#### CONTRACTOR(S) GUIDELINES: 28. ALL SPLICES SHALL UTILIZE 3M 710 MODULES. ALL CABLES MUST BE EQUIPPED TO PROVIDE A CONTINUOUS BOUND OF CABLE SHIELDS THROUGH ALL SPLICES. 29. PULL ROPES SHALL BE PLACED IN ALL VACANT CONDUITS. 30. ALL WORK MUST BE COMPLETED IN A NEAT AND PROFESSIONAL MANNER. THE WORK SITE SHALL BE KEPT CLEAN AND ALL DAMAGE TO OWNER'S PROPERTY REPAIRED. 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING A FINAL CLEANUP OF THI WORK SITE PRIOR TO FINAL SYSTEM ACCEPTANCE. 32. CONTRACTOR SHALL REMOVE ALL COPPER, FIBER AND COAXIAL CABLES ABANDONED IN CONDUIT, CEILINGS AND WALLS PER CEC. CABLE SHALL INCLUDE ALL INTRABUILDING, RISER SYSTEMS AND STATION CABLES FOR ALL LOW VOLTAGE/TECHNOLOGY/STRUCTURED CABLING SYSTEMS. 33. CONTRACTOR(S) SHALL VERIFY ALL SITE CONDITIONS PRIOR TO BID. 34. IN ACCESSIBLE CEILING SPACES; . THE CONTRACTOR SHALL PROVIDE THE REQUIRED STUB UP(S) / OUT(S) AND BOXES WIT MUD-RINGS TO THE NEAREST ACCESSIBLE CEILING SPACE AND / OR NEAREST TECHNOLOGY PATHWAY INFRASTRUCTURE, REFERENCE PLANS AND SPECIFICATION FOR MORE INFORMATION. . THE DESIGNATED SCS / TECHNOLOGY CONTRACTOR(S) SHALL PROVIDE A J-HOOK PATHWAY SYSTEM AND REQUIRED SLEEVES. DO NOT USE CEILING TILE WIRE HANGERS. WATER OR ELECTRICAL PIPES. OR LIGHT FIXTURES TO HANG CABLE. CABLE MUST BE A MINIMUM OF 6 INCHES ABOVE THE CEILING TILE AND MUST NOT COME WITHIN TWELVE INCHES OF A LIGHT FIXTURE. THE SCS / TECHNOLOGY CONTRACTOR WILL PROVIDE THE PATHWAY REQUIRED FOR THE STRUCTURE CABLING SYSTEMS. THE DESIGNATED LOW VOLTAGE / TECHNOLOGY CONTRACTOR(S) FOR EACH "SUB-SYSTEM WILL PROVIDE THE PATHWAY REQUIRED FOR THE SYSTEMS, OUTSIDE WHAT IS CONSIDERED THE STRUCTURED CABLING SYSTEM. 5. IN INACCESSIBLE AND HARDLID CEILING SPACES; . THE CONTRACTOR SHALL PROVIDE ALL CONDUIT PATHWAYS, BOXES ETC. FOR A COMPLETE SYSTEM FROM THE MDF ROOM, IDF ROOM(S), IDF CABINET(S), AND ALL OTHER LOW VOLTAGE / TECHNOLOGY SYSTEMS HEADEND, CABINETS, TERMINAL CABINETS, ETC. TO THE POINT OF TERMINATION AT THE STATION END LOCATION PER PLANS AND SPECIFICATION. **TECHNOLOGY ABBREVIATIONS:** ACP ACCESS CONTROL PROCESSOR (N) NEW NORMALLY CLOSED AFF ABOVE FINISHED FLOOR AHJ AUTHORITY HAVING JURISDICITON NIC NOT IN CONTRACT AMP AMPLIFIER NO NORMALLY OPEN AOR ARCHITECT OF RECORD NTS NOT TO SCALE AUD AUDIO NVR NETWORK VIDEO RECORDER

AUTO AUTOMATIC ON CENTER AUX AUXILIARY OFCI OWNER FURNISHED, AUDIOVISUAL CONTRACTOR INSTALLED AV AUDIOVISUAL CONTROLLER OFOI OWNER FURNISHED, AVc AWG AMERICAN WIRE GUAGE OWNER INSTALLED BCT BONDING CONDUCTOR FOR OSP OUTSIDE PLANT TELECOMMUNICATIONS CONDUIT PB PULL BOX CONDUIT PASSIVE INFRARED PIR CATV COMMUNITY ANTENNA TELEVISION POE POWER OVER ETHERNET CFCI CONTRACTOR FURNISHED PAIR OF CONDUCTORS CONTRACTOR INSTALLED PTZ PAN TILT ZOOM CONTRACTOR FURNISHED, PVC | POLYVINYL CHLORIDE CFOI OWNER INSTALLED PWR POWFR CENTERLINE RCP REFLECTED CEILING PLAN CL REQUEST TO EXIT DIVISION REX DOOR CONTACT REQUEST FOR INFORMATION RFI EXISTING RMC RIGID METALLIC CONDUIT ELECTRICAL CONTRACTOR SM SINGLE MODE STR STRANDS (OF FIBER) ECS EMERGENCY COMMUNICATION STP SHIELDED TWISTED PAIR SYSTEM ENTRANCE FACILITY FOR TELECOMMUNICATION EF SEC SECURITY TBB TELECOMMUNICATIONS EMT ELECTRIC METALLIC TUBING BONDING BACKBONE ER EQUIPMENT ROOM TELCO TELEPHONE COMPANY EXT TGB | TELECOMMUNICATIONS EXTERIOR FUTURE GROUNDING BUSBAR FACP FIRE ALARM CONTROL PANEL TMGB TELECOMMUNICATIOIN MAIN FATC FIRE ALARM TERMINAL CABINET GROUNDING BUSBAR TYP FB FLOORBOX TYPICAL UNLESS OTHERWISE NOTED FIBER OPTIC UON GENERAL CONTRACTOR UNINTERUPTABLE POWER UPS INTERCOM SUPPLY INTERMEDIATE DISTRIBUTION UTP UNSHIELDED TWISTED PAIR IDF VOICE VIDEO SURVEILLANCE SYSTEM ICP INTRUSION CONTROL PROCESSOR VSS INTERIOR INT WB WALL BOX INTERNET PROTOCOL IP WP WEATHERPROOF INFORMATION TECHNOLOGY JUNCTION BOX MAIN DISTRIBUTION FRAME MDF MIC MICROPHONE MM MULTIMODE MPOE MINIMUM POINT OF ENTRY

# **TECHNOLOGY PENETRATION NOTES:**

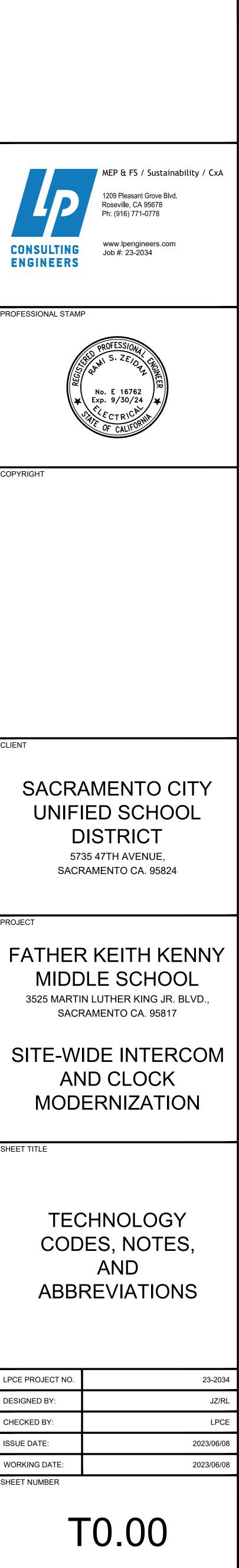
- UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL MAKE NO PENETRATION OF FLOORS, WALLS OR CEILING WITHOUT THE PRIOR WRITTEN APPROVA OF THE OWNERS REPRESENTATIVE. WALL PENETRATIONS:
- A. THE SCS AND/OR LV CONTRACTOR SHALL PROVIDE FIRE STOPPING FOR ALL COMMUNICATIONS RATED (AND IN SOME CASES NON-RATED, THAT WILL BE DESCRIBE BELOW THIS SECTION) PATHWAYS AND SPACES. THESE FIRE STOPPING DEVICES SHALL CONFORM TO (BUT NOT LIMITED TO) UL 1479, ASTM E814, BICSI TDMM, FIRE STOPPING ANSI/TIA-568-C, STANDARD FOR INSTALLING COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING, SECTION 5, CLAUSE 5.1 THROUGH 5.2.3, MANUFACTURES GUIDELINES OR OTHER PREVAILING CODE AND MUST BE AN APPROVE UL LISTED SYSTEM.
- 2. CABLE TRAY FIRE-STOPPING SHALL UTILIZE THE MULTI GANG FIRE-STOPPING SYSTEM THAT WILL BE ABLE TO STACK THE UNITS HORIZONTALLY AND/OR VERTICALLY IF REQUIRED DUE TO CURRENT AND/OR FUTURE CABLING DESIGNS.
- . THE CONTRACTOR SHALL INSTALL PENETRATION FIRE-STOP SEAL MATERIALS IN ACCORDANCE WITH DESIGN REQUIREMENTS, AND MANUFACTURER'S INSTRUCTIONS.
- THE CONTRACTOR'S INSTALLER SHALL BE CERTIFIED, LICENSED OR OTHERWISE QUALIFIED BY THE FIRE-STOPPING MANUFACTURER AS HAVING BEEN PROVIDED THE NECESSARY TRAINING TO INSTALL MANUFACTURER'S PRODUCTS PER SPECIFIED REQUIREMENTS.
- 2. ALL THROUGH-PENETRATION SHALL BE A MANUFACTURED, UL CLASSIFIED, FIRE-STOP DEVICE / SYSTEM DESIGNED TO ALLOW CABLES TO PENETRATE FIRE-RATED WALLS WIT A BUILT-IN FIRE SEALING SYSTEM THAT AUTOMATICALLY ADJUSTS TO THE AMOUNT OF CABLES INSTALLED. THE FIRE-STOPPING DEVICE SHALL BE CAPABLE OF INSTALLATION IN NEW CONSTRUCTION OR RETROFIT IN EXISTING STRUCTURES.
- THE CONTRACTOR MUST NOT USE CONCRETE OR OTHER NON-REMOVABLE SUBSTANCI FOR FIRE STOPPING ON CABLE TRAYS, WIREWAYS OR CONDUITS. CONTRACTORS WHO USE THIS METHOD WILL BE REQUIRED TO REPLACE ALL CABLES AFFECTED AND PROVI THE ORIGINAL SPECIFIED ACCESS TO EACH EFFECTED AREA. THIS REQUIREMENT ALS APPLIES TO MAINTAINING FIRE RATINGS OF ALL FLOORS PENETRATED BY CONDUITS OF DEVICES DESIGNATED FOR USE BY VOICE AND DATA CABLING.
- ANY PENETRATIONS THROUGH FIRE-RATED WALLS FOR CABLE PATHWAYS / CABLES SHALL BE SEALED BY USE OF A NON-PERMANENT FIRE BLANKET OR OTHER METHOD IN COMPLIANCE. THE CONTRACTOR MUST USE FIRE STOPPING ON CABLE TRAYS, WIREWAYS AND CONDUITS FITHER VERTICAL OR HORIZONTAL FOUR DIFFERENT METHODS OF FIRE-STOPPING HAVE BEEN IDENTIFIED FOR THE HORIZONTAL THROUGH PENETRATIONS BETWEEN WALLS, RATED, RATED WITH ACOUSTIC PROPERTIES. NON-RATED, AND NON-RATED WITH ACOUSTIC PROPERTIES.
- LOW ARE METHODS TO ACCOMPLISH THESE DIFFERENT SEALING OF RATED OPENINGS BETWEEN FLOORS OR THROUGH RATED WALLS, WHETHER EXISTING OR CREATED BY THE CONTRACTOR FOR PLACEMENT OF CABLE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SEALING MATERIAL AND APPLICATION SHALL BE AN APPROVED UL LISTED SYSTEM AND SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT IS ACCEPTABLE TO THE LOCAL FIRE AND BUILDING AUTHORITIES HAVING JURISDICTION OVER THIS WORK. CREATION OF SUCH OPENINGS AS ARE NECESSARY FOR CABLE PASSAGE BETWEEN LOCATIONS AS SHOWN ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ANY OPENINGS CREATED BY OR FOR THE CONTRACTOR AND LEFT UNUSED SHALL ALSO BE SEALED AS PART OF THIS WORK. RATED WALLS WITH THROUGH PENETRATIONS WITH ACOUSTIC PROPERTIES SHALL BE INSTALLED WITH FACTORY MANUFACTURED DEVICE. SUCH AS A STI "EZ PATH" OF WIREMOLD "FLAMESTOPPER" OR EQUAL. THE TYPICAL STC RATING IS TO BE EQUAL TO OR GREATER THAN THE WALL PENETRATED, (AVG IS A RATING OF 44 STC PER UE
- RATINGS). NON-RATED PATHWAY, ALTHOUGH NOT REQUIRED TO BE FIRE-STOPPED, SHALL BE A MANUFACTURED DEVICE THAT WILL ALLOW FIRE-STOPPING TO BE INSTALLED IN THE FUTURE IF REQUIRED, (I.E. WIREMOLD "FLAMESTOPPER" OR EQUAL). A NON-RATED PATHWAY WITH ACOUSTIC PROPERTIES CAN BE FOUND IN AREAS SUC AS, CONFERENCE ROOMS, HUMAN RESOURCE OFFICES, MEDICAL EXAMINATION ROOMS ETC. THESE ROOMS REQUIRE TO LIMIT THE AMOUNT OF AMBIENT NOISE TH CAN TRAVEL FROM ONE ROOM TO THE OTHER THROUGH THE CEILING GRID. IF THIS WALL IS PENETRATED, INSTALL A SYSTEM THAT WILL RE-ESTABLISH THE STC RATING

# CONTRACTOR(S) GUIDELINES:

- ALL TECHNOLOGY WORK SHALL COMPLY WITH DESIGN GUIDELINES AS WELL AS APPLICABLE FEDERAL, STATE, AND LOCAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE DOCUMENTS SHALL GOVERN BUT THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.
- IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS AND/OR SPECIFICATIONS OR WITH CODE REQUIREMENTS, THE NOTE, CODE OR SPECIFICATION WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR THE HIGHER STANDARD SHALL PREVAIL.
- OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS OR THE MIS-DESCRIPTION OF DETAILS FROM WORK WHICH ARE CLEAR AND NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS, SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHA NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMITTED OR MIS-DESCRIBE DETAILS OF THE WORK BUT THEY SHALL BE PERFORMED AS IF FULLY AND CORRECTLY SET FORTH AND DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL CHECK ALL DRAWINGS FURNISHED, IMMEDIATELY UPON THEI RECEIPT AND SHALL PROMPTLY NOTIFY THE OWNER OF ANY DISCREPANCIES. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE UNDERWRITERS LABEL (UL) AND SHALL BE INSTALLED IN THE MANNER FOR WHICH THEY ARE DESIGNED
- AND APPROVED. THE CONTRACTOR SHALL NOT BORE, NOTCH OR IN ANY WAY CUT INTO ANY STRUCTURA MEMBER WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT OR STRUCTURAL ENGINEER.
- ALL CHANGES TO STRUCTURES (BUILDING, DRILLING, CORING, ETC.) NOT SHOWN ON TH DRAWINGS SHALL BE APPROVED IN WRITING BY STRUCTURAL ENGINEER.
- 3. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, THE TELECOM DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DAT. INFORMATION AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE SCS AND LOW VOLTAGE WORK INTERFACES WITH OTHER TRADES.
- THE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWINGS TO REFLECT ALL CHANGES MADE DURING CONSTRUCTION AND ANY DEVIATIONS FROM THE ELECTRICAL AND TECHNOLOGY DRAWINGS. THIS INCLUDES DEVIATIONS FROM OUTLET NUMBERS AND ANY ADDITION, DELETION OR RELOCATION OF OUTLETS SHOWN ON WORKING DRAWINGS, PATHWAY ADDITIONS, DELETIONS OR RELOCATIONS. THE CONTRACTOR SHALL AFTER COMPLETION OF JOB, PROVIDE THE OWNER AN ELECTRONIC AND HARD COPY OF AS-BUILT WORK.
- ). ANY DEVIATIONS FROM PLANS OR SPECS MUST BE APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
- 1. ALL FOOTAGES ON DRAWINGS ARE ESTIMATED AND MUST BE VERIFIED BY CONTRACTOR PRIOR TO ORDERING MATERIAL.
- 2. ALL STATION CABLES SHALL BE NEATLY DRESSED AND SECURED EVERY FIVE FEET AT MINIMUM 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF
- CEILING TILE INCLUDING REPLACEMENT OF BROKEN OR DAMAGED TILES. 4. ALL LOCATIONS PASSING THROUGH A FIRE OR A SMOKE BARRIER MUST BE FIRE
- STOPPED USING APPROVED (UL CLASSIFIED) FIRE STOP SYSTEM, INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS AND PROPERLY LABELED. 5. CONDUIT SHALL BE FILLED TO MAXIMUM CAPACITY (PER CODE, STANDARDS, AND
- NORMS) BEFORE UTILIZING ANOTHER VACANT CONDUIT. 3. ALL STATION OUTLETS AND TERMINALS SHALL BE PROPERLY IDENTIFIED USING THE OWNER'S STANDARD INTERNAL DISTRIBUTION NUMBERING SCHEME. ALL LABELS SHALL BE PREPRINTED OR TYPED.
- 7. EACH BACKBONE RISER AND/OR OSP CABLE SHALL BE EQUIPPED WITH A PERMANENT LABEL INDICATING CABLE TYPE, PAIR OR OPTIC COUNTS, DISTANT ENDS, AND CABLE LENGTH. BOTH ENDS OF EACH CABLE AND AT EVERY MAINTENANCE HOLE, HAND HOLE, AND PULL BOX, SHALL BE SO LABELED.
- 3. FIBER BACKBONE CABLE SHALL BE PLACED WITH 6 FOOT MAINTENANCE LOOP AT BOTH ENDS OF THE RUN. THE MAINTENANCE LOOP SHALL BE SECURED IN SUCH A MANNER PROVIDE PROTECTION DURING SUBSEQUENT CABLE PULLS.
- 9. ALL STATION CABLES/OUTLETS SHALL BE TESTED AND DOCUMENTED USING A PAIR SCANNER SPECIFICALLY DESIGNED TO TEST THE TYPE OF CABLE INSTALLED (E.G. CATEGORY 6A). TEST RESULTS SHALL BE ONE PAGE PER AND NOTED WITH THE STATION/JACK NUMBERING SCHEME THAT IS STANDARDIZED FOR THE OWNER. 20. ALL FIBER OPTIC STATION AND RISER CABLE SHALL BE TESTED END-TO-END AND THE
- RESULTS (LOSS IN dB) NOTED ON A SEPARATE TYPED SHEET. 1. AFTER STATION CABLE IS TESTED AND DOCUMENTED, ONE PAIR FROM EACH VOICE STATION SHALL BE CROSS CONNECTED THROUGH EACH CLOSET BACK TO THE MAIN DISTRIBUTION FRAME. TELEPHONE NUMBER ASSIGNMENTS FOR EACH JACK MUST BE APPROVED BY THE TELECOM STAFE PRIOR TO IMPLEMENTATION A WRITTEN RECORD O ALL CROSS CONNECT ASSIGNMENTS WILL BE PROVIDED TO THE OWNER BY THE SCS CONTRACTOR.
- 2. FIBER CABLES SHALL BE SPLICED TOGETHER USING A FUSION SPLICE AND PLACED IN A FIBER SPLICE CASE THAT IS RE-ENTERABLE, FULLY DRESSED AND ENCLOSED TO FIT THE NUMBER AND TYPE OF CABLES TERMINATED.
- 23. CABLE TRAY SHALL BE PLACED IN MDF AND IDF(S) AS SHOWN ON DRAWINGS AND AS REQUIRED TO PROPERLY SECURE CABLES AND WIRE.
- 24. A BACKBONE CABLE ASSIGNMENT RECORD SHEET SHALL BE PREPARED (TYPED) PRIOR TO START OF ACCEPTANCE TESTING. ALL FLOOR PLANS SHALL BE NEATLY HAND NOTED WITH STATION JACK NUMBER AND CABLE LENGTH. 25. ALL CABLES SHALL BE CLEARLY LABELED WITH CABLE NUMBERS, PAIR ASSIGNMENTS
- AND DESIGNATION. 26. ALL CABLE TRAYS, LADDER RACKS, CONDUITS, EQUIPMENT RACKS, PROTECTOR PANELS, AND CABLE SHEATHS SHALL BE BONDED & GROUNDED TO EQUIPMENT GROUND
- WITH #6 WIRE (MIN.) 7. ALL SPLICES SHALL BE CONTAINED WITHIN AN APPROVED SPLICE CASE DESIGNED FOR MULTIPLE CLOSURE.

TECHNOLOGY PENETRATION NOTES:	TECHNOLOGY CABLING NOTES:	TECHNOLOGY PATHWAY
NLESS SPECIFICALLY SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL MAKE NO ENETRATION OF FLOORS, WALLS OR CEILING WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OWNERS REPRESENTATIVE. WALL PENETRATIONS:	1. THE USE OF LUBRICANTS SUCH AS CLEAR GLIDE, TO FACILITATE THE INSTALLATION OF CABLES IN CONDUITS IS ENCOURAGED FOR FRICTION REDUCTION AND TO MAINTAIN THE REQUIRED PULL TENSION. YELLOW 77 AND POLYWATER "F" IS PERMISSIBLE FOR USE AS A LUBRICANT FOR ISP TECHNOLOGY CABLING. THE USE OF OSP, LOW TEMPERATURE CABLE LUBRICANTS SHALL NOT BE ACCEPTABLE IN AN INDOOR PLENUM ENVIRONMENT.	<ol> <li>PATHWAYS CAN BE DIVIDED UP INTO TWO SEPARATE CATEGORIES, OUTSIDE PLANT (OSP) AND INSIDE PLANT (I IDENTIFY ALL EXISTING PATHWAYS (CONDUIT, CABLE TRAY, ETC) THAT WILL BE UTILIZED ON THE PROJECT, AN PROVE ALL PATHS SUBJECT TO BE USED ON THIS PROJECT, BEFORE INSTALLATION. THE <u>CONTRACTOR</u> IS RES NON-ACCESSIBLE AND OPEN CEILING SPACE PATHWAYS AS DESCRIBED IN SECTION F, CONTRACTOR GUIDELING</li> <li>ALL PUBL ROYED SUALL RE SIZED AND INSTALLED PER ANSIZIA 500 D. PUBL ROYED FOR INVENDED SUAR CONDICINAL</li> </ol>
HE SCS AND/OR LV CONTRACTOR SHALL PROVIDE FIRE STOPPING FOR ALL COMMUNICATIONS RATED (AND IN SOME CASES NON-RATED, THAT WILL BE DESCRIBED ELOW THIS SECTION) PATHWAYS AND SPACES. THESE FIRE STOPPING DEVICES SHALL CONFORM TO (BUT NOT LIMITED TO) UL 1479, ASTM E814, BICSI TDMM, FIRE STOPPING	<ul> <li>UNDER NO CIRCUMSTANCES SHALL CABLE PULLING LUBRICANT BE ALLOWED TO ACCUMULATE ON WALLS, FLOORS, BACKBOARDS, OR OTHER SURFACES OUTSIDE THE CONDUIT.</li> <li>2. ANY CABLE DAMAGED OR EXCEEDING RECOMMENDED INSTALLATION PARAMETERS</li> </ul>	2. ALL PULL-BOXES SHALL BE SIZED AND INSTALLED PER ANSI/TIA-569-D. PULL-BOXES FOR IN/UNDER SLAB CONDU OVERHEAD CONDUIT RUNS SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS WITHIN THE ACCESSIBLE CEILING SUPPORTS. PULL-BOXES FOR ROOF MOUNTED OR EXTERIOR ABOVE GRADE APPLICATIONS SHALL BE NEMA 3R RATIO BASED CONDUIT SIZING REFER TO THE FILL RATIO TABLE 1A - 2B BELOW AND REFERENCE TO ANSI/TIA-5
NSI/TIA-568-C, STANDARD FOR INSTALLING COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING, SECTION 5, CLAUSE 5.1 THROUGH 5.2.3, IANUFACTURES GUIDELINES OR OTHER PREVAILING CODE AND MUST BE AN APPROVED IL LISTED SYSTEM.	DURING INSTALLATION SHALL BE REPLACED BY THE CONTRACTOR BEFORE FINAL ACCEPTANCE AT NO COST TO THE OWNER. 3. EACH RUN OF CABLE BETWEEN THE TERMINATION BLOCK OR PATCH PANEL AND THE	PULLBOX SIZING PER ANSI/TIA 569-D Conduit Size WIDTH LENGTH DEPTH ADDITIONAL CONDUIT
ABLE TRAY FIRE-STOPPING SHALL UTILIZE THE MULTI GANG FIRE-STOPPING SYSTEM HAT WILL BE ABLE TO STACK THE UNITS HORIZONTALLY AND/OR VERTICALLY IF EQUIRED DUE TO CURRENT AND/OR FUTURE CABLING DESIGNS.	<ul><li>STATION CONNECTOR SHALL BE CONTINUOUS WITHOUT ANY JOINTS OR SPLICES.</li><li>4. ALL STATION CABLE SHALL BE PLACED IN THE INTERIOR OF WALLS UNLESS OTHERWISE NOTED OR OBSTRUCTED.</li></ul>	1"         4"         15"         3"         2"           2"         8"         36"         4"         5"           3"         61         48"         5"         6"
HE CONTRACTOR SHALL INSTALL PENETRATION FIRE-STOP SEAL MATERIALS IN CCORDANCE WITH DESIGN REQUIREMENTS, AND MANUFACTURER'S INSTRUCTIONS. HE CONTRACTOR'S INSTALLER SHALL BE CERTIFIED, LICENSED OR OTHERWISE	5. PROVIDE BUSHINGS, GROMMETS AND STRAIN-RELIEF FOR CABLES TERMINATING AT WALL-MOUNTED OUTLETS AND PATCH PANELS TO ENSURE DURABLE AND ROBUST CONNECTIONS. THE BUSHINGS AND GROMMETS ARE INTENDED TO PROTECT THE CABLES FROM ANY SHARP EDGES THAT PRESENT A RISK TO THE CABLES. ENSURE THAT	4" 101 60" 8" 8"
QUALIFIED BY THE FIRE-STOPPING MANUFACTURER AS HAVING BEEN PROVIDED THE IECESSARY TRAINING TO INSTALL MANUFACTURER'S PRODUCTS PER SPECIFIED REQUIREMENTS.	<ul> <li>ALL SHARP EDGES ARE COVERED TO PROTECT THE CABLES FROM DAMAGE.</li> <li>6. ALL CABLE BUNDLES EXITING FLOOR OR WALL PENETRATIONS AND RUNNING INTO FURNITURE OR CASEWORK SHALL BE WRAPPED IN SPIRAL WRAP OR SPLIT-LOOM TUBING TO PROTECT THE CABLING AND PROVIDE A NEAT INSTALLATION.</li> </ul>	FILL RATIO TABLE 1A - Conduit         Conduit Size       .13       .18       .19       .20       .21       .22       .23       .24         3/4"       16       8       7       6       6       5       5       4
EVICE / SYSTEM DESIGNED TO ALLOW CABLES TO PENETRATE FIRE-RATED WALLS WITH BUILT-IN FIRE SEALING SYSTEM THAT AUTOMATICALLY ADJUSTS TO THE AMOUNT OF CABLES INSTALLED. THE FIRE-STOPPING DEVICE SHALL BE CAPABLE OF INSTALLATION NEW CONSTRUCTION OR RETROFIT IN EXISTING STRUCTURES.	<ul> <li>7. ALL CABLE OR INNERDUCT SHALL RUN PARALLEL OR AT RIGHT ANGLES TO BUILDING WALL STRUCTURES.</li> <li>2. IN SUSPENDED SET ING AND BAILED FLOOD ADEAS WILLERE DUCT. CARLET BAYS OF</li> </ul>	1"       26       13       12       11       9       9       8       7         1 1/4"       45       23       21       19       17       15       14       13         1 1/2"       61       32       28       25       23       21       19       18
HE CONTRACTOR MUST NOT USE CONCRETE OR OTHER NON-REMOVABLE SUBSTANCE OR FIRE STOPPING ON CABLE TRAYS, WIREWAYS OR CONDUITS. CONTRACTORS WHO ISE THIS METHOD WILL BE REQUIRED TO REPLACE ALL CABLES AFFECTED AND PROVIDE THE ORIGINAL SPECIFIED ACCESS TO EACH EFFECTED AREA. THIS REQUIREMENT ALSO	8. IN SUSPENDED CEILING AND RAISED FLOOR AREAS WHERE DUCT, CABLE TRAYS OR CONDUIT ARE NOT AVAILABLE, CABLE BUNDLES SHALL BE SUPPORTED VIA "J" HOOKS ATTACHED TO THE BUILDING STRUCTURE AND FRAMEWORK AT A MAXIMUM OF FIVE (5) FOOT INTERVALS. MINIMUM 1 " WIDE J-HOOKS SHALL BE APPROPRIATELY SIZED TO ALLOW A MINIMUM OF 60% SPARE CAPACITY FOR FUTURE CABLE INSTALLATION. THE	2"       101       52       47       42       38       35       32       29         2 1/2"       176       92       82       74       67       61       56       51         3"       266       139       124       112       102       93       85       78
APPLIES TO MAINTAINING FIRE RATINGS OF ALL FLOORS PENETRATED BY CONDUITS OR DEVICES DESIGNATED FOR USE BY VOICE AND DATA CABLING. NY PENETRATIONS THROUGH FIRE-RATED WALLS FOR CABLE PATHWAYS / CABLES	CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID FOR ANY ADDITIONAL SUPPORTS/SEISMIC BRACING REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION.	3       200       139       124       112       102       93       83       73         3       1/2"       347       181       162       146       133       121       111       102         4"       444       231       208       187       170       155       142       130
HALL BE SEALED BY USE OF A NON-PERMANENT FIRE BLANKET OR OTHER METHOD IN COMPLIANCE. THE CONTRACTOR MUST USE FIRE STOPPING ON CABLE TRAYS, VIREWAYS AND CONDUITS EITHER VERTICAL OR HORIZONTAL. FOUR DIFFERENT IETHODS OF FIRE-STOPPING HAVE BEEN IDENTIFIED FOR THE HORIZONTAL THROUGH ENETRATIONS BETWEEN WALLS, RATED, RATED WITH ACOUSTIC PROPERTIES, ION-RATED, AND NON-RATED WITH ACOUSTIC PROPERTIES.	9. THE CONTRACTOR SHALL BUNDLE, IN BUNDLES OF 48 OR LESS, STATION OR OTHER CABLING WITH 3/4" HOOK AND LOOP "VELCRO" STRIPS TIGHT ENOUGH TO HOLD THE BUNDLE TOGETHER IN A CYLINDRICAL SHAPE, BUT NOT SO TIGHT AS TO DEFORM THE CABLE GEOMETRY. IT SHALL BE POSSIBLE TO COMPLETELY ROTATE ALL HOOK AND LOOP TIES AROUND ALL CABLE BUNDLES. PLENUM RATED HOOK AND LOOP TIES WILL BE USED IN ALL PLENUM AREAS.	FILL RATIO TABLE 2A - Cable Tray / Wire Basket / Raceway per NEC 2022 Article 725         Tray Size (WxD)         .13       .18       .19       .20       .21       .22       .23       .24
OW ARE METHODS TO ACCOMPLISH THESE DIFFERENT TYPES: SEALING OF RATED OPENINGS BETWEEN FLOORS OR THROUGH RATED WALLS, WHETHER EXISTING OR CREATED BY THE CONTRACTOR FOR PLACEMENT OF CABLE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SEALING MATERIAL AND	<ol> <li>CABLES OR J-HOOKS SHALL NOT BE ATTACHED TO LIFT OUT CEILING GRID SUPPORTS OR LAID DIRECTLY ON THE CEILING GRID.</li> <li>CABLES OR J-HOOKS SHALL NOT BE ATTACHED TO OR SUPPORTED BY FIRE SPRINKLER</li> </ol>	4x4       482       251       225       203       184       168       154       141         6x4       723       377       338       305       277       252       231       212         12x4       1447       754       677       661       554       505       462       424
APPLICATION SHALL BE AN APPROVED UL LISTED SYSTEM AND SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT IS ACCEPTABLE TO THE LOCAL FIRE AND BUILDING AUTHORITIES HAVING JURISDICTION OVER THIS WORK. CREATION OF SUCH OPENINGS AS ARE NECESSARY FOR CABLE PASSAGE BETWEEN LOCATIONS AS	HEADS OR DELIVERY SYSTEMS OR ANY ENVIRONMENTAL SENSOR LOCATED IN THE CEILING AIR SPACE. 12. WHERE ADDITIONAL CONDUIT(S)/SLEEVE(S) ARE REQUIRED, BUT NOT PROVIDED BY THE	18x4       2170       1132       1016       917       831       758       693       636         24x4       2894       1509       1355       1222       1109       1010       924       849         6x6       1085       566       508       458       415       379       346       318
SHOWN ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY OPENINGS CREATED BY OR FOR THE CONTRACTOR AND LEFT UNUSED SHALL ALSO BE SEALED AS PART OF THIS WORK. RATED WALLS WITH THROUGH PENETRATIONS WITH ACOUSTIC PROPERTIES SHALL BE INSTALLED WITH FACTORY MANUFACTURED DEVICE. SUCH AS A STI "EZ PATH" OR	CONTRACTOR, THE SCS AND/OR LV CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE SUCH CONDUIT(S)/SLEEVE(S). CONDUIT(S) AND SLEEVE(S) SHALL BE OF SUITABLE MATERIAL, SIZED, INSTALLED, FIRE-STOPPED, AND GROUNDED AS REQUIRED BY THE CEC 2022, ANSI/TIA-569-D STANDARD AND ALL OTHER APPLICABLE CODES AND STANDARDS. SLEEVES SHALL CONSIST OF METALLIC CONDUIT DE-BURRED AND	12x621701132101691783175869363618x6325616981524137512471137104095524x6434122642032183416631516138712731
WIREMOLD "FLAMESTOPPER" OR EQUAL. THE TYPICAL STC RATING IS TO BE EQUAL TO OR GREATER THAN THE WALL PENETRATED, (AVG IS A RATING OF 44 STC PER UBC RATINGS). NON-RATED PATHWAY, ALTHOUGH NOT REQUIRED TO BE FIRE-STOPPED, SHALL BE A	GROMMETTED ON BOTH ENDS WITH FLANGES OR OTHER MEANS TO PREVENT THE SLEEVE FROM SLIPPING OR FALLING OUT OF THE PARTITION. SLEEVES SHALL EXTEND A MINIMUM OF 6" ON BOTH SIDES OF THE PARTITION. OUTSIDE PERIMETER OF SLEEVES SHALL BE SEALED AGAINST SOUND, AIR, WATER, HEAT, OR AS REQUIRED BY PARTITION	PATHWAY SEPARATION FROM SOURCE OF ELECTROMAGNETIC ENEGRY:
MANUFACTURED DEVICE THAT WILL ALLOW FIRE-STOPPING TO BE INSTALLED IN THE FUTURE IF REQUIRED, (I.E. WIREMOLD "FLAMESTOPPER" OR EQUAL). A NON-RATED PATHWAY WITH ACOUSTIC PROPERTIES CAN BE FOUND IN AREAS SUCH AS, CONFERENCE ROOMS, HUMAN RESOURCE OFFICES, MEDICAL EXAMINATION ROOMS ETC. THESE ROOMS REQUIRE TO LIMIT THE AMOUNT OF AMBIENT NOISE THAT	DESIGN. INSIDE OF SLEEVE SHALL BE SEALED SIMILARLY AFTER INSTALLATION OF ALL CABLING. CABLES SHALL BE INDEPENDENTLY SUPPORTED ON EITHER SIDE OF THE SLEEVE. SLEEVES SHALL NOT BE USED AS CABLE SUPPORTS. ANY CONDUIT(S) AND SLEEVE(S) ADDED BY THE SCS CONTRACTOR SHALL BE APPROVED BY THE OWNERS REPRESENTATIVE PRIOR TO ROUGH-IN.	CONDITION<2KVA2-5 KVA>5KVAUnshielded Power Lines in Proximity to open PVC Pathways5" (In.)12" (In.)24" (In.)
CAN TRAVEL FROM ONE ROOM TO THE OTHER THROUGH THE CEILING GRID. IF THIS WALL IS PENETRATED, INSTALL A SYSTEM THAT WILL RE-ESTABLISH THE STC RATING OF THE WALL, THE TYPICAL STC RATING IS AN AVERAGE OF 44 STC PER UBC RATINGS.	13. IN THE EVENT CONTRACTOR IS REQUIRED TO REMOVE CEILING TILES, SUCH WORK SHALL NOT BREAK OR DISTURB GRID. REMOVAL OF THE CEILING GRID MUST BE COORDINATED WITH THE OWNERS REPRESENTATIVE. ALL INSULATION SHALL BE	Unshielded Power Lines in Proximity to Grounded Metallic Pathways2.5" (In.)6" (In.)12" (In.)Power Lines enclosed in Metal Grounded Pathways in proximity to Grounded Metallic<1" (In.)
CONTRACTOR(S) GUIDELINES:	REPLACED IN ITS ORIGINAL LOCATION. 14. THE NUMBER OF CABLES IN EACH CONDUIT SHALL BE CONTROLLED TO ALLOW FOR FUTURE CABLE INSTALLATION AND TO STAY WITHIN THE MANUFACTURER'S MAXIMUM ALLOWABLE CABLE PULLING TENSION. CONDUIT FILL RATIOS SHALL NOT EXCEED THE	<ol> <li>FOR ALL FIRESTOPPING OF SCS AND LV SYSTEMS PATHWAY RESPONSIBILITIES REFERENCE SECTION G, PENE NOTES.</li> </ol>
LL TECHNOLOGY WORK SHALL COMPLY WITH DESIGN GUIDELINES AS WELL AS PPLICABLE FEDERAL, STATE, AND LOCAL CODES. WHERE THE CONSTRUCTION OCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE DOCUMENTS SHALL OVERN BUT THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS UTHORITY TO VIOLATE ANY CODE OR REGULATION.	<ul> <li>CURRENT REQUIREMENTS OF THE CEC 2022, ANSI/TIA-569-D, REFERENCE SECTION B.2, TABLES 1 AND 2 OF THIS DOCUMENT FOR ADDITIONAL REQUIREMENTS.</li> <li>15. CONDUITS: <ul> <li>ALL BACKBONE CABLING WILL RUN THROUGH DEDICATED CONDUITS.</li> <li>ALL NEW CONDUITS WILL BE SUPPLIED WITH A PULL STRING BY THE CONTRACTOR.</li> </ul> </li> </ul>	<ol> <li>FOR ALL OTHER SCS AND/OR LV SYSTEMS PATHWAY RESPONSIBILITIES REFERENCE SECTION F, CONTRACTOR</li> <li>OUTSIDE PLANT (OSP) PATHWAYS CAN BE BROKEN DOWN INTO THE FOLLOWING ITEMS, MAINTENANCE HOLES,</li> <li>WHILE ENTERING MAINTENANCE HOLES, HAND HOLES, PULLBOXES, FOLLOW ALL CODES AND SAFETY PRACTIC SAFE PULLING TENSIONS FOR THE CABLES TO BE INSTALLED. THIS INFORMATION CAN BE FOUND ON THE CABL</li> </ol>
THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE LANS AND/OR SPECIFICATIONS OR WITH CODE REQUIREMENTS, THE NOTE, CODE OR PECIFICATION WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR HE HIGHER STANDARD SHALL PREVAIL.	<ul> <li>EXISTING CONDUITS SHALL BE PROVEN TO BE CLEAR BY THE SCS AND/OR LV CONTRACTOR PRIOR TO PULLING OF CABLES.</li> <li>SCS AND/OR LV CONTRACTOR SHALL SUPPLY PULL STRING AND PULL ROPE FOR THE INSTALLATION OF ALL CABLES IN EXISTING CONDUITS.</li> <li>FOR ALL CONDUITS LEFT WITH AVAILABLE CAPACITY, SCS AND/OR LV CONTRACTOR SHALL REPLACE PULL STRINGS DURING THE COURSE OF HIS WORK.</li> </ul>	<ul> <li>b. BEFORE EXITING THE MAINTENANCE HOLE, HAND HOLE, PULLBOX, NOTE ON PAPER OR DIGITAL MEANS THE EX "BUTTERFLY" PRINT TO AHJ AND OWNER'S REPRESENTATIVE. LABEL THE INSTALLED MEDIA PER SPECIFICATION</li> <li>c. WITH DIRECTION OF OWNER OR OWNER'S REPRESENTATIVE, CHOOSE AND PROVE ALL CONDUITS BEFORE THE TO ORDERING MATERIAL, ALL LABOR AND MATERIAL COSTS ASSOCIATED WITH DISCREPANCIES BETWEEN DRAFT</li> </ul>
MISSIONS FROM THE DRAWINGS, SPECIFICATIONS OR THE MIS-DESCRIPTION OF ETAILS FROM WORK WHICH ARE CLEAR AND NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS, SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL OT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMITTED OR MIS-DESCRIBED	SCS AND/OR LV CONTRACTOR MUST SEAL ALL CONDUITS WITH AN APPROVED SEALING COMPOUND.	COORDINATE WITH THE ELECTRICAL OR GENERAL CONTRACTOR (EC OR GC), IF CONDUITS ARE PLUGGED OR M d. TRAIL ALL BACKBONE MEDIA (I.E. COPPER, FIBER OR INNERDUCT) WITH A 3/8" YELLOW POLY-NYLON ROPE, LAB
ETAILS OF THE WORK BUT THEY SHALL BE PERFORMED AS IF FULLY AND CORRECTLY ET FORTH AND DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS. HE CONTRACTOR SHALL CHECK ALL DRAWINGS FURNISHED, IMMEDIATELY UPON THEIR	TECHNOLOGY GROUNDING SYSTEM NOTES:	<ul> <li>e. PROVIDE AND INSTALL ALL HARDWARE NECESSARY TO SUPPORT THE CABLING TO THE WALLS OF THE MAINTE HARDWARE IS TO BE CONSTRUCTED FOR THE AREA IT IS TO BE INSTALLED AND DESIGNED FOR THE PURPOSE</li> <li>f. SCS AND/OR LV CONTRACTOR TO PROVIDE EXPANSION PLUGS IN ALL DUCTS/CONDUITS ENTERING THE BUILDIN PULL-STRING TO BE TIED OFF ON THE INSIDE.</li> </ul>
ECEIPT AND SHALL PROMPTLY NOTIFY THE OWNER OF ANY DISCREPANCIES. LL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE UNDERWRITERS ABEL (UL) AND SHALL BE INSTALLED IN THE MANNER FOR WHICH THEY ARE DESIGNED IND APPROVED.	<ol> <li>THE CONTRACTOR SHALL PROVIDE A TELECOMMUNICATION GROUNDING BUSSBAR (TGB) AND TELECOMMUNICATION BONDING BACKBONE (TBB) CABLE(S) AT EACH MDF ROOM AND IDF LOCATION. TERMINATE THE TBB ON GROUND BARS LOCATED AT EACH MDF ROOM AND IDF CABINET FROM BUILDING STEAL OR MAIN ELECTRICAL GROUND, OR AS OTHERWISE INDICATED ON THE DRAWINGS.</li> </ol>	<ol> <li>INSIDE PLANT (ISP) PATHWAYS CAN BE BROKEN DOWN INTO THE FOLLOWING ITEMS, HOLLOW WALL PENETRAT CONDUIT.</li> <li>CABLE RACEWAYS AND CONDUITS SHALL NOT BE FILLED GREATER THAN THE CEC 2022, ARTICLE SIZE FOR CLASS 2/3 WIRE/CABLE.</li> </ol>
HE CONTRACTOR SHALL NOT BORE, NOTCH OR IN ANY WAY CUT INTO ANY STRUCTURAL IEMBER WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT OR STRUCTURAL NGINEER.	<ol> <li>THE SCS CONTRACTOR SHALL UTILIZE A TELECOMMUNICATIONS BONDING BACKBONE (TBB) AS INDICATED IN THE DRAWINGS. GROUNDING MUST BE IN ACCORDANCE WITH THE CEC 2022, ANSI/TIA-607-B AND ALL LOCAL CODES AND PRACTICES.</li> </ol>	a. CONDUIT AND PATHWAY ROUTING SHOWN FOR THE SCS AND LV SYSTEMS ARE STRICTLY DIAGRAMMATICAL FOR RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE BEST MEANS & METHODS FOR SCS & TECHNOLOGY RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE INSTALLATION PLAN WITH THE OWNERS REPRESE GENERAL ELECTRICAL SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
LL CHANGES TO STRUCTURES (BUILDING, DRILLING, CORING, ETC.) NOT SHOWN ON THE RAWINGS SHALL BE APPROVED IN WRITING BY STRUCTURAL ENGINEER. OR PURPOSES OF CLEARNESS AND LEGIBILITY, THE TELECOM DRAWINGS ARE SSENTIALLY DIAGRAMMATIC. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO	3. THE SCS CONTRACTOR SHALL BE RESPONSIBLE FOR BONDING ALL METALLIC SHEATH COMMUNICATIONS CABLES ENTERING THE BUILDING PER MANUFACTURER SPECIFICATIONS AND CEC 770-33, 800-33 AND 800-40. ALL GROUNDS SHALL CONSIST OF # 6-AWG COPPER WIRE AND SHALL BE SUPPLIED FROM AN APPROVED BUILDING GROUND	<ul> <li>b. CONDUIT PATHWAYS SHALL BE SUPPLIED BY THE ELECTRICAL OR GENERAL CONTRACTOR AS PER THE DRAW AND/OR GC OF THE PROJECT.</li> <li>c. NO CABLE IS TO BE PULLED THROUGH A CONDUIT L-BEND "LB" (CONDULETS).</li> </ul>
CALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DATA FORMATION AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS HERE SCS AND LOW VOLTAGE WORK INTERFACES WITH OTHER TRADES.	<ul> <li>AND BONDED TO THE MAIN ELECTRICAL GROUND. ALL CABLE SHEATHS AND SPLICE CASES SHALL BE GROUNDED TO A TELECOMMUNICATIONS GROUND BUS.</li> <li>4. THE SCS CONTRACTOR SHALL PROVIDE GROUNDING AND BONDING FROM ALL HORIZONTAL FOURIER FILE INCLUDING PROPERTY FRAMES.</li> </ul>	d. ALL EXPOSED CONDUIT AND HARDWARE SHALL BE PAINTED TO MATCH SURROUNDING SURFACES. CONTRACT e. CONDUITS SHALL CONTAIN PLASTIC OR NYLON PULL TAPE RATED AT 200 LBS. WITH A MINIMUM OF 5 FEET OF E
HE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWINGS TO REFLECT ALL CHANGES MADE DURING CONSTRUCTION AND ANY DEVIATIONS FROM THE ELECTRICAL AND ECHNOLOGY DRAWINGS. THIS INCLUDES DEVIATIONS FROM OUTLET NUMBERS AND ANY ADDITION, DELETION OR RELOCATION OF OUTLETS SHOWN ON WORKING RAWINGS, PATHWAY ADDITIONS, DELETIONS OR RELOCATIONS. THE CONTRACTOR HALL AFTER COMPLETION OF JOB. PROVIDE THE OWNER AN ELECTRONIC AND HARD	HORIZONTAL EQUIPMENT INCLUDING DISTRIBUTION AND CROSS CONNECT FRAMES, PATCH PANELS, CABLE TRAYS, EQUIPMENT RACKS, LADDER TRAYS, CONDUITS, ACTIVE TELECOMMUNICATION EQUIPMENT, SLEEVES, TEST APPARATUS. EQUIPMENT SHALL BE BONDED TO THE TBB GROUND BARS UTILIZING A #6-AWG GREEN CONDUCTOR WITH 2-HOLE LONG BARREL COMPRESSION GROUNDING LUGS.	<ul><li>f. TERMINATE CONDUIT STUBS AND SLEEVES THAT PROTRUDE THROUGH STRUCTURAL FLOORS 2"-3" ABOVE THE</li><li>g. INSTALL BUSHINGS AND BELL ENDS AS REQUIRED ON ALL CONDUITS.</li><li>h. FLEX CONDUIT IS UNACCEPTABLE FOR USE AS A COMMUNICATIONS CONDUIT EXCEPT AT SEISMIC JOINTS AND</li></ul>
ANY DEVIATIONS FROM PLANS OR SPECS MUST BE APPROVED IN WRITING BY THE WWNER'S REPRESENTATIVE.	a. EACH EQUIPMENT CABINET AND RACK REQUIRES ITS OWN DEDICATED RACK GROUNDING BUSBAR (RGB) WITH A BONDING CONNECTION TO THE GROUNDING INFRASTRUCTURE. THE GROUNDING INFRASTRUCTURE CONSIST OF A TB, BY PROVIDING EVERY RACK/CABINET WITH ITS OWN DEDICATED #6 WAG (MIN.) GREEN CONDUCTORS BACK TO THE TOMB/TB. ALL GROUND CONDUCTOR ATTACHMENTS SHALL UTILIZE 2-HOLE LONG	i. ALL UNDER SLAB OR IN-SLAB CONDUITS SHALL BE INSTALLED IN A MANNER THAT PREVENTS WATER INFILTRATI GROUND WATER, RAIN WATER OR CONSTRUCTION WATER IS PREVENTED FROM ENTERING AND/OR REMOVED ELECTRICAL SPECIFICATIONS, DETAILS AND PLANS FOR ADDITIONAL CONDUIT SEALING REQUIREMENTS.
ALL FOOTAGES ON DRAWINGS ARE ESTIMATED AND MUST BE VERIFIED BY CONTRACTOR PRIOR TO ORDERING MATERIAL. ALL STATION CABLES SHALL BE NEATLY DRESSED AND SECURED EVERY FIVE FEET AT A	<ul> <li>BARREL COMPRESSION LUGS.</li> <li>b. HORIZONTAL CABLES SHALL BE GROUNDED IN COMPLIANCE WITH ANSI/TIA-607-C, FP 70 (EEC) AND LOCAL REQUIREMENTS AND PRACTICES.</li> </ul>	<ul><li>j. PROVIDE LABELING OF EACH CONDUIT PER GENERAL ELECTRICAL SPECIFICATIONS.</li><li>k. REINSTALL PULL-STRINGS IN ALL SCS AND LV ISP PATHWAYS AFTER USE TO FACILITATE FUTURE ADDITION OF</li></ul>
THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF	c. IN RAISED-FLOOR ENVIRONMENTS, THE GROUND CONDUCTOR SHALL ATTACH TO THE LOWEST HOLES ON THE FRONT RAIL OF EACH RACK/CABINET.	I. IT IS THE SCS AND/OR LV CONTRACTOR'S RESPONSIBILITY TO REPORT ANY UNUSABLE OR INADEQUATE CONDU M. PULL BOXES ARE NOT TO BE USED IN LIEU OF A BEND, AND THE CONDUIT SHALL EXIT A PULLBOX ON THE WALL
CEILING TILE INCLUDING REPLACEMENT OF BROKEN OR DAMAGED TILES. ALL LOCATIONS PASSING THROUGH A FIRE OR A SMOKE BARRIER MUST BE FIRE STOPPED USING APPROVED (UL CLASSIFIED) FIRE STOP SYSTEM, INSTALLED PER THE	d. RACK MOUNTED EQUIPMENT SHALL BE GROUNDED VIA THE CHASSIS, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.	n. CONDUITS SHALL; • CONTAIN NO CONTINUOUS SECTIONS LONGER THAN 30M (98 FT.) • CONTAIN NO MORE THAN PER STANDARDS & CODE. • SPLIT CONDUITS IN PLACE OF PULLBOXES ARE UNACCEPTABLE.
IANUFACTURER'S INSTRUCTIONS AND PROPERLY LABELED.	e. BONDING OF LADDER RACK SECTIONS: ATTACH BONDING STRAPS TO EACH LADDER RACK SECTION BY UTILIZING EITHER TWO (2) TRI-LOBULAR THREAD-FORMING SCREWS (NOT SELF-TAPPING OR SHEET METAL SCREWS) OR BY USING TWO (2) STANDARD BOLTS WITH TWO (2) "TYPE B" INTERNAL / EXTERNAL TOOTH LOCK WASHERS PER BOLT. IF	<ul> <li>o. CONDUIT BEND RADIUS SHALL BE;</li> <li>A MINIMUM OF 6 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS 2" IN DIAMETER OR LESS.</li> <li>A MINIMUM OF10 TIMES THE INTERNAL CONDUIT DIAMETER FOR CONDUITS MORE THAN 2" IN DIAMETER.</li> </ul>
ORMS) BEFORE UTILIZING ANOTHER VACANT CONDUIT. ALL STATION OUTLETS AND TERMINALS SHALL BE PROPERLY IDENTIFIED USING THE OWNER'S STANDARD INTERNAL DISTRIBUTION NUMBERING SCHEME. ALL LABELS SHALL E PREPRINTED OR TYPED.	THREAD-FORMING SCREWS ARE NOT USED, REMOVE PAINT AT EACH CONNECTION POINT AND USE AN APPROVED ANTI-OXIDANT PRIOR TO ATTACHING THE BONDING STRAP.	<ul> <li>POWER SEPARATION:</li> <li>THE CONTRACTOR SHALL NOT PLACE ANY DISTRIBUTION CABLING ALONGSIDE POWER LINES, OR SHARE TH POINT SHALL THE COMMUNICATIONS CABLES BE TIED TO POWER CABLES OR OTHER BUILDING SERVICES.</li> <li>ROUTED THROUGH THESE SPACES AT RIGHT ANGLES TO ELECTRICAL POWER CIRCUITS.</li> </ul>
EACH BACKBONE RISER AND/OR OSP CABLE SHALL BE EQUIPPED WITH A PERMANENT ABEL INDICATING CABLE TYPE, PAIR OR OPTIC COUNTS, DISTANT ENDS, AND CABLE ENGTH. BOTH ENDS OF EACH CABLE AND AT EVERY MAINTENANCE HOLE, HAND HOLE,	TECHNOLOGY TERMINAL BACKBOARD NOTES:	<ul> <li>AVOID ELECTROMAGNETIC INTERFERENCE (EMI) BY MAINTAINING ADEQUATE PHYSICAL SEPARATION BETWE TO, ELECTRIC MOTORS, ELECTRIC PENCIL SHARPENERS, TRANSFORMERS, FLUORESCENT LIGHTS THAT SHA SHARE WORK AREA SPACE WITH LINE CORDS AND TERMINALS, LARGE FAX MACHINES AND POWER CORDS</li> </ul>
ND PULL BOX, SHALL BE SO LABELED. FIBER BACKBONE CABLE SHALL BE PLACED WITH 6 FOOT MAINTENANCE LOOP AT BOTH NDS OF THE RUN. THE MAINTENANCE LOOP SHALL BE SECURED IN SUCH A MANNER TO ROVIDE PROTECTION DURING SUBSEQUENT CABLE PULLS.	1. WHERE INDICATED ON DRAWINGS, CONTRACTOR TO PROVIDE NEW PLYWOOD TERMINAL BACKBOARDS. USE DOUGLAS FIR PLYWOOD, INTERIOR A/C GRADE, FINISHED ONE SIDE AND PRIME COAT PAINTED ON ALL SURFACES WITH A FINISH COAT OF FIRE RETARDANT WHITE ENAMEL. ON EACH PLYWOOD SHEET LEAVE ONE (1) FIRE MARSHAL STAMP	
ALL STATION CABLES/OUTLETS SHALL BE TESTED AND DOCUMENTED USING A PAIR CANNER SPECIFICALLY DESIGNED TO TEST THE TYPE OF CABLE INSTALLED (E.G. CATEGORY 6A). TEST RESULTS SHALL BE ONE PAGE PER AND NOTED WITH THE STATION/JACK NUMBERING SCHEME THAT IS STANDARDIZED FOR THE OWNER.	UNPAINTED FOR INSPECTION. UNLESS OTHERWISE INDICATED, USE 8'-0" HIGH X LENGTH AS SHOWN ON DRAWINGS X 3/4" THICK PLYWOOD. REFERENCE BACKBOARD ELEVATIONS FOR MORE INFORMATION.	
TATION/JACK NUMBERING SCHEME THAT IS STANDARDIZED FOR THE OWNER.		

	PROJECT CODES AND STANDARDS:
IDE PLANT (ISP). IT IS THE SCS AND/OR LV SYSTEM(S) CONTRACTOR'S RESPONSIBILITY TO ROJECT, AND COORDINATE WITH THE ON-SITE ELECTRICAL OR GENERAL CONTRACTOR TO CTOR IS RESPONSIBLE FOR THE INSTALLATION ALL UNDERGROUND (OSP) PATHWAYS,	APPLICABLE PROJECT BUILDING CODES, EFFECTIVE AS OF DATE: JANUARY 1, 2023 2022 CALIFORNIA ADMINISTRATIVE CODE (CAC) 2022 CALIFORNIA BUILDING CODE (CBC) 2022 CALIFORNIA ELECTRICAL CODE (CEC)
DR GUIDELINES OF THESE TECHNOLOGY GENERAL NOTES. SLAB CONDUIT RUNS ARE NOT PERMITTED UNLESS OTHERWISE NOTED. PULL-BOXES FOR SIBLE CEILING SPACE AND SUPPORTED INDEPENDENTLY FROM THE STRUCTURE AND CONDUIT BE NEMA 3R RATED. PULL-BOXES SHALL BE SIZED ACCORDING TO THE FOLLOWING: FOR FILL	2022 CALIFORNIA FIRE CODE (CFC) 2022 CALIFORNIA ENERGY CODE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE 2022 CALIFORNIA REFERENCED STANDARDS CODE
BE NEMA 3R RATED. PULL-BOXES SHALL BE SIZED ACCORDING TO THE FOLLOWING: FOR FILL O ANSI/TIA-569-D.	2022 NFPA 72: NATIONAL FIRE ALARM AND SIGNALING CODE, NATIONAL FIRE PROTECTION ASSOCIATION 2022 NFPA 1221: NATIONAL FIRE ALARM AND SIGNALING CODE, NATIONAL FIRE PROTECTION ASSOCIATION <u>APPLICABLE INDUSTRY STANDARDS, CURRENT EDITION</u> TIA-568: GENERIC CABLE STANDARDS
INCREASE PER ONAL CONDUIT 2"	TIA-568-1: COMMERCIAL CABLE STANDARDS TIA-568-2: BALANCED TWISTED PAIR CABLING AND COMPONENTS TIA-568-3: OPTICAL CABLING FEEDER COMPONENTS TIATIA-568-4: BROADBAND COAX CABLING AND COMPONENTS
5" 6" 8"	TIA-569: TELECOMMUNICATION PATHWAYS AND SPACES TIA-570: RESIDENTIAL TELECOMMUNICATIONS TIA-598: OPTICAL FIBER CABLE COLOR CODING TIA-606: ADMINISTRATIVE LABELING STANDARDS TIA-607: TELECOMMUNICATIONS BONDING AND GROUNDING
	TIA-007: TELECOMMUNICATIONS BONDING AND GROUNDING TIA-758: TELECOMMUNICATIONS OUTSIDE PLANT TIA-526-7: SINGLE-MODE FIBER STANDARDS TIA-526-14: MULTI-MODE FIBER STANDARDS
.23       .24       .25       .26       .27       .28       .29       .30       .31       .32       .33       .34       .35       .37       .39         5       4       4       4       3       3       3       3       2       2       2       2       1       1         8       7       7       6       6       5       5       4       4       4       3       3       3       2	TECHNOLOGY DESIGN DIRECTORY:
14     13     12     11     10     9     9     8     7     7     6     6     6     5       19     18     16     15     14     13     12     11     10     10     9     8     7     6	SENIOR DESIGNER:     DESIGNER-II       NAME: JOSIAH ZAMORA, CTS     NAME: RUBELINO LOZANO, NICET III
32       29       27       25       23       21       20       18       17       16       15       14       13       12       11         56       51       47       44       40       38       35       33       31       29       27       25       24       21       19         85       78       72       66       61       57       53       50       46       43       41       38       36       32       29	WORK: (916) 721-2938         PHONE: (916) 771-0778 x4026           MOBILE: (916) 996-3942         EMAIL: rlozano@lpengineers.com           EMAIL: jzamora@lpengineers.com         EMAIL: rlozano@lpengineers.com
111         102         94         86         80         74         69         65         61         57         53         50         47         42         38           142         130         120         111         103         95         89         83         78         73         68         64         61         54         49	CONTRACTOR SUBMITTALS:
.23 .24 .25 .26 .27 .28 .29 .30 .31 .32 .33 .34 .35 .37 .39	(SHOP DRAWINGS / PRODUCT SUBMITTALS / QUALIFICATIONS)  1. ORDERING AND INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL THE FOLLOWING:
154         141         130         120         111         103         96         90         84         79         74         70         66         59         53           231         212         195         180         167         155         145         135         127         119         112         105         99         89         80           462         424         391         361         335         311         290         271         254         238         224         211         199         178         160	a. CONTRACTOR FURNISHED SHOP DRAWINGS (SEE BELOW FOR LISTED SHOP DRAWING REQUIREMENTS)
693         636         587         542         503         467         436         407         381         358         336         317         299         267         241           924         849         782         732         671         623         581         543         509         477         449         423         399         357         321           346         318         293         271         251         233         218         203         190         179         168         158         149         133         120	<ul> <li>b. PRODUCT SUBMITTAL DOCUMENTS</li> <li>c. APPLICABLE TRADES QUALIFICATION CERTIFICATIONS HAVE BEEN APPROVED BY THE SYSTEMS ENGINEER AND/OR ARCHITECT AND IF (A. APPLICABLE, APPROVED BY THE DIVISION OF THE STATE ARCHITECT).</li> </ul>
603         636         587         542         503         467         436         407         381         358         336         317         299         267         241           1040         955         880         814         754         701         654         611         572         537         505         476         449         401         361           1387         1273         1174         1085         1006         935         872         815         763         716         673         634         598         535         482	<ol> <li>ANY DESIGN AND/OR INSTALLATION DISCREPANCIES/CHANGE ORDERS/REWORK (INCLUDING LABOR AND MATERIALS) INCURRED BEFORE OR AFTER CONTRACTOR FURNISHED SHOP DRAWINGS HAVE BEEN APPROVED SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR INSTALLATION SHOP DRAWINGS</li> </ol>
	3. IT SHALL BE UNDERSTOOD THAT THE DRAWINGS, DETAILS, AND ONE-LINES PROVIDED WITH THE DESIGN PACKAGE ARE DIAGRAMMATIC. DATA PRESENTED ON DESIGN DRAWINGS ARE AS ACCURATE AS PRELIMINARY SURVEYS AND PLANNING CAN DETERMINE UNTIL FINAL EQUIPMENT SELECTION IS
>5KVA 24" (In.)	<ul> <li>MADE. ACCURACY IS NOT GUARANTEED AND FIELD VERIFICATION, OF ALL DIMENSIONS, ROUTING, ETC., BY THE CONTRACTOR IS REQUIRED.</li> <li>4. DRAWINGS ARE PROVIDED TO SHOW THE INTENT OF THE DESIGN AND SPECIFICATION AND TO ASSIST THE CONTRACTOR IN SUBMITTING A BID. CONTRACTOR IS DIRECTED TO MAKE FIELD SURVEYS AS</li> </ul>
12" (ln.) 6" (ln.)	PART OF HIS WORK PRIOR TO SUBMITTING SYSTEM LAYOUT DRAWINGS (SHOP DRAWINGS). THE CONTRACTOR SHALL MAKE ALLOWANCE IN THE PROPOSAL TO COVER WHATEVER WORK IS REQUIRED TO COMPLY WITH THE INTENT OF THE DESIGN AND PROVIDE A FULLY FUNCTIONING COMPLETE, OPERABLE, AND INTEGRATED SYSTEM.
ON G, PENETRATION OF WALLS, FLOOR AND CEILINGS OF THESE TECHNOLOGY GENERAL	<ol> <li>IN CASE OF DOUBT OF WORK INTENDED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REQUEST INSTRUCTIONS FROM THE ENGINEER OR OWNER PRIOR TO BID. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A COMPLETE, OPERABLE, AND INTEGRATED FUNCTIONING SYSTEM.</li> <li>INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED CONTRACTOR FURNISHED</li> </ol>
ONTRACTOR GUIDELINES OF THESE TECHNOLOGY GENERAL NOTES. NCE HOLES, HAND HOLES, PULLBOXES, AND CONDUITS.	SHOP DRAWINGS (IN AUTOCAD 2010/ OR SIMILAR PROFESSIONAL DRAWING FORMAT) AND PRODUCT SUBMITTALS HAVE BEEN APPROVED BY THE DESIGNER AND/OR ARCHITECT AND IF (A. APPLICABLE, APPROVED BY THE DIVISION OF THE STATE ARCHITECT).
TY PRACTICES OF A "CONFINED SPACE". UTILIZE NECESSARY EQUIPMENT TO MAINTAIN ALL ON THE CABLE MANUFACTURER'S SPECIFICATIONS SHEETS.	<ol> <li>ANY AND ALL DESIGN AND/OR INSTALLATION DISCREPANCIES, CHANGE ORDERS, (INCLUDING LABOR, MATERIALS, AND SHIPPING) INCURRED WITHOUT CONTRACTOR SHOP DRAWINGS OR AFTER CONTRACTOR SHOP DRAWINGS HAVE BEEN APPROVED SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> </ol>
PECIFICATIONS. BEFORE THE INSTALLATION OF THE MEDIA. MEASURE ALL PATHWAYS WITH MULE-TAPE PRIOR TWEEN DRAWINGS AND VERIFIABLE SITE CONDITIONS SHALL BE BORNE BY CONTRACTOR.	8. ANY WORK PERFORMED WITHOUT APPROVED CONTRACTOR FURNISHED SHOP DRAWINGS AND SUBMITTALS SHALL NOT BE ALLOWED. IF WORK PERFORMED PRIOR TO APPROVE SHOP DRAWINGS, CONTRACTOR WILL DO SO AT THEIR OWN RISK.
UGGED OR MISSING PULL ROPE. N ROPE, LABEL THE ROPE, AND TIE OFF EITHER END, FOR FUTURE INSTALLATIONS. THE MAINTENANCE HOLE, HAND HOLES, PULLBOX. (IF IT DOES NOT ALREADY EXIST) THIS	<ol> <li>ANY PRODUCTS THAT HAVE DEVIATED FROM THE SPECIFICATION OR DRAWINGS SHALL BE FLAGGED AS "SUBSTITUTION REQUEST".</li> </ol>
THE MAINTENANCE HOLE, HAND HOLES, PULLBOX. (IF IT DOES NOT ALREADY EXIST) THIS IE PURPOSE INTENDED FOR ITS USE. THE BUILDING. SEAL ALL UNUSED DUCTS/CONDUITS WITH PLUGS THAT ALLOW THE	
L PENETRATION, MEMBRANE PENETRATION, ACCESSIBLE CEILING (I.E. "J" HOOKS), AND 22, ARTICLE 725 AND BICSI RECOMMENDED FILL FOR THE PARTICULAR RACEWAY OR CONDUIT	<ol> <li>ALL STRUCTURED CABLING SYSTEM (SCS) &amp; LOW VOLTAGE (LV) CABLING USED THROUGHOUT THIS PROJECT SHALL COMPLY WITH THE REQUIREMENTS AS OUTLINED IN THE STANDARDS, CODES AND LOCAL REGULATIONS FOR THE FOLLOWING: ANSI/TIA-568-C, ANSI/TIA-569-D, ANSI/TIA-606-B, ANSI/TIA-607-B, BICSI TDMM (CURRENT VERSION), CEC ARTICLE 90, ARTICLE 300, CEC ARTICLE 645, CEC ARTICLE 646, CEC</li> </ol>
IMATICAL FOR THE PURPOSE OF THE BID TO ILLUSTRATE GENERAL METHODOLOGY. IT IS THE ECHNOLOGY CONDUIT AND PATHWAY INSTALLATION. ADDITIONALLY IT IS THE RS REPRESENTATIVE AND ALL TRADES PRIOR TO INSTALLATION. REFER TO PLANS AND	ARTICLE 725, CEC ARTICLE 760, CEC ARTICLE 770, CEC ARTICLE 800, CEC ARTICLE 830. THE SCS & TECHNOLOGY SYSTEM(S) MUST MEET ALL LOCAL AND OTHER PREVAILING CODES.
R THE DRAWINGS, OTHER CONDUITS (IF ANY) MAY NEED TO BE COORDINATED WITH THE EC	2. ALL SCS & LV CABLING SHALL BEAR UL LISTED TYPE CMP (PLENUM RATED) AND/OR CM/G (GENERAL PURPOSE) AND/OR CMR (RISER RATED). ALL FIBER OPTIC CABLING SHALL BEAR OFNP (PLENUM RATED) AND/OR OFNR (RISER RATED) AND/OR OFN/G (GENERAL PURPOSE). THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING APPROPRIATELY RATED CABLE FOR THE ENVIRONMENT IN WHICH IT IS INSTALLED.
5 FEET OF EXTRA PULL TAPE COILED AT EACH END.	3. ALL INSTALLATION SHALL BE DONE IN CONFORMANCE WITH ANSI/TIA-568-C STANDARDS AND MANUFACTURERS INSTALLATION GUIDELINES. THE CONTRACTOR SHALL ENSURE THAT THE CABLE'S MINIMUM BEND RADIUS AND, MAXIMUM PULLING TENSIONS OF THE
ABOVE THE FLOOR SURFACE.	SPECIFIED DISTRIBUTION CABLES ARE NOT EXCEEDED. THE CABLE BENDS MUST MAINTAIN THE PROPER RADIUS DURING THE PLACEMENT OF THE FACILITIES. FAILURE TO FOLLOW THE APPROPRIATE GUIDELINES WILL REQUIRE THE CONTRACTOR TO PROVIDE, IN A TIMELY FASHION, ANY ADDITIONAL MATERIAL AND LABOR NECESSARY TO PROPERLY RECTIFY THE SITUATION TO THE SATISFACTION AND WRITTEN APPROVAL OF THE
JOINTS AND/OR IF APPROVED IN WRITING BY THE ENGINEER. R INFILTRATION OF THE CONDUIT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE R REMOVED FROM THE CONDUITS PRIOR TO PLACEMENT OF COMMUNICATIONS CABLES. SEE	OWNERS REPRESENTATIVE. THIS SHALL ALSO APPLY TO ANY AND ALL DAMAGES SUSTAINED TO THE CABLES BY THE CONTRACTOR DURING THE IMPLEMENTATION. 4. ALL SCS AND/OR LV INSTALLATIONS SHALL BE PERFORMED BY QUALIFIED TECHNICIANS
ENTS.	FOR THAT SYSTEM. THE LABOR EMPLOYED BY THE CONTRACTOR SHALL BE REGULARLY EMPLOYED IN THE INSTALLATION AND REPAIR OF SCS AND/OR LV SYSTEMS AND SHALL BE ACCEPTABLE TO THE OWNERS REPRESENTATIVE TO ENGAGE IN THE INSTALLATION AND SERVICE OF THIS SYSTEM.
DDITION OF CABLES. JATE CONDUIT RUNS TO THE OWNER PRIOR TO PULLING ANY CABLE. ON THE WALL OPPOSITE THE WALL ENTERED.	5. THE MDF AND IDF SPACES ARE DESCRIBED BELOW, AND ENCOMPASS THE AREAS THE COMMUNICATIONS CABLING EXISTS IN. THESE AREAS INCLUDE (BUT NOT LIMITED TO) THE BACKBOARDS, CABINETS, RACKS, FRAMES, LADDER RACKS, TERMINATION FIELDS, AND PATCH CORDS. (WALL AND RACK TYPES FOR COPPER AND FIBER). THE SCS
MORE THAN (2) 90° BENDS OR (1) REVERSE BEND WITHOUT INSTALLING A PULLBOX SIZED	CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE STANDARDS, CODES AND LOCAL REGULATIONS FOR THESE SPACES, (E.G. ANSI/TIA-568-C, ANSI/TIA-569-D, ANSI/TIA-606-B, ANSI/TIA-607-B, BICSI TDMM (CURRENT VERSION), CEC ARTICLE 90, ARTICLE 300, CEC ARTICLE 645, CEC ARTICLE 646, CEC ARTICLE 725, CEC ARTICLE 770, CEC ARTICLE 800,
ESS. METER.	<ul> <li>CEC ARTICLE 830.</li> <li>6. THE WIRING OF THE SYSTEM SHALL BE EXECUTED IN ACCORDANCE WITH THE DRAWINGS AND THE EQUIPMENT MANUFACTURER'S WIRING DIAGRAMS. SHOULD ANY VARIATIONS IN THESE REQUIREMENTS OCCUR, THE CONTRACTOR SHALL NOTIFY THE OWNERS</li> </ul>
R SHARE THE SAME CONDUIT, CHANNEL OR SLEEVE WITH ELECTRICAL APPARATUS. AT NO SERVICES. STATION CABLES AND TIE CABLES INSTALLED WITHIN CEILING SPACES SHALL BE ATION BETWEEN TECHNOLOGY CABLING AND POSSIBLE SOURCES SUCH AS, BUT NOT LIMITED	REPRESENTATIVE BEFORE MAKING ANY CHANGES. IT SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER - AUTHORIZED INSTALLER OF THE APPROVED EQUIPMENT TO INSTALL THE EQUIPMENT AND GUARANTEE THE SYSTEM TO OPERATE AS PER PLANS AND SPECIFICATIONS.
	<ol> <li>ALL MATERIALS SHALL BE NEW. NO USED OR RE-MANUFACTURED PARTS OR COMPONENTS SHALL BE ACCEPTED.</li> <li>CABLE STORAGE: THE CONTRACTOR SHALL NOT ROLL OR STORE CABLE REELS WITHOUT</li> </ol>
	8. CABLE STORAGE: THE CONTRACTOR SHALL NOT ROLL OR STORE CABLE REELS WITHOUT AN APPROPRIATE UNDERLAY AND THE PRIOR WRITTEN APPROVAL OF OWNERS
TS THAT SHARE DISTRIBUTION SPACE WITH TELECOMMUNICATIONS CABLING, COPIERS THAT /ER CORDS THAT SUPPORTS SUCH EQUIPMENT.	REPRESENTATIVE. 9. SPECIAL EQUIPMENT AND TOOLS: IN ORDER TO ENSURE THE LEAST AMOUNT OF CABLE
	9. SPECIAL EQUIPMENT AND TOOLS: IN ORDER TO ENSURE THE LEAST AMOUNT OF CABLE UNTWISTING, IT IS REQUIRED THAT ALL CABLES SHALL BE STRIPPED USING A CABLE MANUFACTURER'S RECOGNIZED SPECIAL TOOL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH ANY SPECIAL INSTALLATION EQUIPMENT OR TOOLS NECESSARY TO PROPERLY COMPLETE THE SYSTEM. THIS MAY INCLUDE, BUT IS NOT
	9. SPECIAL EQUIPMENT AND TOOLS: IN ORDER TO ENSURE THE LEAST AMOUNT OF CABLE UNTWISTING, IT IS REQUIRED THAT ALL CABLES SHALL BE STRIPPED USING A CABLE MANUFACTURER'S RECOGNIZED SPECIAL TOOL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH ANY SPECIAL INSTALLATION EQUIPMENT OR TOOLS NECESSARY TO PROPERLY COMPLETE THE SYSTEM. THIS MAY INCLUDE, BUT IS NOT LIMITED TO, TOOLS FOR TERMINATING CABLES, TESTING AND SPLICING EQUIPMENT FOR COPPER/FIBER CABLES, COMMUNICATION DEVICES, JACK STANDS FOR CABLE REELS, OR CABLE WINCHES.
	9. SPECIAL EQUIPMENT AND TOOLS: IN ORDER TO ENSURE THE LEAST AMOUNT OF CABLE UNTWISTING, IT IS REQUIRED THAT ALL CABLES SHALL BE STRIPPED USING A CABLE MANUFACTURER'S RECOGNIZED SPECIAL TOOL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH ANY SPECIAL INSTALLATION EQUIPMENT OR TOOLS NECESSARY TO PROPERLY COMPLETE THE SYSTEM. THIS MAY INCLUDE, BUT IS NOT LIMITED TO, TOOLS FOR TERMINATING CABLES, TESTING AND SPLICING EQUIPMENT FOR COPPER/FIBER CABLES, COMMUNICATION DEVICES, JACK STANDS FOR CABLE REELS, OR
	<ol> <li>SPECIAL EQUIPMENT AND TOOLS: IN ORDER TO ENSURE THE LEAST AMOUNT OF CABLE UNTWISTING, IT IS REQUIRED THAT ALL CABLES SHALL BE STRIPPED USING A CABLE MANUFACTURER'S RECOGNIZED SPECIAL TOOL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH ANY SPECIAL INSTALLATION EQUIPMENT OR TOOLS NECESSARY TO PROPERLY COMPLETE THE SYSTEM. THIS MAY INCLUDE, BUT IS NOT LIMITED TO, TOOLS FOR TERMINATING CABLES, TESTING AND SPLICING EQUIPMENT FOR COPPER/FIBER CABLES, COMMUNICATION DEVICES, JACK STANDS FOR CABLE REELS, OR CABLE WINCHES.</li> <li>UNDER NO CIRCUMSTANCE ARE "CHANNEL LOCKS" OR OTHER PLIERS NOT DESIGNED</li> </ol>
	<ul> <li>9. SPECIAL EQUIPMENT AND TOOLS: IN ORDER TO ENSURE THE LEAST AMOUNT OF CABLE UNTWISTING, IT IS REQUIRED THAT ALL CABLES SHALL BE STRIPPED USING A CABLE MANUFACTURER'S RECOGNIZED SPECIAL TOOL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH ANY SPECIAL INSTALLATION EQUIPMENT OR TOOLS NECESSARY TO PROPERLY COMPLETE THE SYSTEM. THIS MAY INCLUDE, BUT IS NOT LIMITED TO, TOOLS FOR TERMINATING CABLES, TESTING AND SPLICING EQUIPMENT FOR COPPER/FIBER CABLES, COMMUNICATION DEVICES, JACK STANDS FOR CABLE REELS, OR CABLE WINCHES.</li> <li>10. UNDER NO CIRCUMSTANCE ARE "CHANNEL LOCKS" OR OTHER PLIERS NOT DESIGNED BY THE SCS MANUFACTURE TO BE USED TO TERMINATE WAO JACKS.</li> <li>SHEET NO. SHEET NAME TO.00 TECHNOLOGY CODES AND NOTES TO.01 TECHNOLOGY SYMBOL LEGEND TI.00 TECHNOLOGY SITE PLAN</li> </ul>
	<ul> <li>9. SPECIAL EQUIPMENT AND TOOLS: IN ORDER TO ENSURE THE LEAST AMOUNT OF CABLE UNTWISTING, IT IS REQUIRED THAT ALL CABLES SHALL BE STRIPPED USING A CABLE MANUFACTURER'S RECOGNIZED SPECIAL TOOL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH ANY SPECIAL INSTALLATION EQUIPMENT OR TOOLS NECESSARY TO PROPERLY COMPLETE THE SYSTEM. THIS MAY INCLUDE, BUT IS NOT LIMITED TO, TOOLS FOR TERMINATING CABLES, TESTING AND SPLICING EQUIPMENT FOR COPPER/FIBER CABLES, COMMUNICATION DEVICES, JACK STANDS FOR CABLE REELS, OR CABLE WINCHES.</li> <li>10. UNDER NO CIRCUMSTANCE ARE "CHANNEL LOCKS" OR OTHER PLIERS NOT DESIGNED BY THE SCS MANUFACTURE TO BE USED TO TERMINATE WAO JACKS.</li> <li>SHEET NO. SHEET NAME TO.00 TECHNOLOGY CODES AND NOTES TO.01 TECHNOLOGY SYMBOL LEGEND TI.00 TECHNOLOGY SITE PLAN</li> </ul>



DW ID	ANNOTATION	DESCRIPTION	BACK BOX	TRIM RING	CONDUIT	MOUNTING	CABLE	MANUFACTURER	MODEL	WEIGHT CAPACITY	SPECIAL INSTRUCTION
	SYMBOL	DESCRIPTION	BACK BOX		CONDON	HEIGHT	CABLL	MANUTACTORER	MODEL	(LBS.)	SPECIAL INSTRUCTION
1	MDF	MDF EQUIPMENT RACK	N/A	N/A	N/A	N/A	N/A	EXISTING	EXISTING	N/A	N/A
2	IDF-1.#	IDF EQUIPMENT RACK	N/A	N/A	N/A	N/A	N/A	EXISTING	EXISTING	N/A	N/A
3	STC-#	SIGNAL TERMINATION CABINET	N/A	N/A	N/A	N/A	N/A	EXISTING	EXISTING	N/A	N/A
4	GB GB#	GROUND BOX W/ CONCRETE LID	N/A	N/A	N/A	N/A	N/A	EXISTING	EXISTING	N/A	N/A
5	PB PB#	PULL BOX W/ COVER	N/A	N/A	N/A	N/A	N/A	EXISTING	EXISTING	N/A	N/A
6		UNDERGROUND CONDUIT	N/A	N/A	N/A	N/A	N/A	EXISTING	EXISTING	N/A	N/A
7		SURFACE CONDUIT	N/A	N/A	N/A	N/A	N/A	EXISTING	EXISTING	N/A	N/A
8		HIGH CAPACITY CABLE TRAY / SPLINE	N/A	N/A	N/A	N/A	N/A	EXISTING	EXISTING	N/A	N/A
9		SURFACE RACEWAY, SINGLE CHANNEL	N/A	N/A	N/A	N/A	N/A	WIREMOLD	WM2300	N/A	N/A
10	iiiiiiiii	NON-CONTINUOUS OPEN ENDED PATHWAY, J-HOOK	N/A	N/A	N/A	N/A	N/A	EXISTING / B-LINE	BCH-32	N/A	INSTALL 12" ABOVE CEILI
11	SWITCH	NETWORK POE SWITCH	N/A	N/A	N/A	AT RACK	CAT6	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	N/A
12	PATCH	PATCH PANEL WITH WIRE MANAGER	N/A	N/A	N/A	AT RACK	CAT6	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	N/A
13	TCU	INTERCOM IP SITE CONTROLLER W/ SOFTWARE LICENSE	N/A	N/A	N/A	AT RACK	CAT6	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	INSTALL 12" ABOVE CEILIN
14	ZONE	ZONE AUDIO AMPLIFIER, 35-WATT 25/70V	N/A	N/A	N/A	AT RACK	CAT6	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	INSTALL 12" ABOVE CEILIN
15	AMP	AUDIO AMPLIFIER, 320-WATT 25/70V	N/A	N/A	N/A	AT RACK	CAT6	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	INSTALL 12" ABOVE CEILII
16	ADMIN	ADMINISTRATIVE CONTROL CONSOLE / PHONE SET	N/A	N/A	N/A	AT RECEPTION DESK	CAT6	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	INSTALL 12" ABOVE CEILII
17	¥	ANALOG INTERCOM SPEAKER (WP=EXTERIOR WEATHERPROOF SPEAKER)	PER MFR.	PER MFR.	SURFACE RACEWAY / 1 EA. 1"C	REPLACE EXISTING / 90" AFF	CAT6	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	N/A
18		IP INTERCOM SPEAKER	PER MFR.	PER MFR.	SURFACE RACEWAY / 1 EA. 1"C	REPLACE EXISTING / 90" AFF	2C #18	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	N/A
19		IP ANALOG CLOCK	REUSE EXISTING / SINGLE GANG	REUSE EXISTING / SINGLE GANG	SURFACE RACEWAY /	REPLACE EXISTING / 90" AFF	CAT6	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	N/A
20	12:00	IP DIGITAL CLOCK	REUSE EXISTING /	REUSE EXISTING / SINGLE GANG	SURFACE RACEWAY /	REPLACE EXISTING / 90" AFF	CAT6	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	N/A
21		ANALOG INTERCOM SPEAKER AND IP ANALOG CLOCK COMBO.	REUSE EXISTING /	REUSE EXISTING / SINGLE GANG	SURFACE RACEWAY /	REPLACE EXISTING / 90" AFF	2C #18 (SPK) / CAT6 (CLOCK)	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	N/A
22	¥▼ ∑⊕	IP INTERCOM SPEAKER AND IP ANALOG CLOCK COMBO.	REUSE EXISTING /	REUSE EXISTING / SINGLE GANG	SURFACE RACEWAY / 1 EA. 1"C	REPLACE EXISTING / 90" AFF	2 EA. CAT6	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	N/A
23	12:00	IP INTERCOM SPEAKER AND IP DIGITAL CLOCK COMBO.	REUSE EXISTING /	REUSE EXISTING /	SURFACE RACEWAY /	REPLACE EXISTING / 90" AFF	2 EA. CAT6	SEE ONE-LINES FOR INFORMATION	SEE ONE-LINES FOR INFORMATION	N/A	N/A

DETAIL IDENTIFICATION  $\begin{pmatrix} XX-XX \\ XX-XX \end{pmatrix}$  #  $\checkmark$  VIEW IDENTIFICATION SHEET IDETIFICATION
(-) INDICATES SAME SHEET

XX-XX XX-XX

NOTES: 1. USE EXTENSION RINGS, DEPTH AS REQUIRED, ON ALL BACK BOX LOCATIONS.

2. REFERENCE ANSI / EIA / TIA STANDARDS AS APPLICABLE.

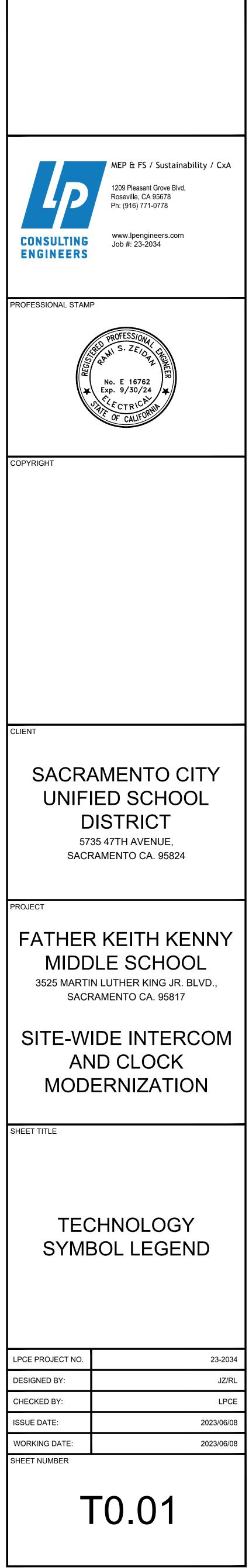
3. ROUTE CONDUIT IN-WALL TO NEAREST TO ACCESSIBLE CEILING SPACE. CONTRACTOR SHALL NOTIFY ARCHITECT/DESIGNER IF CONDUITS ARE UNABLE TO BE INSTALLED IN-WALL PRIOR TO SURFACE MOUNTED CONDUIT INSTALLATION.

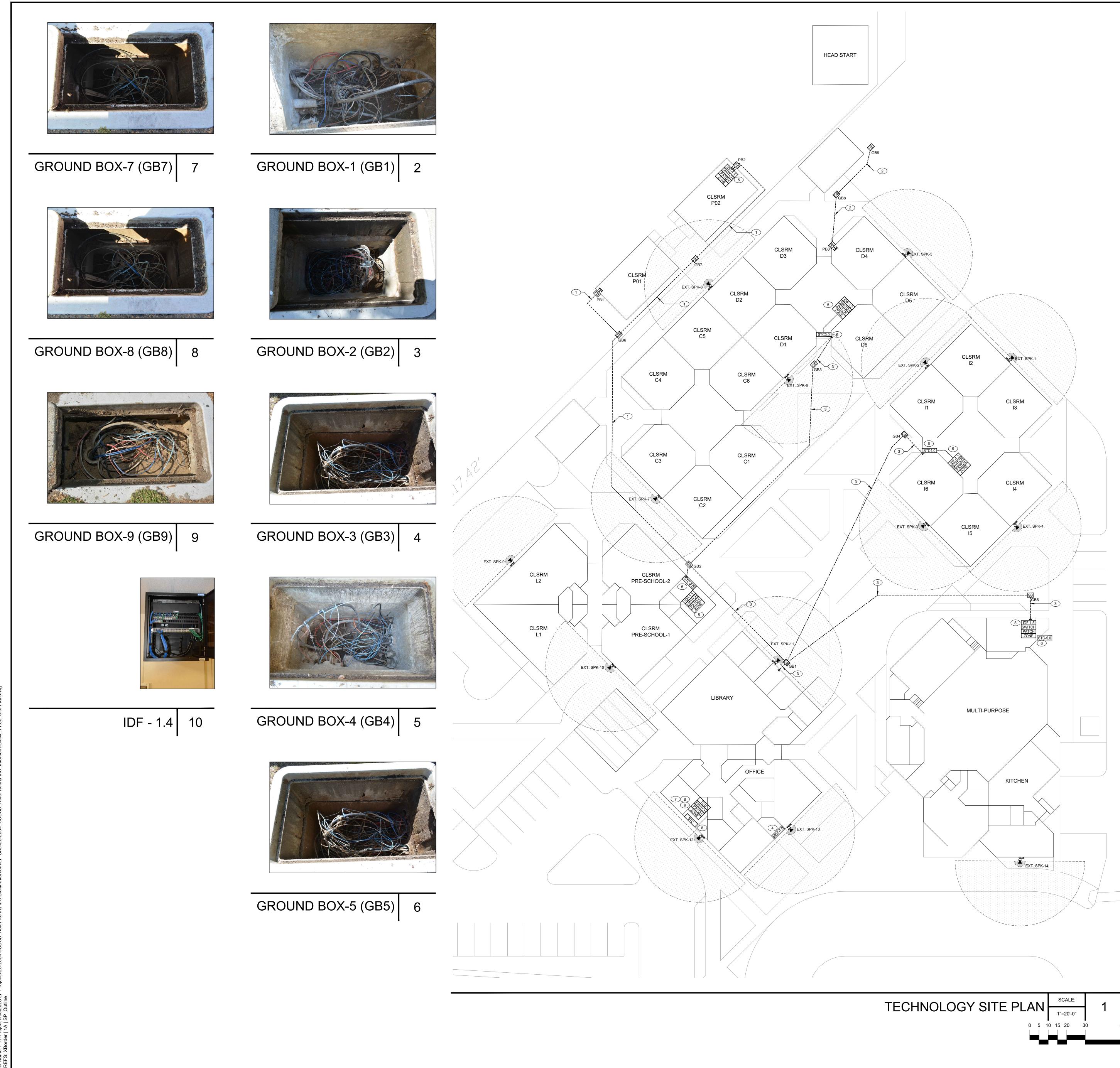
ALL TRIM RINGS AND INSIDE OF BACK BOX SHALL BE PAINTED "GREEN" FOR PRE-SHEETROCK / WALL PANEL IN-WALL INFRASTRUCTURE INSPECTION.

SHEET NOTE TAG

XX-XX XX-XX

XX-XX DETAIL DIVISION GROUP\* (# ONLY)/SPECIFIC IDENTIFICATION (# W/ ALPHA I.D.) SHEET IDENTIFICATION \*IF DETAIL DIVISION GROUP IS CALLED OUT, ALL DETAILS APPLY. TYP.





Login Name: jzamora Plot Date: June 09, 2023 - 4:01 pm File Name: P:\1-Project files\2023 LP F XREFS: XBorder | 1A | SP\_Outline

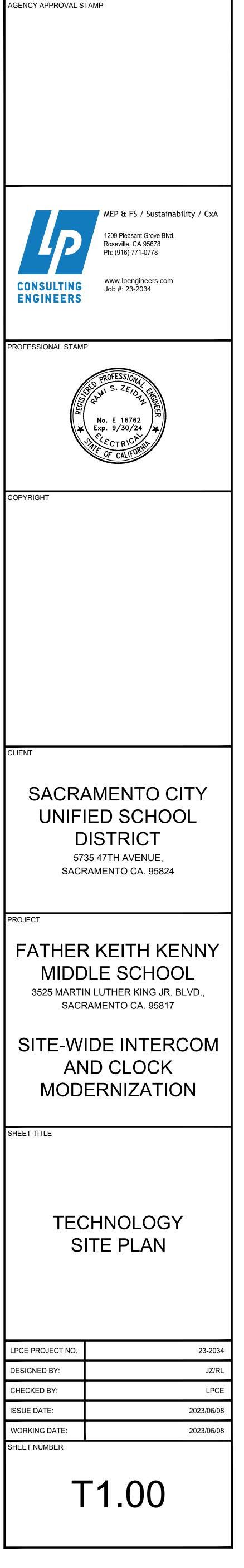
### SHEET GENERAL NOTES:

- ALL EQUIPMENT SHOWN ON CONSTRUCTION DOCUMENTS SHALL BE NEW, CONTRACTOR FURNISHED/CONTRACTOR INSTALLED UNLESS SPECIFIED ON DRAWINGS AND/OR SCHEDULES.
- ALL TECHNOLOGY SYSTEMS MUD RINGS SHALL BE PAINTED GREEN FOR A PRE-WALL FINISH/PANEL BOARD INSPECTION OF IN-WALL HORIZONTAL CABLING INFRASTRUCTURE.
- ALL EXPOSED CONDUITS, STRUCTURED CHANNEL, FASTENERS SHALL BE PRIMED WHITE AND PAINTED TO MATCH SURROUNDING AREA.
- WORK AREA OUTLET (WAO), AND FIELD DEVICE CABLING SHALL BE TERMINATED IN MODULAR PATCH PANEL(S) IN SEQUENTIAL ORDER OF ROOM NUMBER, DROP ID.
- ALL NETWORK CABLES SHALL BE MACHINE LABELED AT PATCH PANEL FACE, AND AT CATEGORY CABLE (BOTH ENDS AS SHOWN ON DETAILS/SPECIFICATIONS).
- . ALL SPEAKER CABLES SHALL BE MACHINE LABELED AT SPEAKER AND STC.
- ALL CLOCKS SHALL BE SET TO NTP SERVER, PACIFIC DAYLIGHT TIME (PST). ALL EXTERIOR SPEAKERS SHALL BE ADJUSTED TO NOT EXCEED 65dB AT THE SCHOOL

# PROPERTY LINE.

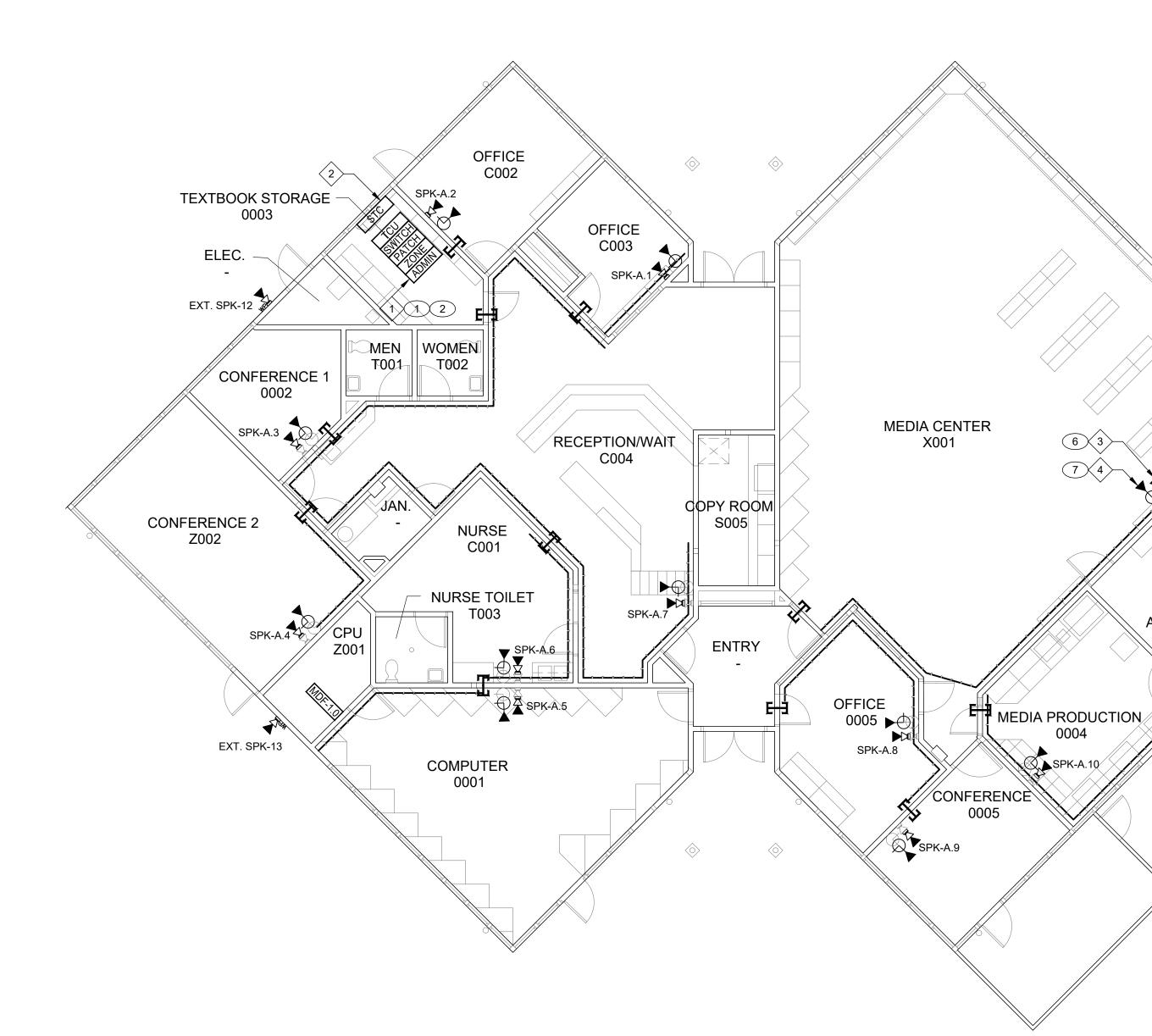
	KEYNOTES:
KEYNOTE ID	DESCRIPTION
1	EXISTING 3 EA. 2" CONDUITS.
2	EXISTING 2 EA. 2" AND 1 EA. 1" CONDUITS.
3	EXISTING 6 EA. 2" AND 2 EA. 1" CONDUITS.
4	EXISTING MDF EQUIPMENT RACK.
5	EXISTING IDF EQUIPMENT RACK.
6	EXISTING SIGNAL TERMINATION CABINET (STC). SEE FLOOR PLANS FOR DEMOLITION REQUIREMENTS.
7	EXISTING TELECENTER U MAIN EQUIPMENT RACK. SEE FLOOR PLANS FOR DEMOLITION REQUIREMENTS.
8	EXISTING TELECENTER ANALOG GATEWAY. SEE FLOOR PLANS FOR DEMOLITION REQUIREMENTS.
9	EXSITING TELECENTER EXTERNAL AMPLIFIER.

SEE FLOOR PLANS FOR DEMOLITION REQUIREMENTS.





INTERCOM STC & TCU 2



## SHEET GENERAL NOTES:

- ALL EQUIPMENT SHOWN ON CONSTRUCTION DOCUMENTS SHALL BE NEW, CONTRACTOR FURNISHED/CONTRACTOR INSTALLED UNLESS SPECIFIED ON DRAWINGS AND/OR SCHEDULES.
- ALL TECHNOLOGY SYSTEMS MUD RINGS SHALL BE PAINTED GREEN FOR A PRE-WALL FINISH/PANEL BOARD INSPECTION OF IN-WALL HORIZONTAL CABLING INFRASTRUCTURE.
- ALL EXPOSED CONDUITS, STRUCTURED CHANNEL, FASTENERS SHALL BE PRIMED WHITE AND PAINTED TO MATCH SURROUNDING AREA.
- WORK AREA OUTLET (WAO), AND FIELD DEVICE CABLING SHALL BE TERMINATED IN MODULAR PATCH PANEL(S) IN SEQUENTIAL ORDER OF ROOM NUMBER, DROP ID.
- ALL NETWORK CABLES SHALL BE MACHINE LABELED AT PATCH PANEL FACE, AND AT CATEGORY CABLE (BOTH ENDS AS SHOWN ON DETAILS/SPECIFICATIONS).
- ALL SPEAKER CABLES SHALL BE MACHINE LABELED AT SPEAKER AND STC.

PROPERTY LINE.

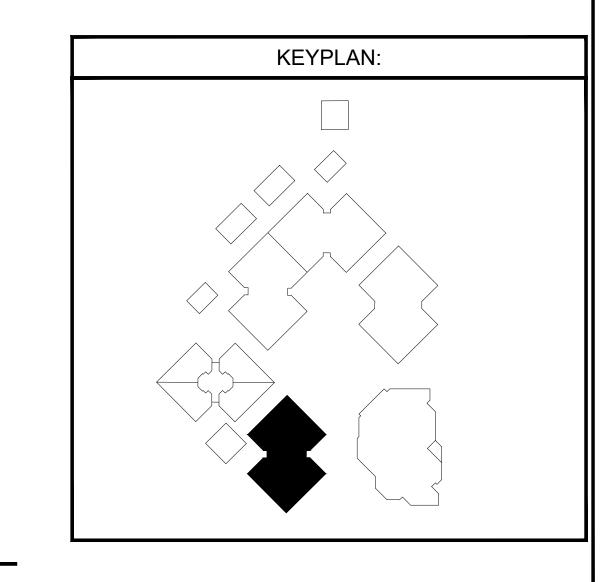
ALL CLOCKS SHALL BE SET TO NTP SERVER, PACIFIC DAYLIGHT TIME (PST). ALL EXTERIOR SPEAKERS SHALL BE ADJUSTED TO NOT EXCEED 65dB AT THE SCHOOL

# DEMO KEYNOTES:

KEYNOTE ID	DESCRIPTION
$\langle 1 \rangle$	DEMO EXISTING INTERCOM CAMPUS CONTROLLER AND ASSOCIATED HARDWARE. WIPE DOWN CONTROL EQUIPMENT, INVENTORY AND RETURN TO THE DISTRICT IN "AS-IS" CONDITION. DEMO ALL ASSOCIATED CONTROL HARDWARE INTERCONNECTION CABLING, INCLUDING MULTI-PAIR COPPER FEEDERS TO EXISTING SIGNAL TERMINATION CABINETS, TERMINATION BLOCKS.
2>	DEMO EXISTING SIGNAL TERMINATION CABINET AND TERMINAL BLOCKS. DEMO ALL CABLING FROM EXISTING TERMINAL BLOCKS TO FIELD SPEAKER LOCATIONS.
$\langle 3 \rangle$	DEMO EXISTING SPEAKER DRIVER, EXISTING BACK BOX AND BAFFLE SHALL BE RE USED, TYP., U.N.O.
4	DEMO EXISTING CLOCK, WIPE DOWN, INVENTORY AND RETURN TO THE DISTRICT IN "AS-IS" CONDITION.
5	ALL DEMO EQUIPMENT AND MATERIALS SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR UNLESS NOTED OTHERWISE. USE OF SCHOOL WASTE DISPOSAL CONTAINERS SHALL NOT BE PERMITTED.
	D  $(1)$ $(2)$ $(3)$ $(4)$ $(4)$

## **KEYNOTES**:

KEYNOTE ID	DESCRIPTION
	NEW TELECENTER U IP SYSTEM SITE CONTROLLER.
2	NEW EXTERIOR SPEAKER ZONE AMPLIFIER.
3	NEW EXTERIOR SPEAKER AMPLIFIER W/ TELECENTER IP MODULE.
4	INSTALL NEW INTERCOM SPEAKER / CLOCK COMBO IN CLASSROOM. ROUTE NEW IP SPEAKER (1 EA. CAT6) / CLOCK (1 EA. CAT6) CABLES TO THE NEAREST IDF.
5	INSTALL NEW EXTERIOR INTERCOM SPEAKER. REUSE EXISTING BACK BOX, BAFFLE. ROUTE NEW SPEAKER (1 EA. 2C #18) CABLE TO THE NEAREST TELECENTER U AMPLIFIER.
6	INSTALL NEW INTERIOR INTERCOM SPEAKER. REUSE EXISTING BACK BOX, BAFFLE. ROUTE NEW SPEAKER (1 EA. CAT6) CABLE TO THE NEAREST IDF.
7	INSTALL NEW IP ANALOG SWEEP TYPE CLOCK. ROUTE (1 EA. CAT6) CABLE TO THE NEAREST IDF.
8	INSTALL NEW IP DIGITAL DISPLAY CLOCK. ROUTE (1 EA. CAT6) CABLE TO THE NEAREST IDF.
9	INSTALL NEW SURFACE RACEWAY WITH APPROPRIATE TRANSITION AND END FITTINGS, MOUNT HIGH ON WALL-APPROXIMATE 6" FROM CEILING.
10	EXISTING HIGH CAPACITY CABLE TRAY / SPINE.
(11)	EXISTING BACK BOX AND UNDERGROUND CONDUIT. SEE SITE PLAN FOR ADDITIONAL INFORMATION.
12	EXISTING SIGNAL TERMINATION CABINET (STC). SEE DEMO NOTES FOR ADDITIONAL REQUIREMENTS.



**∕**5⟩

TECHNOLOGY BUILDING - ADMIN - FLOOR PLAN 0 1 2 3 4 6 8 12 16 | | | | | | |

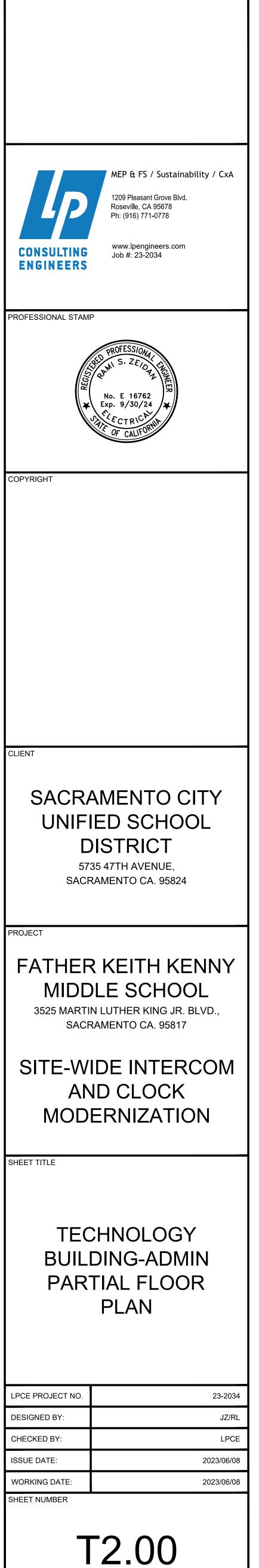
SPK-A

A.V. CENTER S001

EXT. SPK-11

35

STORY AREA

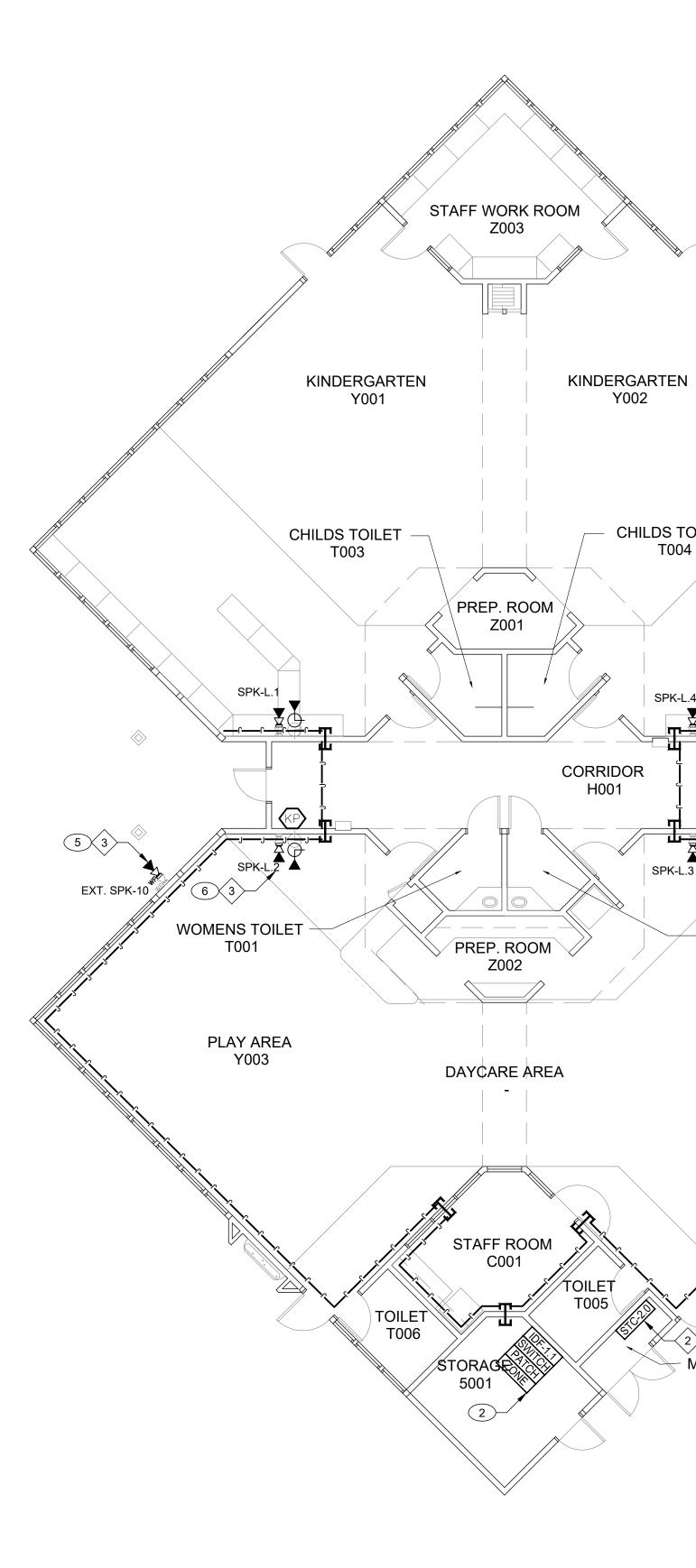




STC-2.0



IDF - 1.1 3



## SHEET GENERAL NOTES:

AGENCY APPROVAL STAMP

CONSULTING

ENGINEERS

MEP & FS / Sustainability / CxA

1209 Pleasant Grove Blvd. Roseville, CA 95678

www.lpengineers.com

Ph: (916) 771-0778

Job #: 23-2034

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- 7. ALL CLOCKS SHALL BE SET TO NTP SERVER, PACIFIC DAYLIGHT TIME (PST). ALL EXTERIOR SPEAKERS SHALL BE ADJUSTED TO NOT EXCEED 65dB AT THE SCHOOL PROPERTY LINE.

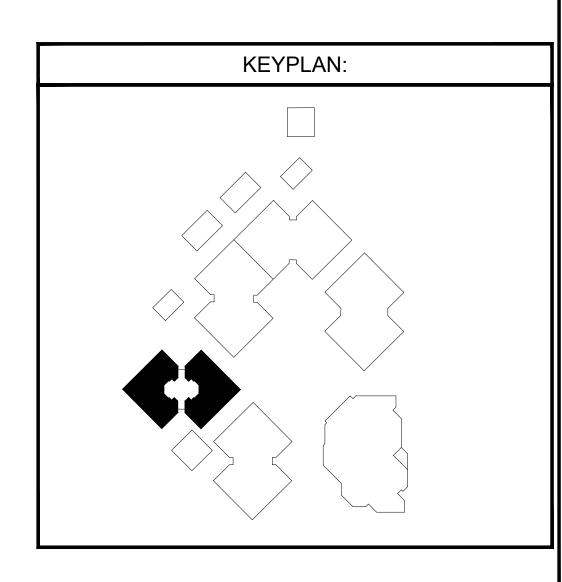
# EXT. SPK-9 CHILDS TOILET T004 $\Diamond$ SPK-L.3 $\sqrt{4}$ MENS TOILET T002 PLAY AREA Y004

#### DEMO KEYNOTES: KEYNOTE ID DESCRIPTION DEMO EXISTING INTERCOM CAMPUS CONTROLLER AND ASSOCIATED HARDWARE. WIPE DOWN CONTROL EQUIPMENT, INVENTORY AND RETURN TO THE DISTRICT IN "AS-IS" CONDITION. DEMO ALL ASSOCIATED CONTROL HARDWARE INTERCONNECTION CABLING, INCLUDING MULTI-PAIR COPPER FEEDERS TO EXISTING SIGNAL TERMINATION CABINETS, TERMINATION BLOCKS. DEMO EXISTING SIGNAL TERMINATION CABINET AND TERMINAL $\langle 2 \rangle$ BLOCKS. DEMO ALL CABLING FROM EXISTING TERMINAL BLOCKS TO FIELD SPEAKER LOCATIONS. DEMO EXISTING SPEAKER DRIVER, EXISTING BACK BOX AND $\langle 3 \rangle$ BAFFLE SHALL BE RE USED, TYP., U.N.O. DEMO EXISTING CLOCK, WIPE DOWN, INVENTORY AND RETURN $\langle 4 \rangle$

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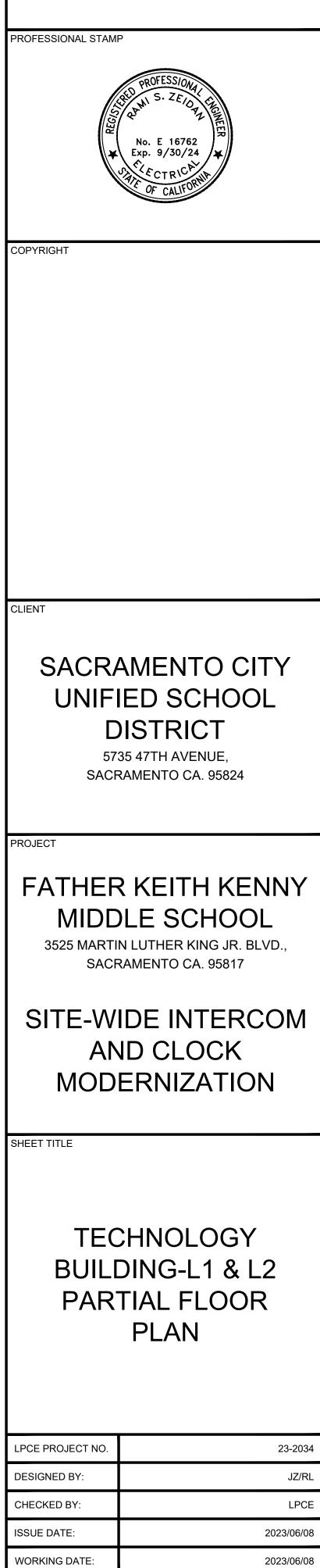
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	NEW TELECENTER U IP SYSTEM SITE CONTROLLER.
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TECHNOLOGY BUILDING-L1 & L2 FLOOR PLAN 0 1 2 3 4 6 8 12

MECHANICAL M001



SHEET NUMBER



JZ/RL

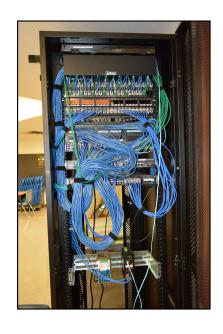
LPCE



STC - 3.0

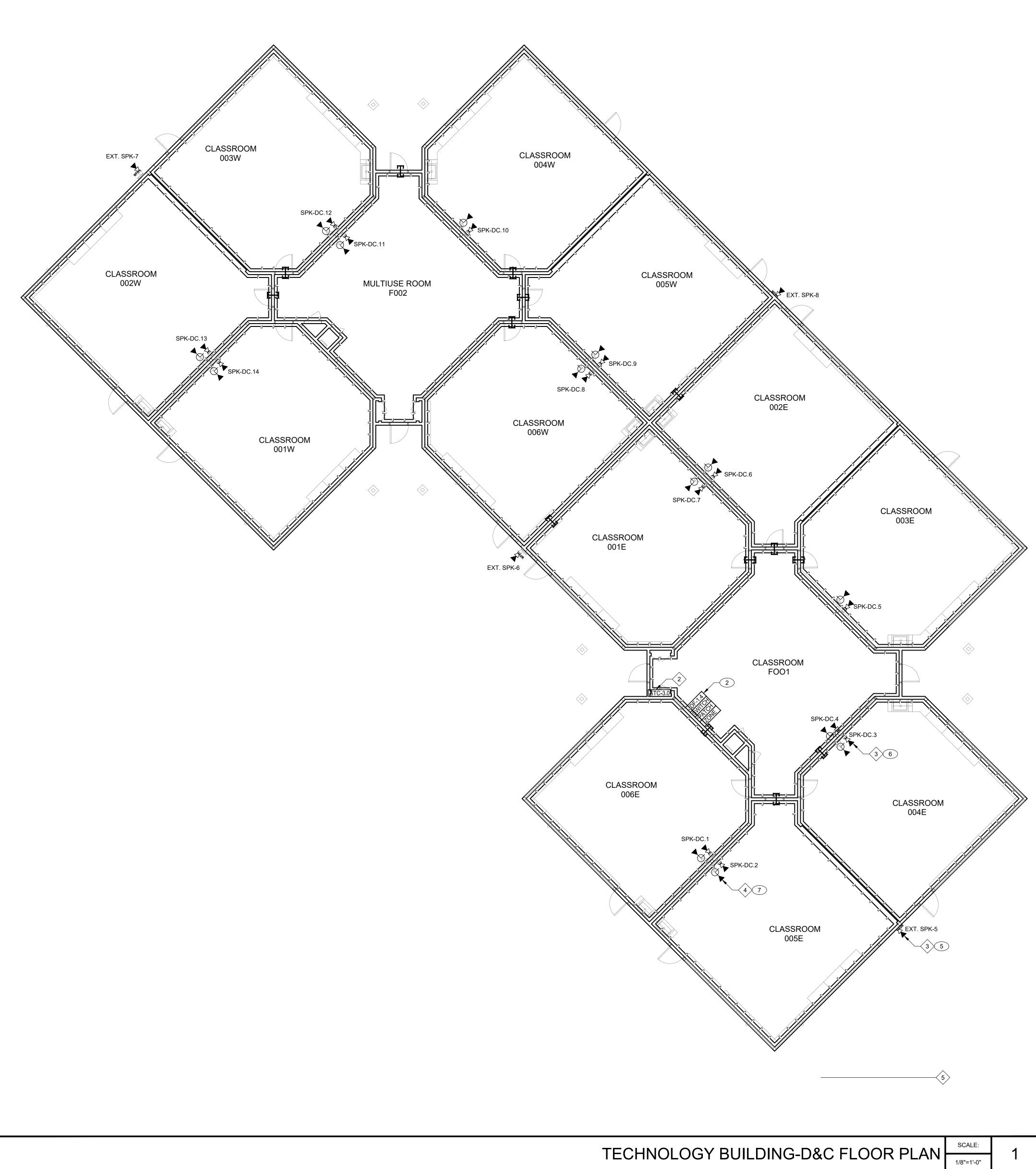


STC - 3.0



IDF - 1.4 4







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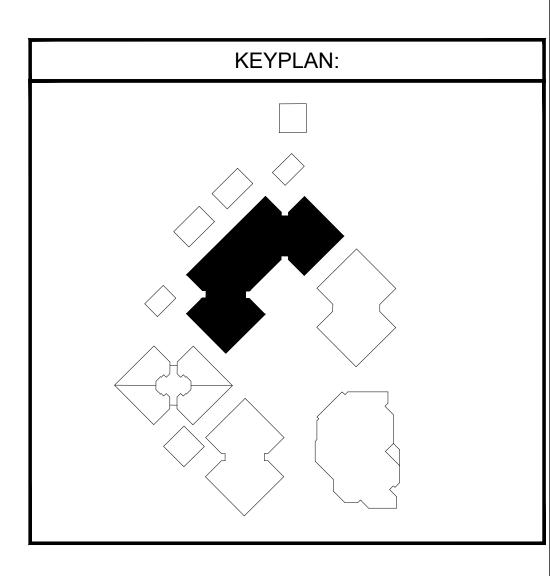
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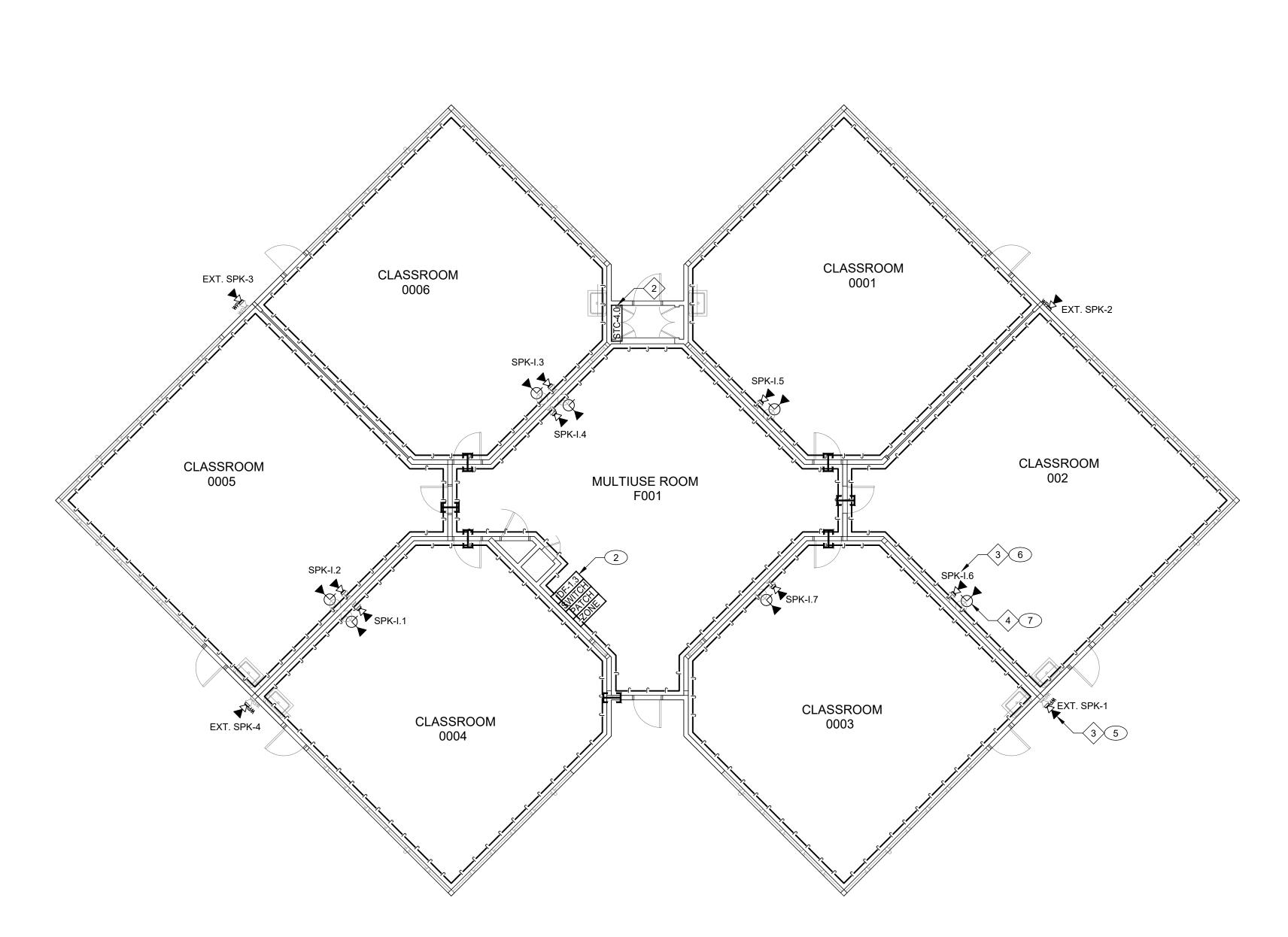
T2.02

JZ/RL

LPCE



STC - 4.0 2





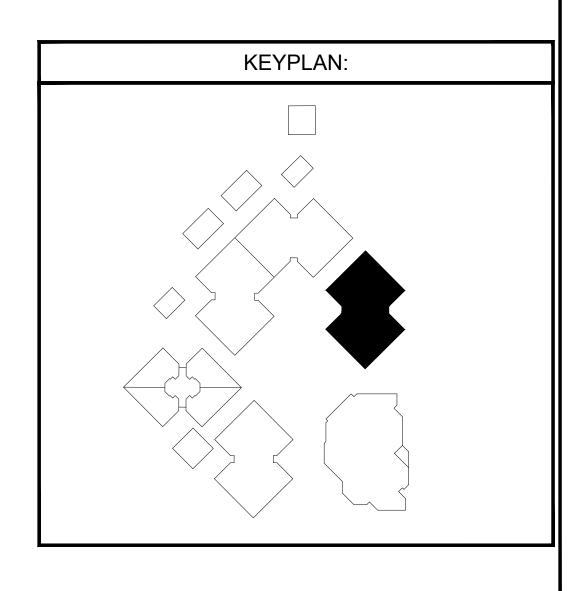
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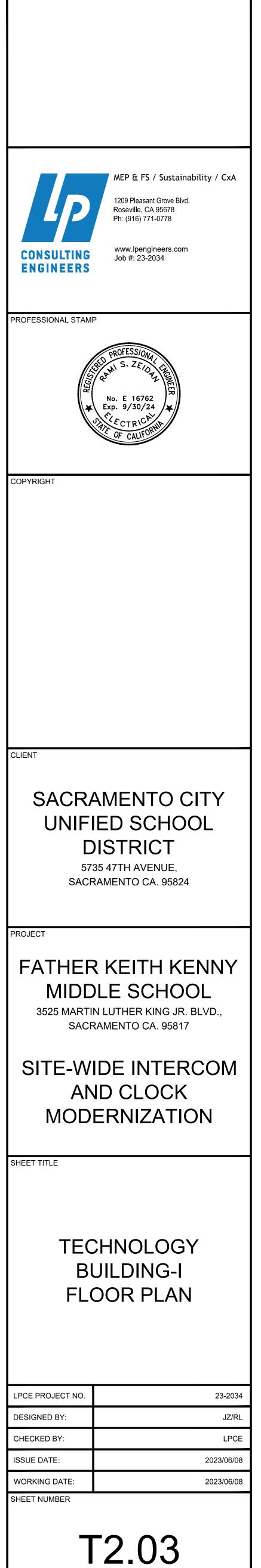
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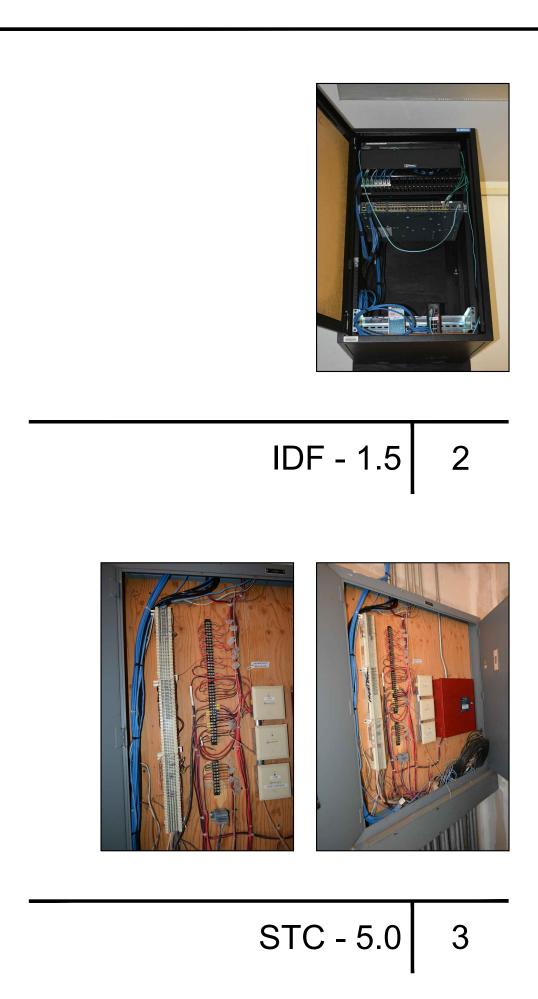
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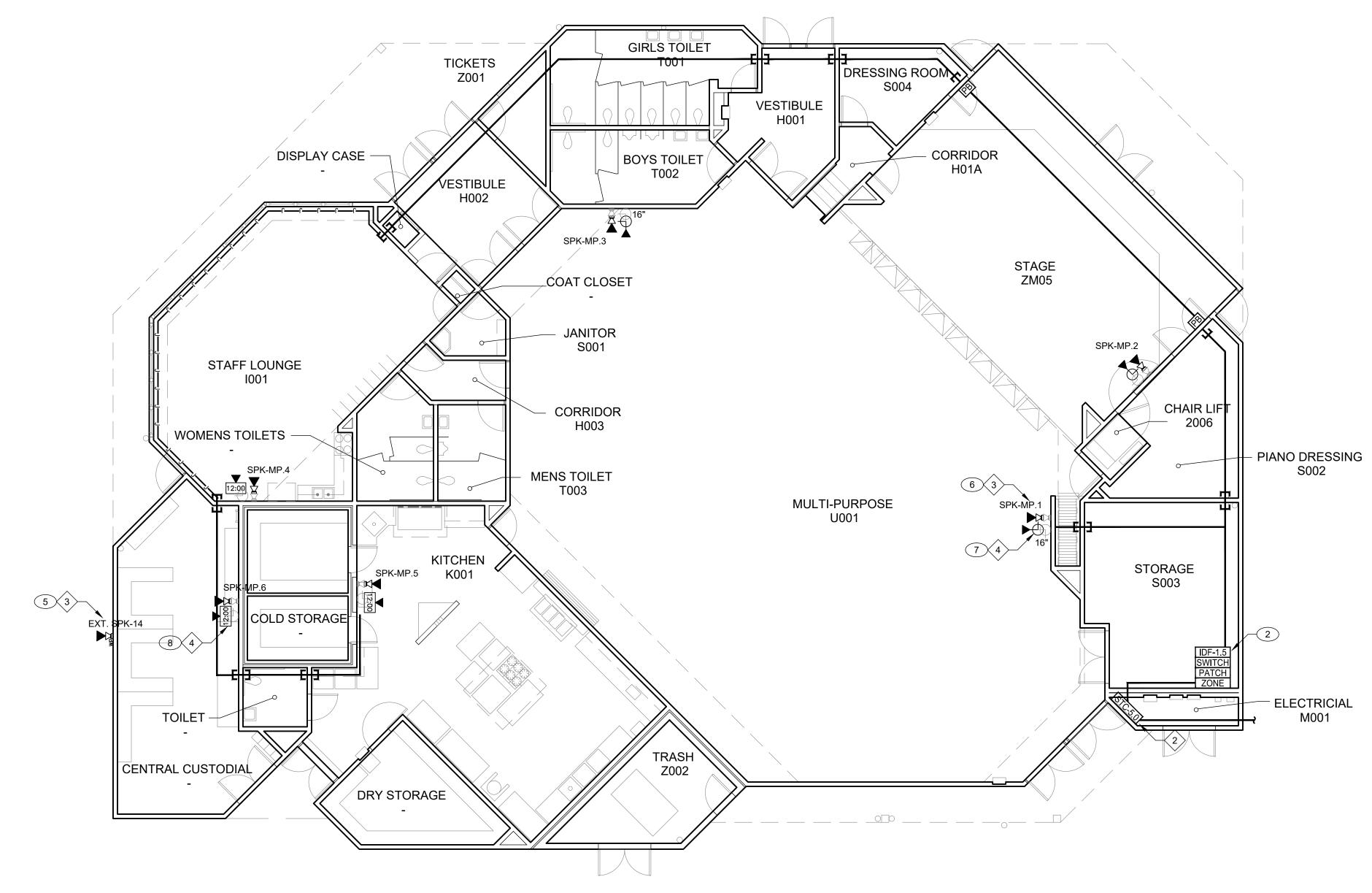


<5>

TECHNOLOGY BUILDING-I- FLOOR PLAN 







## SHEET GENERAL NOTES:

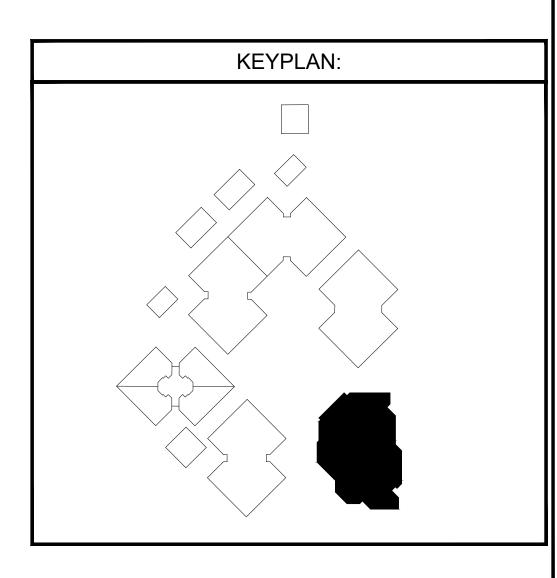
AGENCY APPROVAL STAMP

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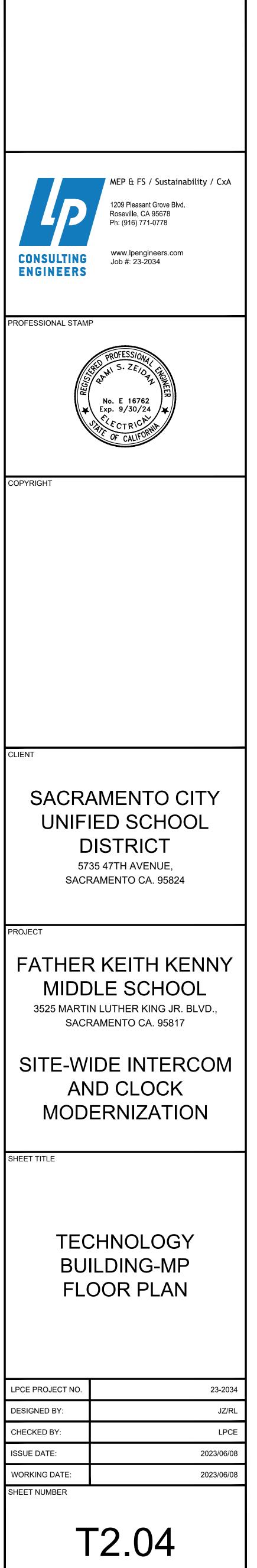
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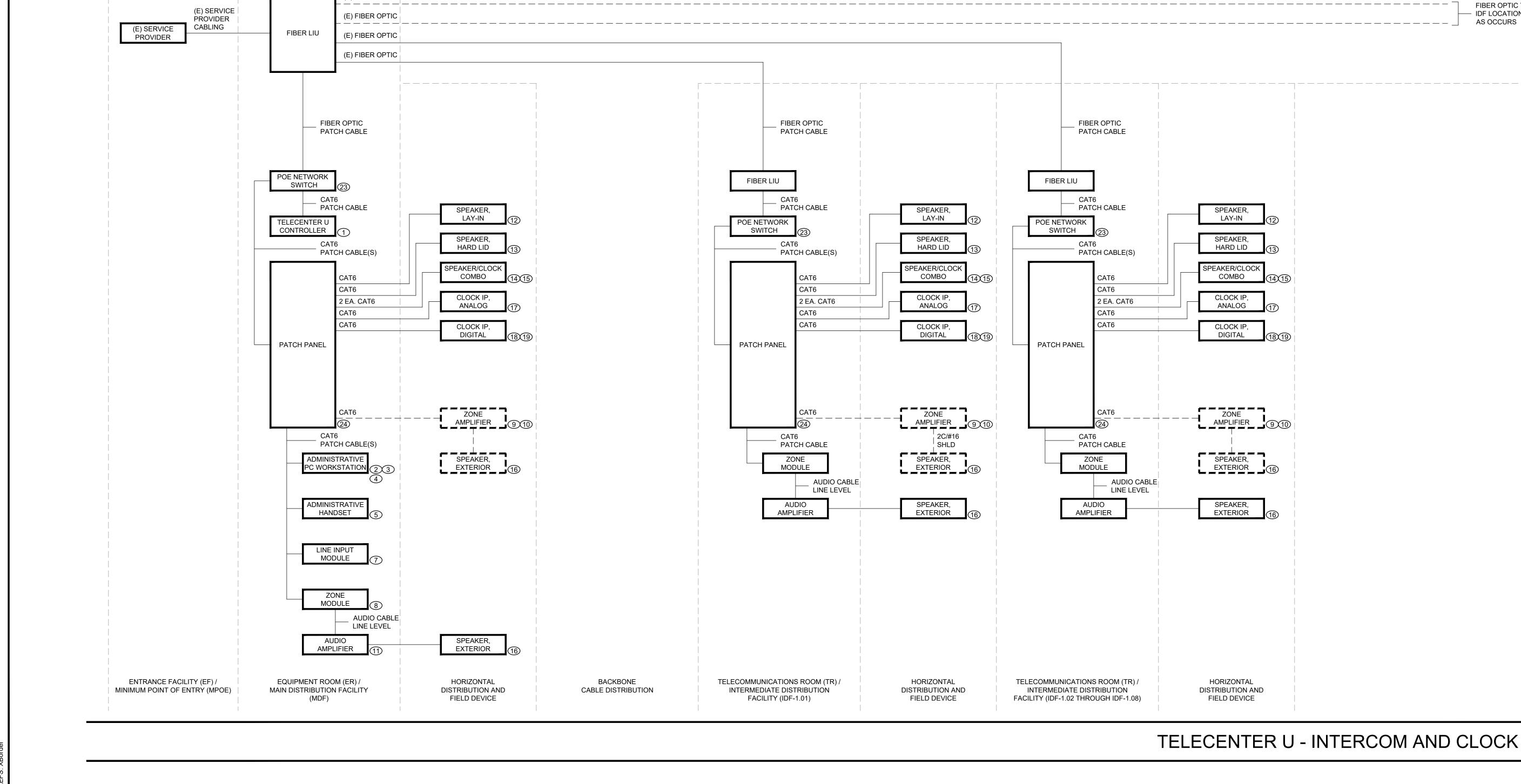
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TECHNOLOGY BUILDING-MP- FLOOR PLAN 0 1 2 3 4 6 8 12





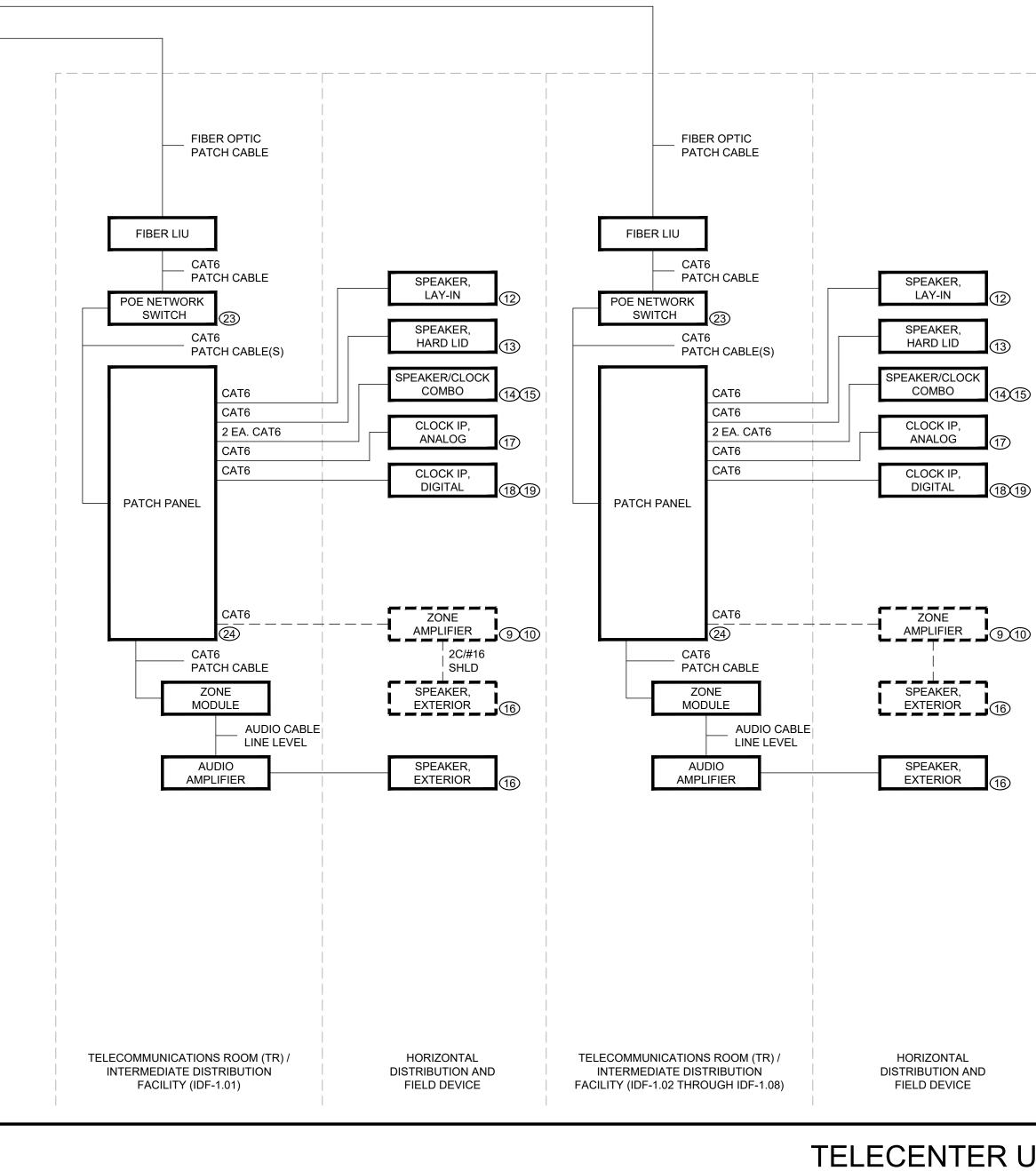
(E) FIBER OPTIC

BACKBONE

CABLE DISTRIBUTION

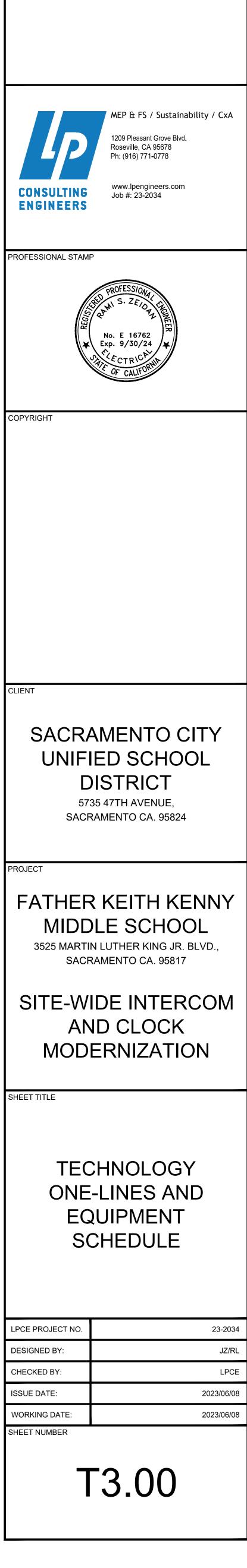
ROW ID	DESCRIPTION	MANUFACTURER	MODEL		DEPTH	POWER	WEIGHT	COMMENTS
	IP SYSTEM SITE CONTROLLER	RAULAND	TCC2000	(RU) EDIT	DEPTH	120VAC	(CAPACITY) N/A	N/A
2	SITE CONTROLLER SOFTWARE LICENSE	RAULAND	TCU3000SW	N/A	N/A	N/A	N/A	CONFIGURE AT ADMIN
								PC WORKSTATION CONFIGURE AT ADMIN
3		RAULAND	TCU3100SW	N/A	N/A	N/A	N/A	PC WORKSTATION CONFIGURE AT ADMIN
4	GRAPHICAL MAP SOFTWARE LICENSE ADMINISTRATIVE CONSOLE,	RAULAND	TCU3300SW	N/A	N/A	N/A	N/A	PC WORKSTATION
5	PHONE HANDSET	RAULAND	TCC2045	N/A	N/A	N/A	N/A	N/A
6	IP SPEAKER + ROOM CONTROL MODULE	RAULAND	TCC2011A	N/A	N/A	POE	N/A	N/A
7	AUDIO LINE INPUT MODULE	RAULAND	TCC2055	N/A	N/A	120VAC	N/A	N/A
8	AUDIO ZONE MODULE	RAULAND	TCC2022	N/A	N/A	120VAC	N/A	N/A
9	ZONE AUDIO AMPLIFIER, 35-WATT, 25V	RAULAND	TCC3022	N/A	N/A	120VAC	N/A	N/A
(10)	POWER SUPPLY FOR ZONE AMPLIFIER	RAULAND	TCC3022PS	N/A	N/A	120VAC	N/A	N/A
(11)	AUDIO AMPLIFIER, 2X160-WATT, 25V	POWERSOFT	MEZZO-322-A	N/A	N/A	120VAC	N/A	N/A
(12)	INTERCOM SPEAKER, LAY-IN (INTERIOR)	RAULAND	IP MODULE: TCC2011A SPEAKER: BAFKIT2X2L8RJ	N/A	N/A	N/A	N/A	N/A
(13)	INTERCOM SPEAKER, HARD LID (INTERIOR)	RAULAND	IP MODULE: TCC2011A SPEAKER: ACC1480 (USO880 W/ RJ45) BACK BOX: ACC1112 BAFFLE: ACC1003	N/A	N/A	N/A	N/A	N/A
(14)	INTERCOM SPEAKER AND CLOCK COMBO, DIGITAL MESSAGE BOARD	RAULAND	IP MODULE: TCC2011A SPEAKER: ACC1480 (USO880 W/ RJ45) BACK BOX: ACC3011SBB BAFFLE: ACC13011S MESSAGE: TCC3011S	N/A	N/A	N/A	N/A	N/A
(15)	INTERCOM SPEAKER AND CLOCK COMBO, 12"-DIA., ANALOG SWEEP	RAULAND / LOWELL / SAPLING	IP MODULE: TCC2011A SPEAKER: ACC1480 (USO880 W/ RJ45) BACK BOX: PC712 BAFFLE: AP-700 CLOCK: SAP-1BS-12R-O	N/A	N/A	N/A	N/A	N/A
(16)	INTERCOM SPEAKER, (EXTERIOR)	RAULAND / LOWELL	SPEAKER: 8C10MRB-T72 BACK BOX: ACC1113 BAFFLE: ACC1012	N/A	N/A	N/A	N/A	N/A
(17)	CLOCK IP, ANALOG SWEEP	SAPLING	12": SAP-1BS-12R-0 16": SAP-1BS-16R-0	N/A	N/A	N/A	N/A	N/A
(18)	DIGITAL CLOCK AND MESSAGE BOARD, SMALL	RAULAND	TCC3011S	N/A	N/A	N/A	N/A	N/A
(19)	DIGITAL CLOCK AND MESSAGE BOARD, LARGE	RAULAND	TCC3011L	N/A	N/A	N/A	N/A	N/A
20	PROTECTIVE CLOCK CAGE	NATIONAL TIME	AS REQ'D	N/A	N/A	N/A	N/A	N/A
21	UNIVERSAL RACK MOUNTING KIT	RAULAND	TCC2099	N/A	N/A	N/A	N/A	N/A
22	CABLES AND CONNECTORS AS REQ'D FOR COMPLETE SYSTEM OPERATION	AS REQ'D	AS REQ'D	N/A	N/A	N/A	N/A	N/A
23	48-PORT NETWORK SWITCH, POE	ARUBA	6200M/R8Q68A	N/A	N/A	N/A	N/A	SEE SPECS. FOR ADDITION
24	48-PORT MODULAR PATCH PANEL	OTRONICS	KSU48	N/A	N/A	N/A	N/A	INFORMATION SEE SPECS. FOR ADDITION

8119

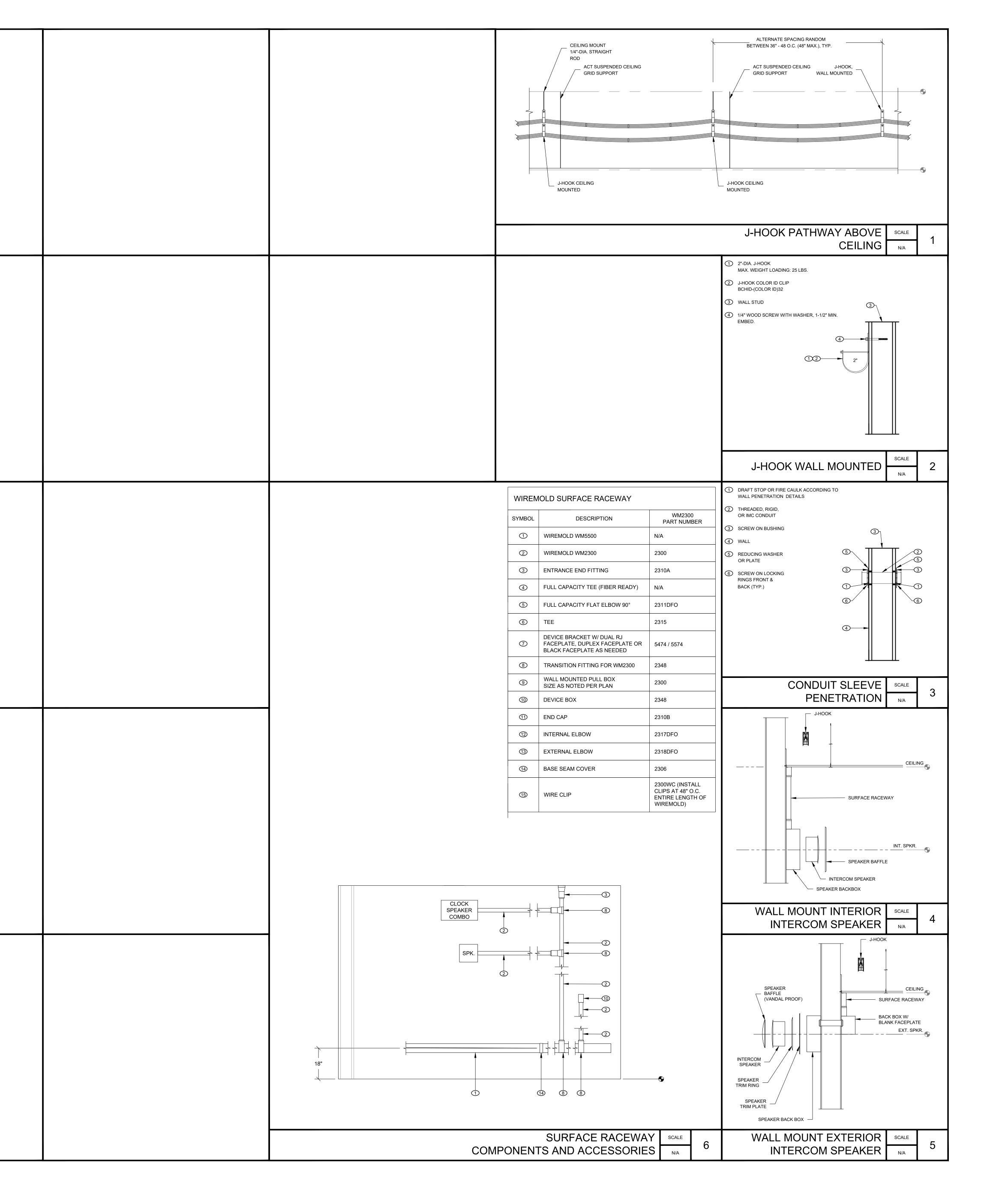


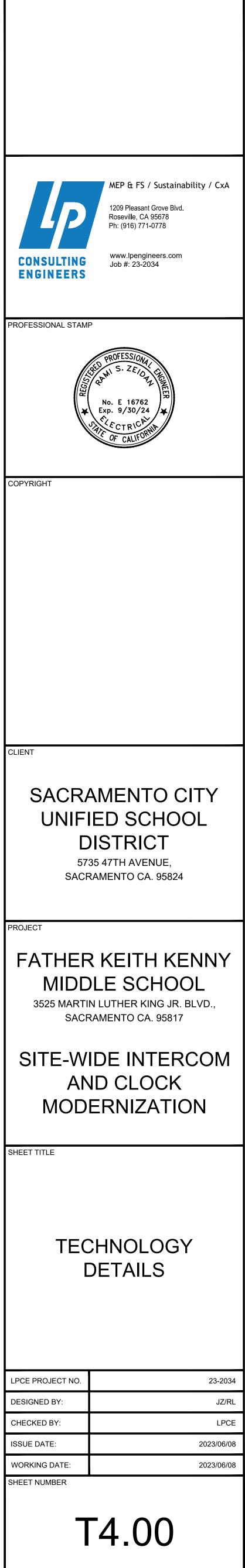
FIBER OPTIC TO ADDITIONAL - IDF LOCATIONS,

R. (16)		
AL N AND ICE		
TER U - INTERCOM AND CLOCK SYSTEM ONE-LINE	SCALE:	
	N/A	1



Login Name: jzamora Plot Date: June 09, 2023 - 4:02 pm File Name: P:\1-Project files\2023 LP XREFS: XBorder





D. Pad Dimensi dimensions s Product EP 23 EP 23 EP 23 EP 24 EP 24 EP 24 EP 24 EP 24 EP 24 EP 24 EP 24 EP 44 EP 44	- Stud composition is in les Wall and Partition Du ons - The minimum dim shown in table and parti Max Outlet Box Size, in. (mm) $2 \times 3 \times 2-1/4$ $(51 \times 76 \times 57)$ deep $2 \times 3 \times 2-1/4$ $(51 \times 76 \times 57)$ deep $2 \times 3 \times 2-1/4$ $(51 \times 76 \times 57)$ deep $2 \times 18 \times 4 \times 2-1/8$ $(54 \times 102 \times 54)$ deep $2-1/8 \times 4 \times 2-1/8$ $(54 \times 102 \times 54)$ deep $2-1/8 \times 4 \times 2-1/8$ $(54 \times 102 \times 54)$ deep $4 \times 4 \times 2-1/8$ $(102 \times 102 \times 54)$ deep $4 \times 4 \times 2-1/8$ $(102 \times 102 \times 54)$ deep $4 \times 4 \times 2-1/8$ $(102 \times 102 \times 54)$ deep $4 \times 4 \times 2-1/8$ $(102 \times 102 \times 54)$ deep $4 \times 4 \times 2-1/8$ $(102 \times 102 \times 54)$ deep $4 \times 11/16 \times 2-1/(119 \times 119 \times 54)$ deep $4 - 11/2 \times 5 \times 2-3/8$ $(114 \times 127 \times 60)$ deep $4 - 1/2 \times 14 \times 2-1/2$	esign in the Fii ensions of the al insert pads Outlet Box Type E - - - - - - - - - - - - - - - - - - -	insert pad are shown may be utilized.	tory. vn in the table in. Rating, hr 3/4 2 3/4 2 3/4 2 3/4 1 3/4 2 3/4 1 3/4 2 3/4 1 3/4 2 3/4 2 3/4 2 3/4 2 3/4 1 3/4 2 3/4 2 3/4 1 3/4 2 3/4 3 3/4 2 3/4		may be cut to ity Face Pla fion Type Steel S Plastic o Steel S Plastic o Steel	e achieve
Nonmetallic Our directed, the ho that the boxes a mm) thick molds the outlet box a pads to be over the connector s is used with Typ extending a mir are tabulated be A. Studs - Unle B. Stud Cavity I mm) thick fib C. Wall Design		a device UL Lis lassemblies. -back. Installat e installed to c completely sea 3 mm) at the s Type MC cab (5 mm) thickne iox composition construction f the minimum s ated as require 8 kg/m3) or mini- dicated in the esign in the Fin- mologies Inc. 2	When protective makes on opposite side tion shall comply with completely cover the al against the stud with seam. An additional le, electrical metalling east of putty shall be in, max device dime features shall compli- stud width is 3-1/2 in ed, stud cavity insula neral fiber (min 4 po- table below. Wall co-	Boxes installe terial is used as of the wall it the National exterior surfa- ithin the stud 3/16 in. (5 mr c tube (EMT) formed arour nsions, hourly y as follows: (89 mm). ation is option of or 64 kg/m3 onstruction sh- tory.	on outlet boxe may be less th I Electrical Co aces of the out cavity. Adjoini n) thickness o or conduit to th d the cable at r rating, type o al and may co ). all comply with 376	es on both sid han 24 in. (610 de (NFPA 70 llet box (exce ing pieces of 1 f putty to be f he box. When its connectio of stud and typ onsist of min 3	es of the wal 0 mm) provide 0. Min 3/16 in pt for the side moldable put ormed around nonmetallic n to the box a be of faceplat 0-1/2 in. (89
STI ® (8	00)992-1180 · (908)526-8000 · FAX		d or ReviseOctober		p.com		
interconnected electrical meta interconnected E. Nonmetallic O "Outlet Boxes	t Boxes - Except as indi d by means of electrical allic tube (EMT) or cond d, the ball of putty is not utlet Boxes - The box m and Fittings Classified	metallic tube uit within the c required. aanufacturer is for Fire Resist	or conduit, a ball of outlet box. When MC indicated in the tab ance" category in th	putty is to be Cable is use le below. Box e Fire Resista	installed to plu d and/or when es shall bear a ince Directory	ig the open ei the outlet bo a 2 hr rating u	nd of each xes are not
- (102 - 4-117 (115 - (114	$\begin{array}{c} \mbox{Max Outlet Box} \\ \mbox{in. (mm)} \\ 4 \times 4 \times 2^{-1}/8 \\ 2 \times 102 \times 54) \ deep \\ 4 \times 4 \times 2^{-1}/8 \\ 2 \times 102 \times 54) \ deep \\ 16 \times 4^{-1}/1/16 \times 2^{-1}/8 \\ 3 \times 119 \times 54) \ deep \\ 4^{-1}/2 \times 5 \times 2^{-3}/8 \\ 4 \times 127 \times 60) \ deep \\ 4^{-1}/2 \times 14 \times 2^{-1}/2 \\ 4^{-1}/2 \times 14 \times 2^{-1}/2 \end{array}$	Outlet Box Type Steel Steel Steel Steel Steel	Outlet Box Mfr N.A. N.A. N.A. N.A.	Pad SizeRat in. (mm) h - 1 - 1 - 1 o - 1 o - 1 o	r Steel or Wood Steel or Wood r 2 Steel or Wood r 2 Steel or Wood r 2 Steel or	Insulation - F - F	ce PlatePutty Type Ball Steel No Plastic Yes Steel Yes Steel Yes Steel Yes
- - - -	4 x 127 x 60) deep 3-3/4 x 4 x 3 (95 x 102 x 76) deep 3-3/4 x 4 x 3 (95 x 102 x 76) deep 3-3/4 x 4 x 3 (95 x 102 x 76) deep 3-3/4 x 4 x 3 (95 x 102 x 76) deep 2-1/4 x 3-3/4 x 2-3/4 (57 x 95 x 70) deep	Polyvinyl Chloride Phenolic Polycarbonate Phenolic Polyvinyl Chloride	Lamson & Sessior or Carlon Allied Moulded Prods	\$ - 1 o - 1 o - 1 o - 1 o - 1 o	r 2 Wood r 2 Wood r 2 Wood r 2 Wood	- Pi - Pi - Pi	astic or Steel N.A. astic or Steel N.A. astic or Steel N.A. astic or Steel N.A. astic or Steel N.A.
kg/m3) or miner wall as directed interconnected y Installation shall installed to com completely seal mm) at the sear Type MC cable, SpecSeal EP23 or 2-1/8 in. (102 with steel or pla wood or steel st may be installed boxes are not in moldable putty p box against the overlapped app connector secur	n min 5-1/2 in. (140 mm al fiber (nom 4 pcf or 64 , the boxes may be inst with conduit or, when ini comply with the Nation pletely cover the exterior against the stud within n. An additional 3/16 in. electrical metallic tube the plant of the stud by 102 by 38 or 54 mm stic faceplates in 1 hr or tuds. When both protect back-to-back provided terconnected. Installation backs are to be installed stud) and to completely rox 1/2 in. (13 mm) at the ing the end of each Typ pletely cover the back in	kg/m3) insula alled back-to-b terconnected, al Electrical C r surfaces of t the stud cavity (5 mm) thickn (EMT) or conc r Shield Box In ) deep flush d r 2 hr fire rated ive materials a that the backs on shall completely seal against t te seam. An a ope MC cable, e	tion. When protection back provided that the open end of the ode (NFPA 70). Min he outlet box (excep- vess of putty to be for duit to the box. Inserts and SpecSea evice UL Listed Me diages and SpecSea evice UL Listed Me di	ve material is ne boxes on o conduit within 3/16 in. (5 m ot for the side of moldable pu rrmed around al Putty Pads, tallic Outlet Bo I assemblies of boxes on bott inimum 1/2 in Electrical Cod urfaces of the fud cavity. Ad, mm) thicknes	used on outlet pposite sides in the outlet box m) thick molda of the outlet b titty pads to be the connector for use with m poses installed constructed with n sides of the w . (13 mm) apa e (NFPA 70). I outlet box (ex oining pieces s of putty to be	t boxes on bo of the wall are x is filled with able putty pad ox against the overlapped a securing the maximum 4 by with steel mu th min 3-1/2 i wall as directe art and provid Min 3/16 in. (f cept for the si of moldable p e formed arou	th sides of th e not a ball of putt ls are to be e stud) and to approx 1/2 in. end of each 4 by 1-1/2 d rings and n. (89 mm) w ed, the boxes ed that the 5 mm) thick ide of the out outty pads to nd the
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Boxes or UL Liste gypsum board w individual U300, to be provided w are to be installe unless otherwise putty pads may b used to seal arou material is requir moldable putty p between outlet b installed back to SpecSeal EP55 Listed Metallic O hr or 2 hr fire rate specified in the in Metallic outlet bo Power Shield Bo accessories. Wh	Pads, for use with max 5 ed Communications-Cir all assemblies framed w U400, or V400 or W400 ith UL Listed Signal App d to completely cover th noted) including nailing in installed on an outlet ind each conduit and/or ed on the exterior surfac ad outlet box protective oxes on opposite sides back, except as noted. Power Shield Box Insert utlet Boxes or UL Listed ad gypsum board wall a: ndividual U300, U400, o xes to be provided with x Insert is to be applied en the Power Shield Bo oxes on opposite sides back, except as noted.	cuit Accessorie vith min 3-5/8 i Series Wall a bliance with ste e exterior surf tabs and to c box to attain th cable fitting o ces of flush de material is use of the wall may ts, for use with I Communicati ssemblies fram r V400 or W40 UL Listed Sig to the back su x Insert is use	es manufactured by n. (92 mm) wide wo nd Partition Designs eel cover plate man- faces of the outlet by ompletely seal again he required minimur n the exterior of eac vice boxes in 1 and ed on boxes on both y be less than 24 in max 5 by 5 by 2 7/ ons-Circuit Accesson ned with min 3-5/8 i 00 Series Wall and 1 on al Appliance with si rface of the box and d on boxes on both	Randl Indust od or steel str s in the Fire R ufactured by C fox (except for nest the stud w n thickness of th box. A min 2 hr fire rated sides of wall (610 mm) pro- 8 in. (127 by ories manufac n. (92 mm) wi Partition Desig teel cover pla d may be slit t sides of wall	ries Inc for use uds and constru- esistance Dire Cooper Wheeld the side of the thin the stud of putty materia 3/16 in. (4.8 m I Wall and Par as directed, the vided that the 127 by 73 mm) tured by Rand de wood or stre gns in the Fire or accommoda as directed, the	e in 1 hr or 2 ł ructed as spe ectory. Metalli ock Inc. Mold e outlet box a cavity. Multipli I. Additional p mm) thickness tition Designs he horizontal s o outlet boxes ) deep flush d II Industries In sel studs and Resistance E ed by Cooper te communic e horizontal s	nr fire rated cified in the c outlet boxe: able putty pau- gainst the stu e moldable outty material of putty s. When the separation are not evice UL to for use in 1 constructed Directory. Wheelock In ations-circuit eparation

