

September 5, 2014

OFFICE OF TECHNOLOGY SERVICES CABLING STANDARDS

General

Illinois Institute of Technology holds itself and contractors it engages to a high degree of integrity and workmanship. This document sets out IIT's standards, expectations, and the manner in which cable contractors work with Office of Technology Services' personnel to complete each job. IIT expects each contractor to be familiar with these standards prior to quoting a job and holds the contractor responsible to provide a copy of these standards to the team performing the actual work on IIT's premises. Any deviation from these standards must be discussed in advance with IIT's Director of Telecommunication Services or the lead IIT Telecommunication Services Cabling Technician. They will communicate with IIT's Planning, Design and Construction project managers in appropriate cases.

A. Standards and Codes Compliance

1. Equipment, devices, apparatus, systems, and installation provided shall be entirely suitable and safe for each intended application and be in full compliance with applicable standards, requirements, rules, regulations, codes, statutes, ordinances, etc. of municipal, county, state and federal governments.
2. The installation must meet all industry standards and practices, including but not limited to, the following:
 - a. Electronics Industries Association/Telecommunications Industries Association (EIA/TIA) Proposed standard for Telecommunications Wiring of Commercial Buildings (SP-1907B); this standard will be known as EIA/TIA – 568 upon adoption from the EIA.
 - b. Building Industry Consulting Service International (BiCSi) Telecommunications Distribution Methods Manual.
 - c. Underwriter's Laboratories' (UL) approved electrical and cabling materials and
 - d. Compliance with current OSHA regulations and with the National Electrical Code.
 - e. New materials, equipment, parts and pieces. Used, rebuilt, or refurbished material, equipment, parts and pieces are not acceptable, unless contractor is given prior approval by Telecommunication Services.
3. Submission of Certificate of Insurance before commencing any work.

B. Personnel

1. Journeymen, apprentices, and technicians working on the IIT campus must adhere to generally-accepted telecommunications standards and be trained and certified by at least one of the following:
 - a. CommScope/SYSTIMAX Solutions
 - b. BiCSi (Building Industry Communications Standards)
2. Cabling contractors must hold a valid, current license from the City of Chicago.
3. Contractor performing work on the Main Campus must park vehicles in the visitor's parking lot at 33rd and State Street.
4. Contractors performing work at the Research Tower, contractor must park vehicles in the IITRI parking lot on 34th and State Street.
5. The following three items apply to work inside the Research Tower:
 - a. Contractor must access the building(s) through Shipping and Receiving after signing in at the first floor security desk.
 - b. Contractor must bring up all necessary materials through Shipping and Receiving.
 - c. Contractor must be directed and supervised by an IIT information technology employee.

C. Materials: Copper

1. All materials for the job are to be CommScope/SYSTIMAX manufactured and backed by its manufacturer's warranty. Materials include, but are not limited to, GigaSPEED XL Category 6 1071 non-plenum cables, GigaSPEED X10D high-density shielded solution cable, as well as corresponding information outlets, fiber shelves, patch cords, etc., unless otherwise specified for the job. SYSTIMAX installation guidelines are to be followed.
2. Cable is PVC coated and certified to the Category 6 draft 2a addendum to ANSI/TIA/EIA 568-B standard.
3. All materials for the job to be on site as of the day the job begins.
4. All Category 6 patch cords are to be provided with the job:
 - a. Voice patch cord: one 3' blue or 3' green to match the cable and information outlet color.
 - b. Yellow data patch cords: one 5' and one 7' for each yellow information outlet.
 - c. Orange data patch cords: one 5' and one 7' for each orange information outlet.
 - d. IIT will provide quantity and lengths of non-standard patch cords needed to quote the job in the scope of work; otherwise 3a-c above applies.
 - e. Data patch cords will be Category 6 certified and will not have boots on the ends.
5. Copper cabling: Four pair, twisted 23 American Wire Gauge (AWG) and PVC coated.
6. Information outlets:
 - a. All four pairs terminated on each end with a GigaSPEED XL information outlet.
 - b. Voice 1 information outlet is blue in color with matching blue inserts on the client side of the drop.
 - c. Voice 2 information outlet is green in color with matching green inserts on the client side of the drop.
 - d. Data 1 information outlet is yellow in color with matching yellow inserts on the client side of the drop.
 - e. Data 2 information outlet is orange in color with matching orange inserts on the client side of the drop.

- f. In a quad outlet configuration that contains both voice and data, the upper left information outlet is blue, and the upper right information outlet is green.
- g. In a triplex outlet configuration, the left information outlet is blue (voice 1), the middle information outlet is yellow (data 1), and the right information outlet is orange (data 2).
- 7. Steel surface raceway system (i.e., 700 series or 2000 series) junction boxes with a flush-mount faceplate.
- 8. All cable outlets will be individually labeled and labeled identically at both ends.
- 9. Data station distribution cables constructed with Category 6 data grade media and shall originate on a Category 6 patch panel located in the Main Distribution Frame (MDF) or Intermediate Distribution Frame (IDF) location.
- 10. Total station cable length will not exceed 295 feet or 90 meters.
- 11. MDFs' and all IDFs' wiring center originate on enclosed racks or cabinets.
- 12. All Category 6 station cabling will be tested to Category 6 specifications.

D. Materials: Fiber Optic

The standard fiber optic cable for IIT is Systimax/CommScope LazrSpeed 550 for 50 micron for multimode and Systimax/CommScope TeraSpeed zero water peak for single mode. The IIT OTS representative must approve substitutes. Cable is UL listed NEC type OFNR and exceeds the requirements of FDDI-ANSI X3T9.5 PMD document for optical fiber products.

The Office of Technology Services currently specifies the installation of 50/125 micron multimode and 8-9/125 micron singlemode fiber optic cable to support data communication services on IIT campus.

Fiber installed on IIT's Main Campus must meet or exceed the following specifications:

1. Multimode Fiber

Installed cable shall be 50/125 micron core/cladding, enhanced grade, multimode, and graded index glass fiber

- a. *Performance:* Installed fiber must meet or exceed the following performance specifications.

Wavelength (nm)	Max. Attn.(dB/Km)	Min. Bandwidth (Mhz*Km)
850	3.5	200
1300	1.0	500

- b. *Cable Construction:* Installed cable must be manufactured to meet or exceed the following specifications:
 - i. Inside cable: Inside-rated cable shall be used for all interior installations. Installed cable shall meet or exceed the following specifications:
 - i) Tight buffered 900 um, mechanical strippable Teflon.
 - ii) EIA/TIA -598 color coding for fiber optic cable.
 - iii) Aramid yarn strength member, capable of supporting a short-term tensile load of 400 lb. without stretching.
 - iv) Capable of bend radii as small as 20 x outside cable diameter (under installation load) and 10 x outside cable diameter (long term load).

- v) Capable of a minimum crush resistance of 850 lb./in.
- ii. *Outside Plant Cable*: Outside plant cable shall be used for all applications where cable is to be run in underground conduits. Outside plant cable may not be used for interior and shall meet the following specifications:
 - i) Gel filled buffer tube, 250 um, acrylate.
 - ii) EIA/TIA-598 color coding for fiber optic cable.
 - iii) Flooded core
 - iv) Capable of bend radii as small as 20 x outside cable diameter (under installation load) and 10 x outside cable diameter (long term load).
 - v) Capable of a minimum crush resistance of 850 lb./in.
 - vi) All outside plant fiber cable will be armored
 - vii) The cable will come with at least one rip cord, preferable two rip cords

2. Single Mode fiber

- a. *Performance*: Installed fiber must meet or exceed the following performance specifications

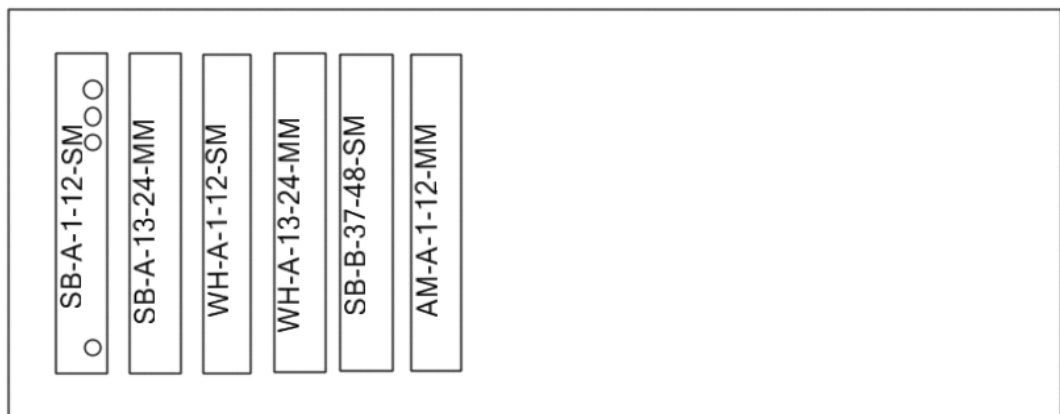
Fiber cable types	Wavelength (nm)	Max. Attn. (dB/Km)
Singlemode, Inside plant	1,310	1.0
	1,550	1.0
Singlemode, Outside plant	1,310	0.35
	1,550	0.2

- b. *Construction*: Riser or plenum rated cable shall be used for all interior installations. Installed cable shall meet or exceed the following specifications:
 - i. *Inside Cable*: Riser cable shall be used for all interior installations and shall meet the following specifications:
 - (i) Tight buffered 900 um, mechanical strippable Teflon.
 - (ii) EIA/TIA -598 color coding for fiber optic cable.
 - (iii) Aramid yarn strength member, capable of supporting a short-term tensile load of 400 lb. without stretching.
 - (iv) Capable of bend radii as small as 20 x outside cable diameter (under installation load) and 10 x outside cable diameter (long term load).
 - (v) Capable of a minimum crush resistance of 850 lb./in.
 - ii. *Outside Plant Cable*: Outside plant cable shall be used for all applications where cable is to be run in underground conduits. Outside plant cable may not be used for interior applications and shall meet the following specifications:
 - i) Gel filled buffer tube, 250 um, acrylate.
 - ii) EIA/TIA -598 color coding for fiber optic cable.
 - iii) Flooded core
 - iv) Capable of bend radii as small as 20 x outside cable diameter (under installation load) and 10 x outside cable diameter (long term load).
 - v) Capable of a minimum crush resistance of 850 lb./in.
 - vi) All outside plant fiber cable will be armored
 - vii) The cable will come with at least one rip cord, preferable two rip cords.

3. Installation Standards

a. *Underground Inter-Building Cable*

- i. All fiber cable is to be protected with inner duct. After installation, inner ducts are to be permanently labeled as containing fiber optic cable. Instruction for labeling will be provided by OTS.
- ii. All cable and inner duct are to be fully supported throughout its entire run. At no time shall more than 400 pounds of tension be placed on any fiber cable while it is being pulled through tray or conduit. It is preferred that all fiber cable be pulled with hand power only. If power winches or mechanical advantage devices are used to pull cable, a tension meter must be used to insure that maximum tension is not exceeded. Alternatively, a "mechanical fuse" rated at 350 pounds may be included in the linkage. Torsion shall be avoided by the use of a swivel at the cable end. While under tension, a minimum bend radius of 20 times the outside cable diameter will be maintained through the use of pulleys and sheaves where required. After pulling, no bend may have a radius, at rest, of less than 10 times the outside cable diameter.
- iii. Use riser-rated flexible raceway for indoor fiber and outside-rated innerduct for outside plant fiber (OSP).
- iv. The fiber patch cords are to be CommScope/SYSTIMAX single or multi-mode, inside plant, and consist of a single, buffered, graded-index fiber, all corresponding to the type of fiber being installed.
- v. The fiber patch cords are multimode or CommScope/SYSTIMAX single mode, inside plant, and consist of a single, buffered, graded-index fiber.
- vi. Labeling:
 - (i) Labeling on cabinets shall be accomplished by a P-touch (Brother labeler) or a similar device
 - (ii) Use black on white tape.
 - (iii) Labels shall identify the far end location(building code), tray, strand count and type of fiber (see the Diagram below)
 - (iv) Letters should be used for trays
 - (v) Building codes can be found in Annex A below.



b. *Indoor Intra-Building Cable*

- i. All pathways will consist of innerduct, conduit or a combination of both.
- ii. If broken or split, this innerduct shall be spliced with the proper fittings.
- iii. Where it enters a junction box or slack box the innerduct will be connected to the wall mount box with the proper fitting to securely fasten the innerduct to the enclosure.
- iv. Cables and innerduct shall be rated according to TIA/EIA and NEC codes for the environment in which they are installed.
- v. Support for innerduct shall be no greater than 4' intervals.
- vi. All spare innerduct will have a pull string provided for future use.
- vii. Pull points shall be installed or used at intervals not to exceed the manufacturer's specifications for the cable being placed.
- viii. No service loops shall be left at indoor pull points.
- ix. Service loops shall be installed only where a cable leaves a building or is terminated. Those loops shall be between 25 and 50 feet in length.

c. *Labeling: See 3.a.vi paragraph above*

4. Terminations

- a. Fiber optic cables are terminated in Fiber Optic Termination Boxes (FOTB) of sufficient size to permit termination of all fiber strands. In the event that an enclosure must be oversized (number of termination ports) due to manufacturer's product standardization, specify the next larger available enclosure size. Only one Fiber Optic Termination Box in each termination location is desired.
- b. Adapter plates that accommodate LC type connectors are specified for cable installed within each Fiber Optic Termination Box. Install blanking plates or leave uninstalled spaces open.
- c. All glass strands of each fiber optic cable is terminated on connectors. All fiber optic terminations are made with epoxy style or anaerobic connectors.

5. Testing

- a. *Before Installation:* It is suggested that each individual fiber in a cable be tested with an OTDR for length and transmission anomalies while on the reel before installation.
- b. *After Installation and termination*
 - i. All single mode and multimode fiber strands shall be tested end-to-end for bi-directional attenuation, 850 nm/1300 nm for multimode and 1310 nm/1550 nm for singlemode fibers. Tests should be conducted in compliance with EIA/TIA-526-14 or OFSTP 14, Method B, according to the manufacturer's instructions for the test set being utilized.
 - ii. Acceptable connector attenuation: 0.75db/connector link
 - iii. Acceptable splice attenuation: 0.30db/splice
 - iv. Testing with either a light source meter or an OTDR shall be done in both directions
 - v. Every fiber shall be tested and documented
 - vi. Test results will be provided to IIT OTS department in two hard copies and one copy of the raw

Annex A

Academic Buildings

Name	Address	Building Code
Alumni Memorial	3201 South Dearborn	AM
Crown Hall	3360 South State	CR
Engineering 1	10 West 32nd	E1
Life Science	3105 South Dearborn	LS
Perlstein Hall	10 West 33rd	PH
Siegel Hall	3301 South Dearborn	SH
Stuart Building	10 West 31st	SB
Wishnick Hall	3255 South Dearborn	WH

Athletic Building

Name	Address	Building Code
Keating Hall	3040 South Wabash	KH

Facilities Services

Name	Address	Building Code
Heating Plant	3430 South Federal	HP
Machinery Hall	100 West 33rd	MH

Fraternities/Sororities

Name	Address	Building Code
Alpha Epsilon Pi	3350 South Michigan	AE
Alpha Sigma Alpha	3340 South Michigan	TX
Alpha Sigma Phi	3361 South Wabash	AS
Delta Tau Delta	3349 South Wabash	DT
Kappa Phi Delta	3330 South Michigan	TE
Phi Kappa Sigma	3366 South Michigan	PK
Pi Kappa Phi	3333 South Wabash	KP
Sigma Phi Epsilon	3341 South Wabash	SP
Triangle	3360 South Michigan	TR

Rental Property

Name	Address	Building Code
Materials & Metals Building	3350 South Federal	MTB
Vandercook	3140 South Federal	VA

Residence Halls

Name	Address	Building Code
East Hall	71 East 32nd	RE
Fowler Hall	3241 South Wabash	FO
Graduate Hall	70 East 33rd	RG
Lewis Hall	70 East 33rd	RL
McCormick Lounge	3241 South Wabash	MC
North Hall	71 East 32nd	RN
Residence - Dining	71 East 32nd	RD
South Hall	71 East 32nd	RS
State Street Village	3301 South State	SV
Bailey Hall	3101 South Wabash	BA
Carman Hall	60 East 32nd	CA
Cunningham Hall	3100 South Michigan	CU
Gunsaulus	3140 South Michigan	GU

Student Services

Name	Address	Building Code
Auto Lab	3240 South Federal	AL
Chapel	65 East 32nd	CH
Farr Hall	3300 South Michigan	FH
Galvin Library	35 West 33rd	GL
Hermann Hall (HUB)	3241 South Federal	HH
Main Building	3300 South Federal	MB
The Commons	3200 South Wabash	CO
Campus Center	3201 South State	MC

University Technology Park At IIT

Name	Address	Building Code
Technology Business Center	3440 South Dearborn	TBC
Incubator	3440 South Dearborn	INC
IIT Tower	10 West 35th	IT
IITRI Life Sciences Research	35 West 34th	LSR
Technology Park - Central	3424 S. State St.	TC

E. Installation

1. Prior to installation, contractor must supply a Certificate of Liability Insurance from its insurance carrier. See "Appendix A" attached hereto, which is IIT's policy on Insurance Requirements for Third Parties.
2. Any deviation from this standards document must be approved by Telecommunication Services, as stated in the "General" paragraph above.

3. Any field changes must be approved by Telecommunication Services, as stated in the "General" paragraph above.
4. All room layouts will be presented to and discussed with Telecommunication Services and Network Services in advance of the bidding process.
5. All cabling installed is Category 6 ANSI/EIA/TIA 568-B specifications. All cabling is installed with proper stress relief and the tie down.
6. All patch panel layouts will match the logical layout of the rooms. If rooms are skipped during the cabling job, a commensurate number of ports should be left blank on the patch panel for future use.
7. All conduit installation meets all state and local codes.
8. Debris, boxes, leftover cables, and trash is removed from construction site upon completion of work. IDF and MDF rooms will be vacuumed and wet mopped to remove as much dust as possible.
9. All remaining unused cable is to be left on site.
10. Unless otherwise noted, all exposed wiring in furnished rooms is installed in metal wire mold surface raceway. Exposed cabling is not acceptable.
11. All cabling is pulled in above ceiling, under flooring, and down through inside the walls to a cut out box or metal wire mold (if necessary). There will be no exposed cabling.
12. SYSTIMAX does not allow the use of liquid lubricants, as they can gather in the conduit and affect the cable performance.
13. Splicing of data cable is not allowed.
14. "Combing of Lacing", which is the grooming of all the cables in a bundle down a raceway, is not recommended for PowerSUM and GigaSPEED XL. Avoid slack loops and ensure cable is not twisted, which can untwist cable pairs. Cables must not be supported by electrical conduits, ceiling hangars, gas pipes, or water pipes.
15. All wire must meet or exceed national Electrical Code for PVC wire. All wire cable is furnished and installed by contractor.
16. All cabling is pulled in the highest point possible in the interstitial space above the accessible ceiling space. Cabling is not allowed to rest on any ceiling tile or suspension system. Exception: in the Research Tower on floors that have metal pan ceiling systems, Facilities Management will allow the contractor to bundle cables and run along the ceiling grid, but not over light fixtures.
17. If more than one cable is run parallel with another, cable is hung every five (5) feet for support by J-Hooks or some sort of wire management. The cables are secured with Velcro to the structure every twelve (12) to twenty-four (24) inches. Cable spans between such hanging supports must exhibit visible sag as an indication of acceptable cable tension.
18. All cable/cabling is kept thirty (30) inches away from any heat source; i.e., steam valves, etc.
19. All cables/cabling is kept away from moveable mechanical equipment; i.e., dampers, valves, pneumatic tubes, etc.
20. Data wiring is at least five (5) inches from power lines 2kVA or less, twelve (12) inches from fluorescent lighting and power lines 2 and 5kVA, thirty-six (36) inches from power lines greater than 5kVA, forty (40) inches from transformers and motors.
21. Where possible, cables must cross AC power at 90-degree angles.
22. Fire and smoke partition and wall penetrations are sleeved with conduit and fire stopped.
23. Cables are pulled free of sharp bends or kinks.
24. Cables are not pulled across sharp edges. Cables shall not be forced or jammed between metal parts, assemblies, etc.

25. Cables are not pulled across access doors and pull box covers. Access to all equipment and systems is maintained.
26. Termination of cables is of a high level of workmanship and satisfies CommScope/SYSTIMAX Category 6 specifications.
27. Information outlets and patch panels must conform to the EIA/TIA 568B wiring scheme.
28. A fire stop conduit sleeve must be installed through shaft to ceilings.

F. Faceplates

1. The faceplate color standard is ivory and labeled above each information outlet. At times, a project may call for stainless steel faceplates; such deviation from standard will be specified prior to bidding each job.
2. All ports are labeled according to the room number and cable color. For example, 201-y 201-o or 152-1a-y, 152-1a-o, 152-1b-y and so on.
3. Dust covers are provided for each blank outlet.
4. If surface mount blocks are used, they must be permanently mounted to the surface.

F. Ceiling Work

1. Access to areas, removal of ceiling tiles, etc. is coordinated with Facilities no later than 48 hours prior to requiring such service. Arrangements can be made through the telecommunications manager.
2. If Facilities determines that contractor shall remove and replace ceiling tiles:
 - a. Ceiling tiles are removed with a ceiling pan puller, not a screwdriver.
 - b. Tiles are removed in their entirety to prevent bending.
 - c. Contractor is liable for any damages caused to the ceiling system.
 - d. Contractor must put back in place all ceiling tiles that were removed during the cabling process.
 - e. Contractor must wipe clean all tiles that were handled during the project.

G. Workmanship

1. All work to be completed in a good and workman-like manner and on time.
2. Contractor to remove boxes, material, scraps, etc. from work area each day and keep work area clean from debris.
3. For closet build outs, room must be vacuumed and wet-mopped to remove as much dust as possible.

H. Examination

1. Contractor, together with Office of Technology Services, shall thoroughly examine site conditions for acceptance of data cabling system installation to verify conformance with manufacturer and specification tolerances.
2. Do not commence with installation until all conditions are made satisfactory.

3. After cabling has been installed and tested, contractor, together with Office of Technology Services, will verify standards have been met and create a punch list for any non-conformity.

I. Deliverables

1. Testing and certification documentation returned to Telecommunication Services upon completion of the job. Deliverables will include 2 copies of printed test results and 2 copies of the raw test data delivered electronically to Telecommunication Services.
2. Two copies of printed as-built drawings to Telecommunication Services, and one copy of printed as-built drawings to IIT Facilities Design & Construction. Deliverables will include the as-built drawings delivered electronically to Telecommunication Services.

J. Related Documents

1. Building Industry Consulting Service International, Telecommunications Distribution TIA/EIA 568-A
2. National Electrical Code, Articles 770, 800, and 820.

Direct all questions or request deviations regarding these standards to:

Virginia Bentley
Director, Telecommunications Services
Illinois Institute of Technology
10 West 31st Street, Room 102
Chicago, IL 60616
Telephone: 312 567 7542
Facsimile: 312 567 5801
E-Mail: bentley@iit.edu

EXHIBIT A: EXCERPT FROM:

Policies and Procedures Handbook
Illinois Institute of Technology

Procedure No.: E.6
Date of Issue: 05/07

Subject: Insurance Requirements for Third Parties

Page 1 of 2

When entering into contracts, leases, agreements and purchase orders between the University and third parties, it shall be the responsibility of the administrator executing the contract, lease, agreement or purchase order to give due care and consideration that the third party is appropriately insured. Although each situation is unique, the standards below should serve as guidelines for the type and amounts of insurance that should be expected of third parties. If in a particular case, the administrator has doubt as to the appropriateness of or need for certain insurance and/or insurance provisions, he or she should contact the General Counsel's Office.

1. As a general rule, if the third party will perform work on campus or employees or agents of the third party will be on campus, then the contract, lease, agreement or purchase order should require that Illinois Institute of Technology be named as an Additional Insured on the third party's general liability and, if applicable, automobile policy.
2. The third party should be required to carry insurance from a carrier licensed to do business in Illinois that is rated "A- VIII" or better by A.M. Best (or comparable rating).
3. The contract, lease, agreement or purchase order should require that the third party's insurer provide at least 30 days' prior written notice to the University of termination or modification of all required insurance coverage.
4. If the third party will be performing design, construction, construction-like activities, demolition or other activities generally considered to be of a hazardous nature, then the contract, lease, agreement or purchase order should require that the third party's commercial general liability insurance should be "primary and not contributory" and its property insurance should include a "waiver of subrogation" in favor of the University.
5. As a general rule, contracts, leases, agreements or purchase orders should require that the third party have the following insurance in the following amounts:
 - a. Commercial general liability insurance with limits not less than \$2,000,000 combined single limit for personal injury, sickness or death or for damage to or destruction of property for any one occurrence;1 2 3
 - b. Property insurance insuring the full replacement cost of all equipment, real and/or personal property owned or used by the third party in connection with the contract, lease, agreement or purchase order;

c. Worker's compensation insurance in an amount not less than the required statutory limits and including employer's liability insurance with limits of not less than \$500,000 per occurrence³; and

d. If the third party is using a vehicle to perform services for the University, comprehensive automobile liability for all owned, non-owned and hired vehicles with bodily injury limits of no less than \$1,000,000 per person, \$1,000,000 per accident; and property damage limits of no less than \$1,000,000 per accident. 2 3

6. The contract, lease, agreement or purchase order should require that upon execution and within 15 days before the expiration of each required policy, the third party will deliver to the University certificates evidencing the required insurance or renewal thereof along with any other conditions or requirements set forth in this Policy.

1. When the University rents or provides space to a not for profit or a community group for the purpose of holding a meeting, it is generally sufficient that the not for profit or community group only demonstrate that it has \$1,000,000 in commercial general liability insurance. If a proposed not for profit or community group seeking to rent or to utilize space on campus does not have its own insurance or does not have adequate insurance, it can procure a limited policy sufficient to satisfy the University's requirements through a program known as TULIP (Tenants and Users Liability Insurance Program) offered by the University Risk Management and Insurance Association, of which the University is a member. More information on TULIP is available at <http://www.urmia.org/tulip.cfm> or by contacting the General Counsel's Office.

2. The particulars of a contract, agreement or purchase order may justify a lower policy limit, which, in all but highly unique circumstances, should not be less than \$1,000,000, or higher policy limits; however, such a determination is dependent of the facts and circumstances unique to the situation. Factors to consider include, but are not limited to: (i) the nature of the services to be rendered, (ii) where the services will be rendered, (iii) the duration of time for which the services will be rendered, (iv) whether the services involve electricity, gas, flammables or dangerous chemicals or materials, and (v) the likelihood of injury (and the severity of that injury) or damage to property (and the extent of that damage) if it were to occur.

3. Major construction and design contracts should have significantly higher limits, and the responsible administrator should discuss these contracts with the General Counsel's Office.