

**COMMUNICATIONS & LOW VOLTAGE CONDUIT REQUIREMENTS:**

ALL CONDUIT RUNS SHALL BE 3/4" EMT, UNLESS NOTED OTHERWISE.

ALL BOXES SHALL BE A MINIMUM OF 4-11/16" x 4-11/16" x 2-1/8" DEEP BOX WITH A SINGLE GANG TRIM RING MOUNTED FLUSH TO THE WALL SURFACE, UNLESS NOTED OTHERWISE.

ALL MOUNTING HEIGHTS ARE TO THE CENTERLINE OF THE BACKBOX UNLESS NOTED OTHERWISE.

ALL CONDUIT SHALL BE ROUTED ABOVE CEILINGS, BELOW FLOORS, OR STUBBED UP WITHIN WALLS; NO CONDUIT SHALL BE EXPOSED UNLESS APPROVED BY THE ARCHITECT.

ALL CONDUITS IN WALLS SHALL STUB UP AT LEAST 6-INCHES ABOVE THE FINISHED CEILING. ALL STUBS SHALL BE REAMED AND BUSHED AT BOTH ENDS.

ALL CONDUIT PENETRATIONS THROUGH FIRE-RATED PARTITIONS SHALL BE SEALED AS REQUIRED BY CODE. ALL BACKBOXES MOUNTED WITHIN FIRE-RATED PARTITIONS SHALL MEET THE FIRE RATING OF THE PARTITION AS REQUIRED BY CODE.

PROVIDE PULL STRINGS IN ALL CONDUIT RUNS LONGER THAN 10-FEET.

PROVIDE PULL BOXES EVERY 100 LINEAR FEET OR AFTER TWO SUCCESSIVE 90° BENDS.

ALL JUNCTION AND PULL BOXES SHALL BE FURNISHED WITH ACCOMPANYING BLANK COVER PLATE.

ALL BOXES IN EXTERIOR LOCATIONS SHALL BE WEATHERPROOF AND WATERPROOF.

INSTRUCTIONS SHOWN IN DIMENSION LINES, DETAILS, ELEVATIONS, AND PLANS (IN THIS ORDER) TAKE PRECEDENCE OVER INSTRUCTIONS SHOWN IN LEGENDS.

CONDUIT AND CABLE ROUTING SHOWN IS SCHEMATIC AND IS NOT INTENDED TO REPRESENT INSTALLATION PATHS OR DISTANCES. ACTUAL ROUTING AND BOX LOCATIONS SHALL BE FIELD-VERIFIED FOR FEASIBILITY AND COORDINATED WITH OTHER DISCIPLINES BY THE INSTALLATION CONTRACTOR.

HORIZONTAL CONDUITS INTO EACH TECHNOLOGY AREA FROM THE EXTERIOR CEILING PLENUM ARE REQUIRED FOR CABLE ACCESS INTO THE ROOM FROM ALL LOCATIONS THROUGHOUT THE SPACE. THE ENDS OF THE CONDUITS SHALL BE REAMED AND BUSHED, AND EXTEND A MINIMUM OF 2-INCHES INTO THE ROOM.

| CABLE O.D. (") | CONDUIT TRADE SIZE AND MAXIMUM QUANTITIES OF CABLES OF THAT O.D. |     |        |        |    |     |     |
|----------------|--|-----|--------|--------|----|-----|-----|
|                | 3/4"   | 1"  | 1-1/4" | 1-1/2" | 2" | 3"  | 4"  |
| 0.16           | 10   | 19  | 33     | 46     | 75 | 200 | 333 |
| 0.18           | 8  | 13  | 23     | 32     | 52 | 139 | 231 |
| 0.20           | 6  | 11  | 19     | 25     | 42 | 112 | 187 |
| 0.25           | 4  | 6   | 12     | 16     | 27 | 71  | 120 |
| 0.27           | 3  | 6   | 10     | 14     | 22 | 60  | 102 |
| 0.30           | 2  | 4   | 8      | 10     | 18 | 48  | 82  |
| 0.33           | 1  | 4   | 6      | 8      | 14 | 40  | 68  |
| 0.35           | 1  | 3   | 6      | 8      | 12 | 36  | 60  |
| 0.38           | 1  | 2   | 5      | 7      | 10 | 30  | 50  |
| 0.40           | 1  | 2   | 4      | 6      | 10 | 28  | 46  |
| 0.45           | 1  | 1   | 3      | 5      | 8  | 22  | 38  |
| 0.50           | 1  | 1   | 2      | 4      | 6  | 16  | 30  |
| 0.55           | 1  | 1   | 1      | 3      | 5  | 14  | 24  |
| 0.60           | N/A  | 1   | 1      | 2      | 4  | 12  | 20  |
| 0.67           | N/A  | 1   | 1      | 1      | 3  | 10  | 16  |
| 0.70           | N/A  | 1   | 1      | 1      | 3  | 8   | 14  |
| 0.75           | N/A  | N/A | 1      | 1      | 2  | 7   | 12  |

| NUMBER AND SIZE OF CONDUITS | PULL BOX SIZE (W x L x H IN INCHES) | FOR EACH ADDITIONAL CONDUIT ENTERING THE PULL BOX, INCREASE THE WIDTH |
|-----------------------------|-------------------------------------|---|
| ONE 1-INCH                  | 4 X 16 X 3                          | 2 INCHES  |
| ONE 1-1/4-INCH              | 6 X 20 X 3                          | 3 INCHES  |
| ONE 1-1/2-INCH              | 8 X 27 X 4                          | 4 INCHES  |
| ONE 2-INCH                  | 8 X 36 X 4                          | 5 INCHES  |
| ONE 4-INCH                  | 15 X 60 X 8                         | 8 INCHES  |

| CONDUIT DIAMETER | MINIMUM BEND RADIUS |
|------------------|---------------------|
| 1-INCH           | 4 INCHES            |
| 1-1/4-INCH       | 8 INCHES            |
| 1-1/2-INCH       | 9 INCHES            |
| 2-INCH           | 12 INCHES           |
| 4-INCH           | 40 INCHES           |

**TECHNOLOGY DRAWING INDEX**

- T0.00 - LEGEND AND GENERAL NOTES
- T0.01 - CABLE SPECIFICATION
- T1.00 - TECHNOLOGY PLAN

**ABBREVIATIONS USED IN THESE DRAWINGS:**

AVIC = AUDIOVISUAL CABLING CONTRACTOR  
 LVI = LOW VOLTAGE INTEGRATOR  
 EC = ELECTRICAL INSTALLATION CONTRACTOR  
 PIC = PAGING INSTALLATION CONTRACTOR  
 SIC = SECURITY INSTALLATION CONTRACTOR

- ▲ X MOUNTING INFORMATION, WHERE X =
- A ABOVE CEILING
  - D TO THE DESK
  - F FLUSH-MOUNTED
  - H HIDDEN UNDER WORKSURFACE
  - M TO THE MULLION
  - R TO THE RACK ITSELF
  - S PLACED ON THE WORKSURFACE

- ▲ X MOUNTING INFORMATION, WHERE X =
- A ABOVE CEILING
  - D TO THE DESK
  - F FLUSH-MOUNTED
  - H HIDDEN UNDER WORKSURFACE
  - M TO THE MULLION
  - P TO THE PODIUM
  - R TO THE RACK ITSELF
  - S PLACED ON THE WORKSURFACE
  - TX TRANSMITTER
  - RX RECEIVER

**COMMUNICATIONS LEGEND:**

▲ W +48" WALLPHONE LOCATION. LVI TO FURNISH AND INSTALL ONE (1) CATEGORY 6 CABLE AND ONE (1) CATEGORY 6 8P8C (RJ45) JACK IN A FACEPLATE WITH WALLPHONE MOUNTING LUGS. REFER TO THE SPECIFICATION DRAWING FOR CABLE AND JACK REQUIREMENTS.

▲ 1 ONE (1) CABLE AND ONE (1) JACK LOCATION. LVI TO FURNISH AND INSTALL ONE (1) CATEGORY 6 CABLE AND ONE (1) CATEGORY 6 8P8C (RJ45) JACK AT THIS LOCATION. REFER TO THE SPECIFICATION DRAWING FOR CABLE AND JACK REQUIREMENTS.

▲ 2 TWO (2) CABLE AND TWO (2) JACK LOCATION. LVI TO FURNISH AND INSTALL TWO (2) CATEGORY 6 CABLES AND TWO (2) CATEGORY 6 8P8C (RJ45) JACKS AT THIS LOCATION. REFER TO THE SPECIFICATION DRAWING FOR CABLE AND JACK REQUIREMENTS.

▲ 3 THREE (3) CABLE AND THREE (3) JACK LOCATION. LVI TO FURNISH AND INSTALL THREE (3) CATEGORY 6 CABLES AND THREE (3) CATEGORY 6 8P8C (RJ45) JACKS AT THIS LOCATION. REFER TO THE SPECIFICATION DRAWING FOR CABLE AND JACK REQUIREMENTS.

▲ 4 FOUR (4) CABLE AND FOUR (4) JACK LOCATION. LVI TO FURNISH AND INSTALL FOUR (4) CATEGORY 6 CABLES AND FOUR (4) CATEGORY 6 8P8C (RJ45) JACKS AT THIS LOCATION. REFER TO THE SPECIFICATION DRAWING FOR CABLE AND JACK REQUIREMENTS.

▲ 6 SIX (6) CABLE AND SIX (6) JACK LOCATION. LVI TO FURNISH AND INSTALL SIX (6) CATEGORY 6 CABLES AND SIX (6) CATEGORY 6 8P8C (RJ45) JACKS AT THIS LOCATION. REFER TO THE SPECIFICATION DRAWING FOR CABLE AND JACK REQUIREMENTS.

▲ 2 TWO (2) CABLE AND TWO (2) JACK LOCATION. LVI TO FURNISH AND INSTALL TWO (2) CATEGORY 6 CABLES AND TWO (2) CATEGORY 6 8P8C (RJ45) JACKS AT THIS LOCATION ALONG WITH APPROPRIATE INSERTS FOR FLOOR BOX. REFER TO THE SPECIFICATION DRAWING FOR CABLE AND JACK REQUIREMENTS.

▲ 4 FOUR (4) CABLE AND FOUR (4) JACK LOCATION. LVI TO FURNISH AND INSTALL FOUR (4) CATEGORY 6 CABLES AND FOUR (4) CATEGORY 6 8P8C (RJ45) JACKS AT THIS LOCATION ALONG WITH APPROPRIATE INSERTS FOR FLOOR BOX. REFER TO THE SPECIFICATION DRAWING FOR CABLE AND JACK REQUIREMENTS.

▲ X DELETED WALL/COLUMN LOCATION. LVI TO REMOVE ALL DATA AND VOICE CABLING AT THIS LOCATION AND FURNISH AND INSTALL A BLANK COVER PLATE.

▲ X DELETED FLOOR BOX LOCATION. LVI TO REMOVE ALL DATA AND VOICE CABLING AT THIS LOCATION AND FURNISH AND INSTALL A BLANK COVER PLATE.

NOTE: AT ALL LOCATIONS - EXCEPT THOSE THAT ARE INDICATED TO BE DELETED - THE LVI SHALL NOT REMOVE THE VOICE CABLING AND ASSOCIATED RJ11 JACK. THE LVI SHALL TAKE DUE CARE TO ENSURE THAT THE VOICE CABLING AND JACK IS NOT DAMAGED DURING THE REMOVAL AND INSTALLATION OF THE DATA CABLING.

BARTLETT PUBLIC LIBRARY DISTRICT  
 800 S. BARTLETT ROAD  
 BARTLETT, IL 60103



ISSUANCE INFORMATION:

| NO. | DATE       | DESCRIPTION          |
|-----|------------|----------------------|
| 1   | 03/04/2024 | BID AND CONSTRUCTION |



SCALE: AS NOTED

**LEGEND AND GENERAL NOTES**

**T0.00**

**GENERAL SCOPE REQUIREMENTS:**

- ALL CABLE, ASSOCIATED MATERIALS AND LABOR REQUIRED FOR A COMPLETE INSTALLATION OF THE COMMUNICATIONS CABLING SYSTEM SHALL BE PROVIDED BY THE LVI UNLESS OTHERWISE STATED IN THE DRAWINGS.
- WHERE APPLICABLE, THE LVI SHALL REMOVE ALL PREVIOUSLY INSTALLED AND ABANDONED CABLE BEFORE THE INSTALLATION OF NEW CABLE TAKES PLACE. THIS MAY CONSIST OF ABANDONED COMMUNICATIONS CABLING NOT REMOVED DURING DEMOLITION AS WELL AS ANY TEMPORARY CABLING INSTALLED BY THE LVI AS PART OF THE INSTALLATION.
- DUE CARE AND DILIGENCE HAVE BEEN USED IN PREPARATION OF THE DRAWINGS, AND THEY ARE BELIEVED TO BE SUBSTANTIALLY CORRECT. HOWEVER, THE RESPONSIBILITY FOR DETERMINING THE FULL EXTENT OF EXPOSURE AND THE VERIFICATION OF ALL INFORMATION PRESENTED HEREIN SHALL REST SOLELY WITH THE LVI. THE OWNER, SENTINEL TECHNOLOGIES, AND ANY OTHER REPRESENTATIVES WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THESE DRAWINGS, NOR FOR THE FAILURE ON THE PART OF THE LVI TO DETERMINE THE FULL EXTENT OF THE EXPOSURES.
- THE LVI SHALL NOT BE ALLOWED TO TAKE ADVANTAGE OF ANY ERRORS OR OMISSIONS IN THESE DRAWINGS. WHERE ERRORS OR OMISSIONS APPEAR IN THESE DRAWINGS, THE LVI SHALL PROMPTLY NOTIFY SENTINEL TECHNOLOGIES IN WRITING OF SUCH ERROR OR OMISSIONS. ANY SIGNIFICANT ERROR, OMISSIONS, OR INCONSISTENCIES IN THE DRAWINGS SHALL BE REPORTED NO LATER THAN FIVE (5) DAYS BEFORE THE SUBMISSION DEADLINE. THE OWNER, SENTINEL TECHNOLOGIES, AND ANY OTHER REPRESENTATIVES SHALL NOT BE RESPONSIBLE FOR ERRORS THAT GO UNDISCOVERED.
- THE LVI SHALL PROTECT ALL STORED AND INSTALLED MATERIALS AS PART OF THESE SYSTEMS BEFORE, DURING, OR AFTER INSTALLATION FROM DAMAGE CAUSED BY OTHER TRADES UNTIL TURNOVER AND FINAL ACCEPTANCE. IF DAMAGE OCCURS DESPITE SUCH PROTECTIONS, REMOVE AND REPLACE ALL DAMAGED COMPONENTS FOR THE ENTIRE UNIT(S) AS REQUIRED TO PROVIDE A SOLUTION IN AN ORIGINAL, UNDAMAGED CONDITION.
- THE T568B WIRING PATTERN SHALL BE USED FOR ALL UTP CABLE TERMINATIONS.
- IN DISTRIBUTED TELECOMMUNICATIONS ROOMS THAT ARE VERTICALLY STACKED, ALL LVI-INSTALLED CABLE SHALL BE INSTALLED IN SLEEVES OR CONDUITS (FURNISHED AND INSTALLED BY OTHERS). IF SLEEVES ARE USED, THEN ALL ALL CABLES SHALL BE SECURED TO THE WALL EVERY FORTY-EIGHT INCHES (48").
- ALL LVI-INSTALLED CABLE RUNS SHALL CONTAIN NO SPLICE OR TRANSITION POINTS FROM CROSS-CONNECT TO CROSS-CONNECT OR FROM CROSS-CONNECT TO EACH OUTLET LOCATION.
- ALL CABLES SHALL BE INSTALLED SUCH THAT THE RESPECTIVE MANUFACTURERS' RECOMMENDED BEND RADIUS FOR EACH CABLE TYPE IS NOT EXCEEDED.
- THE LVI SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL DISTANCES FOR EACH LVI-INSTALLED CABLE RUN FROM CROSS-CONNECT TO CROSS-CONNECT.
- ALL LVI-INSTALLED CABLES SHALL BE PROPERLY DRESSED, TIED, AND TRIMMED.
- CABLE PULLING LUBRICANTS, WHERE USED, SHALL BE APPROVED BY THE CABLE MANUFACTURER SO THAT THE LUBRICATING COMPOUNDS DO NOT DETERIORATE THE CABLE JACKET.
- THE LVI SHALL PROVIDE AND INSTALL ALL JACKS AND APPROPRIATE INSERTS FOR ALL LOCATIONS INCLUDING THOSE INSIDE FLOOR, TABLE-TOP BOXES, AND MODULAR FURNITURE SYSTEMS.

**DRAWINGS:**

- THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND MAY NOT REPRESENT EXACT FIELD CONDITIONS. THE LVI SHALL FIELD-VERIFY CRITICAL INSTALLATION REQUIREMENTS AND PROVIDE NECESSARY ASSOCIATED WORK.
- THE LOCATIONS OF TELECOMMUNICATION EQUIPMENT AND DEVICES SHOWN ARE APPROXIMATE. THE LVI SHALL, PRIOR TO INSTALLATION, VERIFY EXACT LOCATIONS BY CROSS-CHECKING ARCHITECTURAL AND ELECTRICAL DRAWINGS, FIELD CONDITIONS, AND APPROVED SHOP DRAWINGS.
- THE LVI SHALL TAKE FIELD MEASUREMENTS AS REQUIRED TO FIT THE WORK PROPERLY. RECHECK MEASUREMENTS BEFORE INSTALLING EACH PRODUCT. WHERE PORTIONS OF THE WORK ARE INDICATED TO FIT OTHER CONSTRUCTION, VERIFY DIMENSIONS OF OTHER CONSTRUCTION BY FIELD MEASUREMENTS BEFORE FABRICATION. COORDINATE FABRICATION SCHEDULE WITH CONSTRUCTION PROGRESS TO AVOID DELAYING THE WORK.
- LOCATIONS AND ROUTES OF PATHWAYS SHOWN ON DRAWINGS ARE SCHEMATIC AND NOT NECESSARILY REFLECTIVE OF CONDITIONS AT TIME OF INSTALLATION. OR WERE POSITIONED FOR CLARITY RATHER THAN EXACT SPACING, BENDING, OR DESIRED SEPARATION. THE LVI SHALL REVIEW ANY AND ALL SUCH PATHWAYS SHOWN ON THE DRAWINGS TO ENSURE THAT THE PROPOSED SOLUTION WILL FUNCTION AS INTENDED WITH REGARD TO QUANTITIES, SIZES, LOCATIONS, ETC.
- THE LVI SHALL REVIEW THE ACTUAL CONDUIT PLANS PROPOSED BY THE MEP ENGINEER OR EC TO ENSURE THAT CONDUITS INTENDED FOR THE COMMUNICATIONS CABLING SYSTEM ARE CORRECTLY SIZED, ADEQUATELY POSITIONED, AND HAVE THE REQUISITE NUMBER OF PULL BOXES AS REQUIRED BY THE ACTUAL MATERIALS PROPOSED BY THE LVI, AND/OR AS THE LVI DESIRES AS OPTIMAL FOR INSTALLATION. THE LVI SHALL BE RESPONSIBLE FOR ANY AND ALL COSTS ASSOCIATED WITH CONDUIT CHANGES RESULTING FROM FAILURE TO PREVIEW AND APPROVE THE PATHWAYS INSTALLED BY OTHERS.
- THE LVI SHALL BE PREPARED TO RELOCATE EQUIPMENT OR DEVICES PROVIDED UNDER THIS SCOPE OF WORK WHEN DIRECTED BY THE PROJECT TEAM WITHOUT COST, PROVIDED EQUIPMENT HAS NOT BEEN INSTALLED AND THE NEW LOCATION IS NOT GREATER THAN TWENTY FIVE FEET (25') FROM THE LOCATION ORIGINALLY SHOWN.
- OUTLETS SHALL BE LOCATED AT SAME HEIGHT, AND OF SAME ORIENTATION UNLESS OTHERWISE NOTED.
- WIRING, SIGNAL AND CONTROL DEVICES WHERE PROVIDED SHALL BE FLUSH-MOUNTED IN FINISHED AREAS.

**QUALITY ASSURANCE:**

- ALL MATERIALS AND LABOR PROVIDED BY THE LVI SHALL BE OF THE HIGHEST QUALITY.
- THE LVI SHALL BE CERTIFIED TO INSTALL THE SOLUTION THAT THE LVI HAS PROPOSED AS SPECIFIED IN THESE DRAWINGS. THE LVI SHALL INSTALL ALL MATERIALS IN COMPLIANCE WITH MANUFACTURER'S WRITTEN DIRECTIONS.
- ONLY THE HIGHEST GRADE COMPONENTS SHALL BE CONSIDERED, AND ALL COMPONENTS SHALL BE BALANCED WITH EACH OTHER FROM AN ELECTRICAL AND PERFORMANCE CHARACTERISTIC STANDPOINT.
- THE COMMUNICATIONS CABLING SYSTEM SHALL BE END-TO-END CERTIFIED BY THE LVI AND THE MANUFACTURER. A WRITTEN DOCUMENT ADDRESSING THE COMMUNICATION CABLING SYSTEM'S CERTIFICATION SHALL BE PROVIDED BY THE MANUFACTURER ONCE THE INSTALLATION IS COMPLETE.
- ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER ACCORDING TO GENERALLY ACCEPTED TRADE PRACTICES.
- APPROPRIATE PREVAILING WAGE REQUIREMENTS SHALL BE STRICTLY FOLLOWED.
- THE LVI SHALL PROVIDE A PERFORMANCE BOND PER THE BARTLETT PUBLIC LIBRARY DISTRICT'S REQUIREMENTS.
- ALL WORK TO BE PERFORMED BY THE LVI SHALL BE COORDINATED WITH THE OTHER TRADES AND THE LIBRARY.
- THE LVI SHALL CONFORM AND ADHERE TO ALL JOB SITE REQUIREMENTS AS DEFINED BY THE LIBRARY. IT IS THE RESPONSIBILITY OF THE LVI TO OBTAIN THESE REQUIREMENTS FROM THE LIBRARY.
- ALL NECESSARY PERMITS ARE TO BE SECURED BY THE LVI.
- APPROPRIATE LEVELS OF INSURANCE AND BONDING SHALL BE MAINTAINED. CERTIFICATES OF INSURANCE MAY BE REQUESTED AND SHALL BE PROVIDED AT THE LVI'S EXPENSE.
- ANY VARIATIONS TO THE INSTALLATION OF THE COMMUNICATIONS CABLING SYSTEM AS DESCRIBED IN THESE DRAWINGS SHALL BE SUBJECT TO THE CONTROL OF THE LIBRARY, AND SENTINEL TECHNOLOGIES.
- SUBSTITUTION OF ANY MATERIALS SPECIFIED IN THIS DOCUMENT SHALL ONLY BE CONSIDERED ONCE A REQUEST TO DO SO HAS BEEN SUBMITTED IN WRITING TO THE LIBRARY, AND SENTINEL TECHNOLOGIES FOR APPROVAL. THIS SUBMITTAL SHALL DISCUSS THE SCOPE OF THE CHANGE, THE RAMIFICATIONS ON THE OVERALL COMMUNICATIONS CABLING SYSTEM AND THE ADVANTAGES TO BE GAINED BY THE LIBRARY.
- THE LVI SHALL CONFORM TO THE FOLLOWING STANDARDS AND ALL CURRENT ADDENDA WHEN PROVISIONING AND INSTALLING THE COMMUNICATIONS CABLING SYSTEM:

- TIA-568 0-E. GENERIC TELECOMMUNICATIONS CABLING FOR CUSTOMER PREMISES
- TIA-568 1-E. COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARD
- TIA-568 2-D. BALANCED TWISTED-PAIR TELECOMMUNICATIONS CABLING AND COMPONENTS STANDARD
- TIA-569-D. TELECOMMUNICATIONS PATHWAYS AND SPACES
- ANSI/NECA/IBCSI 568-2006. STANDARD FOR INSTALLING COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING
- TIA-606-D. ADMINISTRATION STANDARD FOR TELECOMMUNICATIONS INFRASTRUCTURE
- TIA-607-C. GENERIC TELECOMMUNICATIONS BONDING AND GROUNDING (EARTHING) FOR CUSTOMER PREMISES
- ANSI/TIA-1152-A. REQUIREMENTS FOR FIELD TEST INSTRUMENTS AND MEASUREMENTS FOR BALANCED TWISTED-PAIR CABLING
- BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL (BICSI) TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL (LATEST EDITION)
- BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL (BICSI) INFORMATION TRANSPORT SYSTEMS INSTALLATION MANUAL (LATEST EDITION)
- NFPA 70 NATIONAL ELECTRICAL CODE (NEC) (LATEST EDITION), WHERE MORE STRINGENT THAN LOCAL CODES
- ALL APPLICABLE LOCAL, COUNTY, AND STATE BUILDING AND ELECTRICAL CODES
- UL 444. COMMUNICATION CABLES
- FCC PART 68 REGULATIONS
- IEEE 802.3. ETHERNET STANDARD

**FIRST-NAMED MANUFACTURER:**

- WITHIN THESE DRAWINGS, THE FIRST-NAMED APPROVED MANUFACTURER INDICATES THAT ITS RESPECTIVE DEVICE, EQUIPMENT OR SYSTEM MAY HAVE BEEN USED TO MEET THE JOB REQUIREMENTS AND TO DETERMINE THE SPACE AND DIMENSIONAL REQUIREMENTS. THE LVI'S USE OF ANOTHER PRE-APPROVED SYSTEM SHALL REQUIRE THAT THE LVI VERIFY THAT THE RESPECTIVE DEVICES, EQUIPMENT, SYSTEMS, OR PRODUCTS WILL MEET THE JOB REQUIREMENTS AND WILL FIT THE ALLOCATED SPACE.
- THE LISTING OF A MANUFACTURER AS ACCEPTABLE OR PRE-APPROVED DOES NOT IN ANY WAY RELIEVE THE LVI FROM THE RESPONSIBILITY FOR PROVIDING DEVICES, EQUIPMENT, OR SYSTEMS THAT MEET THE REQUIREMENTS OF THE SPECIFICATIONS. THE LVI SHALL VERIFY THAT PERFORMANCE REQUIREMENTS ARE MET, AS NO TWO MANUFACTURERS SHOULD BE TRUSTED AS EXACTLY IDENTICAL IN FUNCTION, FIT, OR FINISH.

**COORDINATION:**

- THE LVI SHALL COORDINATE THE ARRANGEMENT, INSTALLATION, AND FINISHING OF THE COMMUNICATIONS CABLING SYSTEM:
  - ALL FACEPLATE COLORS AND FINISHES SHALL BE COORDINATED WITH THE LIBRARY
  - ANY OTHER ELEMENTS THAT MIGHT OR WILL INTERFERE WITH ELEMENTS INSTALLED BY OTHER TRADES SHALL BE COORDINATED WITH THE LIBRARY AND THOSE RESPECTIVE TRADES
- CONFLICTS REQUIRING NOTICEABLE DEVIATION FROM THE DRAWINGS SHALL BE COORDINATED WITH SENTINEL.

**FIRE STOPPING:**

- FIRE STOP SYSTEMS SHALL BE UL-LISTED OR FACTORY MUTUAL APPROVED. THE LVI SHALL FURNISH AND INSTALL THE PROPER FIRE STOP SYSTEM WITH CLASSIFIED PRODUCTS AND MATERIALS COMPATIBLE WITH THE APPROPRIATE PENETRATING ELEMENTS, TYPE OF CONSTRUCTION MATERIAL AND DIMENSIONS OF THE WALL, PARTITION, BARRIER, OR FLOOR, AND THE ENVIRONMENT AND TEMPERATURE RANGE OF BOTH SIDES OF THE OPENING. FIRE STOP SYSTEMS SHALL MAINTAIN THE ORIGINAL FIRE RESISTANCE RATING OF THE WALL, PARTITION, BARRIER, OR FLOOR PRIOR TO THE PENETRATION.
- EXPANSION TYPE FIRE STOP MATERIAL SHALL BE USED WHERE NECESSARY TO PROTECT AND CLOSE UPON FAILURE OF THE PENETRATING ELEMENT DUE TO FIRE.
- FIRE STOP PENETRATIONS IN FIRE-RATED WALLS AND FLOORS FOR SLEEVES, CABLES, CONDUITS, DUCTS, AND CABLE TRAYS
- FIRE STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE-RATED WALLS AND FLOOR ASSEMBLIES SHALL BE LISTED OR CLASSIFIED BY AN APPROVED INDEPENDENT TESTING LABORATORY FOR "THROUGH-PENETRATION FIRE STOP SYSTEMS," AND SHALL MEET THE REQUIREMENTS DESIGNATED IN ASTM E814 (OR UL 1479).
- THICKNESS OF MATERIALS MUST BE ESTABLISHED BY FORMAL ASTM E814 OR UL1779 TESTS.
- THE LVI SHALL INSTALL FIRE STOPPING MATERIAL IN ACCORDANCE WITH CONSTRUCTION ELEMENTS AND MANUFACTURER SPECIFICATIONS.
- THE LVI SHALL THOROUGHLY CLEAN AND REMOVE ANY FIRE STOPPING MATERIAL THAT DRIPS OR FALLS ONTO WALL OR FLOOR SURFACES.

**SUBMITTALS:**

- ON AWARD OF THE PROJECT, SHOP DRAWINGS AND PRODUCT DATA OF STANDARD CATALOGED PRODUCTS SHALL BE SUBMITTED WITH APPLICABLE DATA THAT MEET THE PROJECT REQUIREMENTS. SUBMITTALS THAT INCLUDE INFORMATION ON MULTIPLE DEVICES OR EQUIPMENT ARE ACCEPTABLE ONLY WHEN ITEMS APPLICABLE TO THE PROJECT ARE IDENTIFIED WITH ARROWS, CHECK MARKS OR OTHER CALL OUTS. THE LVI SHALL CLEARLY IDENTIFY WHICH MANUFACTURER SOLUTIONS ARE BEING PROPOSED AT THE TIME OF THE BID RESPONSE.
- WHEN SHOP DRAWINGS ARE CREATED FROM OR INCORPORATED WITH SENTINEL'S DRAWINGS, THE LVI SHALL REMOVE THE ARCHITECTS, ENGINEER'S, AND SENTINEL'S TITLE BLOCKS AND REPLACE THEM WITH THE LVI'S OWN, UNIQUE TITLE BLOCK. THE LVI'S TITLE BLOCK SHALL INCLUDE AT A MINIMUM THE LVI'S NAME, ADDRESS AND TELEPHONE NUMBER, AND PROJECT NAME.
- SHOP DRAWINGS OF RELATED EQUIPMENT, DEVICES, AND MATERIAL SHALL BE SUBMITTED AT THE SAME TIME SO THE PROJECT TEAM CAN COORDINATE RELATED COMPONENTS.
- NO MATERIAL OR EQUIPMENT SHALL BE PURCHASED, RELEASED FOR MANUFACTURE, OR SHIPMENT WITHOUT FIRST OBTAINING THE APPROVAL OF THE PROJECT TEAM. ONLY THE LVI SHALL BE RESPONSIBLE FOR COSTS AND COORDINATION OF RETURNING ITEMS PURCHASED PRIOR TO APPROVAL.
- THE LVI SHALL SUBMIT AN ELECTRONIC COPY OF THE SUBMITTALS UNLESS DIRECTED OTHERWISE BY THE LIBRARY. THESE SUBMITTALS SHALL BE SUBJECT TO APPROVAL OR REJECTION WITH COMMENTARY. SUBMITTALS MAY CONSIST OF BUT NOT BE LIMITED TO ONE OR ANY APPROPRIATE COMBINATION OF THE FOLLOWING:
  - MANUFACTURER CUT-SHEETS
  - SHOP DRAWINGS (INCLUDING SINGLE-LINE DIAGRAMS)
  - CATALOG SHEETS
  - WRITTEN SPECIFICATIONS
  - ORIGINALS OR COPIES OF THE ABOVE

**TESTING, IDENTIFICATION, AND ADMINISTRATION REQUIREMENTS:**

- UTP HORIZONTAL AND BACKBONE CABLING
  - A LEVEL IIIe CERTIFIED TESTING DEVICE SHALL BE USED. THE TESTER SHALL HAVE BEEN FIELD CALIBRATED WITHIN THE LAST MONTH.
  - THE LVI SHALL ENSURE THAT THE APPROPRIATE ADAPTERS AND TEST CORDS ARE USED.
  - ALL PAIRS OF HORIZONTAL STATION AND BACKBONE CABLING SHALL BE TESTED FROM THE JACK TO THE PATCH PANEL OR BLOCK, AND FROM PATCH PANEL TO PATCH PANEL IN A BI-DIRECTIONAL MANNER.
  - ALL TESTING SHALL BE CONDUCTED ON THE PERMANENT LINK.
  - ALL TESTING SHALL BE IN CONFORMANCE WITH THE MANUFACTURER'S REQUIREMENTS TO OBTAIN APPLICATION PERFORMANCE WARRANTY CERTIFICATION.
- THE LVI SHALL PROVIDE TEST RESULTS AND CERTIFICATION AS TO THE COMMUNICATIONS CABLING SYSTEM'S ADHERENCE TO THE STANDARDS AND PERFORMANCE REQUIREMENTS REFERENCED IN THESE DRAWINGS.
- LABELS SHALL MEET THE LEGIBILITY, EXPOSURE, DEFACEMENT, AND ADHESION REQUIREMENTS OF UL969.
- LABELS SHALL BE PREPRINTED OR PRINTED BY A COMPUTER. LABELS WRITTEN BY HAND ARE NOT ACCEPTABLE.
- THE LVI SHALL THOROUGHLY LABEL THE ENTIRE COMMUNICATIONS CABLING SYSTEM FOR FUTURE MAINTAINABILITY.

- ALL CABLES SHALL BE LABELED AT THE FACEPLATE, THE PATCH PANEL JACK/PORT.
- THE LVI SHALL PROVIDE RECORD DRAWINGS IN AN AUTOCAD COMPATIBLE FORMAT AND IN PDF FORMAT.
- THE LVI SHALL THOROUGHLY DOCUMENT THE ENTIRE COMMUNICATIONS CABLING SYSTEM FOR FUTURE MAINTAINABILITY AND TROUBLESHOOTING.

**CUTOVER AND TRAINING REQUIREMENTS:**

- THE LVI SHALL COORDINATE ALL TRAINING WITH THE CUSTOMER TO DETERMINE THE EXTENT, DURATION, AND SCHEDULE OF THE TRAINING SESSIONS.
- THE LVI SHALL PROVIDE TRAINING FOR CUSTOMER PERSONNEL TO ENSURE KNOWLEDGE TRANSFER REGARDING DOCUMENTATION AND OPERATION OF THE COMMUNICATIONS CABLING SYSTEM.
- AT CLOSEOUT, CLEAN OR RE-CLEAN ENTIRE WORK TO NORMAL LEVEL FOR "FIRST CLASS" MAINTENANCE/CLEANING OF BUILDOUT PROJECTS OF A SIMILAR NATURE. REMOVE NON-PERMANENT PROTECTION AND LABELS. CLEAN EXPOSED FINISHES. TOUCH-UP MINOR FINISH DAMAGE, REMOVE DEBRIS AND BROOM-CLEAN SPACES. SANITIZE WORK, AND PERFORM SIMILAR CLEANUP OPERATIONS NEEDED TO PRODUCE A CLEAN CONDITION.

**SUPPORT AND WARRANTY REQUIREMENTS:**

- THE COMMUNICATIONS CABLING SYSTEM SHALL BE END-TO-END CERTIFIED BY THE LVI AND THE MANUFACTURER.
- AN EXTENDED MATERIAL, LABOR, AND PERFORMANCE WARRANTY SHALL BE PROVIDED BY THE MANUFACTURER. THE LVI SHALL DELIVER TO THE OWNER THE DOCUMENTATION OUTLINING THE TERMS AND CONDITIONS OF THE WARRANTY. A MINIMUM 20-YEAR APPLICATION PERFORMANCE WARRANTY IS REQUIRED.
- ONCE THE COMMUNICATIONS CABLING SYSTEM IS CERTIFIED, THE LVI SHALL REPAIR - AT NO ADDITIONAL CHARGE - ANY PART OF THE COMMUNICATIONS CABLING SYSTEM THAT IS NOT WORKING PROPERLY WITHIN 24 HOURS OF THE REPORT OF THE PROBLEM, UNLESS OTHER ARRANGEMENTS ARE MADE WITH THE MANUFACTURER ISSUING THE WARRANTY.

**UTP HORIZONTAL STATION CABLE:**

- ALL UTP CABLE SHALL BE CMP (COMMUNICATIONS PLENUM CABLE) FOR PLENUM SPACES AS SPECIFIED IN NEC SECTION 800-50.
- ALL UTP CABLE SHALL BE FROM THE SAME MANUFACTURER AND BE THE SAME TYPE.
- ALL CATEGORY 6 UTP CABLE AND CONNECTORS SHALL MEET OR EXCEED THE CHANNEL REQUIREMENTS AS DEFINED BY THE LATEST STANDARDS.
- ONLY UTP CABLES FROM THE FOLLOWING MANUFACTURERS SHALL BE CONSIDERED:
  - BERK-TEK - 10032092
  - HUBBELL - HC6RWP
  - UNIPRISE - CS37P WHT C6 4/23 U/UTP CPK 1KFT
- ONLY 8 POSITION, 8 CONDUCTOR (8P8C) CATEGORY 6 CONNECTORS SHALL BE USED. ONLY UTP CONNECTORS FROM THE FOLLOWING MANUFACTURERS SHALL BE CONSIDERED:
  - HUBBELL - HP648, HXJ6W
  - LEVITON - 69586-U48, 61110-RW6
  - UNIPRISE - UNP-6-DM-2U-48, UNJ600-WH

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|-----|------------|----------------------|
| 1   | 03/04/2024 | BID AND CONSTRUCTION |

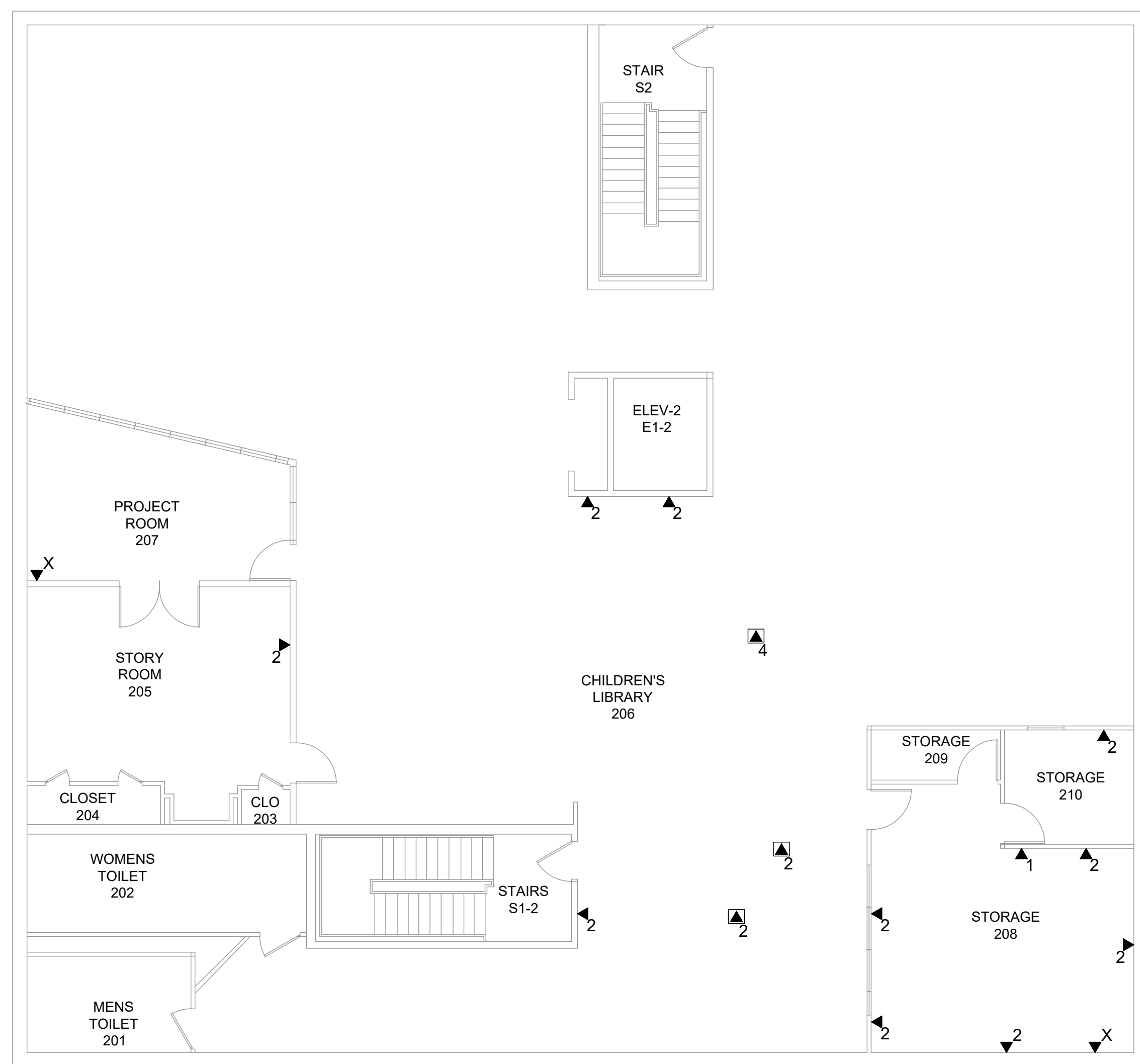
SCALE: AS NOTED

**CABLE SPECIFICATION**

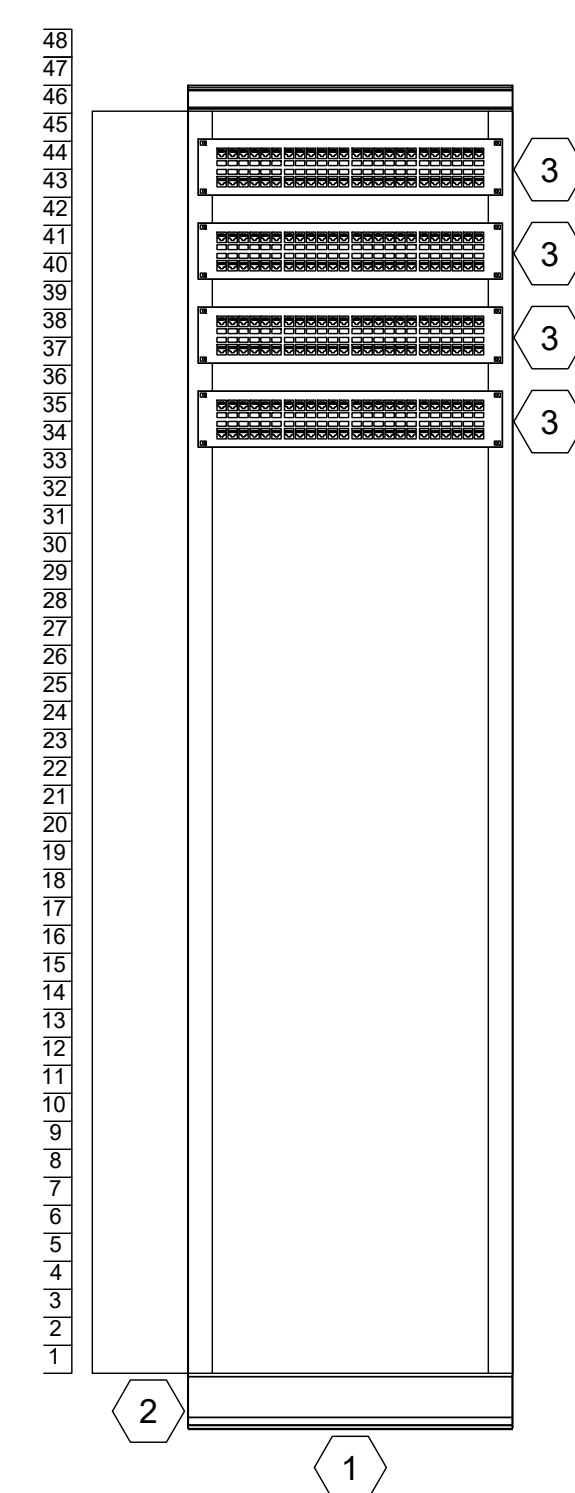
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**1** TECHNOLOGY PLAN - FLOOR 1  
PLAN VIEW  
1/8" = 1' - 0"  
NORTH



**2** TECHNOLOGY PLAN - FLOOR 2  
PLAN VIEW  
1/8" = 1' - 0"  
NORTH



**3** 2-POST RACK LAYOUT  
ELEVATION VIEW - FRONT  
1" = 1' - 0"

DRAWING KEYNOTES:

- 1 LOW VOLTAGE INTEGRATOR SUPPLIED AND INSTALLED 2-POST 19-INCH OPEN RELAY RACK - CPI PART #48353-703. LVI TO CONNECT 2-POST RACK TO TELECOMMUNICATIONS GROUNDING BUS BAR.
- 2 LOW VOLTAGE INTEGRATOR SUPPLIED AND INSTALLED 6-INCH WIDE VERTICAL CABLE MANAGER - CPI PART #13902-703.
- 3 LOW VOLTAGE INTEGRATOR SUPPLIED AND INSTALLED CATEGORY 6 2U 48-PORT PATCH PANEL TO SUPPORT TERMINATION OF HORIZONTAL STATION CABLING. REFER TO SPECIFICATION DRAWING FOR EXACT REQUIREMENTS.
- 4 EXISTING 2-POST RACK IN THE SERVER ROOM TO BE REMOVED AND REPLACED WITH THE NEW 2-POST RACK UPON COMPLETION OF THE NEW CABLING INSTALLATION AND THE REMOVAL OF THE EXISTING CABLING BY THE LOW VOLTAGE INTEGRATOR.
- 5 EXISTING WALL MOUNTED CABINET IN THIS ROOM TO BE REMOVED BY THE LOW VOLTAGE INTEGRATOR.
- 6 EXISTING TO REMAIN 110-BLOCKS TO SUPPORT VOICE CONNECTIVITY.

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**Bicsi**  
REGISTERED COMMERCIAL CONTRACTOR  
EXPIRES 12/31/26  
Reg. No. 119887  
*Jim Bicsi*

SCALE: AS NOTED

**TECHNOLOGY PLAN**

**T1.00**