS:
- (1) 4" DATA (1) 3" - PA (1) 2" - EMS
- REFER TO DETAIL: (ED-1.1)
- PROVIDE NEW SIGNAL CABLING IN EXISTING CONDUITS AND RECONNECT EXISTING EQUIPMENT IN P.A.C. BUILDING TO EXISTING HEAD END EQUIPMENT IN BUILDING 'A'. QUANTITY AND SIZE OF CABLING TO MATCH EXISTING. CONTRACTOR SHALL PROVIDE ALL NECESSARY CONDUIT, CABLING, HARDWARE, SOFTWARE, PROGRAMMING AND TESTING AS NECESSARY FOR A COMPLETE RECONNECTION.

ENLARGED ELECTRICAL REMODEL SITE PLAN

(E) BLDG P.A.C.

04-116949

(E) PA RACK (A#04-114977)

—(E) IDF RACK

(A#04-114977)

(E) EMS PANEL

(A#04-114977)

PROJECT No.: 2/14/2025 11:25:50 AM

/--(E) MDF

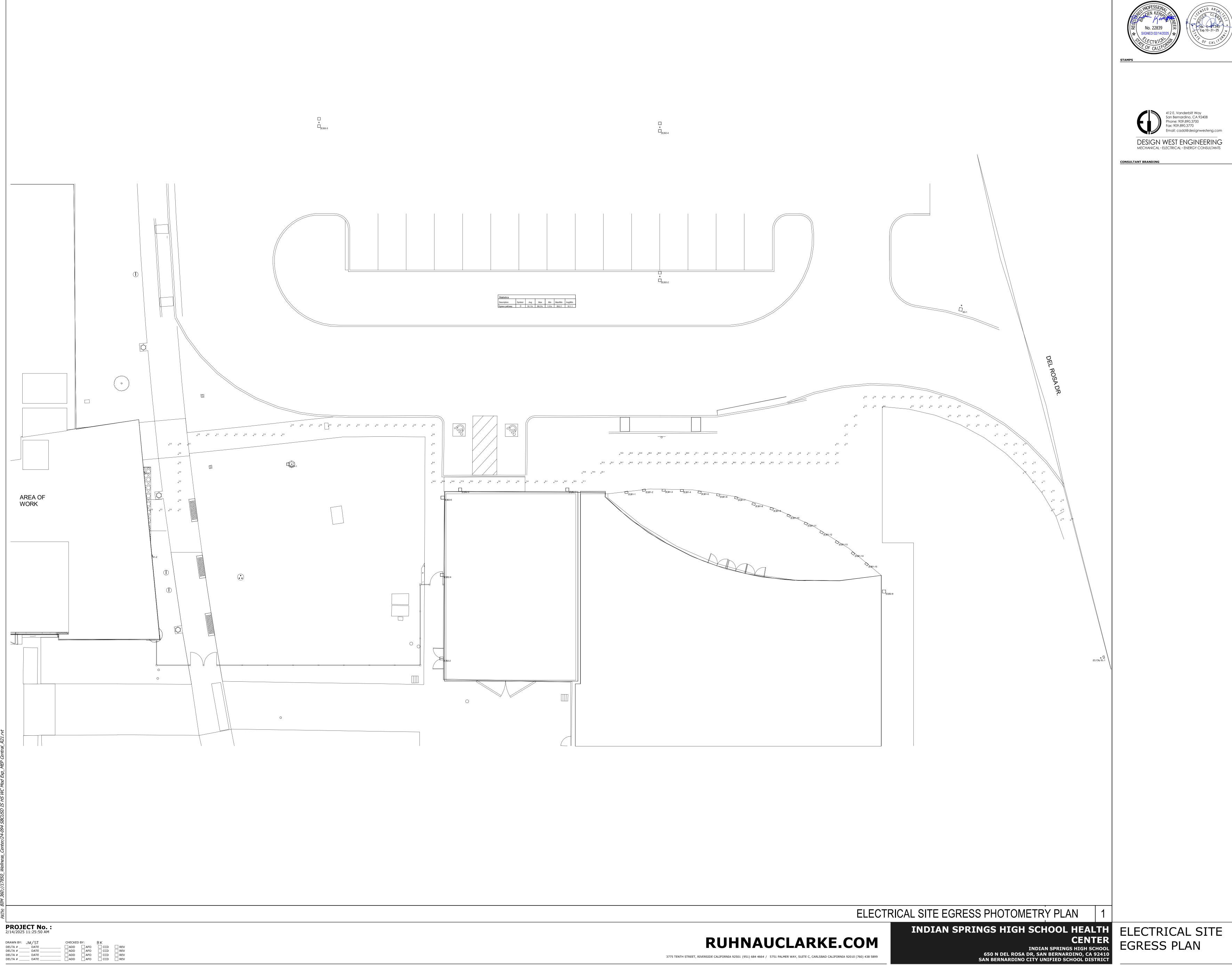
(E) EMS

AREA OF

(E) BLDG T

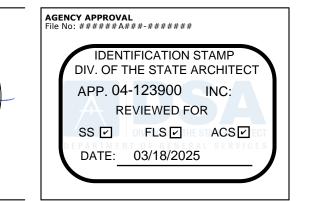
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INDIAN SPRINGS HIGH SCHOOL HEALTH CENTER INDIAN SPRINGS HIGH SCHOOL REMODEL SITE PLAN

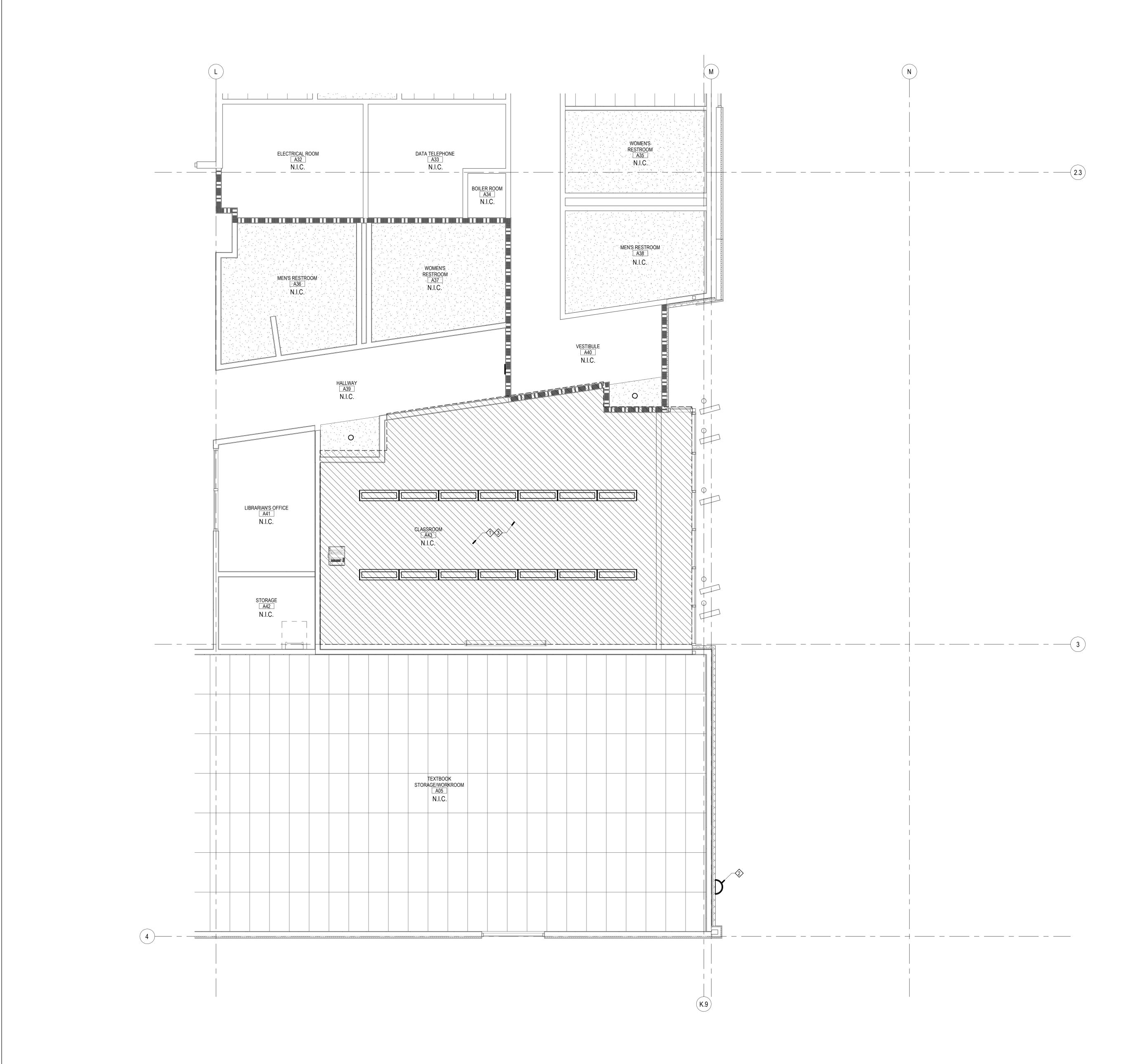
















DIV. OF THE STATE ARCHITECT APP. 04-123900 INC: REVIEWED FOR SS 🗹 FLS 🗸 ACS 🗸



RUHNAU CLARKE

ARCHITECTS

## **GENERAL NOTES**

REFER TO ELECTRICAL LEGENDS AND NOTES SHEET FOR ADDITIONAL DEMOLITION NOTES. CONTRACTOR IS TO USE EXTREME CAUTION WHEN STARTING THE DEMOLITION WORK, THERE ARE MULTIPLE SERVICES FEEDING THIS WORK AREA. CONTRACTOR SHALL MAKE THEIR DUE DILIGENCE IN SOURCE TRACING ALL EXISTING EQUIPMENT, DISCONNECTS AND CIRCUITS ENTERING AND LEAVING THIS AREA. CONTRACTOR SHALL LABEL ALL CONDUITS WITH THEIR SOURCE LOCATION IF CONDUITS ARE TO REMAIN. ANY CIRCUITS BEING REMOVED SHALL HAVE ITS SOURCE CORRECTLY LABELED AS 'SPARE' AND SAFE-OFF CIRCUIT BREAKER. ANY CIRCUITS THAT REMAIN ARE TO BE REDLINED AND

- **CONSTRUCTION NOTES**
- CONTRACTOR IS TO DEMO EXISTING RECEPTACLES, LIGHTING FIXTURES, SWITCHES AND CONTROL DEVICES IN THESE AREAS. REMOVE CONDUIT AND CONDUCTORS BACK TO SOURCE.
- CONTRACTOR IS TO DEMO EXISTING EXTERIOR LIGHT FIXTURE AS SHOWN. REMOVE CONDUIT AND CONDUCTORS BACK TO LAST FIXTURE IN CIRCUIT.
- EXISTING DATA AND TELEPHONE OUTLETS TO BE DEMOLISHED IN THESE AREAS. CONDUIT AND CABLES TO BE REMOVED BACK TO DATA ROOM.

ELECTRICAL DEMOLITION PLAN

INDIAN SPRINGS HIGH SCHOOL HEALTH
CENTER
INDIAN SPRINGS HIGH SCHOOL
650 N DEL ROSA DR, SAN BERNARDINO, CA 92410
SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

PROJECT No.: 2/14/2025 11:25:36 AM







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RUHNAU CLARKE

ARCHITECTS

## **GENERAL NOTES**

REFER TO 'GENERAL NOTES' ON ELECTRICAL LEGENDS AND NOTES SHEET.

- FOR ANY FIRE WALL PENETRATIONS 2" AND UNDER: REFER TO DETAIL: (14)

## **CONSTRUCTION NOTES**

- 1) PROVIDE A DEDICATED 120VAC CIRCUIT FOR WINDOW ROLLER-SHADE MOTORS.
- PROVIDE WALL SWITCH TO CONTROL ROLLER-SHADES IN THIS ROOM. NEW LOCATION OF EXISTING THERMOSTAT. EXTEND CONDUIT AND LOW VOLTAGE CABLING AS NECESSARY FOR
- PROVIDE LIGHTING INVERTER MOUNTED ON WALL.
- REFER TO DETAIL: (7) ED-1.1

POWER REMODEL FLOOR PLAN

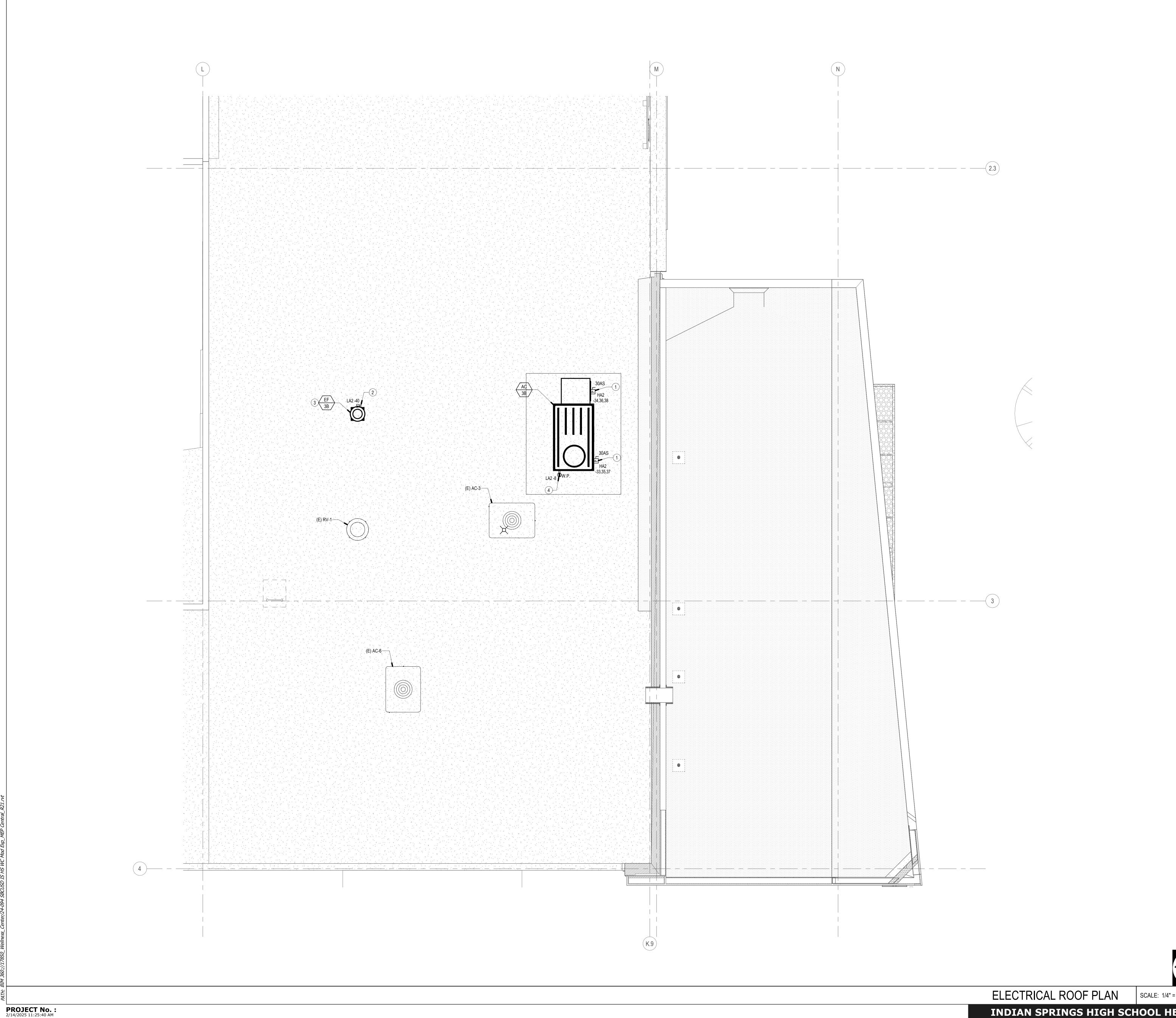
RATED ASSEMBLY LEGEND 1-HR FIRE RATED WALL ASSEMBLY

PROJECT No.: 2/14/2025 11:25:39 AM

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INDIAN SPRINGS HIGH SCHOOL HEALTH CENTER
INDIAN SPRINGS HIGH SCHOOL
SON DEL ROSA DR. SAN BERNARDINO, CA 92410
SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

POWER & SIGNAL
REMODEL PLAN





**AGENCY APPROVAL** File No: ######A###-###### APP. 04-123900 INC: REVIEWED FOR SS I FLS I ACS I



RUHNAU CLARKE ARCHITECTS

## **GENERAL NOTES**

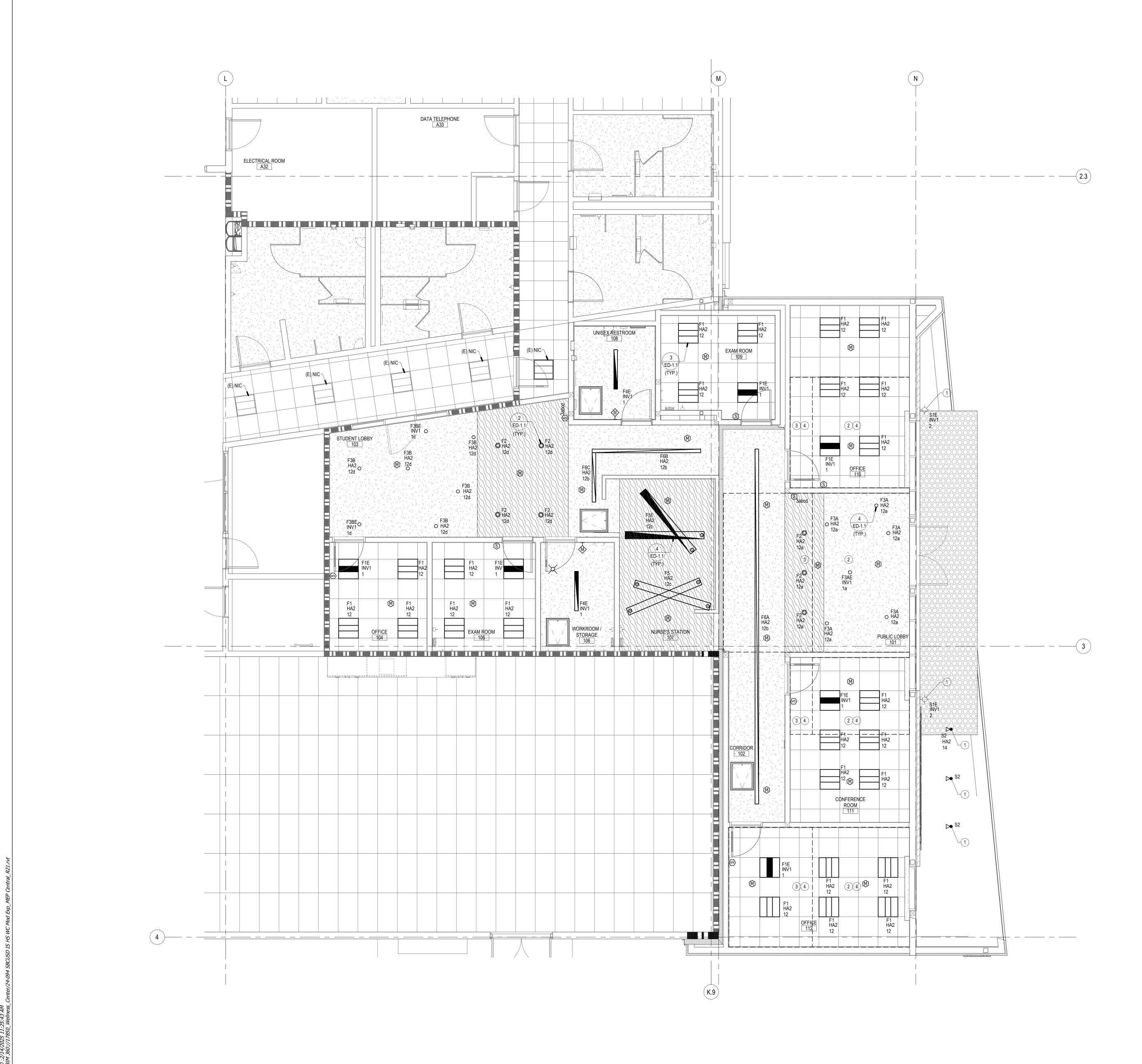
- 1. REFER TO 'GENERAL NOTES' ON ELECTRICAL LEGENDS AND NOTES SHEET.
- 2. ALL CONDUITS SHALL BE INSTALLED IN THE CEILING BELOW U.O.N.
- REFER TO MECHANICAL AND PLUMBING PLANS FOR THE EXACT LOCATION OF HVAC EQUIPMENT AND ADDITIONAL WIRING REQUIREMENTS.
- 4. PROVIDE DUCT DETECTOR/S.F.D. POWER AND CONNECTIONS AS INDICATED ON MECHANICAL DRAWINGS. 5. PROVIDE FLEXIBLE SEAL TYPE CONDUIT FOR CONNECTION TO ALL HVAC EQUIPMENT.
- 6. MOUNT ALL DISCONNECT SWITCHES INDEPENDENT OF THE HVAC UNIT.
- 7. ALL EXTERIOR ELECTRICAL EQUIPMENT SHALL BE NEMA 3R.
- 8. ALL EXTERIOR RECEPTACLE OUTLETS SHALL BE GFCI TYPE.
- 9. PROVIDE HEAVY DUTY DISCONNECT SWITCHES WITH DUAL ELEMENT FUSES TO MATCH MOTOR H.P.

# CONSTRUCTION NOTES

- PROVIDE AND INSTALL H.D. WEATHERPROOF NEMA 3R RATED FUSED DISCONNECT MOUNTED ON UNISTRUT RACK. FUSING PER MECHANICAL EQUIPMENT MANUFACTURERS REQUIREMENTS. VERIFY EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR.
- PROVIDE 120V 1P NEMA 3R MOTOR RATED SNAP SWITCH.
- (3) EXHAUST FAN SHALL BE CONTROLLED BY LIGHT SWITCH IN RESTROOM BELOW.
- 4) PROVIDE WEATHER PROOF GFCI WORK OUTLET AS REQUIRED WITHIN 25'-0" OF MECHANICAL EQUIPMENT. EXTEND EXISTING RECEPTACLE CIRCUIT FROM NEAREST ROOF RECEPTACLE AS NECESSARY FOR A COMPLETE

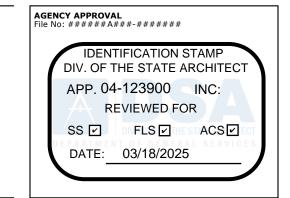
INDIAN SPRINGS HIGH SCHOOL HEALTH
CENTER
INDIAN SPRINGS HIGH SCHOOL
SON DEL ROSA DR, SAN BERNARDINO, CA 92410
SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

ELECTRICAL REMODEL
ROOF PLAN











### **GENERAL NOTES**

- COORDINATE LIGHT FIXTURE LOCATIONS AND LIGHT SWITCH LOCATIONS, COLOR, AND STYLE WITH
- WHERE OCCUPANCY SENSORS ARE SHOWN ON PLANS, VERIFY WATTAGE AND COVERAGE OF PRODUCT PROVIDED IS ADEQUATE FOR SPACE TO BE CONTROLLED. COVERAGE IS TO BE ADJUSTED TO AVOID ACCIDENTAL ACTIVATION OUTSIDE OF AREA. VERIFY WIRING REQUIREMENTS TO ADDITIONAL SENSORS, ROOM CONTROLLERS, RELAY PACKS, ETC WITH PRODUCT BEING PROVIDED.

OCCUPANCY SENSORS SHALL NOT BE LOCATED WITHIN FOUR FEET OF ANY HVAC DIFFUSER.

- WHERE DAYLIGHT SENSORS ARE SHOWN ON PLANS, LOCATION SHOWN IS DIAGRAMMATICAL. VERIFY LOCATION IS PER MANUFACTURER RECOMMENDATIONS BASED ON TYPE OF SENSOR (OPEN/CLOSED LOOP). VERIFY WIRING REQUIREMENTS TO ADDITIONAL SENSORS, ROOM CONTROLLERS, RELAY PACKS, ETC WITH PRODUCT BEING PROVIDED.
- PROVIDE NON-SWITCHED 'HOT' POWER WIRE TO BATTERY PACK CHARGING/SENSOR IN FIXTURE. REFER TO LIGHTING CONTROL DETAILS FOR WIRING AND CONDUIT REQUIREMENTS. CONTRACTOR
- SHALL PROVIDE ALL WIRING AND CONDUITS REQUIRE BY MANUFACTURER TO FIXTURES AND
- FINAL MOUNTING LOCATIONS OF ALL OCCUPANCY AND PHOTOCELL DEVICES SHALL COORDINATED WITH MANUFACTURERS RECOMMENDATIONS AND FIELD ADJUSTED WITH REPRESENTATIVE AS

# **CONSTRUCTION NOTES**

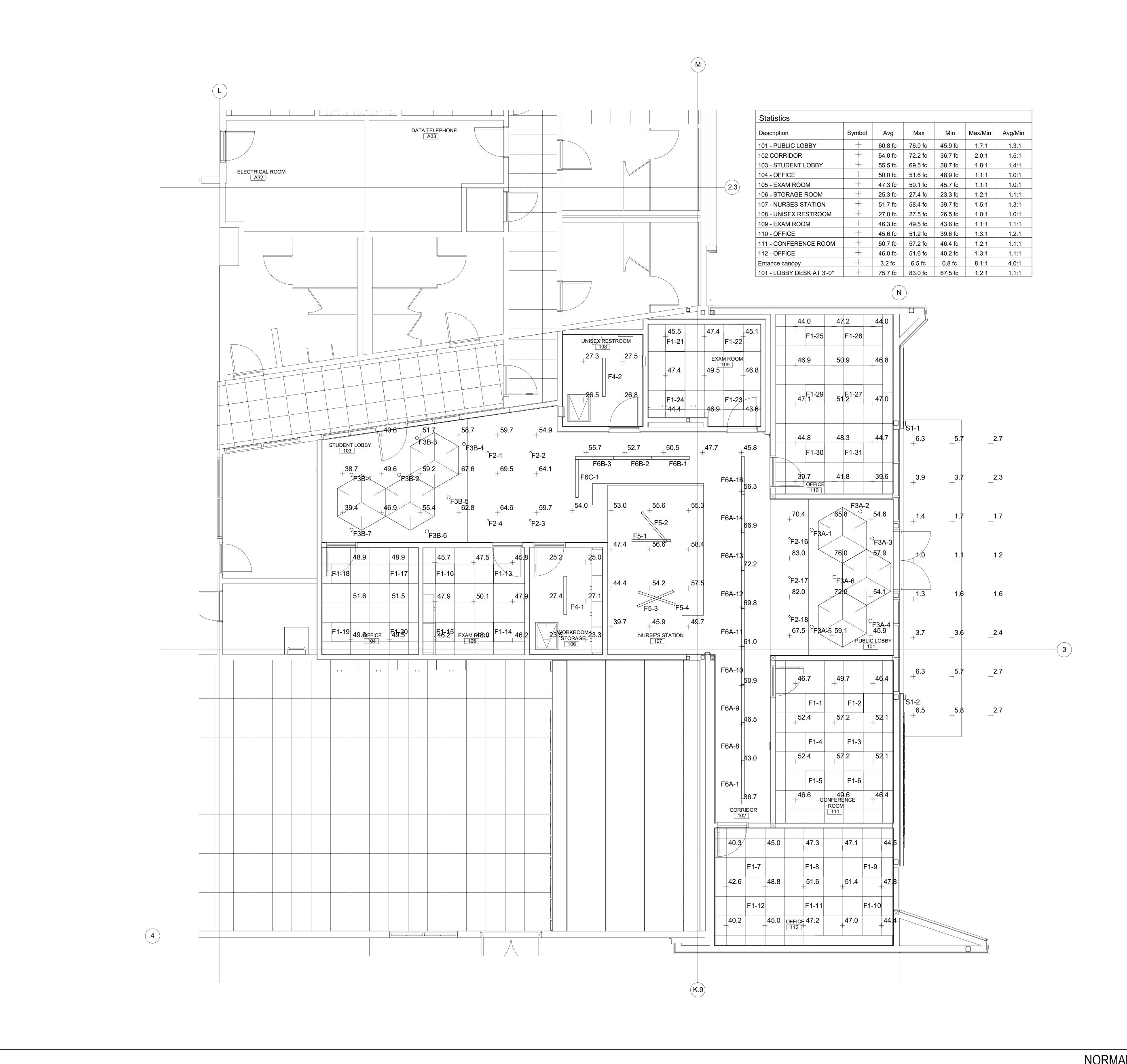
- 1) ROUTE THROUGH nLIGHT SYSTEM FOR PHOTOCELL AND TIME CLOCK CONTROL. VERIFY SETTTINGS WITH DISTRICT MAINTENANCE PRIOR TO SYSTEM START UP.
- 2 PRIMARY DAYLIGHTING ZONE.
- 3 SECONDARY DAYLIGHTING ZONE.
- (4) TOTAL INSTALLED WATTS IN PRIMARY SIDELIT DAYLIT ZONE DOES NOT EXCEED 120 WATTS, THEREFORE, AUTOMATIC DAYLIGHTING CONTROLS ARE NOT REQUIRED. SECTION 130.1(D)2
- (5) TOTAL INSTALLED WATTS IN SECONDARY SIDELIT DAYLIT ZONE DOES NOT EXCEED 120 WATTS, THEREFORE, AUTOMATIC DAYLIGHTING CONTROLS ARE NOT REQUIRED. SECTION 130.1(D)2

RATED ASSEMBLY LEGEND

1-HR FIRE RATED WALL ASSEMBLY

LIGHTING REMODEL PLAN

**PROJECT No.:** 2/14/2025 11:25:43 AM



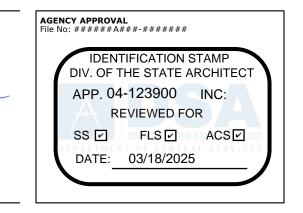
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DESIGN WEST ENGINEERING MECHANICAL · ELECTRICAL · ENERGY CONSULTANTS

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RUHNAU

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NORMAL PHOTOMETRY PLAN

INDIAN SPRINGS HIGH SCHOOL HEALTH CENTER
INDIAN SPRINGS HIGH SCHOOL
INDIAN SPRINGS HIGH SCHOOL

NORMAL PHOTOMETRY
PLAN







DIV. OF THE STATE ARCHITEC APP. 04-123900 INC: REVIEWED FOR SS 🗸 FLS 🗸 ACS 🗸 DATE: 03/18/2025

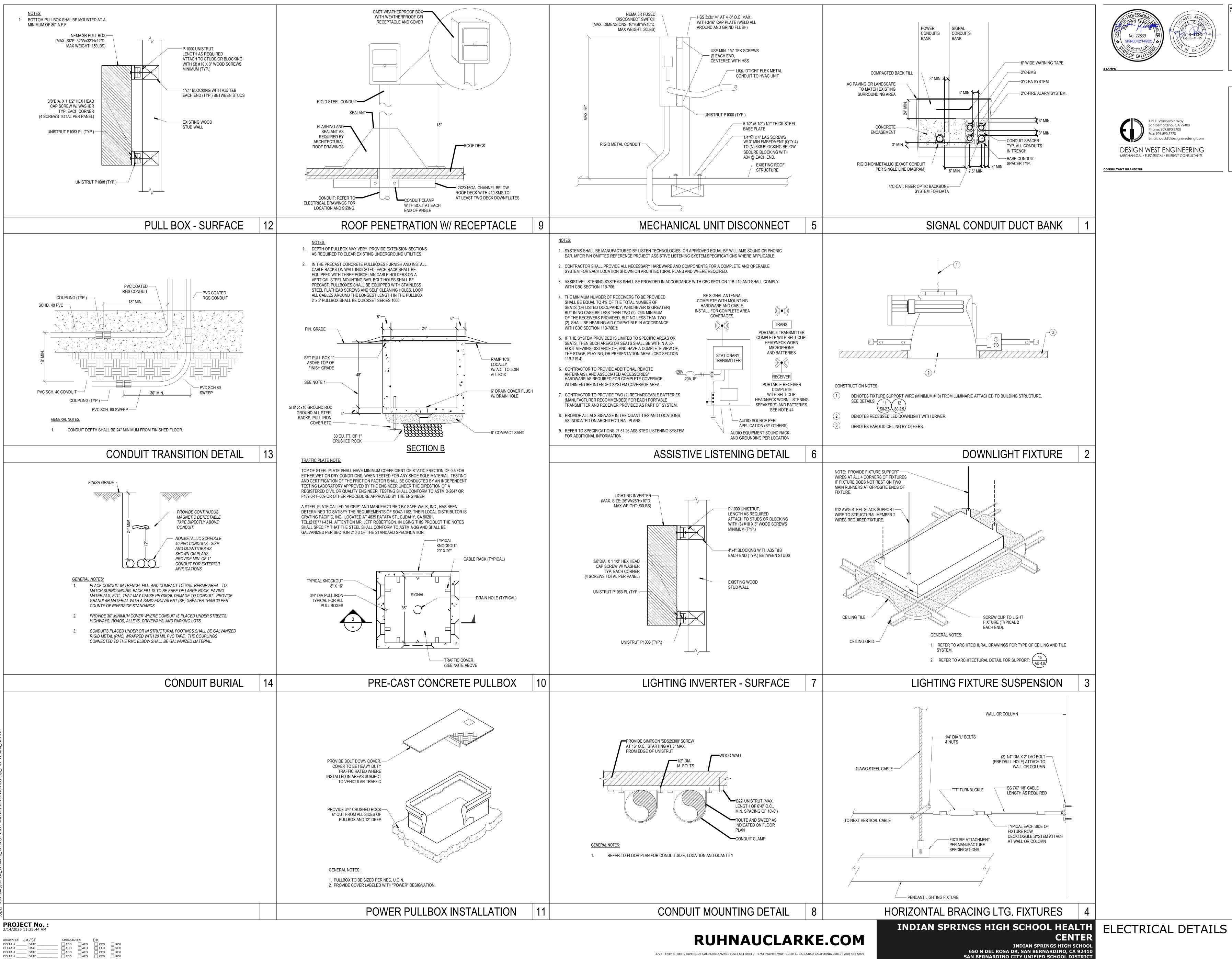
412 E. Vanderbilt Way San Bernardino, CA 92408 Phone: 909.890.3700 Fax: 909.890.3770 DESIGN WEST ENGINEERING MECHANICAL \* ELECTRICAL \* ENERGY CONSULTANTS RUHNAU CLARKE ARCHITECTS

EMERGENCY EGRESS PHOTOMETRY PLAN

INDIAN SPRINGS HIGH SCHOOL HEALTH EMERGENCY EGRESS CENTER

INDIAN SPRINGS HIGH SCHOOL
650 N DEL ROSA DR, SAN BERNARDINO, CA 92410
SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

PROJECT No.: 2/14/2025 11:25:44 AM



DIV. OF THE STATE ARCHITEC

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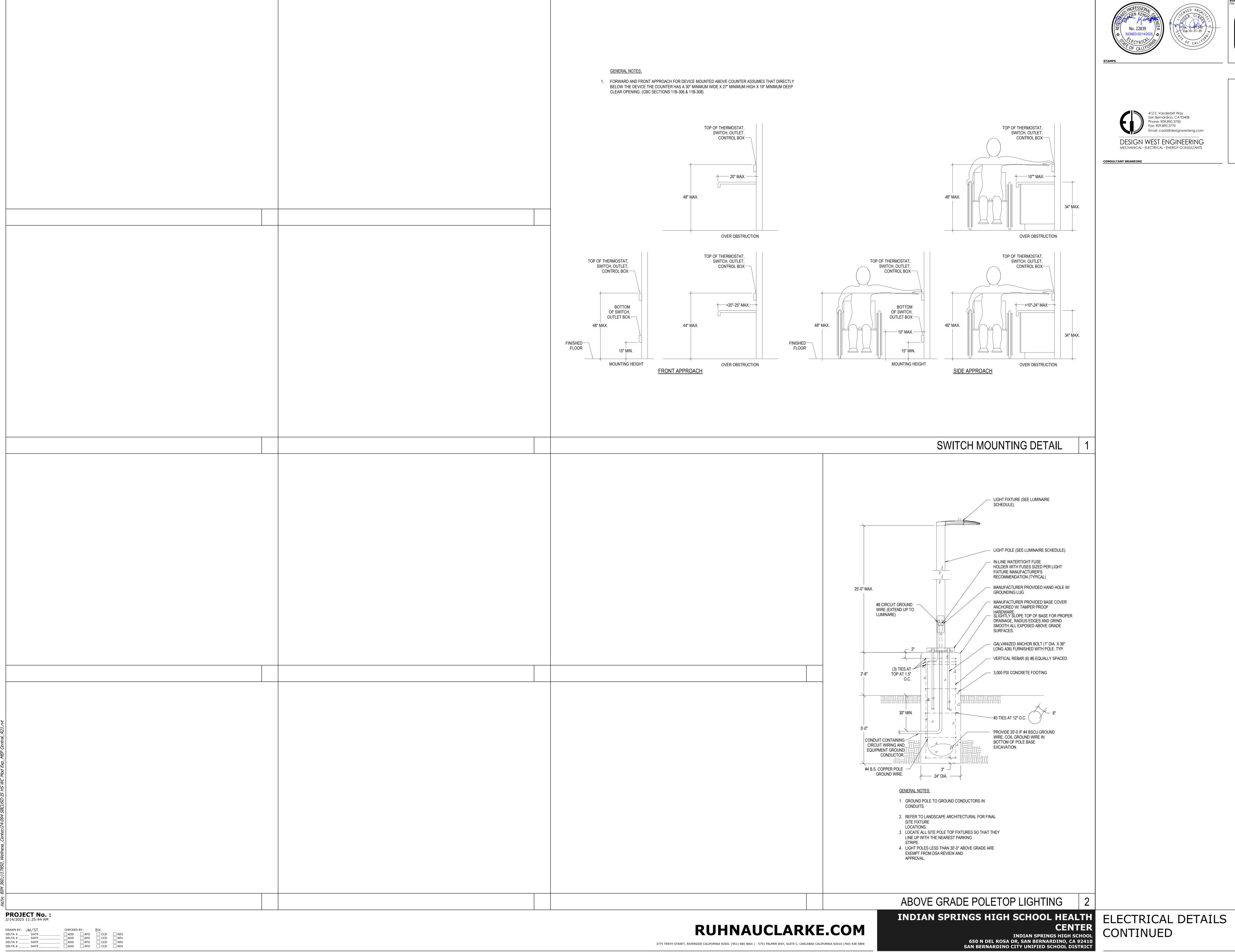
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ARCHITECTS

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APP. 04-123900 INC:

DATE: 03/18/2025



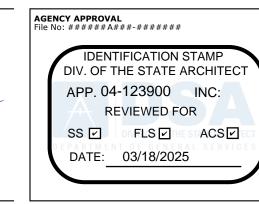






RUHNAU ARCHITECTS

No. 22839



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RUHNAU CLARKE ARCHITECTS

PROJECT No. :

TO COMPLY WITH THESE CODES OR REGULATIONS.

CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR ANY ADDITIONAL COSTS FOR MATERIAL OR LABOR

RUHNAUCLARKE.COM

3775 TENTH STREET, RIVERSIDE CALIFORNIA 92501 (951) 684 4664 / 5751 PALMER WAY, SUITE C, CARLSBAD CALIFORNIA 92010 (760) 438 5899

INDIAN SPRINGS HIGH SCHOOL HEALTH FIRE ALARM LEGENDS & CENTER

650 N DEL ROSA DR, SAN BERNARDINO, CA 9241

SAN BERNARDINO CITY UNIFIED SCHOOL DISTRIC

**INDIAN SPRINGS HIGH SCHOOL** 

- 97. NOT USED.
- INSTALLATION OF AN AUTOMATIC FIRE ALARM SYSTEM SHALL NOT BEGIN UNTIL DETAILED PLANS & SPECIFICATIONS HAVE BEEN REVIEWED BY DSA. UPON COMPLETION OF THE INSTALLATION, A TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE WITNESS OF A DSA APPROVED PROJECT INSPECTOR.
- A FULL SET OF MANUFACTURER'S PRODUCT DATA SHEETS SHALL BE PROVIDED WITH SPECIFIC ITEMS IDENTIFIED FOR
- 100. ALL FIRE ALARM COMPONENTS SHALL BE LOCATED AND INSTALLED IN ACCORDANCE WITH THEIR LISTINGS.
- 101. THE LOCATION OF AUTOMATIC DETECTORS, MANUAL PULL STATIONS & OTHER FIRE ALARM EQUIPMENT & DEVICES, ARE FOR REFERENCE ONLY AND SHALL BE REVIEWED BY DSA FLS FOR APPLICABLE USE. FINAL APPROVAL OF DEVICE PLACEMENT IS SUBJECT TO FIELD VERIFICATION OF CODE COMPLIANCE.
- 102. THE TOTAL SOUND PRESSURE LEVEL PRODUCED BY COMBINING THE AMBIENT SOUND PRESSURE LEVEL WITH ALL AUDIBLE NOTIFICATION APPLIANCES OPERATING SHALL NOT EXCEED 110 DBA AT THE MINIMUM HEARING DISTANCE FROM THE AUDIBLE APPLIANCE. WHERE THE AVERAGE AMBIENT NOISE IS GREATER THAN 105 DBA, VISIBLE ALARM NOTIFICATION APPLIANCES SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 72 AND AUDIBLE ALARM NOTIFICATION APPLIANCES SHALL NOT BE REQUIRED.
- 103. A 24-HOUR EMERGENCY RESPONSE PHONE NUMBER SHALL BE PERMANENTLY POSTED ADJACENT TO THE CONTROL
- 104. THROUGH PENETRATION FIRE STOPPING FOR ALL FIRE WALLS, FLOOR/CEILINGS, AND ASSEMBLIES SHALL HAVE AN "F" OR "T" RATING PER THE CBC AND STANDARDS. INSTALLATION OF FIRE STOPPING SHALL COMPLY WITH APPROVED METHODS.
- 105. THE VOLTAGE DROP SHALL NOT EXCEED 10% USING EITHER THE ENGINEER "POINT TO POINT" OR OHM'S LAW FORMULAS. THIS WILL BE VERIFIED BY DSA DURING ALARM TESTING PER LOCAL ORDINANCE.
- ELECTRICAL DRAWINGS/PANEL SCHEDULES SHALL INDICATE A DEDICATED BRANCH CIRCUIT FOR ALL FIRE ALARM APPURTENANCES, EACH CIRCUIT SHALL HAVE A RED MARKING & BE IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL."

PROVIDE A LOCK-ON DEVICE ON THE CIRCUIT BREAKER HANDLE. THE LOCATION OF THE DEDICATED CIRCUIT BREAKER

- AUTOMATIC FIRE SPRINKLER WATER FLOW ALARMS, SUPERVISORY INITIATING DEVICES, AND THEIR CIRCUITS, SHALL BE DESIGNED AND INSTALLED SO THAT THEY CANNOT BE READILY TAMPERED WITH, OPENED, OR REMOVED WITHOUT INITIATING A SIGNAL.
- 108. THE AUDIBLE ALARM NOTIFICATION APPLIANCES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 DECIBELS (DBA) ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 DBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF NOT LESS THAN 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIABLE SPACE WITHIN THE BUILDING.
- 109. ALL AUTOMATIC FIRE SPRINKLER SYSTEMS WITH 20 HEADS OR MORE SHALL BE SUPERVISED PER NFPA 13.8.16.1.1.

SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT. NFPA 72, 1-5.2.5.2.

- 110. THE SEISMIC BRACING AND ANCHORAGE OF ELECTRICAL CONDUITS, BUS DUCTS, WIREWAY, AND CABLE TRAY SHALL BE IN ACCORDANCE WITH THE "GUIDELINE FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS", PUBLISHED BY SMACNA, AND APPROVED DIAGRAMS SHALL BE MAINTAINED BY CONTRACTOR AND KEPT AT THE JOB SITE AT ALL TIMES.
- LOCATE 135 DEGREE HEAT DETECTORS BELOW CEILING IN ALL LOCATIONS EXCEPT FOR BOILER ROOMS, KILN ROOMS AND IN CEILING SPACES. LOCATE 190 DEGREE HEAT DETECTORS IN BOILER ROOMS, KILN ROOMS AND ATTIC SPACES. 112. PROVIDE FIRE ALARM DOCUMENTATION CABINET ADJACENT TO FIRE ALARM CONTROL PANEL, FOR ACCESS TO RECORDS
- WHEN THE FACP IS LOCATED IN A SEPARATE ROOM FROM THE MAIN ENTRY, DOOR SIGNAGE WHICH READS "F.A.C.P." SHALL BE PROVIDED TO INDICATE IT'S LOCATION.

#### SEQUENCE OF OPERATIONS

ACTION	DEVICE	AREA SMOKE DETECTOR	FACP 120 VAC POWER FAILURE	NOTES	
ACTIVATE CONTROL PANEL TROUBLE BUZZER AND LED		YES	YES	1)	
ACTIVATE CONTROL PANEL SUPERVISORY BUZZER AND LED		NO	NO		
ACTIVATE CONTROL PANEL ALARM BUZZER AND LED		YES	NO		
ANNUNCIATE FACP & ALL REMOTE FIRE ALARM ANNUCIATOR(S)		YES	NO		
SEND SIGNAL TO CENTRAL STATION (24HR ATTENDED LOCATION)		YES	YES		
ACTIVATE ALL AUDIBLE/VISUAL DEVICES THROUGHOUT BUILDII (ALARM)	NG	YES	NO		
NOTIFY FIRE DEPARTMENT VIA CENTRAL STATION		YES	NO		
SHUT DOWN AIR HANDLING EQUIPMENT		YES	NO	2	
MUTE LOCAL PUBLIC ADDRESS SYSTEM		YES	NO		
NOTES:					

INDICATE TROUBLE ON WIRING FAULT OR DEVICES AS REQUIRED. SHUT DOWN ONLY AIR HANDLING EQUIPMENT IN THE BUILDING OR AREA WHERE ALARM CONDITION OCCURS.

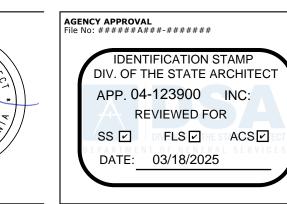
#### FIRE ALARM NOTES CONT.

- EQUIPMENT AND MATERIALS SHALL BE LISTED, LABELED AND INSTALLED PER RECOGNIZED ELECTRICAL TESTING
- IN ADDITION TO ANY SUBMITTAL REQUIREMENTS, SHOP DRAWINGS AND PRODUCT DATA SUBMITTALS SHALL INCLUDE PHYSICAL DIMENSIONS, MOUNTING DETAILS, PENETRATION LOCATIONS AND TYPES.
- COORDINATE EXACT LOCATIONS AND MOUNTING REQUIREMENTS OF ALL EQUIPMENT WITH DISTRICT REPRESENTATIVE
- DRAWINGS DO NOT SHOW ALL THE NECESSARY J-BOXES AND PULL BOXES WHICH WILL BE REQUIRED THROUGHOUT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL THESE BOXES AS NECESSARY TO TERMINATE CONDUITS AND RACEWAYS. PAINT BOXES TO MATCH COLOR OF THE FINISHED SURFACE THAT THE BOXES ARE
- ALL JUNCTION BOXES AND DEVICES INDICATED ON BUILDING EXTERIORS SHALL BE WEATHERPROOF TYPE.
- ALL SIGNAL WIRING IN UNDERGROUND CONDUITS SHALL BE WET LOCATION TYPE
- COORDINATION:
- THE GENERAL CONTRACTOR SHALL COORDINATE LAYOUT DIMENSIONS INDICATED ON ELECTRICAL, ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER BEFORE BID TIME, OR BEFORE PROCEEDING WITH THE
- IN THE EVENT THAT CERTAIN FEATURES OF THE CONSTRUCTION ARE NOT FULLY SHOWN ON THE CONSTRUCTION DOCUMENTS, THEN THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SIMILAR CONDITIONS THAT ARE SHOWN.
- THE CONTRACTOR SHALL VERIFY ALL ELECTRICAL, COMMUNICATION AND SECURITY REQUIREMENTS BEFORE BEFORE STARTING ANY UNDERGROUND WORK, THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES IN ORDER TO LOCATE EXISTING UNDERGROUND LINES. IN THE EVENT THAT DURING THE UNDERGROUND
- CONTRACTOR DETERIORATES ANY EXISTING LINES, IT WILL BE HIS RESPONSIBILITY TO DO ALL REPAIR WORK AT HIS EXPENSE.
- RACEWAYS RUNNING THROUGH BUILDING EXPANSION JOINTS SHALL BE EQUIPPED WITH EXPANSION FITTINGS. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL FATC'S & PANEL LOCATIONS WITH OTHER EQUIPMENT IN ORDER TO MAKE SURE THE FATC'S & PANEL ARE MOUNTED WITH ENOUGH CLEARANCE IN FRONT AND STAY CLEAR FROM ADJACENT
- THE ENGINEER HAS PREPARED THESE DOCUMENTS ONLY FOR IMPROVEMENTS SPECIFIED. DETAILED OR SHOWN AS NEW WORK, AND ASSUMES NO RESPONSIBILITY FOR OTHER CONSTRUCTION, MATERIAL OR EQUIPMENT NOTED AS "EXISTING" OR AS "PROVIDED BY OTHERS".

EQUIPMENT BEFORE ROUGH-IN. NOTIFY ARCHITECT/ENGINEER OF ANY PROBLEM BEFORE INSTALLATION.

- CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS IN THE FIELD BEFORE BID AND INFORM THE ENGINEER OF ANY DISCREPANCIES.
- SEAL AND CAULK AS REQUIRED AT ALL PENETRATIONS. INCLUDING FIRE-RATED ASSEMBLIES.
- WHEREVER POSSIBLE, CONCEAL NEW CONDUITS AND BOXES IN CEILING, ATTIC SPACE OR WALLS. FISH CONDUITS INSIDE OF STUD WALLS WHERE POSSIBLE. WHERE EXPOSED RACEWAYS AND BOXES HAVE TO BE USED IN FINISHED AREAS, USE "WIREMOLD" TYPE SURFACE RACEWAYS AND BOXES.
- WHEN RUNNING WIREMOLD RACEWAYS. RUN RACEWAYS HIGH ON WALL AT CEILING LINE OR LOW NEAR FLOOR AND SWEEP DOWN OR UP TO DEVICES. TAKE CARE TO MAKE INSTALLATION NEAT AND UNOBJECTIONABLE. DRAWINGS DO NOT SHOW NECESSARY INTERMEDIATE BOXES. INCLUDE ALL NECESSARY PULL AND J-BOXES IN BID.
- WHEN ALL FIRE ALARM DEVICES ARE INSTALLED AND PROGRAMMING IS COMPLETED, A NEW FIRE ALARM DEVICE MAP SHALL BE PROVIDED TO THE SCHOOL'S MAIN OFFICE WITH FRAME. MAP SHALL CLEARLY INDICATE TO SCHOOL PERSONNEL THE LOCATIONS OF ALL NEW DEVICES.
- EXISTING STRUCTURAL MEMBERS SHALL NOT BE ALTERED IN ANY WAY WITHOUT FIRST CONSULTING A REGISTERED ENGINEER AND DSA DISTRICT STRUCTURAL ENGINEER.
- PROVIDE ALL NECESSARY SHORING WHEREVER NEW CONSTRUCTION WORK CAN JEOPARDIZE EXISTING STRUCTURES.
- REMOVE EXISTING CONSTRUCTION TO THE BASE OF MATERIALS TO THE EXTENT NECESSARY FOR THE INSTALLATION OF
- WIREMOLD SHALL BE USED UNDER EXISTING HARD LID CEILING AND IN LOCATION WHERE CONCEALED CONDUIT INSTALLATION IS NOT POSSIBLE. WIREMOLD SHALL BE RUN ON TOP OF WALL UNDER CEILING. WIREMOLD RUNNING ACROSS CEILING IS ALLOWED ONLY FOR SINGLE DEVICE CONNECTION. FOR SINGLE SMOKE DETECTOR CONNECTION IN CLASSROOM, RUN THE WIREMOLD FROM J-BOX TO THE DETECTOR ONLY. FOR CLASSROOM WITH MULTIPLE DETECTORS. USE SPACING IN COMPLIANCE WITH NFPA-72 AND USE A SHORT PIECE OF WIREMOLD FROM EACH WALL J-BOX TO EACH DETECTOR. DO NOT RUN WIREMOLD ACROSS THE CEILING FROM WALL TO WALL EXCEPT ALONG TOP OF WALL.
- UPON COMPLETION OF THE SYSTEM INSTALLATION, THE SYSTEM SHALL BE TESTED IN THE PRESENCE OF AND IN A MANNER ACCEPTABLE TO DSA/IOR. CONTRACTOR TO SUPPLY NECESSARY TESTING EQUIPMENT INCLUDING A "DECIBEL METER" TO CHECK THE ACCEPTABLE NOISE LEVELS OF AUDIBLE DEVICES. PROVIDE THE TEST RESULTS PER NFPA-72 TO THE ARCHITECT, DSA, INSPECTOR OF RECORD, OWNER AND TO THE LOCAL FIRE AUTHORITY.
- SYSTEM SHALL BE OPERATIONAL AT ALL TIMES EXCEPT PRE-SCHEDULED OUTAGES WHEN APPROVED BY DISTRICT REPRESENTATIVE AND AT THE TIME AND PERIODS AS DIRECTED BY THE DISTRICT REPRESENTATIVE. THE CONTRACTOR SHALL PROVIDE ADEQUATE MANPOWER TO ACCOMPLISH ALL POWER OUTAGES OR DISABLING OF FIRE DETECTION SYSTEMS TO OCCUPIED SPACES IN NOT-TO-EXCEED (4) FOUR HOUR PERIODS. FOR REST OF REQUIREMENTS DURING CONSTRUCTION OF THE SYSTEM AND THE TRANSFER WITHOUT INTERRUPTIONS SEE DISTRICT REQUIREMENTS.
- MUST PROVIDE A LABELING SYSTEM, DEMO OR AVERY, TO MARK AND IDENTIFY PANEL AND CIRCUIT NUMBERS INSIDE OF
- CONSULT WITH DISTRICT SPECIFICATIONS REGARDING FIRE ALARM SYSTEM CONDUCTOR TYPES.
- DEVICE SOUND LEVELS AND CANDELA RATINGS MUST COMPLY WITH NFPA 72 2022 EDITION RECOMMENDATIONS.
- 78. FIRE ALARM MONITORING SHALL BE REQUIRED AS FOLLOWS: FIRE ALARM SHALL TRANSMIT ANY ALARM, SUPERVISORY OR TROUBLE SIGNAL TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72.
  - SUPERVISING STATION SHALL BE LISTED BY UL OR FM 3011
  - SUPERVISION OF FIRE ALARM SYSTEM AND TELEPHONE LINES SHALL BE ARRANGED BY OWNER/DISTRICT.
- ALL EXPOSED CONDUITS AND BOXES SHALL BE PAINTED RED.
- PROVIDE #12 GROUND WIRE FOR ALL FIRE ALARM CIRCUITS.
- DRAWINGS ARE BASED ON AVAILABLE AS-BUILT PLANS AND FIELD OBSERVATIONS. NOTIFY THE AUTHORIZED OWNER REPRESENTATIVE IMMEDIATELY WHEREVER EXISTING CONDITIONS ENCOUNTERED DEVIATE FROM THESE DRAWINGS AND EXISTING EQUIPMENT MUST BE RELOCATED DUE TO NEW CONSTRUCTION EFFORTS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE TYPE OF CEILING CONSTRUCTION AND TO PROVIDE THE PROPER TYPE OF BOX MOUNTING AND SUPPORT FOR FIRE ALARM INITIATION DEVICES.
- FIRE WATCH IF REQUIRED SHALL CONFORM TO 2022 CALIFORNIA FIRE CODE CHAPTER 33. FIRE WATCH SHOULD BE USED CAREFULLY SINCE THIS IS AN OCCUPIED SITE. CONTRACTOR SHALL PROVIDE FIRE WATCH WHEN PROJECT IS RUNNING
- THE FIRE ALARM SYSTEM SHALL CONTAIN ALL PRINTED CIRCUIT BOARDS, PROGRAMMING, MODULES, CABLES, HARDWARE OR OTHER EQUIPMENT TO SUPPORT THE OPERATION OF A SYSTEM PRINTER. IF A SYSTEM PRINTER IS NOT INDICATED TO BE PART OF THE FIRE ALARM PROJECT THEN THE PRINTER PORT MAY BE PROGRAMMED AS ENABLED BUT NOT SUPERVISED.
- A UNIVERSAL DIGITAL ALARM COMMUNICATOR TRANSMITTER (UDACT) MUST BE PROVIDED IN THE ALARM CONTROL PANEL. THE ASSIGNED OWNER REPRESENTATIVE IS TO PROVIDE THE CENTRAL STATION SERVICE, ACCOUNT NUMBER, AND THE TWO TELEPHONE NUMBERS FOR THE TWO DEDICATED TELEPHONE LINES UTILIZED BY THE UDACT. THESE NUMBERS ARE TO BE LABELED CLEARLY AT THE FACP. THE ACCOUNT NUMBERS MUST BE LABELED ON A MINIMUM 20 SQ. INCH PLACARD AS REQUIRED BY THE 2022 NFPA 72. THE DEDICATED TELEPHONE NUMBERS ARE TO BE PERMANENTLY AND CLEARLY LABELED ON THE TELEPHONE JACKS.
- ALL SIGNALS PRODUCED BY THE PUBLIC ADDRESS SYSTEM, BOTH AUTOMATIC AND MANUAL MUST BE LOCKED OUT DURING AN ALARM CONDITION OF THE FIRE ALARM SYSTEM. THIS IS REQUIRED TO PREVENT THE RE-ENTRY OF STUDENTS INTO A STRUCTURE THAT MAY BE INVOLVED WITH A FIRE.
- SMOKE DETECTORS SHALL BE USED AS THE PRIMARY METHOD OF AUTOMATIC FIRE ALARM SYSTEM INITIATION EXCEPT IN AREAS WHERE THE ENVIRONMENT OR AMBIENT CONDITIONS EXCEED SMOKE DETECTOR INSTALLATION GUIDELINES. GREEN OAKS ACT (SB 575) 01-01-2002
- HEAT DETECTORS SHALL BE USE IN AREAS WHERE THE ENVIRONMENT OR AMBIENT CONDITIONS EXCEED SMOKE DETECTORS INSTALLATION GUIDELINES. HEAT DETECTORS WHERE INSTALLED ABOVE SUSPENDED CEILINGS MUST HAVE THEIR LOCATIONS BE CLEARLY MARKED BELOW THE CEILING AND BE EASILY ACCESSIBLE. LABEL LETTERING SHOULD BE 3/4" HIGH, RED ON WHITE BACKGROUND AND BOLD ENOUGH TO BE EASILY SEEN BY PERSONNEL FROM THE FLOOR.
- INITIATING DEVICES SHALL BE INSTALLED IN ALL AREAS WHERE REQUIRED. EACH INSTALLED INITIATING DEVICE SHALL BE ACCESSIBLE FOR PERIODIC MAINTENANCE AND TESTING. 2022 NFPA 72.
- ALL FIRE ALARM STROBES WHERE THREE OR MORE FLASHES ARE VISIBLE FROM ANY ONE POINT MUST BE SYNCHRONIZED. THE TRIGGER CIRCUIT FOR VISUAL SIGNALS SHOULD BE FROM THE FACP. THE TRIGGER CIRCUIT FOR AUDIBLE SIGNALS SHOULD BE FROM THE FACP TO ENSURE SYNCHRONIZATION. ALL AUDIBLE SIGNALS MUST BE SYNCHRONIZED WITHIN THE SAME NOTIFICATION ZONE 2022 NFPA 72.
- AIR MOVING SYSTEM SUPPLYING AIR IN EXCESS OF 2000 CFM TO ENCLOSED SPACE WITHIN BUILDING SHALL BE EQUIPPED WITH AN AUTOMATIC SHUT-OFF. AUTOMATIC SHUT-OFF SHALL BE ACCOMPLISHED BY SMOKE DETECTORS IN EVERY SPACE SERVED BY THE AIR MOVING EQUIPMENT. AREA DETECTORS SHALL BE USED FOR HVAC SHUT-DOWN PER 2022
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN CONTINUITY OF THE EXISTING FIRE ALARM SYSTEM, CENTRAL STATION REPORTING SYSTEM. SMOKE MANAGEMENT SYSTEM. AND ANY OTHER LIFE SAFETY FOUIPMEN EXISTING AT THE SITE AND AFFECTED BY HIS WORK ON THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIRE WATCH OR OTHER MITIGATING MEASURES FOR SYSTEMS THAT ARE MADE INACTIVE OR OTHERWISE COMPROMISED AS A RESULT OF THE WORK PERFORMED BY THAT CONTRACTOR.
- EXISTING SPARE CONDUIT MAY BE USED IF ADEQUATELY SIZED AND IN GOOD CONDITION, BUT IN NO CASE SHALL EXISTING CONDUCTORS THAT ARE NECESSARY FOR THE OPERATION OF THE EXISTING SYSTEM BE USED DURING THE CONSTRUCTION PERIOD. NEW AND EXISTING CONDUCTORS MUST NOT BE DAMAGED BY THE INSTALLATION OR REMOVAL OF NEW CONDUCTORS. CONTRACTOR SHALL REPLACE ALL DAMAGED CONDUCTORS AT NO COST TO DISTRICT.
- EFFECTIVE JULY 1, 2010, ALL BUILDINGS ON A NEW PUBLIC SCHOOL CAMPUS AS DEFINED IN CBC SECTION 215, SHALL BE PROTECTED BY AN AUTOMATIC FIRE ALARM SYSTEM. AT LEAST ONE MANUAL PULL STATION SHALL BE INSTALLED FOR THE PURPOSE OF MANUALLY INITIATING THE ALARM SYSTEM. ALL SYSTEM COMPONENTS SHALL BE APPROVED & LISTED BY THE CALIFORNIA STATE FIRE MARSHAL (CSFM). THE SYSTEM SHALL BE INSTALLED FOR GROUP E OCCUPANCIES WITH AN OCCUPANT LOAD OF 50 OR MORE OR CONTAINING MORE THAN 1 CLASSROOM, CBC 305.9.
- THE AUTOMATIC FIRE ALARM SYSTEM SHALL BE DESIGNED, INSTALLED & MAINTAINED IN ACCORDANCE WITH NFPA 72 AS AMENDED BY CFC ARTICLE 91, CFC 1006.3.

CONSULTANT BRANDING



RUHNAU 412 E. Vanderbilt Way San Bernardino, CA 92408 Phone: 909.890.3700 Fax: 909.890.3770 Email: cadd@designwesteng.com

ARCHITECTS

DESIGN WEST ENGINEERING MECHANICAL · ELECTRICAL · ENERGY CONSULTANTS

PROJECT No. :

3775 TENTH STREET, RIVERSIDE CALIFORNIA 92501 (951) 684 4664 / 5751 PALMER WAY, SUITE C, CARLSBAD CALIFORNIA 92010 (760) 438 5899

SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

FIRE ALARM WIRING SCHEDULE							
TYPE	DESCRIPTION	MANUFACTURE/CATALOG #	PURPOSE				
D	2 #16 UTP	INDOOR/WEST PENN NO. D990 OUTDOOR/WEST PENN NO. AQ225	SLC LOOP CIRCUIT				
Α	2 #12 STP	INDOOR/WEST PENN NO. 999	SPEAKER CIRCUIT				
V	2 #12 THHN/THWN, CU	VINYLON THHN/THWN-2	STROBE ALARM CIRCUIT				
Р	2 #12 THHN/THWN, CU	VINYLON THHN/THWN-2	L.V. POWER CIRCUIT				
N	2 #18 UTP	INDOOR/WEST PENN NO. D980 OUTDOOR/WEST PENN NO. AQ224	NETWORK CIRCUIT				

FIRE ALARM DEVICE ID - CIRCUIT NUMBER ADDRESS NUMBER SLC CIRCUIT ----AUDIO CIRCUIT -

VOLTAGE DROP CALCS CIRCUIT 'FACP-S22'

EXISTING EXTERIOR HORN

STARTING VOLTAGE = 20.4

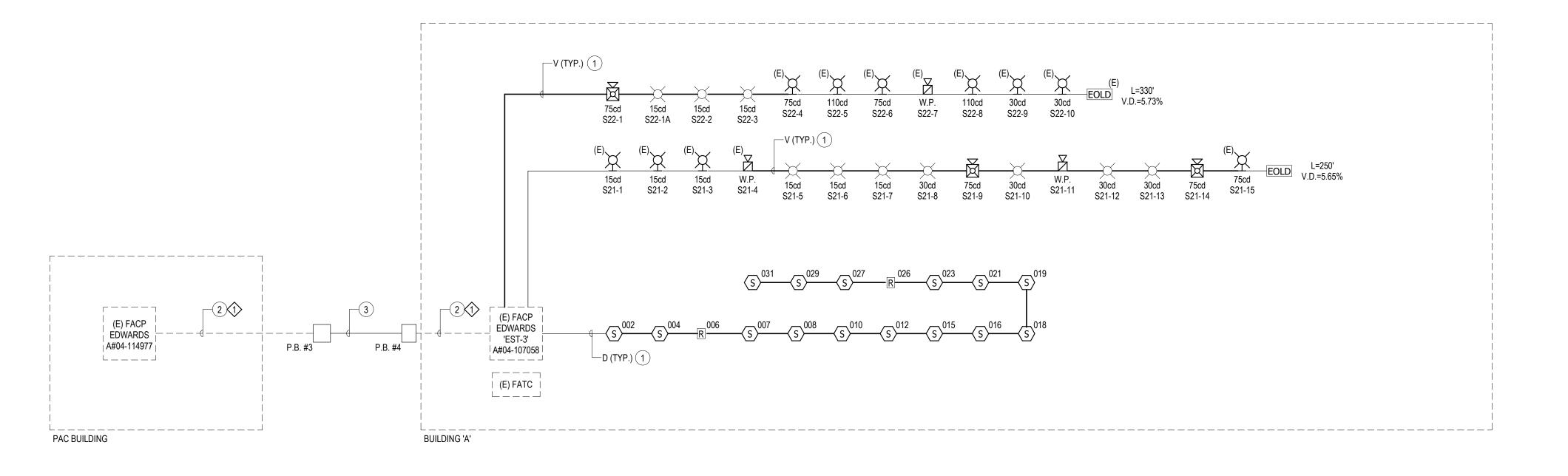
NOTE: -NUMERAL ADJACENT TO CABLE TYPE INDICATES QUANTITY OF CABLES. -EXAMPLE: "3F" DENOTES 3 PAIR OF 2#12 CABLE

-ALL CONDUIT IS 3/4" U.O.N.

-ALL CABLES SHALL BE THHN /THWN (FOR UNDERGROUND)

-FIRE ALARM WIRES SHALL BE UNCOATED SOLID COPPER THHN/THWN.

-FIRE ALARM CABLES SHALL BE FPLR TYPE SUITABLE FOR ENVIRONMENT. -REFER TO SPECIFICATIONS FOR NETWORK CABLES AND FOR WIRES COLOR CODE.



FIRE ALARM RISER DIAGRAM

LTAGE DROP CALCS CIRCUIT 'FACE	-S21'					Location:	BUILDIN	IG 'A'	
DEVICE	QTY	VOLTAGE	AMPS PER UNIT	TOTAL ALARM AMPS	WIRE SIZE	RES.	DIST.	VOLT DROP	%
EXISTING 15cd WALL STROBE	3	24	0.059	0.177	8228	1 122	<u> </u>	2	122
EXISTING 75cd WALL STROBE	1	24	0.152	0.152	-	-			- 14
<b>NEW 15cd CEILING STROBE</b>	3	24	0.063	0.189	8778	2772			575
NEW 30cd CEILING STROBE	4	24	0.168	0.672	823	E-5		- 1	- 44
NEW 75cd CEILING HORN/STROBE	2	24	0.180	0.360	; <del></del> -	j			-
EXISTING EXTERIOR HORN	1	24	0.040	0.040	0.000	-	- <del></del>	- 1	-
NEW EXTERIOR HORN	1	24	0.049	0.049	944				-
TOTALS	3	24		1.639	#12	1.6550	250	1.36	5.68

TVDE	OTV	SUPERVISO	RY CURRENT	ALARM CURRENT		
TYPE	QTY	EACH	TOTAL	EACH	TOTAL	
EXISTING FACP	1	1.362	1.362	5.647	5.647	
NEW SMOKE DETECTOR	15	0.000051	0.000765	0.000068	0.00102	
NEW RELAY MODULE	2	0.0001	0.0002	0.0001	0.0002	
NEW 15cd CEILING STROBE	6	(\$5.5.5.\$)	(55.55)	0.063	0.378	
NEW 30cd CEILING STROBE	4	SEERE	****	0.168	0.672	
NEW 75cd CEILING HORN/STROBE	3	(5.5.5.5)	(55.55)	0.180	0.54	
NEW EXTERIOR HORN	1	(2222)		0.049	0.049	
		TOTALS	1.362965		7.28722	
		TOTAL SUPERVISORY CURRENT SUPERVISORY STANDBY TIME REQUIRED BATTERY (SUPERVISORY)  TOTAL FIRE ALARM CURRENT FIRE ALARM STANDBY TIME		1.363 A 24.0 HRS 32.711 AH 7.287 A 0.0833 HRS		
		REQUIRED BATTERY	(FIRE ALARM)	0.607 A	н	
		TOTAL REQUIRED (V MARGIN)	VITH 25% SAFETY	41.648 A	Н	
		NEW BATTERY		50.0 A	Н	

BATTERY REMAINING SPARE CAPACITY

STARTING VOLTAGE = 20.4 VOLTAGE AT END OF LINE = 19.0 MINIMUM VOLTAGE PER MANUFACTURER SPECIFICATIONS = 16.0

FIRE ALARM CALCULATIONS

SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

8.352 AH

DIV. OF THE STATE ARCHITECT

APP. 04-123900 INC: REVIEWED FOR SS 🗹 FLS 🗸 ACS 🗸

RUHNAU

CLARKE

ARCHITECTS

412 E. Vanderbilt Way San Bernardino, CA 92408 Phone: 909.890.3700

**GENERAL NOTES** 

ALL STROBES AND SMOKE DETECTORS SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT", PER NFPA 72

STORAGE BATTERY CELLS SHALL BE INSULATED AGAINST GROUNDS FAULTS THAT MIGHT OCCUR, PER

BATTERIES SHALL BE PROTECTED AGAINST EXCESSIVE CHARGING AND LOAD CURRENTS BY MEANS

THE SECONDARY POWER SUPPLY SHALL AUTOMATICALLY PROVIDE POWER TO THE PROTECTED PREMISES SYSTEM WITHIN 10 SECONDS AND THE SUPERVISING SYSTEM WITHIN 60 SECONDS OF PRIMARY POWER FAILURE, TO MEET MINIMUM VOLTAGE REQUIREMENTS FOR OPERATION (PER NFPA

PROVIDE A LISTED BREAKER LOCKING DEVICE FOR THE REMOTE POWER SUPPLY CIRCUIT BREAKER

MARKING AND IDENTIFICATION FOR 'FIRE ALARM CIRCUIT'. LOCATION OF CIRCUIT BREAKER TO BE

**DEMOLITION NOTES** 

**CONSTRUCTION NOTES** 

PROVIDE NEW FIRE ALARM CABLING IN EXISTING CONDUITS AND RECONNECT EXISTING EQUIPMENT IN P.A.C. BUILDING TO EXISTING HEAD END EQUIPMENT IN BUILDING 'A'. QUANTITY AND SIZE OF CABLING TO MATCH EXISTING. CONTRACTOR SHALL PROVIDE ALL NECESSARY CONDUIT, CABLING, HARDWARE, SOFTWARE,

PROVIDE NEW FIRE ALARM CABLING IN NEW CONDUIT PATHWAY. REFER TO REMODEL SITE PLAN FOR CONDUIT

1 ) VERIFY WITH FIRE ALARM WIRING SCHEDULE FOR ALL FA CABLING REQUIREMENTS.

PROGRAMMING AND TESTING AS NECESSARY FOR A COMPLETE RECONNECTION.

REMOVE EXISTING CABLING BACK TO HEAD END EQUIPMENT IN PAC BUILDING. EXISTING CONDUIT TO REMAIN.

AND FIRE ALARM CONTROL UNIT, PER NFPA 72 10.6.5.4. PROVIDE CIRCUIT BREAKER WITH RED

REFER TO 'FIRE ALARM NOTES' ON FIRE ALARM LEGENDS AND NOTES SHEETS.

Fax: 909.890.3770

DESIGN WEST ENGINEERING MECHANICAL \* ELECTRICAL \* ENERGY CONSULTANTS

OF AN OVERCURRENT DEVICE, PER NFPA 72 10.6.10.4.

PERMANENTLY IDENTIFIED AT FAPS/FACP.

NFPA 72 10.6.10.2.1.

3775 TENTH STREET, RIVERSIDE CALIFORNIA 92501 (951) 684 4664 / 5751 PALMER WAY, SUITE C, CARLSBAD CALIFORNIA 92010 (760) 438 5899

Location: BUILDING 'A'

VOLTAGE AT END OF LINE = 19.0

MINIMUM VOLTAGE PER MANUFACTURER SPECIFICATIONS = 16.0

QTY VOLTAGE AMPS PER TOTAL ALARM WIRE RES. DIST. VOLT

0.063

UNIT AMPS SIZE DROP
24 0.082 0.164 -- -- --

INDIAN SPRINGS HIGH SCHOOL HEALTH FIRE ALARM RISER CENTER INDIAN SPRINGS HIGH SCHOOL 650 N DEL ROSA DR, SAN BERNARDINO, CA 92410

DIAGRAM

PROJECT No.: 2/14/2025 12:08:09 PM

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**AGENCY APPROVAL** File No: ###### A###-###### DIV. OF THE STATE ARCHITEC APP. 04-123900 INC: REVIEWED FOR SS 🗹 FLS 🗸 ACS 🗸



RUHNAU CLARKE

ARCHITECTS

#### GENERAL NOTES

- REFER TO FIRE ALARM LEGENDS AND NOTES SHEET FOR ADDITIONAL DEMOLITION NOTES.
- CONTRACTOR IS TO USE EXTREME CAUTION WHEN STARTING THE DEMOLITION WORK, THERE ARE MULTIPLE SERVICES FEEDING THIS WORK AREA. CONTRACTOR SHALL MAKE THEIR DUE DILIGENCE IN ARE TO REMAIN. ANY CIRCUITS BEING REMOVED SHALL HAVE ITS SOURCE CORRECTLY LABELED AS 'SPARE' AND SAFE-OFF CIRCUIT BREAKER. ANY CIRCUITS THAT REMAIN ARE TO BE REDLINED AND
- REFER TO DEMOLITION NOTE #8 ON SHEET 'F0-0.1' FOR EXISTING FIRE ALARM SYSTEM IN THEATER

# **CONSTRUCTION NOTES**

- PROVIDE NEW UNDERGROUND PULL BOX AT INTERCEPTION POINT AND EXTEND UNDERGROUND CONDUIT AS SHOWN IN REMODEL SITE PLAN.
- PROVIDE NEW SURFACE MOUNTED PULL BOX AT INTERCEPTION POINT AND EXTEND CONDUIT AS SHOWN IN REMODEL SITE PLAN.
- (3) EXISTING UNDERGROUND FIRE ALARM PULL BOX TO REMAIN. EXISTING UNDERGROUND FIRE ALARM CONDUIT TO BE REMOVED. CONTRACTOR TO FILL HOLE AND RE-
- COMPACT TO 95%, AND TOP WITH NEW PAVING AS NECESSARY TO MATCH EXISTING SURROUNDING AREA. DISCONNECT AND REMOVE EXISTING FIRE ALARM CABLING BACK TO HEAD END EQUIPMENT.
- (5) EXISTING UNDERGROUND CONDUIT TO REMAIN. DISCONNECT AND REMOVE EXISTING FIRE ALARM CABLING BACK TO HEAD END EQUIPMENT.
- 6 EXISTING SURFACE MOUNTED CONDUIT TO REMAIN. DISCONNECT AND REMOVE EXISTING FIRE ALARM CABLING BACK TO HEAD END EQUIPMENT IN BUILDING 'A'.

FIRE ALARM DEMOLITION SITE PLAN

INDIAN SPRINGS HIGH SCHOOL HEALTH CENTER
INDIAN SPRINGS HIGH SCHOOL
SOON DEL ROSA DR. SAN BERNARDINO, CA 92410
CAN REPNARDING CITY UNITED SCHOOL PICTORS

FIRE ALARM
DEMOLITION SITE PLAN

FS-1.1

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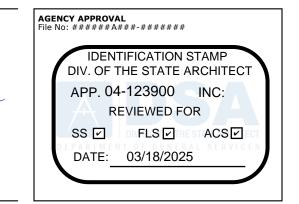
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SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

PROJECT No.: 2/14/2025 12:08:18 PM









RUHNAU CLARKE ARCHITECTS

#### GENERAL NOTES

- ELECTRICAL CONTRACTOR SHALL VERIFY EXACT LOCATION OF UTILITY PANELS, CONDUIT, AND TRANSFORMER WITH RESPECTIVE UTILITY COMPANIES PRIOR TO START OF ANY SITE WORK.
- THE CONTRACTOR SHALL INSPECT AND VERIFY ALL FIELD CONDITIONS PRIOR TO INSTALLATION OF
- COORDINATE TRENCH ROUTING AND EQUIPMENT LOCATIONS WITH EXISTING CONDITIONS AND NEW
- 4. ALL SITE BRANCH CIRCUIT WIRING SHALL BE #10 AWG. OR LARGER.
- CONTRACTOR SHALL VERIFY EXISTING BUILDING FOOTING PRIOR TO INSTALLATION OF STUB-UP CONDUITS FOR NEW WALL MOUNTED JUNCTION BOX TO AVOID ANY INTERFERENCE.
- CONTRACTOR SHALL UTILIZE 'GPR' GROUND PENETRATING RADAR TO SURVEY AND TRACE ALL EXISTING UNDERGROUND UTILITY LINES IN AREAS WHERE NEW TRENCHING IS PLANNED. CONTRACTOR TO SUBMIT "GPR" REPORT TO PROJECT MANAGER FOR REVIEWING PRIOR TO
- 7. ALL SITE UNDERGROUND CONDUIT TO BE 1" MIN. UNLESS OTHERWISE NOTED.
- 8. SUPPORT CONDUIT(S) EVERY 10'-0" AND WITHIN 3'-0" OF ANY JUNCTION BOX OR TERMINATION.

## **CONSTRUCTION NOTES**

- 1 PROVIDE NEW UNDERGROUND FIRE ALARM PULL BOX AT INTERCEPT POINT.
- PROVIDE NEW SURFACE MOUNTED FIRE ALARM PULL BOX AT INTERCEPT POINT.
- PROVIDE THE FOLLOWING SURFACE MOUNTED SIGNAL CONDUITS MOUNTED HIGH ON EXTERIOR WALL:
- REFER TO DETAIL: (4) PROVIDE CONDUIT RISER DOWN EXTERIOR WALL AND TRANSITION UNDERGROUND.
- REFER TO DETAIL:  $\frac{3}{(FD-1.1)}$ (5) PROVIDE THE FOLLOWING UNDERGROUND SIGNAL CONDUITS:
- (1) 2" FIRE ALARM
- PROVIDE NEW FIRE ALARM CABLING IN EXISTING CONDUIT AND RECONNECT EXISTING FIRE ALARM CONTROL PANEL IN P.A.C. BUILDING TO EXISTING FIRE ALARM CONTROL PANEL IN BUILDING 'A'. QUANTITY AND SIZE OF CABLING TO MATCH EXISTING. CONTRACTOR SHALL PROVIDE ALL NECESSARY CONDUIT, CABLING, HARDWARE, SOFTWARE, PROGRAMMING AND TESTING AS NECESSARY FOR A COMPLETE RECONNECTION.

FIRE ALARM SITE PLAN

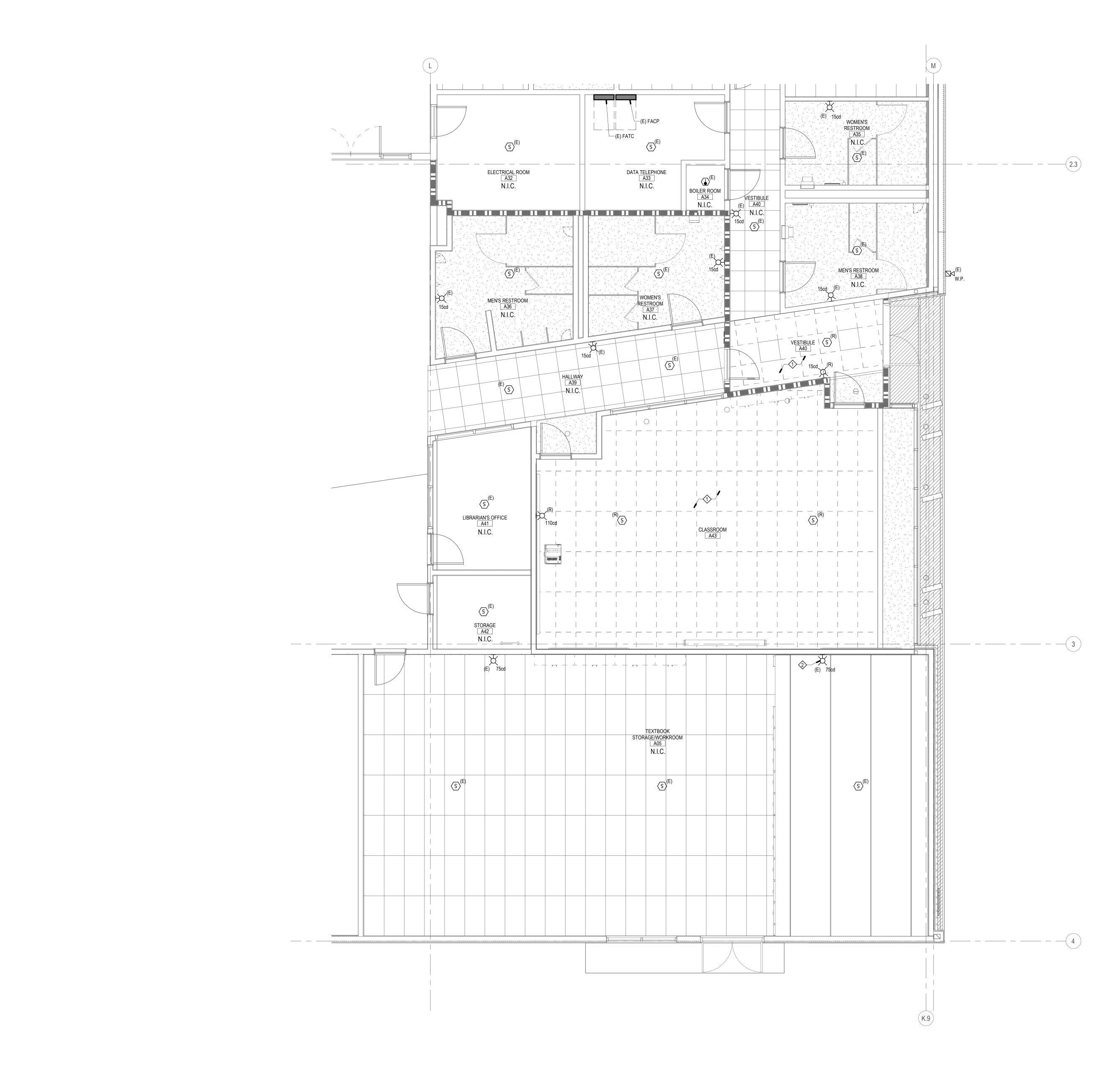
INDIAN SPRINGS HIGH SCHOOL HEALTH CENTER INDIAN SPRINGS HIGH SCHOOL SITE PLAN

650 N DEL ROSA DR, SAN BERNARDINO, CA 92410

SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

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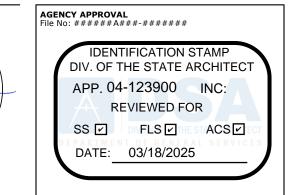
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RUHNAU CLARKE ARCHITECTS

**GENERAL NOTES** 

REFER TO 'DEMOLITION NOTES' ON FIRE ALARM LEGENDS AND NOTES SHEET.

**CONSTRUCTION NOTES** 

EXISTING FIRE ALARM DEVICES TO BE REMOVED IN THIS ROOM. DISCONNECT AND REMOVE ALL FIRE ALARM CABLING AND CONDUIT BACK TO NEAREST DEVICE TO REMAIN.

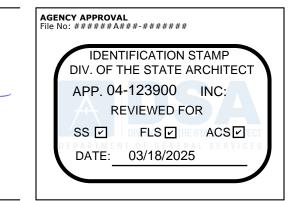
DISCONNECT AND REMOVE EXISTING FIRE ALARM CABLING AND CONDUIT FROM EXISTING STROBE BACK TO NEAREST DEVICE TO REMAIN. EXISTING STROBE TO REMAIN.

FIRE ALARM DEMOLITION PLAN











**GENERAL NOTES** 

REFER TO 'GENERAL NOTES' ON FIRE ALARM LEGENDS AND NOTES SHEET. FOR ANY FIRE WALL PENETRATIONS 2" AND UNDER: REFER TO DETAIL: (14)
AD-2.1

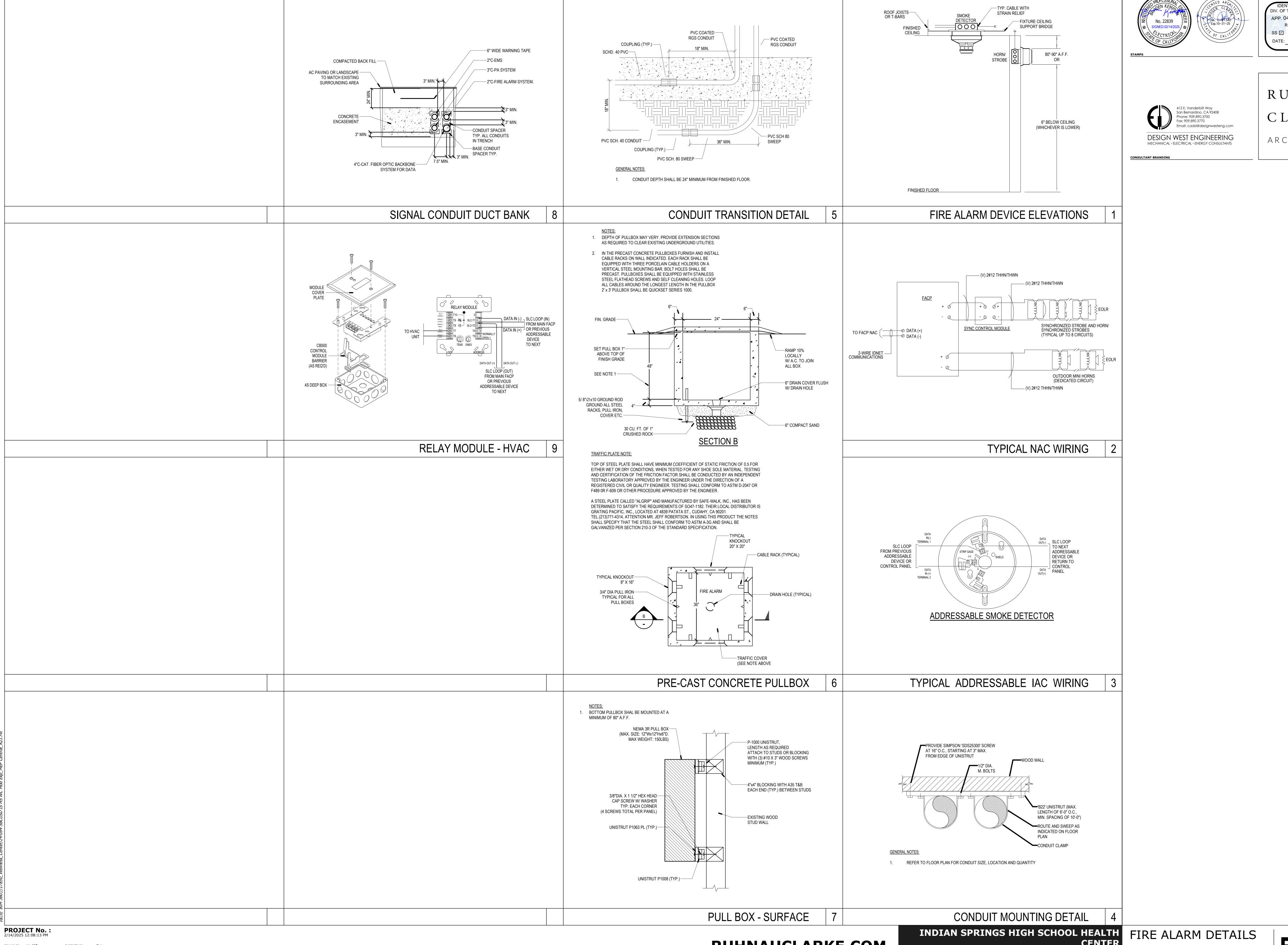
# **CONSTRUCTION NOTES**

- EXTEND EXISTING FIRE ALARM CIRCUIT TO EXISTING STROBE. PROVIDE ALL NECESSARY CABLING, CONDUIT, JUNCTION BOXES, PROGRAMMING AND TESTIN FOR A COMPLETE AND OPERABLE CIRCUIT. 2 EXISTING FIRE ALARM CIRCUIT TO REMAIN. REFER TO AS-BUILT DRAWINGS UNDER A#04-107058 FOR MORE INFORMATION.
- 3) PROVIDE RELAY MODULE FOR NEW HVAC UNIT SHUT-DOWN. REFER TO DETAIL:  $\frac{9}{60-1}$
- 4) PROVIDE RELAY MODULE FOR EXISTING HVAC UNIT SHUT-DOWN.

REFER TO DETAIL: (9)

RATED ASSEMBLY LEGEND

1-HR FIRE RATED WALL ASSEMBLY



DIV. OF THE STATE ARCHITECT APP. 04-123900 INC: REVIEWED FOR SS I FLS I HEST ACS I DATE: 03/18/2025

> RUHNAU CLARKE ARCHITECTS

INDIAN SPRINGS HIGH SCHOOL

650 N DEL ROSA DR, SAN BERNARDINO, CA 92410

SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

DUE TO EXISTING CONDITIONS.

TO THE FINISHED BUILDING.

(NATIONAL FIRE ALARM CODE).

APPROVING ENGINEER.

PROFESSIONAL ENGINEER.

APPROVED LOCATION.

9. ALL MATERIAL INSTALLED SHALL BE NEW AND U.L. LISTED.

- CALIFORNIA BUILDING CODE (CBC) - 2022 EDITION

HAVING JURISDICTION AND THE OWNER'S REPRESENTATIVE.

19. ALL WIRING SHALL BE ACCOMPLISHED UNDER THE ELECTRICAL CONTRACT.

LOCATION MUST MEET APPLICABLE CODES AND DESIGN REQUIREMENTS.

ASSOCIATED CALCULATIONS TO THE ENGINEER FOR APPROVAL.

RECEIVING APPROVAL PRIOR TO STARTING CONSTRUCTION.

21. THESE DRAWINGS REPRESENT SCHEMATIC SYSTEMS.

EXISTING MATERIAL.

### PIPE HANGER NOTES

- . HANGER SYMBOLS AS SHOWN ON PIPING PLAN DO NOT REFLECT ACTUAL FIELD INSTALLATION. FINAL HANGER LOCATION SHALL BE IN ACCORDANCE WITH 2022 NFPA 13 17.4.2.
- 2. MAXIMUM LENGTH OF UNSUPPORTED STEEL PIPE IS TO BE 24".
- 3. 3" MINIMUM CLEARANCE FROM UPRIGHT SPRINKLER TO HANGER PER 2022 NFPA 13 17.4.3.3.

## HANGER SPACING REQUIREMENTS

PIPE DIAMETER (IN.)	PIPE TYPE	HANGER SPACING	MAX. DISTANCE FROM END OF LINE SPRINKLER HEAD
1	SCHEDULE 40	12'-0" MAX	36" MAX
1 1/4	SCHEDULE 40	12'-0" MAX	48" MAX
1 1/2	SCHEDULE 40	15'-0" MAX	60" MAX
2	SCHEDULE 40	15'-0" MAX	60" MAX
2.5	SCHEDULE 10	15'-0" MAX	60" MAX
3	SCHEDULE 10	15'-0" MAX	60" MAX
4	SCHEDULE 10	15'-0" MAX	60" MAX

#### BRANCHLINE RESTRAINT REQUIREMENTS

 BRANCHLINE RESTRAINT NOT REQUIRED WHERE HANGER ROD ≤ 6" MEASURED BETWEEN TOP OF PIPE AND STRUCTURE. 2. PROVIDE BRANCHLINE RESTRAINT WHERE HANGER ROD > 6" MEASURED BETWEEN TOP OF PIPE AND STRUCTURE.

NFPA 13 MAXIMUM SPACING (ft) OF STEEL LINE RESTRAINT

PIPE DIAMETER (IN.)	SEISM REFERENCE SE	Γ (Cp) - REQUIREMENTS	
, ,	Cp ≤ 0.50	0.5< Cp < 0.71	Cp > 0.71
1	43	36	26
1 1/4	<b>A</b> 6	36	27
1 1/2	49	41	29
2	53	45	31

3. PROVIDE LATERAL RESTRAINT AT SPRIG-UPS GREATER THAN 4'-0".

4. WHERE REQUIRED, RESTRAINTS TO BE PROVIDED IN AN APPROVED MANNER AS SPECIFIED BY NFPA 13.

## SEISMIC BRACING REQUIREMENTS

FORCE FACTOR  $C_P = 1.26$ 

- 1. EARTHQUAKE BRACING TO BE PROVIDED IN ACCORDANCE WITH NFPA 13.
- SITE CONDITIONS MAPPED SPECTRAL ACCELERATION FOR SHORT PERIODS S<sub>S</sub> = 2.234
- MAPPED SPECTRAL ACCELERATION FOR A 1-SECOND PERIOD S<sub>1</sub> = 0.82 SITE CLASS = D

MAXIMUM SPECTRAL RESPONSE ACCELERATION AT 1-SECOND PERIODS S<sub>D1</sub> = 0.765

 RISK CATEGORY OF BUILDING = III MAXIMUM SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS Sps = 1.787

#### SEISMIC PROTECTION REQUIREMENTS

PROVIDE CLEARANCE AT ALL PIPING EXTENDING THROUGH WALLS, FLOORS, PLATFORMS, AND FOUNDATIONS; UNLESS. PROVISIONS OF NFPA 13 ALLOW AN ALTERNATIVE. NO CLEARANCE REQUIRED WHERE PIPING PASSES THROUGH FRANGIBLE CONSTRUCTION (SUCH AS GYPSUM BOARD OR EQUAL) THAT IS NOT REQUIRED TO HAVE A FIRE RESISTANCE RATING OR OTHER NFPA 13 EXCEPTIONS.

1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 4 | 6 | 8 PIPE DIAMETER (IN.)

NFPA 13 PIPE CLEARANCE PROVISIONS

(CORE DRILL/SLEEVE) PROVIDE SEISMIC SEPARATION ASSEMBLY WHERE PIPING, REGARDLESS OF SIZE, CROSSES BUILDING SEISMIC

SEPARATION JOINTS (REFERENCE STRUCTURAL DRAWINGS FOR LOCATION).

PROVIDE EXPANSION JOINTS WHERE PIPING, REGARDLESS OF SIZE, CROSSES BUILDING EXPANSION JOINTS (REFERENCE STRUCTURAL DRAWINGS FOR LOCATION AND TOLERANCE). PROVIDE FLEXIBLE PIPE COUPLINGS ON 2-1/2" AND LARGER PIPE, JOINING GROOVED END PIPE, IN ACCORDANCE WITH NFPA 13 REQUIREMENTS.

# FIRE SPRINKLER HEAD SCHEDULE

						STRUCTURAL DRAWING
	SPRINKLER IDENTIFICATION, SIN	RESPONSE TYPE	GENERAL DESCRIPTION	TEMPERATURE RATING, °F	SPRINKLER QUANTITY	
•	TYCO FRB TY3231	QUICK	STANDARD COVERAGE K-5.6, PENDENT (SSP)	155	15	SHEET NUMBER
0	TYCO FRB TY3131	QUICK	STANDARD COVERAGE K-5.6, UPRIGHT (SSU)	200	12	FP-0.1 FP-1.1
ROOSTER TAIL	TYCO FRB TY3231	QUICK	STANDARD COVERAGE K-5.6, PENDENT (SSP)	155	14	FP-1.2 FP-2.1 FP-3.1
SEE DETAIL	TYCO FRB TY3131	QUICK	STANDARD COVERAGE K-5.6, UPRIGHT (SSU)	200	14	FP-4.1 FP-4.2

## SPRINKLER PROTECTION AREA & SPACING

	SPRINKLER HEAD PRO	DTECTION AREA & SPACIN	G LIGHT HAZARD
CONSTRUCTION TYPE	SYSTEM TYPE	MAX AREA	MAX SPACING
NON-COMBUSTIBLE OBSTRUCTED	HYD. CALC	225 sq. ft.	15
COMBUSTIBLE OBSTRUCTED	HYD. <u>CAL</u> e	168 sq. ft.	15
W/ EXPOSED MEMBERS > 3'-0"	HTD. CALC	100 Sq. 11.	15
COMBUSTIBLE OBSTRUCTED	HYD. CALC	120 00 #	15
W/ EXPOSED MEMBERS < 3'-0"	HYD. CALC	130 sq. ft.	15
	SPRINKLER HEAD PROTE	CTION AREA & SPACING (	ORDINARY HAZARD
ALL	ALL	130	15

#### GENERAL OVERHEAD NOTES

BEFORE PROCEEDING WITH THE WORK THIS CONTRACTOR SHALL CAREFULLY CHECK AND VERIFY ALL DIMENSIONS. SIZES, REQUIRED CLEARANCES AND SHALL ASSUME FULL RESPONSIBILITY FOR THE FITTING OF ALL EQUIPMENT AND

IN THE PREPARATION OF THESE DOCUMENTS, CERTAIN ASSUMPTIONS ARE MADE REGARDING EXISTING CONDITIONS. SOME OF THESE ASSUMPTIONS MAY NOT BE VERIFIABLE WITHOUT EXPENDING ADDITIONAL SUMS OF MONEY OR DESTROYING OTHERWISE ADEQUATE OR SERVICEABLE PORTIONS OF EXISTING BUILDINGS AND/OR EQUIPMENT.

THEREFORE, THE ENGINEER SHALL NOT BE HELD RESPONSIBLE FOR ANY CHANGES OR ADDITIONAL COSTS INCURRED

A BID SHALL CONSTITUTE FULL RESPONSIBILITY OF THE CONTRACTOR TO INSTALL SERVICE(S) IN COMPLIANCE WITH THE REQUIREMENTS OF THE SERVING UTILITY COMPANY AND THE MECHANICAL ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHARGES LEVIED BY THE SERVING UTILITY COMPANY EXCEPTING THE FIRST BILLING DEPOSIT

THE CONTRACTOR SHALL COMPLY WITH ALL CONTRACT DOCUMENTS IN LAYING OUT HIS WORK AND EQUIPMENT. HE

WHERE MATERIAL IS SHOWN ON THE DRAWINGS BUT NOT SPECIFIED, IT SHALL BE OF THE SAME TYPE AND QUALITY AS

SHALL COORDINATE THE WORK OF THIS SECTION WITH THE WORK OF OTHER TRADES AND ALL JOB CONDITIONS.

THE INSTALLATION OF ACCESS PANELS OR OTHER INDICATING EQUIPMENT OR SPECIALTIES REQUIRING READING, ADJUSTMENT, INSPECTION, REPAIRS, REMOVAL OR REPLACEMENT SHALL BE CONVENIENTLY LOCATED WITH REFERENCE

8. TEST SYSTEM(S) IN ACCORDANCE WITH REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION (AHJ).

10. PROPRIETARY AND CENTRAL STATION MONITORING ARE NOT PART OF THIS SCOPE OF WORK

13. RISER NIPPLES AND OUTLETS ON SCHEDULE 10 PIPING ARE TO BE WELDED ONLY

11. ELECTRICAL HIGH AND LOW VOLTAGE WIRING AND SIGNAL WIRING ARE NOT IN THIS SCOPE OF WORK

15. SPRINKLER SYSTEMS SHALL BE DESIGNED, INSTALLED, TESTED, AND FLUSHED IN ACCORDANCE WITH:

- NFPA 13 (STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS) - 2022 EDITION

12. MINIMUM DEPTH FOR BURIED PIPE SHALL BE IN ACCORDANCE WITH NFPA AND THE RESPECTIVE LOCATION.

14. SPRINKLER FINISHES AND ASSOCIATED TRIM (NO OVERSIZED ESCUTCHEONS) TO BE APPROVED BY ARCHITECT.

16. NO INSTALLATION OF ANY PIPING OR EQUIPMENT IS TO BEGIN PRIOR TO APPROVAL OF PLANS BY THE AUTHORITY

17. FIRE SPRINKLER SYSTEM SHALL BE SUPERVISED IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE AND NFPA 72

18. CUTTING OF STRUCTURAL AND/OR ARCHITECTURAL MEMBERS TO BE DONE ONLY WITH THE WRITTEN APPROVAL OF THE

20. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW GENERAL ARRANGEMENT OF SYSTEM(S). FINAL SIZE AND

22. DESIGN SHALL BE COMPLETED BY AN INDIVIDUAL WHO IS CERTIFIED AS A LEVEL III OR IV TECHNICIAN BY NATIONAL

24. PROVIDE A COMPLETE AUTOMATIC FIRE SPRINKLER SYSTEM THROUGHOUT ALL AREAS AND SUBMIT DRAWINGS AND

27. CONTRACTOR TO PROVIDE A LISTED FIRESTOPPING SYSTEMS ASSEMBLY AT ALL PIPE AND TROUGH PENETRATIONS

PASSING THROUGH RATED CONSTRUCTION (FIRE RATED WALLS, PARTITIONS, FLOORS, AND CEILING FLOOR

28. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURE'S RECOMMENDATIONS.

29. CONTRACTOR SHALL PROVIDE ALL NECESSARY TEST CONNECTIONS/DRAINS AND PIPED TO DISCHARGE AT AN

PRESSURE, WHICHEVER IS GREATER AND WITNESSED BY OWNERS REPRESENTATIVE AND AHJ.

32. FINISHED SPRINKLER HEAD LOCATION TO BE APPROVED BY ARCHITECT PRIOR TO INSTALLATION.

31. CONTRACTOR SHALL PROVIDE SPRINKLER GUARDS AT ALL HEADS SUBJECT TO DAMAGE.

COORDINATE DRAIN REQUIREMENTS WITH PLUMBING AS NEEDED.

STRUCTURAL DRAWINGS TO DETERMINE THE RELATIVE Cp FACTOR.

36. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING WORK.

WILL NOT BE PERMITTED. ALL PIPE SHALL BE STEEL.

30. ALL SYSTEM PIPING SHALL BE HYDROSTATICALLY TESTED AT 200 PSI OR AT 50 PSI ABOVE THE SYSTEM OPERATING

33. SPRINKLER HEAD AND ESCUTCHEON FINISHES TO BE COORDINATED WITH ARCHITECT UNLESS OTHERWISE INDICATED.

34. SCOPE OF WORK SHALL INCLUDE ALL HANGERS, BRACING AND BRANCHLINE RESTRAINTS REQUIRED BY CODE.

35. SCOPE OF WORK SHALL INCLUDE ALL LOW-POINT DRAINS, AUXILIARY DRAINS AND AIR PRESSURE RELIEF VALVES.

37. ALL SPRINKLER PIPING SHALL COMPLY WITH NFPA 13 STANDARDS, EXCEPT THAT PLASTIC PIPE AND COPPER TUBING

38. PROVIDE FIRE SPRINKLER PROTECTION UNDER FIXED OBSTRUCTIONS OVER 4 FT. WIDE (FOR EXAMPLE, DUCTS,

39. SEISMIC BRACING AND ASSOCIATED CALCULATIONS TO BE PERFORMED IN ACCORDANCE WITH NFPA 13. REFERENCE

FIRE SPRINKLER SHEET INDEX

FIRE SPRINKLER LEGENDS, NOTES & SCHEDULES

FIRE SPRINKLER HYD. REF. CEILING PLAN

FIRE SPRINKLER REFLECTED CEILING PLAN

FIRE SPRINKLER BUILDING SECTIONS

SHEET NAME

OVERHEAD DOORS, OPEN GRATE FLOORING, CONVEYORS OR SIMILAR) WHERE REQUIRED BY NFPA 13.

FIRE SPRINKLER SITE PLAN

FIRE SPRINKLER DEMO PLAN

FIRE SPRINKLER DETAILS

25. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS AND CALCULATIONS TO THE AHJ AND

SUBFIELD OF FIRE PROTECTION ENGINEERING TECHNOLOGY AND STAMPED AND APPROVED BY LICENSED

23. AUTOMATIC FIRE SPRINKLER SYSTEM(S) SHALL BE DESIGNED BY HYDRAULIC CALCULATIONS.

26. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY AND ASSOCIATED PERMITTING FEES.

INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICET) IN THE AUTOMATIC SPRINKLER SYSTEM LAYOUT

ITEMS RELATED TO SITE UTILITIES AND/OR OTHER SERVICE(S); MATERIALS, LABOR, PERMITS, FEES, ETC., SHALL BE VERIFIED WITH THE RESPECTIVE SERVING UTILITY COMPANY PRIOR TO SUBMISSION OF A BID. THE ACT OF SUBMITTING

EXISTING CONDITIONS UNDER WHICH HE WILL BE REQUIRED TO WORK.

MATERIALS HEREIN REQUIRED TO OTHER PARTS OF THE WORK OF THEIR TRADES.

FIRE SPRI	NKLER	LEGEND AND SYMBOLS
SYMBOL	ABBREVIATION	DESCRIPTION
DETAIL No.		DETAIL REFERENCE
A P-1		SECTION REFERENCE
STACK/RISER  ID. No.		PLUMBING STACK OR RISER REFERENCE
EQUIPMENT ID. No.		EQUIPMENT REFERENCE
	PHY	PRIVATE HYDRANT ONE HOSE OUTLET
Ф	HYD	PUBLIC HYDRANT TWO HOSE OUTLETS
<del>**</del>	FDC	SIAMESE FIRE DEPARTMENT CONNECTION
	PIV	POST INDICATOR VALVE
	DCVA	DOUBLE CHECK VALVE ASSEMBLY
	RPDA	REDUCED PRESSURE DETECTOR ASSEMBLY
	OS&Y	OUTSIDE SCREW AND YOKE, RISING STEM
$\triangleright$	T.B.	THRUST BLOCK OR MECHANICAL JOINT RESTRAINT
	PRV	PRESSURE RELIEF VALVE
	BFV	INDICATING BUTTERFLY VALVE
	AV	ALARM CHECK VALVE
<b>───</b>	DPV	DRY PIPE VALVE
	ASR	AUTOMATIC SPRINKLER RISER
——————————————————————————————————————	VA	VALVE, GENERAL
	CV	CHECK VALVE
ē	ITV	INSPECTOR TEST VALVE
<del></del>	DN	PIPE DOWN
<del></del>	UP	PIPE UP
<del></del>	DN	TEE DOWN
<del></del> 0	UP	TEE UP
O— C—		PIPE RISER & PIPE DROP (UP AND DOWN)
•	SSP	SEMI RECESSED PENDENT SPRINKLER HEAD
0	SSU	UPRIGHT SPRINKLER HEAD
•	SSP	CONCEALED PENDENT SPRINKLER HEAD
/		PIPE HANGER
×		END OF LINE RESTRAINT
1		LATERAL SEISMIC BRACING
<del></del>		LONGITUDINAL SEISMIC BRACING
4		"4" WAY BRACING
- <b>y</b> 		PIPE CAP
		SEISMIC FLEXIBLE JOINT
$\bigcirc$	NODE	HYDRAULIC CALCULATION NODE
<b>♦</b>	P.O.D.	POINT OF DEMOLITION
	AP	ACCESS PANEL
	ABV	ABOVE
	BEL	BELOW
	CONIN	CONNECTION

## APPLICABLE CODES AND STANDARDS

CONNECTION

CONTINUATION

**EXISTING** 

NEW

DOWN

TYPICAL

WITH

UNLESS OTHER NOTED

ALL THREAD ROD

2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR 2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR 2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR 2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

CONN

U.O.N.

PARTIAL LIST OF APPLICABLE STANDARDS: NFPA 13 2022 STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS (CA AMENDED) 2019 STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES 2022 NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDED)

FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPER 80

# FIRE PROTECTION DESIGN CRITERIA

SPRINKLER DESIGN DEMANDS FOR HAZARD CLASSIFICATION					
AREA	HAZARD CLASS	MINIMUM DENSITY	MIN. HYI DESIGN (F		HOSE DEMAND
		(GPM/FT²)	WET	DRY	(GPM)
	LIGHT HAZARD (LH)	0.10	1500	1950	100
	ORDINARY HAZARD GROUP 1 (OH1)	0.15	1500	1950	250

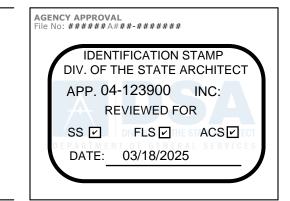
FIRE SPRINKLER INSTALLATION, SIZING, AND LOCATION TO MEET THE REQUIREMENTS OF NFPA 13, LOCAL CODES, AND INSURANCE REQUIREMENTS. HYDRAULIC CALCULATIONS SHALL BE BASED ON THE DESIGN DENSITY ASSOCIATED WITH THE HAZARD CLASSIFICATION OF THE SPACE. VERIFY ALL STORAGE ARRANGEMENTS, COMMODITIES, AND QUANTITIES WITH THE OWNER. STORAGE AREAS SHALL BE DESIGNED FOR CLASS I- IV COMMODITY STORED UP TO 12' IN HEIGHT AND GROUP A PLASTICS SHALL BE

LIMITED TO 5' IN HEIGHT OR LESS. CALCULATIONS SHALL BE BASED ON A WATER SUPPLY WATER FLOW TEST THAT WAS PERFORMED IN ACCORDANCE WITH NFPA 291 NO MORE THAN 6 MONTHS PRIOR TO SUBMISSION OF THE CALCULATIONS. HYDRAULIC CALCULATIONS SHALL INCLUDE A 10% SAFETY FACTOR.

HYDRANT F	LOW TEST
DATE OF TEST	11/26/2024
LOCATION	ON-SITE HYDRANT
STATIC PRESSURE W/ 10% RED	69 - 62.1PSI

RESIDUAL PRESSURE W/ 10% RED







CLARKE ARCHITECTS

RUHNAU

PROJECT No. :1-78-50

**RUHNAUCLARKE.COM** 

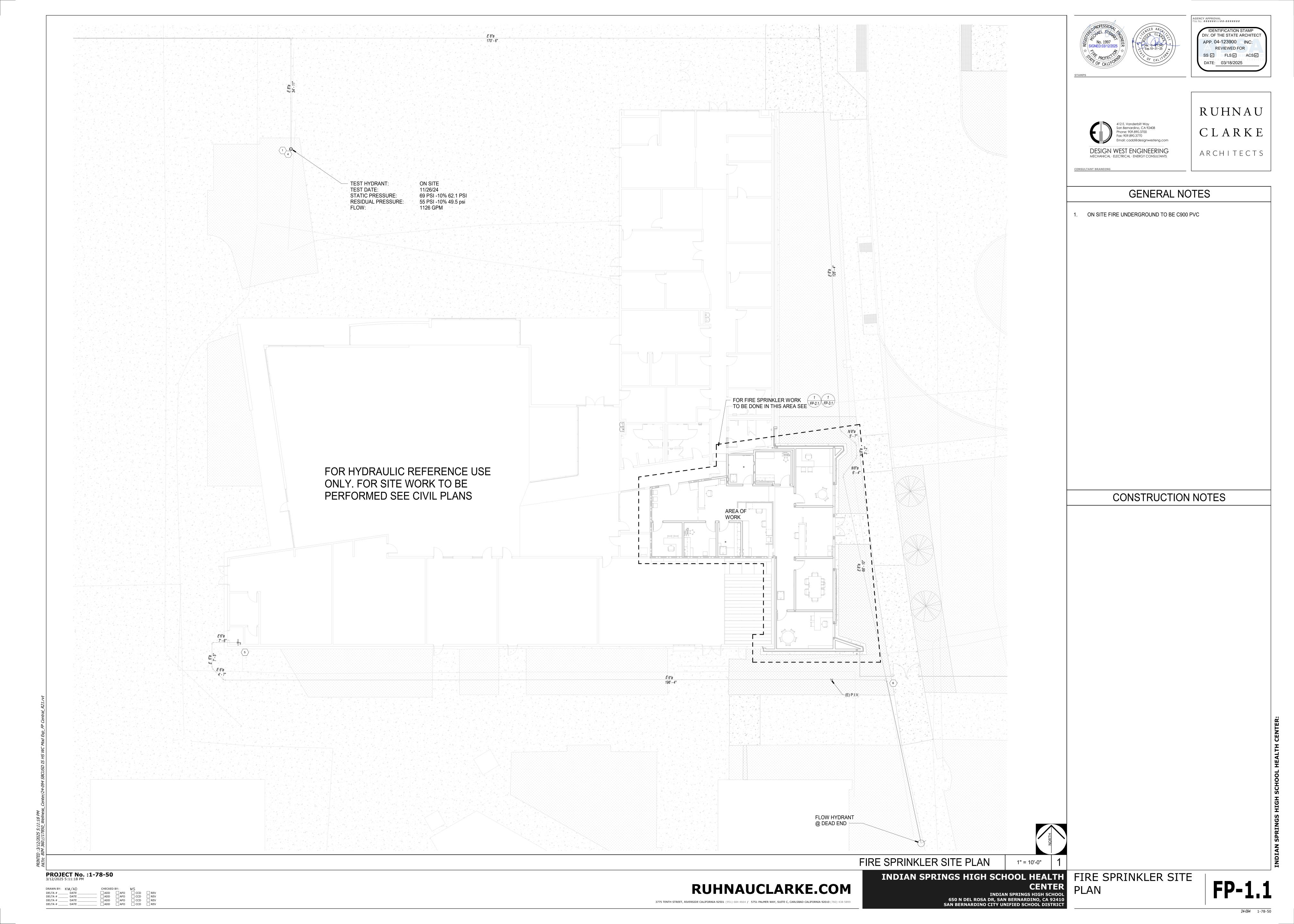
3775 TENTH STREET, RIVERSIDE CALIFORNIA 92501 (951) 684 4664 / 5751 PALMER WAY, SUITE C, CARLSBAD CALIFORNIA 92010 (760) 438 589

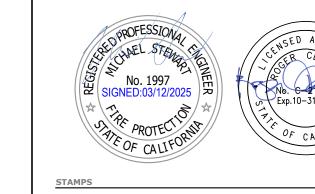
INDIAN SPRINGS HIGH SCHOOL HEALTH FIRE SPRINKLER

55 - 49.5 PSI

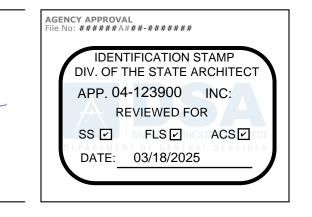
SoCal Flow Testing

LEGENDS, NOTES & 650 N DEL ROSA DR, SAN BERNARDINO, CA 92410 **SCHEDULES** SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT









RUHNAU

CLARKE

ARCHITECTS



**GENERAL NOTES** 

CONSTRUCTION NOTES

PIPE AFF

*E*1 1/2"ø 88' - 10"

PIPE AFF 12' - 6 3/16"

*E*2 1/2"ø 36' - 1"

ONLY.

FOR HYDRAULIC REFERENCE USE

PIPE AFF 14' - 5 3/16"

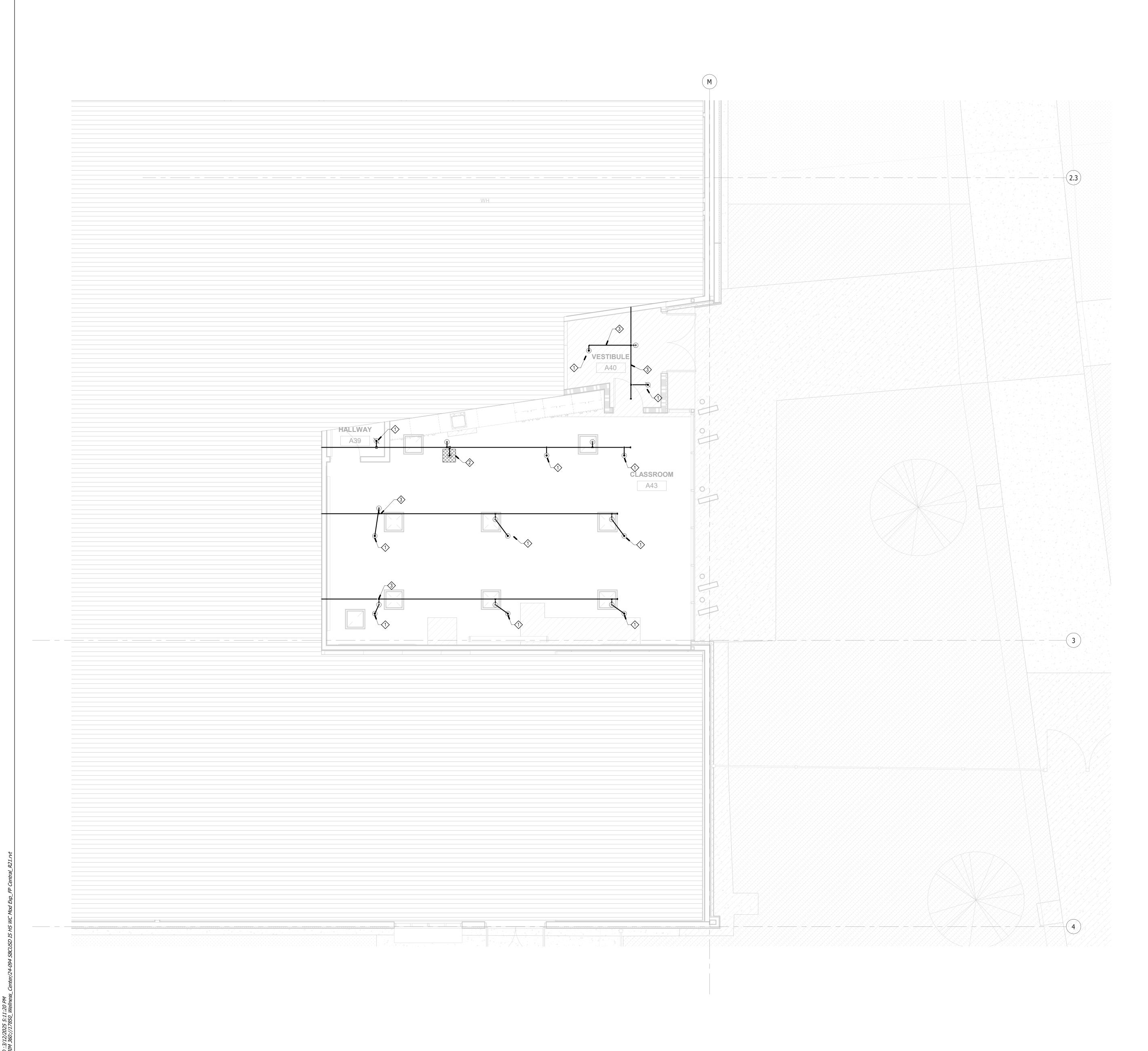
FIRE PROTECTION HYDRAULIC REF PLAN

1/8" = 1'-0"

PROJECT No. :1-78-50 3/12/2025 5:11:19 PM

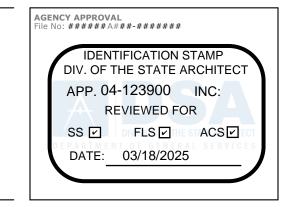
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## **GENERAL NOTES**

1. FOR HAZARD CLASSIFICATIONS SEE FP-0.1

# **CONSTRUCTION NOTES**

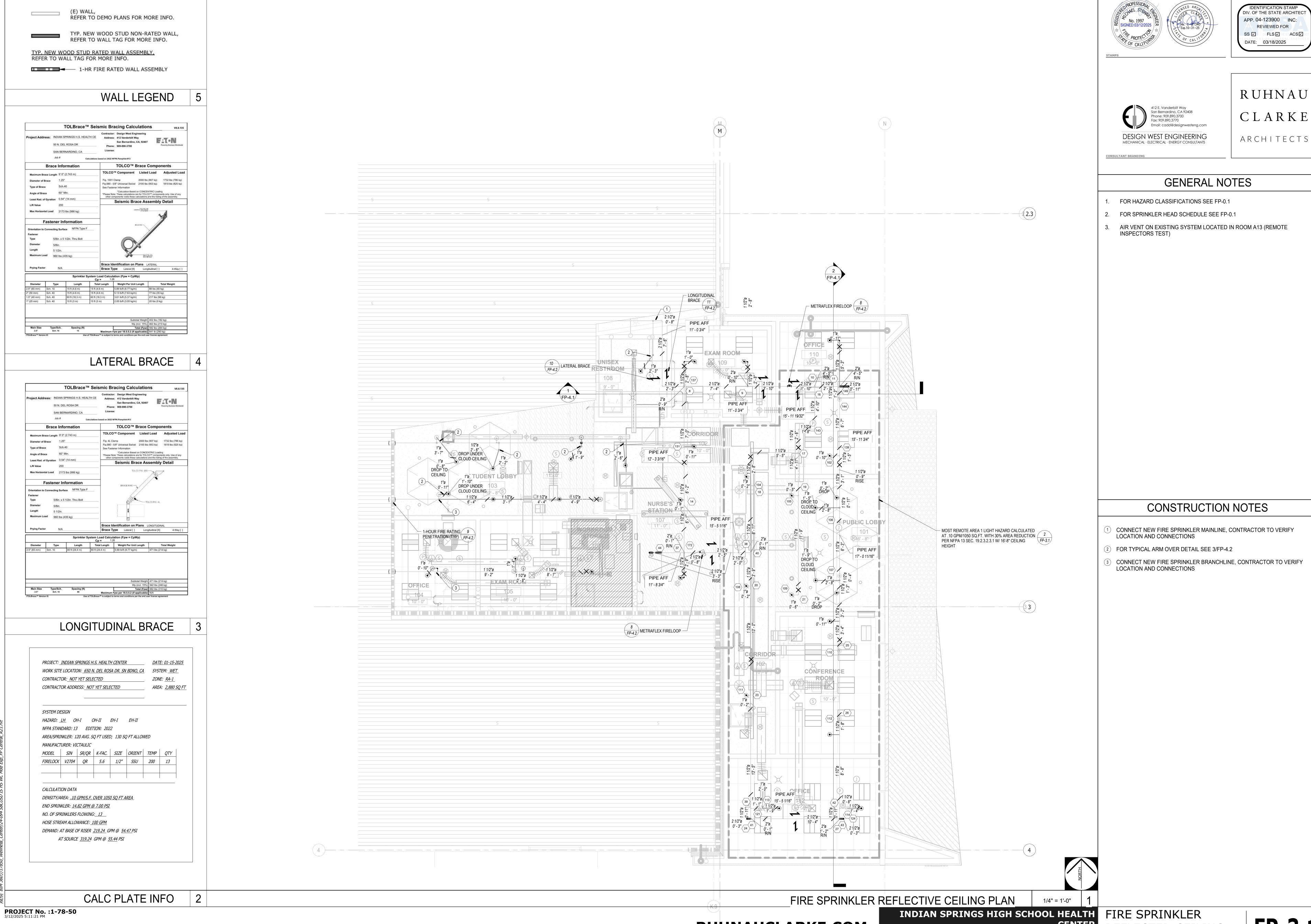
- ♦ EXISTING SPRINKLER HEAD TO BE ROLOCATED AND REPLACED
- EXISTING SPRINKLER HEAD TO BE REMOVED AND CAPPED AT NEAREST FITTING
- EXISTING BRANCHLINE, FITTINGS AND FIRE SPRINKLERS BEYOND THIS
   CONNECTION TO BE REMOVED AND REPLACED

FIRE SPRINKLER DEMOLITION PLAN

INDIAN SPRINGS HIGH SCHOOL HEALTH
CENTER
INDIAN SPRINGS HIGH SCHOOL
650 N DEL ROSA DR, SAN BERNARDINO, CA 92410
SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

PROJECT No. :1-78-50 3/12/2025 5:11:20 PM

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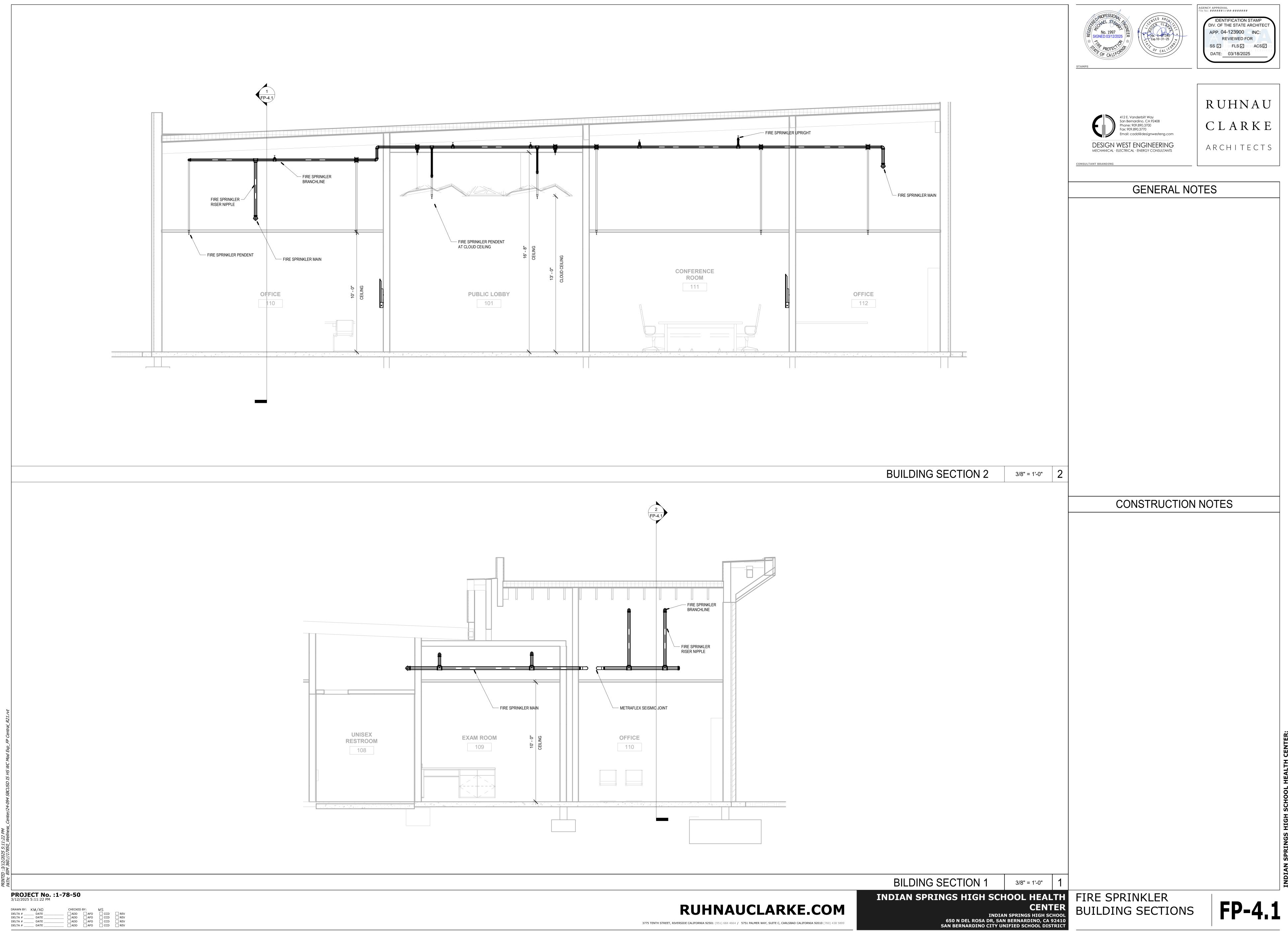


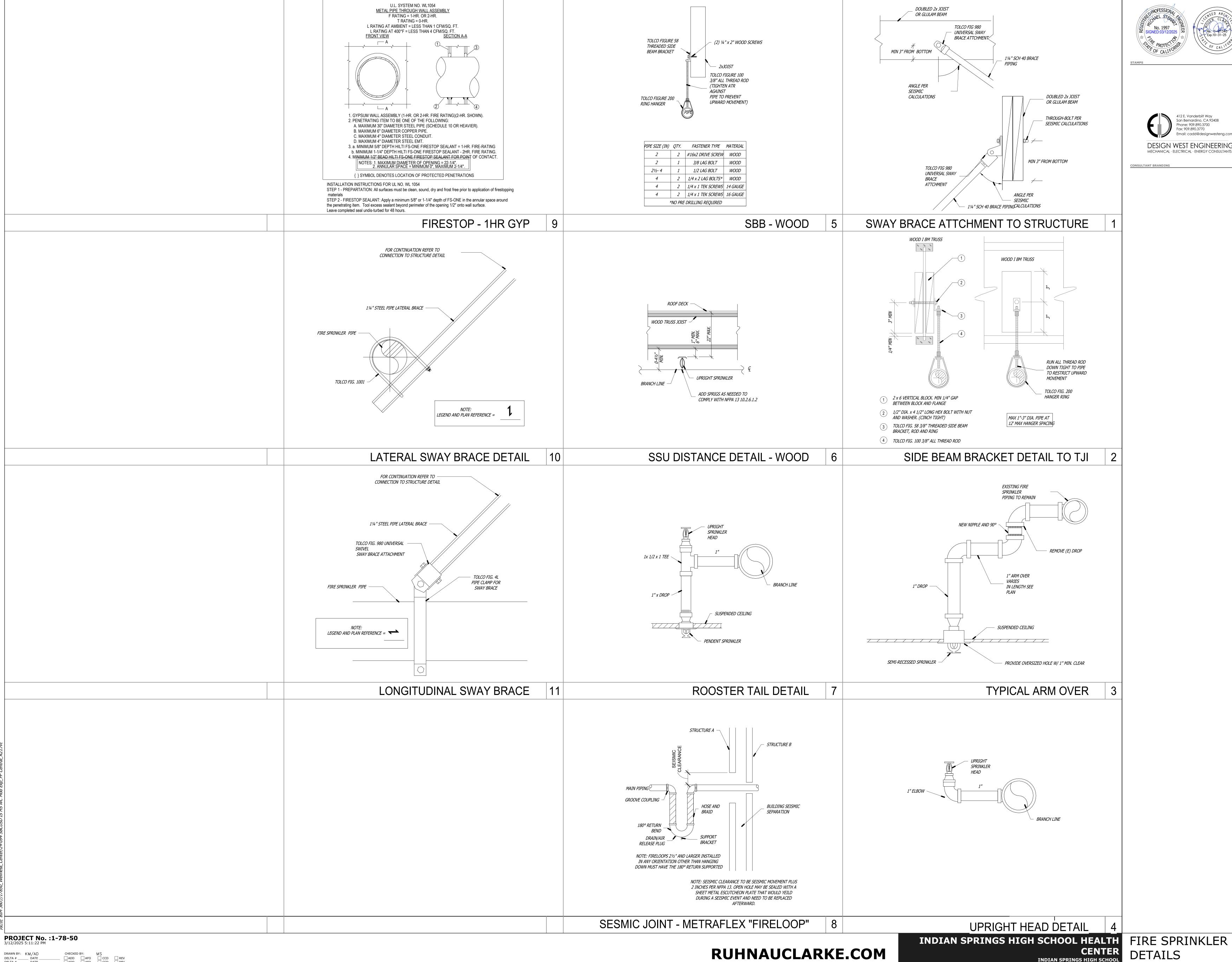
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CENTER

INDIAN SPRINGS HIGH SCHOOL
650 N DEL ROSA DR, SAN BERNARDINO, CA 92410
SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT

REFLECTED CEILING





IDENTIFICATION STAM DIV. OF THE STATE ARCHITECT APP. 04-123900 INC: REVIEWED FOR SS I FLS I HEST ACS I DATE: 03/18/2025

412 E. Vanderbilt Way San Bernardino, CA 92408 Phone: 909.890.3700 Fax: 909.890.3770 Email: cadd@designwesteng.com DESIGN WEST ENGINEERING MECHANICAL - ELECTRICAL - ENERGY CONSULTANTS RUHNAU CLARKE ARCHITECTS

650 N DEL ROSA DR, SAN BERNARDINO, CA 92410

SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT