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PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Work covered by this section shall consist of furnishing labor, equipment, supplies, materials, and testing unless otherwise specified, and in performing the following operations recognized as necessary for the installation, termination, and labeling of copper horizontal cable as described on the drawings and/or required by these specifications.
- B. The extent of the inter building Copper Horizontal Cabling Installation (The Project) will be as shown in the project drawings or as specified.
- C. The project's architects, engineers, contractor, manufacturer, and/or University employee is assumed to possess the knowledge, manpower, and materials applicable to the completion of the installation within the University's Information Technology Department's design guidelines and standards
- D. **The Contractor shall complete all work and turn over a completed and standards compliant horizontal cabling system to meet the requirements of the UNM IT network system. The scheduled date for completion of horizontal cabling and associated optical fiber, copper backbone and wireless systems shall incorporate the activation dates for services need to activate all networked services including voice, data, special systems needed for a Certificate of Occupancy, the testing and operation of Building Monitoring Systems, and Electronic Safety and Security Systems.**
- E. Ensure that power is provided in the design and installation for data outlets to power computers and devices for each user.

1.02 RELATED SECTIONS:

- A. The project's architects, engineers, contractor, manufacturer, and/or University employee are responsible to be knowledgeable with the provisions contained within the following and other related sections of these standards of the UNM IT department as they apply to the completion of the project's installation and design.
 - 1. Division 27, Section 27 00 00 Communications
 - 2. Division 27, Section 27 05 28 Pathways for Communication Systems.
 - 3. Division 27, Section 27 05 53 Identification for Communication Systems.
 - 4. Division 27, Section 27 11 16 Communications Cabinets, Racks, Frames, and Enclosures.
 - 5. Division 27, Section 27 11 19 Communications Termination Blocks and Patch Panels.

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6. Division 27, Section 27 11 23 Communications Cable Management and Ladder Rack.
 7. Division 27, Section 27 13 13 Communications Copper Backbone Cabling.
 8. Division 27, Section 27 13 23 Communications Optical Fiber Backbone Cabling.
 9. Division 27, Section 27 13 33 Communications Coaxial Backbone Cabling.
 10. Division 27, Section 27 15 23 Communications Optical Fiber Horizontal Cabling.
 11. Division 27, Section 27 15 33 Communications Coaxial Horizontal Cabling.
 12. Division 27, Section 27 15 43 Communications Faceplates and Connectors.
 13. Division 27, Section 27 08 00 Communications, Testing and Acceptance
- B. Design, manufacture, test, and install the project's data cabling systems in accordance to the UNM IT design guidelines and standards, industry standards, manufacturer's requirements and in accordance with NFPA 70 (National Electric Code), state codes, local codes, requirements of authorities having jurisdiction, and particularly the most recent editions of the following standards and specifications.
1. UNM IT Design Guidelines and Standards
 2. This Technical Specification and Associated Drawings
 3. ANSI/TIA-568-C.0, Generic Telecommunications Cabling for Customer Premises, and its published addenda.
 4. ANSI/TIA-568-C.1, Commercial Building Telecommunications Cabling Standard, and its published addenda.
 5. ANSI/TIA-568-C.2, Copper Cabling Components Standard, and its published addenda.
 6. ANSI/TIA-568-C.3, Optical Fiber Cabling Components Standard, and its published addenda.
 7. ANSI/TIA/EIA-569-B, Commercial Building Standard for Telecommunications Pathways and Spaces, and its published addenda
 8. ANSI/TIA/EIA-606-A, Administration Standard for the Telecommunications Infrastructure of Commercial Buildings, and its published addenda
 9. ANSI/J-STD-607-A, Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications, and its published addenda.
 10. Building Industries Consulting Services International (BICSI) Telecommunications Distribution Methods Manual (TDMM)
 11. ANSI/TIA-942, Telecommunications Infrastructure Standard for Data Centers, and its published addenda
- C. Determine and adhere to the most recent edition of these specifications when developing responses and during the installation.

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1.03 QUALITY ASSURANCE

- A. UNM IT shall inspect the project's design documents and installation while in progress.
- B. It is the responsibility of the Contractor to schedule regular and milestone inspection times with UNM IT. It is incumbent upon the Contractor to verify that the installation and material used has been inspected before it is enclosed within building features, buried, or otherwise hidden from view. The Contractor shall bear costs associated with uncovering or exposing installations or features that have not been inspected.
- C. The Contractor will provide electronic test results and a 20 year manufacturer's warranty with a copy of the warranty to be submitted to UNM IT at the completion of work.

1.04 COPPER HORIZONTAL SYSTEM DESCRIPTION

- A. The main Equipment Room (ER) and each Telecommunications Room (TR) shall house both voice and data backbone cabling and active equipment to support networking requirements. The ER in most cases shall be the main point of entry for outside services as well as main distribution point for all backbone cabling to the TR. The copper horizontal cable shall be employed using a universal cabling system between the work area outlet and the ER or TR for voice, data and special systems connectivity.
- B. Copper cabling in the horizontal system shall consist of plenum rated Category 6 premise cables and connectors, pathways, patch panels, terminations, equipment racks, cable management labeling and documentation. The end-to-end link begins at the outlet and shall include the work area outlet with angled keystone jacks using insulation displacement contacts (IDC), Category 6 premise cable, and Category 6 IDC IDC patch panels and termination blocks terminating in the designated TR or ER. All components shall be of the same manufacturer's warranted cabling system. All cables shall be supported in the equipment racks and pathways accordance with the manufacturer's specifications and recommendations.
- C. All cables and termination hardware shall be 100% tested for defects in installation and to verify cable performance under installed conditions. Testing shall be done for link compliance to UNM IT requirements. All conductors and system components of each installed cable link shall be verified useable prior to system acceptance.
- D. Any defect in the cabling system and/or link installation including but not limited to cable, connectors, feed-through couplers, patch panels, connector blocks and all associated system components and parts shall be repaired or replaced at the providers expense in order to ensure 100% useable conductors in all installed cables.

PART 2: PRODUCTS

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2.01 GENERAL

- A. The materials and products specified herein reflect the minimum acceptable standards of fabrication and manufacturing.
- B. All materials and products supplied by the Contractor and specified herein are to be new, unused, of first quality and in original packaging or shipping containers or as shown on drawings, specified and described in this section.
- C. All outlets and termination hardware shall be 100% tested for defects in installation and to verify cable performance under installed conditions. Testing shall be done for link compliance to UNM IT requirements. All conductors and system components of each installed cable link shall be verified useable prior to system acceptance. Any defect in the cabling system and/or link installation including but not limited to cable, connectors, feed-through couplers, patch panels, connector blocks and all associated system components and parts shall be repaired or replaced at the providers expense in order to ensure 100% useable conductors in all installed cables.
- D. All products shall be a part of the provided manufacturer's cabling system.
- E. Approved manufacturers products and systems shall be technically compliant systems that include the manufacturer's system partners:
 - 1. AMP
 - 2. Belden
 - 3. CommScope/Systimax/Uniprise
 - 4. Ortronics
 - 5. Siemons
- F. New buildings and major renovations will be treated differently than minor remodels in existing buildings.
 - 1. New building construction and renovations will utilize a minimum of Category 6, 23 gauge cabling and IDC termination hardware as specified in the project specifications, drawings and approved by UNM IT through RFI submittal.
 - 2. For Adds Moves or Changes, match the existing manufacturer's cabling systems and termination hardware with a minimum of Category 5E in areas previously installed with Categories 5E, 5 or 3 for both voice and data unless directed otherwise by UNM IT. Including those areas where separate voice and data closets are utilized. In areas where Category 6, Category 6 10G UTP or F/UTP has been installed, match the new to be installed cabling with the exact manufacturer and category as the existing cabling system. Update the manufacturer's warranty to include any additions.
- G. All horizontal, riser and intra cables shall be plenum rated unless otherwise specified and approved by UNM IT. All cables must have been verified to UL 444 and C22.2

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- H. All test equipment shall be certified, calibrated to meet manufacturers' requirements and meet the performance requirements of Underwriters' Laboratories (UL), ETL – SEMKO, the manufacturer's systems specifications/requirements and most current TIA/EIA standards applicable at the time of contract award to the installation contractor as it applies to the specified testing application.
- I. All testing shall be performed using a Fluke DTX 1800 or UNM IT approved equal complete with updates and certified by the manufacturer capable to provide LinkWare reports.
- J. Contact the UNM IT for approval of cabling systems before installation. Verify exact cabling requirements with UNM IT.
- K. UNM IT will provide patch cords and make all connections to campus network and phone system.

2.02 SUBSTITUTIONS

- A. Product substitutions shall be managed according to the following guidelines:
 - 1. All substitutions shall be submitted to and approved by UNM IT.
 - 2. Acceptance of substitutions is at discretion of UNM IT. UNM IT reserves the right to determine suitability of the substitute product and reject any and all materials submitted for substitution. Submit requests for substitutions in writing to UNM IT for approval within 10 days of contract award, or sooner if required to maintain the construction schedule.
 - 3. Products rejected or otherwise judged unsatisfactory by the UNM IT will not be authorized for use in completing the work. Any unapproved products discovered as part of the installation will be removed and replaced with UNM IT specified and approved products at the Contractor's expense.
 - 4. Project Drawings may be based on equipment configuration of a particular manufacturer. If a substitution is approved, the Contractor shall make changes needed to accommodate the substitution at no expense to the University of New Mexico, including work under other divisions.

2.03 DATA CABLING

- A. Approved cabling for new buildings shall meet the following requirements:
 - 1. Each Outlet shall be minimally configured with two (2) - 4 pair, Category 6 cables, unshielded twisted pairs, 23 gauge, bare copper, with overall blue jacket, CMP (Plenum) rated.
 - 2. Cable performance shall be tested and be verified by a recognized testing agency to

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the most current version of TIA/EIA 568 standard requirements for performance @ 250 MHz with a manufacturer's cabling performance warranty for 20 years.

B. UNM Minimum Compliant Installed Horizontal Copper Permanent Link Requirements

1. Category 6 systems that are technically approved must be guaranteed by the Contractor and Manufacturer to meet the link performance field testing as prescribed in the UNM Minimum Complaint Installed Link Headroom Table (below) for Category 6 after installations.
2. Currently UNM is specifying Single Mode Optical Fiber to the desk top for link/channels requiring 10 G performances to the desktop. Refer to UNM IT Specification: Communications Optical Fiber Horizontal 27 15 23, for exact specification requirements.
3. Note: The minimum TIA 568 performance test levels for Category 6 Link or Channel testing that establish a PASS/FAIL test report does not constitute the minimum UNM acceptable performance level for permanent links. The minimum UNM acceptable link performance for Category 6 cabling systems are stated in the table below.
4. The table below represents the current UNM IT acceptable performance level. The actual UNM IT minimum performance requirements are set 2 db above the most current TIA minimum Category 6 performance level for each perimeter.

UNM Minimum Complaint Installed Link Headroom Table

Cable Type	NEXT db	PSNEXT db	ACRF db	PSACRF
100 MHz Category 5E	43.8	41.3	26.2	23.2
250 MHz Category 6	37.3	34.7	17.2	15.2

C. Installation Requirements for UNMH Permanent Links

1. The standard telecommunications outlet configuration for UNMH installations is 3 Category 5E permanent links. In areas of high inaccessibility install 4 permanent links with approval from UNMH IT. Provide links and test to the TIA 568 requirements for Category 5E permanent links.
2. Outlets assigned for PYXIS installations install 2 Category 5E permanent links at 80" AFF. Provide links and test to the TIA 568 requirements for Category 5E permanent links and the UNM Minimum Compliant Installed Horizontal Optical Fiber Permanent Link Requirements.

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3. Outlets for Patient Monitoring install 4 Category 5E permanent links at 60" AFF. Terminate on red jacks at patient care end. Provide links and test to the TIA 568 requirements for Category 5E permanent links. Provide a 48 port dedicated patch panel and install the patch panel in the first position of the rack.

D. Installations Requiring Category 6A F/UTP Cabling for 10 G Performance

1. The primary horizontal cabling system for 10G networks is to use single mode optical fiber to the desktop for these applications. However, there are Category 6A F/UTP Cabling systems currently installed in several buildings capable of supporting 10 G. The future installation of 10G cabling systems using Category 6A F/UPT must be approved prior to design by UNM IT. Refer to UNM IT Specification: Communications Optical Fiber Horizontal 27 15 23, for exact specification requirements.
2. Provide single 4-pair, category 6A F/UTP, shielded twisted pairs, 23 gauge, bare copper, with overall blue jacket, CMP (Plenum) rated.
3. Cable performance shall meet and be verified by a recognized testing agency to the most current version of TIA/EIA 568 standard requirements for performance @ 500 MHz with a cabling performance warranty for 20 years including.
4. UNM acceptance requires 2 db of head room tested at 10 G, in all test perimeters established by TIA for Category 6A permanent links.
5. The following manufacturer's warranted systems are approved unless otherwise specified:
 1. AMP
 2. Belden
 3. CommScope/Systimax/Uniprise
 4. Ortronics
 5. Siemons

2.04 VOICE CABLING

- A. All cabling for voice lines shall be provided as a Universal Cabling System. All Voice cabling must follow data cabling guidelines with either Category 6 or Category 6A F-UTP cabling as per section 2.02. Category 3 cabling shall not be installed for any application.

2.05 SECURITY, SURVEILLANCE, LIFE SAFETY, FIRE AND OTHER ALARMS

- A. Install Category 6 cabling to the aforementioned UNM Requirements for data cabling for IP protocol devices and systems. Install, terminate and test as part of the

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Universal Cabling System.

- B. For dedicated voice lines such as security/alarm panels, elevator phones, and blue light emergency telephones, cabling shall be terminated on a 110 block in the TR and *shall not be* terminated on the voice/data patch panels unless otherwise specified. Contractor is responsible to ensure the cable is of the proper jacket rating for the application.
- C. Provide voice grade patch panels: 8 position (8P4C) modular, high density, 48 port, pins (3, 4, 5 and 6) activated, with Female Telco connectors. Connect the patch panel with 25 pair cables and terminate on 110 blocks using 4- C-4 and 1 C-5 connectors. Provide OR-808004343 Telco Patch Panel or approved UNM IT equal.
- D. When specified install a Universal Cabling System for IP security, surveillance, fire and life safety data systems that terminates in the data patch panels in labeled sequential order. Cabling for IP cameras shall be provided for under the provisions in this specification and as specified by the manufacturer, project specification and UNM IT.

PART 3: EXECUTION

3.01 General

- A. This section describes the installation locations for the products and materials, as well as methods and UNM IT standards associated with the structured cabling system installation portion of the project. These specifications, along with the drawings and other supplied documentation shall be followed during the course of the installation.
- B. The contractor is required to be currently listed as a registered manufacturer certified installer and warranty provider.
- C. The Contractor shall be an approved contractor under UNM RFP 779. The contractor and their installation team shall be familiar with the requirements of RFP 779, acceptable UNM IT practices, design requirements specific to UNM IT and shall provide a cabling system under the requirements of the fore mentioned contract and practices and in accordance with this document.
- D. Contractors shall provide personnel for cabling and infrastructure installations who are trained and certified by the manufacturer in the installation and testing of the submitted products.
- E. The contractor is required to supply all necessary tools, equipment, accessories, safety equipment, protective clothing, etc., as customary for the craft and necessary for the installation.

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- F. The contractor shall verify space, infrastructure requirements, cabling requirements and outlet locations with UNM IT and the OCP Project Team before beginning the cabling installation. All discrepancies shall be documented by an RFI submitted to the OCP Project Team and UNM IT.
- G. The contractor shall verify the cable type and jacket fire rating required with Architect and the assigned UNM IT Facilities Manager before procurement and installation. The contractor is to ensure that the cable type meets the requirements of its operating environment.

3.02: COPPER HORIZONTAL CABLING INSTALLATION; UNIVERSAL CABLING SYSTEM

- A. The purpose of a UCS is to cable a building for information needs without knowing specifically what equipment will be utilized. A UCS is geared for long term sustainability and flexibility. A USC is a cabling system where voice, data, video, and other low voltage services are provided over the same cable media.
- B. Contractor is responsible to obtain and follow the manufacturer's installation instructions for the approved products, proper installation, termination and wire management for the cabling system.
- C. The copper horizontal cabling shall be terminated at the TR on patch panels as per specifications in Division 27, Section 271119 Communications Termination Blocks and Patch Panels, and at the work area Telecommunications Outlets (TO) as per Division 27, Section 271543 Communications Faceplates and Connectors.
- D. For older buildings with separate voice and data closets, voice designated cabling may be specified to be terminated on 110 style blocks or existing 66 style blocks where capacity exists. Check with UNM IT Facility Manager for specific instructions.
- E. For dedicated voice lines such as security/alarm panels, elevator phones, and code blue emergency telephones, cabling shall be terminated on a 110 block in the TR and not on the patch panel and in accordance with the products listed in this section unless otherwise specified.
- F. The cabling contractor is to include in their scope of work the installation of all wireless access points and patched connections to the device as designated on the plans. The owner will provide the access points to the contractor for installation. The owner will activate all access points upon the completion of their installation.
- G. The Contractor shall install and guarantee, demonstrate with test results that each installed permanent link meets the requirements for link performance as stated in the UNM Minimum Complaint Installed Link Table. All links that do not meet the tested performance link criteria shall be repaired or replaced by the contractor prior to test results submittal to meet final acceptance.

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- H. Cabling such as video surveillance, building monitoring, card access, IP alarms etc, shall be installed and terminated on data patch panels in accordance with and a 4 post equipment rack for special systems. Install as specified in Section 2.02 and Section 3.02 E fore mentioned.
- I. Where patch panels are mounted in equipment racks, equally distribute cables on each side using vertical wire management, and into the horizontal strain relief wire management so as not to exceed wire management fill capacity. The patch panel shall be split into two halves so that ports 1 thru 12 and 25 thru 36 feed from the same side and 13 thru 24 and 37 thru 48 feed from the opposite side. Leave a minimum 4 inches of slack at the patch panel for re-termination of cables.
- J. Cables are to be neatly dressed with Velcro tie wraps, and secured to the strain relief bars at the back of the patch panel. Cable ties are not allowed.
- K. All cables at the back of the patch panel are to be labeled as per Division 27, Section 27 05 53 - Identification for Communication Systems.
- L. New ER's and TRs must be lighted, lockable, free from dust, dirt, and other foreign materials before the installation of any termination hardware or the termination of copper or fiber optic cables. The door to the telecommunication rooms must be closed during termination processes.
- M. All cables need to be terminated sequentially in order by the station ID on the patch panel.
- N. All cables shall be terminated on patch panels and telecommunications outlets using the TIA T568B wiring configuration unless otherwise specified.
- O. The cabling contractor shall verify and ensure cable fill in pathways not to exceed 40% cable fill for new installations and 60% for additional cabling in renovated areas. The contractor is responsible for installation of additional pathways where cables added will exceed the specified cable fill ratios.
- P. Provide a nylon pull cord in each empty conduit to facilitate future installation of cables.
- Q. Horizontal cable lengths including all slack, directional and elevation shall not exceed 295 feet. Contact UNM IT if this is not possible.
- R. Provide a minimum of 10 feet of service loop cable at the TRs to be contained and routed in the cable tray. Do not coil the cable to achieve the service loop.
- S. A minimum of 18 inches of slack shall be installed above the ceiling at the end of the conduit run near the work area outlet and supported using a category compliant method adequate to permit installation and removal of device for inspection without damage to cable or connections.
- T. Cable bend radius shall not be greater than the manufacturer's specification.

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- U. Care shall be taken so as not to damage cable during the installation process and that manufacturer's pull tension specification is not exceeded. Ensure that cable routing meets all clearances specified in the NEC and TIA applicable references.
- V. Within TRs, cables shall be snugly wrapped using Velcro reusable cable ties, a minimum of every three feet for cable organization, and installed in a neat and workmanlike manner. Cable ties shall be tightened so as not to deform cable jackets and thus affect cable performance.
- W. Maximum strip length for cable jackets shall meet the manufacturers' requirements.
- X. Dust caps are required to be placed over the terminated cabling at the back of the patch panel following manufacturers' specifications.

3.03: RELOCATION AND REMOVAL OF EXISTING TELECOMMUNICATIONS CABLING AND TELECOMMUNICATIONS OUTLETS.

- A. Where the relocation of an existing TO is required and the new location will allow the existing cables to reach, the cables may be disconnected and removed back to the pathway or raceway system for installation into the new TO. Relocation requires a retest of all affected cables and relabeling, if necessary, as per Division 27, Section 270553 Identification for Communication Systems.
- B. Where existing cables will not reach, new cables shall be installed as per section 3.02.
- C. Where the removal of existing TO's is required, the contractor shall remove the TO, associated surface mount raceway, and cables back to the source.
- D. Upon removal or relocation of an existing TO, a corresponding IBN and as-built information is required.

3.04: LINK TESTING:

- A. Contractor shall notify the responsible UNM IT Facilities Manager before the start of testing. UNM IT personnel may accompany the contractor during testing for verification purposes.
- B. The contractor shall schedule a site survey with IT Facilities at the completion of labeling and prior to testing with UNM IT prior to the start of testing to verify labeling.
- C. 100% testing of all cabling is required.

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- D. The approved tester for UNM IT installations is the Fluke DTX 1800. All other testers shall be approved UNM IT. In the event of different test results from an approved substituted tester, UNM IT will decide upon which test result is valid.
- E. UNM IT accepts only Permanent Link test perimeters for acceptance. UNM IT will not accept Channel test perimeters.
- F. In addition to testing for compliance for warranty and TIA 568 standards compliance, the Contractor is to guarantee and demonstrate with test results that each installed permanent link meets the requirements for link performance as stated in the preceding Section 2.03 – B - 4, UNM Minimum Complaint Installed Link and Section 2.03 D, Installations requiring Category 6A F/UTP Cabling for 10 G Performance.
- G. The requirements of the UNM Minimum Complaint Installed Link supersede Manufacturer and TIA 568 testing for compliancy and acceptance by IT.
- H. All marginal (*) Pass/Fail test results will not be accepted by UNM.**
- I. All links that do not meet the tested performance link criteria shall be repaired or replaced by the contractor prior to test results submittal. This includes a Star Pass, Marginal Pass or Non Complaint UNM Installed Link Headroom Pass will not be accepted by UNM IT.
- J. All Links that do not meet the preceding requirements stated above in Section E, shall be replaced or repaired by the Contractor at no charge to UNM.
- K. The Contractor shall notify UNM IT upon discovery any problems related to the manufacture's quality, high incidents of failure or other anomalies discovered during testing such as trends of failing test results and cable not meeting manufacturer's specifications.
- L. The contractor shall deliver 2 CD's with the complete test results in electronic format on each disk. Provide test results in the following format: Provide one in an open searchable Fluke LinkWare format and the second in a locked or closed format.
- M. UNM IT may perform random verification testing and/or commissioning as part of acceptance of all copper cable testing or provide a third party commission agent to provide testing and inspection services. The Contractor shall provide all test results to UNM IT prior to the start of the commissioning process and cooperate with the UNM IT in the process.

3.05: AS-BUILT INFORMATION and CLOSEOUT

- A. Contractor shall provide as-built information to UNM IT to accompany all test result information.

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- B. As-built information shall be in electronic format in AutoCAD Version 2000. Indicate location of all outlets, distribution cable trays, junction boxes, patch panels, equipment rack layout with cable designators and counts and all additions and deletions pertaining to the copper horizontal cabling system. Include correct outlet labeling next to all telecom symbols.
- C. The Contractor shall provide one set of preliminary as-built information and test results to UNM IT including all test result information 30 days prior to occupancy to ensure the scheduled installation and activation of UNM IT equipment and services.
- D. **Failure of the contractor to provide the required as-built information in a timely manner for UNM IT to prepare cutover information may cause an installation delay for the project due to the contractors not meeting these requirements. The delivery of the as-built documentation needs to be coordinated with UNM IT as a project milestone.**
- E. Partial as-builds shall be submitted as additional cabling is completed to meet installation schedules.
- F. The Contractor shall provide at substantial completion a list of all uncompleted work and a punch list of open items to the IT Facilities Manager at substantial completion and prior to UNM scheduled activations.
- G. If construction drawings are not utilized, contractor shall provide all telecommunications location information on an accurate and electronic formatted scaled floor plan preapproved by UNM IT.
- H. Partial as-builds shall be submitted as additional cabling is completed to meet installation schedules. The Contractor shall provide one set of preliminary as-build information, equipment layouts including elevations and test results to meet the schedule requirements of the UNM IT equipment installation and activation.
- I. As final submission, provide a 2 CD with copies of the IBNS in Excel format one copy shall be locked and the second shall be in an open, searchable format. Provide floor plans with outlet locations and ID's in Auto Cad and Complete Test results (not just summary sheet) in LinkWare.
- J. The final as-built shall be submitted with all corrections made no later than 30 days after cabling installation is completed.

3.06: SYSTEM WARRANTY REQUIREMENTS:

- A. Contractor shall provide a 20-year extended manufacturer's warranty in addition to the contractor's warranty provided to the project. The warranty shall be titled to the UNM IT Department. The warranty shall begin at the system acceptance date and remain in effect for a period of 20 years from that date.

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- B. The umbrella warranty provided for the horizontal copper cabling system shall be issued by the manufacture of the cabling system. The contractor shall provide to UNM IT any additional warranties from partners in addition to the cabling system warranty, i.e. cable manufacturer, contractor warranties. Acceptable manufacturer warrantees include:
1. AMP
 2. Belden
 3. CommScope/Systimax/Uniprise
 4. Ortronics
 5. Siemons
- C. All installed systems must conform to the manufacturer's official published specifications. Any exceptions agreed to by the contractor and the manufacturer shall be approved by UNM IT. The contractor shall submit in writing and obtain approval from UNM IT for all exceptions pertaining to the cabling system's warranty prior to the request being submitted to the manufacturer.
- D. The warranty shall include a warranty of the applications published by the manufacturer at the time of the warranty application. The contractor is to provide to UNM IT a list of these applications.
- E. The contractor will provide UNM IT with a copy of the warranty application at the time of submittal to the manufacturer.
- F. Contractor shall perform all labeling requirements and provide testing documentation for verification and submittal to the manufacturer and UNM IT. A copy of the warranty application and all documentation and test results shall be submitted simultaneously to UNM IT and the manufacturer.
- G. Contractor shall provide copies floor plans sent to the manufacture showing final locations of all telecommunication outlets, patch panels, termination blocks and spaces prior to submission of the warranty application. The contractor is to ensure that the warranty submittals match the submitted as-built.
- H. Contractor shall submit for the warranty all cable records to reflect moves, adds, and changes as built.
- I. The contractor shall include and schedule UNM IT in all site surveys and inspections that relate to the warranty application or processes.

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END OF SECTION

