



MISSOURI  
HIGHWAYS and TRANSPORTATION  
COMMISSION  
JEFFERSON CITY, MISSOURI  
**SPECIFICATIONS**  
FOR  
CONSTRUCTING OR IMPROVING

**Central Office**  
**CATEGORY- 6, STRUCTURED CABLING SYSTEM**

**Jefferson City, Missouri**

**9-091002**

**INVITATION  
FOR BID (IFB)  
FORM**

**MISSOURI DEPARTMENT OF TRANSPORTATION  
GENERAL SERVICES - FACILITIES  
1320 CREEK TRAIL DRIVE – P.O. BOX 270  
JEFFERSON CITY, MO 65102**

REQUEST NO.	9-091002
DATE	September 9, 2009

**SEALED BIDS, SUBJECT TO THE CONDITIONS ON ALL PAGES OF THIS IFB WILL BE RECEIVED AT THIS OFFICE LOCATED AT 1320 CREEK TRAIL DR., JEFFERSON CITY, MO 3:00 PM LOCAL TIME; October 2, 2009**

AND THEN PUBLICLY OPENED AND READ FOR FURNISHING THE FOLLOWING SUPPLIES OR SERVICES.

**Facsimile or emailed bids shall not be accepted.**

SIGN AND RETURN BEFORE TIME SET FOR OPENING.

**BIDS TO BE BASED F.O.B.  
MISSOURI DEPARTMENT OF TRANSPORTATION**

F.O.B. Destinations

MoDOT  
1617 Missouri Blvd.  
Jefferson City, MO 65109

**As a condition for bidding this project, contractors must contact Eddy Davis at [James.Davis@modot.mo.gov](mailto:James.Davis@modot.mo.gov) or (573.526.1380) to arrange a mandatory site survey.**

Attached and part of this IFB:

1. TECHNICAL SPECIFICATIONS (20-pages);
2. MHTC Terms & Conditions (6-pages);
3. Annual Wage Order #16, Cole County (13-pages).

<b>BUYER:</b>	Clayton Hanks <a href="mailto:Clayton.Hanks@modot.mo.gov">Clayton.Hanks@modot.mo.gov</a>	<b>BUYER TELEPHONE:</b>	573-522-9565
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The purpose of this solicitation is to establish a contract to supply and install Category-6 Structured Cabling System at MoDOT's 1617 Missouri Blvd., Jefferson City, MO location.

1. The undersigned, having examined the proposed Contract Documents titled: "Central Office – Category-6 Structured Cabling System" and having visited the sites and examined the conditions affecting the Work, hereby proposes and agrees to furnish all labor, materials, equipment and everything which may be necessary or incidental thereto, as proposed by said Contract Documents, all to the satisfaction of the Chief Engineer of the Missouri Department of Transportation and the Missouri Highway and Transportation Commission, for the stipulated sum of:

\_\_\_\_\_ DOLLARS (\$\_\_\_\_\_).

2. The undersigned, acknowledges having examined and being familiar with the contract documents including the drawings, the Instructions to Bidders, General Conditions, Supplementary Conditions and the body of technical specifications.
3. The undersigned acknowledges receipt of Addenda number \_\_\_\_\_ through \_\_\_\_\_ inclusive.
4. Enclosed with this bid is bid security in the amount of not less than 5% of the bidder's proposed Contract Sum, the amount being \_\_\_\_\_ DOLLARS (\$\_\_\_\_\_).

Date:	_____	Firm Name:	_____
Telephone No.:	_____	Address:	_____
Fax No.:	_____		_____
Federal I.D. No.	_____	By (Signature):	_____
Email Address:	_____	Type/Print Name	_____

"Notice to Contractors

MoDOT will receive bids for installing Category-6 Structured Cabling System at its One Stop Office building, General Services, 1320 Creek Trail Drive, P.O. Box 270, Jefferson City, MO 65102 until 3:00 p.m. on October 2, 2009. Project locations: Missouri Blvd., Jefferson City MO. Contact Clayton Hanks at 573-522-9565 or [Clayton.Hanks@modot.mo.gov](mailto:Clayton.Hanks@modot.mo.gov) to for plans, forms, and information, or download them at no charge at [http://modot.org/business/contractor\\_resources/FacilitiesConstructionandMaintenance.htm](http://modot.org/business/contractor_resources/FacilitiesConstructionandMaintenance.htm). Scheduled site surveys are mandatory."



**SUBCONTRACTOR LISTING**

1. For portions of the Work equaling or exceeding 1% of the total proposed Contract Sum, the undersigned proposes to use the following subcontractors. Except as otherwise approved by the Owner, the undersigned proposes to perform all other portions of the Work with his own forces.

2. Portion of the Work:	Subcontractor name and address:
_____	_____
	_____
	_____
_____	_____
	_____
	_____
_____	_____
	_____
	_____
_____	_____
	_____
	_____

USE ADDITIONAL SHEETS  
IF REQUIRED

PROVIDE SIGNATURE  
IDENTICAL TO THAT  
SHOWN ON THE BID FORM

BIDDER:  
\_\_\_\_\_

by \_\_\_\_\_

# PREFERENCE IN PURCHASING PRODUCTS

DATE: \_\_\_\_\_

The bidders attention is directed to Section 34.076 RSMo 2000 which gives preference to Missouri corporations, firms, and individuals when letting contracts or purchasing products.

Bids/Quotations received will be evaluated on the basis of this legislation.

**All vendors submitting a bid/quotation must furnish ALL information requested below.**

**FOR CORPORATIONS:**

State in which incorporated: \_\_\_\_\_

**FOR OTHERS:**

State of domicile: \_\_\_\_\_

**FOR ALL VENDORS:**

List address of Missouri offices or places of business:

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**THIS SECTION MUST BE COMPLETED AND SIGNED:**

**FIRM NAME:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**CITY:** \_\_\_\_\_ **STATE:** \_\_\_\_\_ **ZIP:** \_\_\_\_\_

**BY (signature required):** \_\_\_\_\_

**Federal Tax I.D. #:** \_\_\_\_\_ **if no Federal Tax I.D. # - list Social Security #:** \_\_\_\_\_

NOTE: For bid/quotation to be considered, the "Preference in Purchasing Products" form must be on file in the General Services (Facilities Management) Division and must be dated in the current calendar year.

## MISSOURI DOMESTIC PRODUCTS PROCUREMENT ACT

The bidder's attention is directed to the Missouri Domestic Products Procurement Act, Sections 34.350 to 34/359, RsMO, which requires all manufactured goods or commodities used or supplied in the performance of this contract or any subcontract to be manufactured or produced in the United States.

Section 34.355, RsMO, requires the vendor or contractor to certify his compliance with Section 34.353 and, if applicable, Section 34.359, RsMO, at the time of bidding **and** prior to payment. Failure to comply with Section 34.353, RsMO, during the performance of the contract **and** to provide certification of compliance prior to payment will result in nonpayment for those goods or commodities.

Section 34.353.2, RsMO, specifies that it does not apply where the total contract is less than Twenty-Five Thousand Dollars (\$25,000.00). If your total bid is Twenty-Five Thousand Dollars (\$25,000.00) or more, you **must** complete this form as directed below.

**Failure to complete and return this document with this bid will cause the State to presume the manufactured goods or products listed in the bid are not manufactured or produced in the United States, and the bid will be evaluated on that basis. Please read the certification appearing below on this form.**

- [ ] If all the goods or products specified in the attached bid which the bidder proposes to supply to the State shall be manufactured or produced in the "United States" as defined in Section 34.350, RsMO, check the box at left.
- [ ] If only one item of any particular goods or products specified in the attached bid is manufactured or produced in the "United States" as defined in Section 34.350, RsMO, check the box at left and list the items (or item number) here:  
\_\_\_\_\_

- [ ] If any or all of the goods or products specified in the attached bid which the bidder proposes to supply to the State are **not** manufactured or produced in the "United States" as defined in Section 34.350, RsMO, then: (a) check the box at left; (b) list below, by item (or item number), the country other than the United States where each good or product is manufactured or produced; and (c) check the boxes to the left of the paragraphs below if applicable and list the corresponding items (or item numbers) in the spaces provided.

Item (or item number)	Location Where Item Manufactured or Produced

(attach an additional sheet if necessary)

- [ ] The following specified goods or products cannot be manufactured or produced in the United States in sufficient quantities or in time to meet the contract specifications. Items (or item numbers): \_\_\_\_\_
- [ ] The following specified goods or products must be treated as manufactured or produced in the United States, in accordance with an existing treaty, law, agreement, or regulation of the United States, including a treaty between the United States and any foreign country regarding export-import restrictions or international trade. Items (or item numbers): \_\_\_\_\_

### CERTIFICATION

**By submitting this document, completed as directed above, with a bid, the bidder certifies under penalty of making false declaration (Section 575.060, RsMO) that the information contained in this document is true, correct and complete, and may be relied upon by the State in determining the bidders qualifications under and in compliance with the Missouri Domestic Products Procurement Act.**

**The bidder's failure to complete and return this document with the bid as directed above will cause the State to presume the manufactured goods or products listed in the bid are not manufactured or produced in the United States, and the bid will be evaluated on that basis pursuant to Section 34.353.3(2), RsMO.**

**MISSOURI SERVICE-DISABLED VETERAN BUSINESS PREFERENCE**

By virtue of statutory authority, RSMo 34.074, a preference will be given all contracts for the performance of any job or service to service-disabled veteran business either doing business as Missouri firms, corporations, or individuals; or which maintain Missouri offices or places of business, when the quality of performance promised is equal or better and the price quoted is the same or less or whenever competing bids, in their entirety, are comparable.

Definitions:

**Service-Disabled Veteran** is defined as any individual who is disabled as certified by the appropriate federal agency responsible for the administration of veterans' affairs.

**Service-Disabled Veteran Business** is defined as a business concern:

- a. Not less than fifty-one (51) percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than fifty-one (51) percent of the stock of which is owned by one or more service-disabled veterans; and
- b. The management and daily business operations of which are controlled by one or more service-disabled veterans.

If an offeror meets the definitions of a service-disabled veteran and a service-disabled veteran business as defined in 34.074 RSMo and is either doing business as a Missouri firm, corporation, or individual; or maintains a Missouri office or place of business, the offeror **must** provide the following with the proposal in order to receive the Missouri service-disabled veteran business preference over a non-Missouri service-disabled veteran business when the quality of performance promised is equal or better and the price quoted is the same or less or whenever competing proposals, in their entirety, are comparable:

- a. A copy of a letter from the Department of Veterans Affairs (VA), or a copy of the offeror's discharge paper (DD Form 214, Certificate of Release or Discharge from Active Duty) from the branch of service the offeror was in, stating that the offeror has a service-connected disability rating ranging from 0 to 100% disability; and
- b. A completed copy of this exhibit

(NOTE: For ease of evaluation, please attach copy of the above-referenced letter from the VA or a copy of the offeror's discharge paper to this Exhibit.)

By signing below, I certify that I meet the definitions of a service-disabled veteran and a service-disabled veteran business as defined in 34.074 RSMo and that I am either doing business as a Missouri firm, corporation, or individual; or maintain Missouri offices or places of business at the location(s) listed below.

**Veteran Information**

**Business Information**

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Service-Disabled Veteran's Name, (Please Print)

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*Service-Disabled Veteran's Signature*

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Service-Disabled Veteran Business Name

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Missouri Address of Service-Disabled Veteran Business

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**APPLICANT AFFIDAVIT FOR SOLE-PROPRIETORSHIP OR PARTNERSHIP**

(a separate affidavit is required for each owner and general partner)

STATE OF \_\_\_\_\_ )  
 ) ss  
COUNTY OF \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me appeared \_\_\_\_\_, personally known to me or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instruments, who being by me duly sworn, deposed as follows:

My name is \_\_\_\_\_, and I am of sound mind, capable of making this affidavit, and personally certify the facts herein stated, as required by Section 208.009, RSMo, for failure to provide affirmative proof of lawful presence in the United States of America:

I am the \_\_\_\_\_ of \_\_\_\_\_, which is applying for a public benefit (grant, contract, and/or loan) administered/provided by the Missouri Highways and Transportation Commission (MHTC), acting by and through the Missouri Department of Transportation (MoDOT).

I am classified by the United States of America as: (check the applicable box)

- a United States citizen.
- an alien lawfully admitted for permanent residence.

I am aware that Missouri law provides that any person who obtains any public benefit by means of a willfully false statement or representation, or by willful concealment or failure to report any fact or event required to be reported, or by other fraudulent device, shall be guilty of the crime of stealing pursuant to Section 570.030, RSMo, which is a Class C felony for stolen public benefits valued between \$500 and \$25,000 (punishable by a term of imprisonment not to exceed 7 years and/or a fine not more than \$5,000 – Sections 558.011 and 560.011, RSMo), and is a Class B felony for stolen public benefits valued at \$25,000 or more (punishable by a term of imprisonment not less than 5 years and not to exceed 15 years – Section 558.011, RSMo).

I recognize that, upon proper submission of this sworn affidavit, I will only be eligible for temporary public benefits until such time as my lawful presence in the United States is determined, or as otherwise provided by Section 208.009, RSMo.

I understand that Missouri law requires MHTC/MoDOT to provide assistance in obtaining appropriate documentation to prove citizenship or lawful presence in the United States, and I agree to submit any requests for such assistance to MHTC/MoDOT in writing.

I acknowledge that I am signing this affidavit as a free act and deed and not under duress.

\_\_\_\_\_  
Affiant Signature

\_\_\_\_\_  
Affiant's Social Security Number or  
Applicable Federal Identification Number

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Notary Public

My commission expires:



**TECHNICAL SPECIFICATIONS  
FOR A  
CATEGORY 6  
STRUCTURED CABLING SYSTEM  
(Low Voltage Applications)**

**MoDOT Materials Lab  
1617 Missouri Blvd  
Jefferson City, MO 65109**

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No additional compensation will be allowed for extra work incurred on the part of the Contractor due to the bidders failure to notice any existing condition, which may cause the additional labor.

Bid responses shall be concise following the format and numbering of this specification. Items not requiring responses shall be acknowledged by the bidder as being understood.

Bidders must notify the Purchaser as soon as detected any omissions or errors in the specification so corrective addenda may be issued. Notification must be received by the Purchaser at least (10) days prior to the date for receipt of bids.

Inquiries and requests for clarifications should be submitted to [Eddy Davis \(573.526.1380\)](mailto:Eddy.Davis@mo.gov) at least 5 - days prior to the date for receipt of bids.

#### 1.4 SCHEDULE OF EVENTS

The schedule below indicates the critical dates that must be satisfied by the Contractor.

EVENT	DATE
Release of this IFB	September 9, 2009
Mandatory Site Surveys	September 21 through 25, 2009
Bids Due	October 2, 2009
Contract Award	October 20, 2009
Submittal Review and Acceptance	October 20 through 30, 2009
Start of Installation	October 31, 2009
Completion of Installation	December 15, 2009
Start of Acceptance Testing	(During phased installation)
Start of Cut Over	(During phased installation)

## 2 QUALITY ASSURANCE

### 2.1 CONTRACTOR QUALIFICATIONS

The Contractor shall at a minimum possess the following qualifications:

Be in business a minimum of five (5) years.

Possess those licenses/permits required to perform telecommunications installations in the specified jurisdiction.

Personnel knowledgeable in local, state, province and national codes and regulations. All work shall comply with the latest revision of the codes or regulations. When conflict exists between local or national codes or regulations, the most stringent codes or regulations shall be followed.

Contractor must be registered with BICSI and have at least one RCDD on staff.

Must have personnel fluent in the use of Computer Aided Design and possess and operate CAD software using .DWG or .DXF format.

### 2.2 REQUIRED CONTRACTOR TRAINING

The Contractor shall be fully conversant and capable in the cabling of low voltage applications such as, but not limited to data, voice and imaging network systems. The Contractor shall at a minimum possess the following qualifications:

Personnel trained and certified in the design of the Siemon Cabling System<sup>®</sup>.

Personnel trained and certified to install the Siemon Cabling System<sup>®</sup>.

The Designer and Installer shall show proof of current certification of the Siemon Cabling System<sup>®</sup> via an updated certificate given after attending the CI-301 training course or an on-line re-certification class given every two years.

Provide references of the type of installation provide in this specification.

Personnel trained and certified in fiber optic cabling, splicing, termination and testing techniques.

Personnel must have experience using an optical light source and power meter plus OTDR.

Personnel trained in the installation of pathways and support for housing horizontal and backbone cabling.

### 2.3 CONTRACTOR RESPONSIBILITY

Contractor shall be obligated to exercise the highest standard of care in performing its obligations as defined in this request for proposal.

Contractor acknowledges that owner will rely on contractor's expertise, ability and knowledge of the system being proposed and shall be obligated to exercise the highest of standard care in performing it's obligation as defined in the following Scope of Work.

### 2.4 MANUFACTURER QUALITY & PRODUCT SUBSTITUTIONS

All telecommunications connecting hardware and cable must be made by an ISO 9001:2000 Certified Manufacturer.

All products must meet the technical requirements listed in sections 6-8. Any products not meeting these requirements will not be considered.

## 3 INDUSTRY REQUIREMENTS

The following installation, documentation, component and system industry specifications shall be met or exceeded:

- ANSI/TIA/EIA-568-B.1 and addenda  
*"Commercial Building Telecommunications Cabling Standard - Part 1: General Requirements"*
- ANSI/TIA/EIA-568-B.2 and addenda  
*"Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted-Pair"*
- ANSI/TIA/EIA-568-B.3 and addenda  
*"Commercial Building Telecommunications Cabling Standard - Part 3: Optical Fiber Cabling and Components Standard"*
- ANSI/TIA/EIA-569-B and addenda  
*"Commercial Building Standard for Telecommunications Pathways and Spaces"*
- ANSI/TIA/EIA-606-A and addenda  
*"Administration Standard for the Telecommunications Infrastructure of Commercial Buildings"*
- ANSI-J-STD-607-A and addenda  
*"Commercial Building Grounding and Bonding Requirements for Telecommunications"*
- ANSI/TIA/EIA-526-7  
*"Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant"*
- ANSI/TIA/EIA-526-14A  
*"Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant"*
- IEC/TR3 61000-5-2 - Ed. 1.0 and amendments  
*"Electromagnetic compatibility (EMC) - Part 5: Installation and mitigation guidelines - Section 2: Earthing and cabling"*
- ISO/IEC 11801:2002 Ed2.0 and amendments  
*"Information technology - Generic cabling for customer premises"*
- CENELEC EN 50173:2000 and amendments  
*"Information Technology - Generic cabling systems"*

## 4 SCOPE OF WORK

- Main floor square footage approximately 53,600 and 2<sup>nd</sup> floor square footage approximately 6,950
- Approximately 300 Dual Cat 6 locations
- Provide all necessary patch cords in wiring closet and desk locations.
- Telecommunication closets are located one on the east side and one on the west side of the building.
- Installation shall be in existing cable trays and conduit

- Maintaining near 100% network/telephone connectivity during phased installation and cut-over of project.
- Complete removal and disposal of existing Type II cabling, jacks, faceplates, etc.
- Installation of (2) Siemon RS3-07S racks to replace existing CPI aluminum relay racks
- Requires Siemon RS3 horizontal cable managers between all patch panels.
- Requires installation of M-SPP patch panels in order to be MapIT G2 ready.
- Provide optional pricing for MapIT live utilizing M-MCP Master control panel and patching to be fully MapIT compliant.

## 5 BALANCED TWISTED-PAIR PRODUCT SPECIFICATIONS

In addition to meeting the category 6 specifications outlined in ANSI/TIA/EIA-568-B.2-1, the requirements in this section must also be met for all applicable balanced twisted-pair products as listed below.

### 5.1 OUTLETS

All category 6 information outlets designed for termination of 4-pair balanced twisted-pair category 6 copper cable must possess the following characteristics at the minimum:

- Outlet color requirements – Data – Orange, Voice- Ivory
- Exceed category 6 component compliance through the frequency range of 1 to 250MHz
- Be available in black, white, red, gray, yellow, blue, green, orange, ivory, bright white, light ivory and alpine white
- Universal design allows the same outlet to be mounted in flat or angled orientation.
- Terminates with an ergonomic and easy to use Z-tool to ensure fast and simple terminations.
- Have a lacing module that offers zero-cross termination, which eliminates pair crossing
- Have available termination tool included with each box of 20 outlets
- Be backwards compatible to allow lower performing categories of cables or connecting hardware to operate to their full capacity
- Support industry standards for T568A or T568B wiring options on each individual outlet
- Allow installation from the front or rear of the faceplate, and allow for the jack to pass through the faceplate without re-termination
- Provide color-coded, snap-in icons available for circuit identification
- Allow for a minimum of 5 terminations without signal degradation below standards compliance limits
- Be constructed of high impact, glass reinforced nylon.
- Have, as an option, an outlet, which can be mounted into an IEC 60603-7 compliant opening (keystone)
- Must be certified by Underwriters Laboratories to United States Standards and C22.2 Canadian Telecommunications Standards

*Siemon Z-MAX™ 6 Outlet Recommended*

### 5.2 PATCH CORDS

All Category 6 modular equipment cords shall conform to the following minimum performance standards:

- Be factory assembled and 100% transmission tested with laboratory grade network analyzers for proper performance up to 250 MHz
- Be backwards compatible with lower performing categories
- Be equipped with identical modular 8-position plugs on both ends, wired straight through with standards compliant wiring
- Utilize patented metallic isolator shields pairs inside plug for optimum NEXT performance and a 360 degree crimp for providing excellent plug-to-cable strain relief without causing pair deformation
- Obtain the required performance without use of printed circuit board components
- Incorporate internal stranded cordage isolator within a round, flame-retardant jacket to provide extended flex life and maintain ideal pair geometry
- Use bend relief compliant boots (with optional color-coded icons) to ensure proper category 6 performance and feature a latch guard to protect against snagging
- Use modular plugs which exceed FCC CFR 47 part 68 subpart F and IEC 60603-7 specifications, have 50 micro-inches minimum of gold plating over nickel contacts and are resistant to corrosion from humidity, extreme temperatures, and airborne contaminants

- Be available in standard lengths of 3, 5, 7, 10, 15 and 20 ft. with custom lengths available upon request
- Offer multiple cable colors (with color matching boots) in standard colors of black, white, red, gray, yellow, blue and green for proper circuit identification
- Be certified by Underwriters Laboratories to United States Standards and C22.2 Canadian Telecommunications Standards
- Meet the following performance specifications:

Frequency (MHz)	Attenuation (dB/100m)	PS ELFEXT (dB)	PS NEXT (dB)
1	2.4	67.8	72.3
4	4.5	55.8	63.3
10	7.1	47.8	57.3
16	9.1	43.7	54.2
20	10.2	41.8	52.8
31.25	12.8	37.9	49.9
62.5	18.5	31.9	45.4
100	23.8	27.8	42.3
200	34.8	21.8	37.8
250	39.4	19.8	36.3

*Siemon MC® 6 Series Modular Cords Recommended*

### 5.3 PATCH PANELS

All termination panels shall facilitate cross-connection and inter-connection using modular patch cords and shall conform to EIA standard, 19-inch relay rack mounting requirements.

- Have port monitoring capabilities built into each patch panel for increased density.
- Have redundant power and communication ports for each patch panel.
- Be made of black painted Steel, in a 24 port configuration
- Accommodate at least 24 ports for each rack mount space (1RMS = 44.5 mm [1.75 in.])
- Feature the Z-MAX™ keystone outlet available in 6A UTP and 6A F/UTP as well as the Cat 6 UTP Max keystone module.
- Allow tool-less termination of keystone outlets
- Feature robust “intellitab” sensor pads constructed with 30 micro-inches of gold over nickel.
- Be backwards compatible to allow lower performing categories of cables or connecting hardware to operate to their full capacity
- Have rear protective strain relief caps which can be installed onto cable before or after termination
- Allow 110 style punch-down termination or modular S110P4 Plug for connection of Control Bus Cable connections (to analyzer)
- Support industry standards for T568A or T568B wiring options on each individual outlet
- Have modular ports compliant with FCC CFR 47 part 68 subpart F and IEC 60603-7 with 50 micro-inches of gold plating over nickel contacts
- Have individual port identification numbers permanently marked on both the front and rear of the panel
- Feature on-panel intelligence and a combination of LEDs and a backlight graphic LCD to guide technicians

- Active circuit board on panel must be field serviceable (i.e., allow for replacement without removal of the panel, keystone outlets or patch cords)
- Must be certified by Underwriters Laboratories to UL 60950-1, 1<sup>st</sup> Edition (2003) – Information Technology Equipment. ACA TS 001, A/NZS 3260

*Siemon MapIT™ G2 Smart Patch Panel Recommended*

#### 5.4 CABLE

All Category 6 cable shall conform to the following minimum performance standards:

##### **TWISTED-PAIR CABLING**

- All qualified cables shall surpass the most severe category 6 requirements provided in the Industry Standards by meeting or exceeding the performance listed below for all specified frequencies (except where noted):

Parameter	UTP Cable Performance				
	100 MHz	200 MHz	250 MHz	400 MHz*	550 MHz*
Insertion Loss (dB)	19.0	27.5	31.0	40.0	47.7
NEXT Loss (dB)	51.3	46.8	45.3	42.3	40.0
PSNEXT Loss (dB)	49.3	44.8	43.3	40.0	38.2
ACR (dB)	32.3	19.3	14.4	2.3	-7.5
PSACR (dB)	30.3	17.3	12.4	0.3	-9.5
ACR-F (dB)	34.8	28.7	26.8	22.7	19.9
PS ACR-F (dB)	31.8	25.7	23.8	19.7	16.9
Return Loss (dB)	20.1	18.0	17.3	15.9	14.9
Propagation Delay (ns)	538	537	536	536	536
Delay Skew (ns)	≤ 45	≤ 45	≤ 45	≤ 45	≤ 45

\* Performance for frequencies beyond TIA and ISO requirements are for information only

*Siemon Premium 6 Cable Recommended*

In addition to the requirements listed above, bundled or hybrid cable must also meet the following requirements:

- Be in groupings of 4-pair units.
- Be power sum NEXT tested where any disturbed pair within the hybrid/bundle cable shall be 3 dB better than the specified pair-to-pair NEXT loss of a single 4-pair cable of the same category.
- All Data outlets will be serviced with BLUE cable – 9C6P4-E4-06-RBA
- All Voice outlets will be serviced with WHITE cable – 9C6P4-E4-02-RBA

## 6 MOUNTING OPTIONS

### 6.1 FACEPLATES

All faceplates installed, as part of this specification shall have these minimum features listed below:

- Be applicable to both fiber and copper applications.
- Be available in 1-, 2-, 3-, 4- and 6-port single-gang configurations or 6-, 8- and 12-port double-gang configurations.
- Allow modules to be removed from the front of the faceplate.
- Allow UTP modules to pass through faceplates even after termination.
- Have write on designation labels for circuit identification together with a clear plastic cover.
- Feature easily removable designation label covers which can be removed without use of tools.
- Be available in single-gang and double-gang configurations.
- Have as a minimum the standard colors of black, white, gray, ivory and light ivory.
- Have optional modular furniture adapters available.
- Have Designer style faceplates and mounting frames available
- Have stainless steel versions available with designation label option.
- Have surface mount boxes and standoff rings available for both single and double gang faceplates.
- Be manufactured using UV resistant, high impact thermoplastic to prevent color fading and provide additional durability.
- Must be certified by Underwriters Laboratories to United States Standards and C22.2 Canadian Telecommunications Standards.

*Siemon MAX<sup>®</sup> Series Faceplates Recommended*

### 6.2 RACKS

For rack-mounted installations in a telecommunications room the installer shall use a 19 or 23- inch equipment rack.

- Have 116.8 mm (4.6 in) by 152 mm (6 in) vertical cable channels as side rails in 2.1 m (7 ft) height.
- Include vertical cable managers mounted on the front of the channels with hinged covers that can handle large quantities of cables and patch cords. Cable managers must retain cables even when covers are removed. Covers are modular in design, which eliminates the need to remove full-length covers for each patch cord change.
- Have available additional vertical cable manager segments for mounting to the back of the Rack to provide additional cable management.
- Have channels capable of utilizing and re-locating ten high capacity, reusable hook and loop cable managers available in bags of ten.
- Have cable access holes on side rails, which allow cables to be routed between adjacent racks.
- Have standard 19-inch CEA-310-E mounting holes having a full 45 RMS on front and back of rails.
- Have ladder channel, which acts as a top bracket to easily nest a standard 304.8 mm (12 in) ladder tray. The channel must have carriage bolt holes for attaching to the ladder system.
- Have available an optional rack top cable tray which manages cable bundles routed above the rack, and eliminates the need for installing a ladder rack for routing cables. The tray is mounted without the need of tools or hardware and includes up to three (3) separate cable paths featuring removable quarter-turn hook and loop cable managers.
- Be available in two versions, either aluminum or steel with a black finish and utilize black grommets for unused cable openings.

- Have the mounting option of two additional vertical cable management channels 152 mm (6 in) x 2.1 m (7 ft) and 76 mm (3 in) x 2.1 m (7 ft) which can be located between racks. The channel shall include cable retainers, which can be hinged left or right and be located in any position along the channel.
- Have floor mounting holes and a ground lug for 0-6 gauge ground cable provided.
- Have optional 10-outlet (4 ft) power strip for mounting onto the rack.

*Siemon RS3 Series Rack System Recommended*

### 6.3 CABLE MANAGEMENT

For cabinet enclosure installations in a telecommunications room or data center the installer shall have these minimum features listed below:

The Horizontal Cable Management shall be mounted above and below each patch panel.

#### 1. Front Wire Mangers

- Have 1, 2 and 4 RMS versions available.
- Have available wire managers with Covers to conceal Equipment Patch Cords
- Be available in a Multi-Access Configuration with pass-through holes for easy routing of cables.

*Siemon RS3 Horizontal Cable Managers Recommended*

## 7 ACTIVE EQUIPMENT

### 7.1 ANALYZERS/SCANNERS

The analyzer/scanners are hardware devices that provide the connection to and real-time monitoring of the “enabled” port connections. The analyzers/scanners shall be user configurable to adapt to any user environment and shall be able to interface at any point with the corporate IP network to consolidate patching/port status into the database.

The design topology shall be flexible enough to adapt to the available space in the racks or cabinets provided and scalable to cater for future growth. Analyzers/scanners shall be mountable in a standard 19” rack. The analyzer/scanner shall have but not limited to:

- LCD Multi-Functional User Interface
- LAN 1 & LAN 2 ports
- Monitored port I/O's

The analyzer/scanner shall be flexible in terms of port density and be suitable (economically viable) for supporting outlying branch environments accommodating <20 users whilst being scalable enough to support as many ports possible in situations where space and power requirements are at a premium. Systems Integrators should state the port granularity and space/power requirements for the proposed solution.

Patch zones (intra-patching areas) are limited to accommodate a maximum patch-cord length of 10m and are therefore restricted to approximately 4,000 ports but System Integrators should state the maximum patch zone capacity supported by the selected solution.

Each analyzer shall have its own unique IP address unless otherwise specified, and shall communicate with the software via the Ethernet LAN/WAN. In the event that network connection is down or there is a power outage, analyzer shall be able to automatically resynchronize itself with the database upon re-establishment of the network. The analyzer shall be non-intrusive to the prevailing network in the event of any analyzer being faulty or requiring removal from the network.

Systems Integrators should state the selected system support for non-LAN auxiliary devices. The ability to monitor and control (input and output) additional devices - e.g. doors, alarm trips, I/O controllers,

thermostatic controls and air conditioning is highly valued as these features complement the existing BMS (building management system).

## 7.2 MANAGEMENT SOFTWARE

### ▪ Scalability

The solution shall run on a 32-bit architecture operating system, Windows XP/2000 or above and shall be deployed utilizing client server technology optimized for mission critical networks supporting multiple users accessing the database server. The system shall support multi-threading applications and shall include a fully relational transaction-processing SQL engine for database management purpose. The solution shall support multiple concurrent users, either within a single building or different buildings distributed geographically. The system shall be able to be administrated via the LAN or the WAN. The software must be user-friendly and require minimum supervision once the initial database construction is complete. Upon user-defined searches, reports, events and/or alarms, the system shall inform/alert the system administrator the structure and status of the network infrastructure. Although initially American English is acceptable, future migration of system technology to additional non-English speaking language support maybe required. Systems Integrators are requested to state the level of language support offered by the proposed solution. Systems Integrators should attempt to quantify the 'real-time' performance of the proposed system. Speed of notification of events and updates as well as management of critical resources and connections must be notified and controlled in a deterministic manner in real-time. Preference will be given to faster/more reliable solutions as it is envisaged that there is a significant cost of downtime associated with a solution that does not support real-time alerts.

#### Functionality

##### System Architecture

The network connection used to link the server and the analyzer/scanner shall be a non-proprietary open system protocol such as TCP/IP or SNMP. System shall also support other industry standard network protocol such as ARP, HTTP, ICMP, Telnet, UDP and TFTP. Under management levels, the system shall also be able to provide serial/telnet login, HTTP and SNMP (read only).

##### Operational Support & Readiness

The chosen system must support a standard web browser based GUI with additional support for thin client technology (MS Pocket PC).

To enhance operational effectiveness data entry and system configuration activity tools should be made available via the most efficient methodology possible. To aid this process please state the scope, availability and flexibility of any configuration wizards present. In addition the system must be able to support automatic self-discovery at start-up.

The solution shall be capable of storing files containing time stamped information in the form of a historical log that contains a complete record of adds, moves and changes that can be sorted, filtered, and reported. This historical information should be available when interrogating individual ports in order to provide accurate timely roll back information.

Multi select drag and drop capability should be available to all functions particularly when viewing connectivity data and subsequently during the creation of work orders.

##### Operational Assurance

The system shall underpin the clients existing fault-finding process. The fault-finding capability shall consist of notification, isolation and rectification. Handling these processes efficiently is a function of the level of integration between the clients' management systems. The solution will form the platform upon which a best practice fault management process can be developed. Systems Integrators should outline how the solution accommodates the notification, isolation and rectification of faults.

A basic operational requirement of the solution is the ability to monitor real-time events occurring on the network e.g. the loss of a mission critical connection. The ability to create a warning or an alarm based upon these unauthorized or unexpected events is of paramount importance. The solution shall exhibit the ability to support a wide range of alarms including but not limited to; taking a photograph, launching any 3<sup>rd</sup> party application, creating an email, audible alarms, SMS and pager messages.

In addition to reducing fault finding time the solution shall also ensure that down-time due to poorly executed moves, adds & changes is eradicated. The ability to identify and manage authorized and unauthorized actions for entry into the database and for further manager-authorization and storage respectively, is a highly valued feature of the solution. This requirement applies to patching, MAC addresses and switch ports moves adds & changes. In addition the solution must be able to automatically detect changes made during power outages.

#### Asset Management

The system should also be capable of self-discovering the physical location of network devices (PC's, switches and both PBX & IP phones) as part of an entirely automated process. By correlating end-device information found in switches, PBX's and ARP cache's across the network, with its connectivity database, the system should keep a real-time model of the entire physical network infrastructure (including support for VLAN's). If the connected device has an SNMP agent it shall also be able to discover other SNMP MIB information.

The system should also be capable of detecting network devices being connected and disconnected from the network and automatically update the database accordingly and shall keep an audit trail of all MAC address and select SNMP information changes detected at the wall outlet. The system shall also be able to set "aging" parameters that will aid reclamation of unutilized network devices.

The protocol deployed for the discovery of network device shall be Simple Network Management Protocol (SNMP).

#### Fulfillment

Within the database a primary requirement is the solutions ability to search and filter information into a variety of formats suitable for reports or screen viewing. Both the speed (single search rather than multiple searches) with which this can be done and the degree of flexibility (being able to reference data from external databases) are the dimensions for enhancing user productivity and are hence a pre-requisite for the chosen software and equipment.

The system must have the ability to enhance the search process by filtering (e.g. to be able to search for all MAC addresses and subsequently filter for only those addresses on a particular floor). The construction and filtering of searches within the system should not be limited.

The ability to present data in a single report must build upon the system search capability as the client wishes to carry out comparisons automatically using data from several sources located both internally within the IT department and externally with facilities management. The system must also support the viewing of this information in a suitable format e.g. the ability to show data associated with an object within a CAD graphics module. If any limitations are present with respect to the capability of the system to perform 100% user definable filtered searches, reports and screen viewing, these must be highlighted by the Systems Integrator.

Another primary function is to support the tracing of circuits. The system shall provide the graphical representation of end-to-end physical connectivity and connection status in real time.

The selected solution must excel at planning and implementing individual and large scale moves, adds & changes. Systems integrators should state how effectively, efficiently and intuitively the simple addition of a new device or the relocation of a workstation are accommodated. The fewer the number of operator actions/time taken to create an accurate work order the better operational efficiency will be. Systems Integrators should state how well the automated MAC process be scaled, whilst retaining the operator simplicity requirements highlighted above. In addition Systems Integrators should state how well the pre-project planning phase is accommodated within the system.

The system shall support the use of CAD graphics located both internally to the application and those located within a 3<sup>rd</sup> party facilities management database. The CAD function must allow the client to connect the logical and trace information with the physical floor location. The CAD file should be

## **1 INTRODUCTION**

### **1.1 GENERAL BACKGROUND**

The structured cabling system will support voice, data, and imaging applications within the facility located at [1617 Missouri Blvd, Jefferson City, MO 65109](#).

This document describes the system requirements to be met in the proposals of the telecommunications cabling vendors to secure under contract all materials, design, engineering, installation, supervision and training services for the structured cabling system.

### **1.2 TERMS AND CONDITIONS OF BIDS**

This is an invitation to submit a bid based on the materials, systems and equipment described in this document.

All bids must be submitted in accordance with the specifications and information contained herein, as well as with any addenda, if required, issued by the MHTC.

The bid package shall be accompanied by a presale warranty commitment binding the awarded contractor and manufacturer to the customer selected, extended warranty package not less than 20 years in length.

It is the intent of the Drawings and Specifications to provide a complete workable telecommunication cabling system ready for the Owner's use. Any item not specifically shown on the Drawings or called for in the Specification, but normally required for a complete system, are to be considered a part of the contract. Consideration other than cost alone will be used in making the determination of the successful contractor. These factors will include financial stability, availability, design support, project management and field supervision.

The Manufacturers and Products specified in the document are to be used. No substitutions of components specifically referenced will be allowed, without prior written customer consent after submittal review.

### **1.3 INSTRUCTIONS TO THE BIDDER**

Bids shall be valid for 90 days and other factors such as material and labor rate increases during the duration of this project must be taken into account.

The Bidder shall consider the nature and amount of work to be done as well as the difficulties involved in its proper execution.

No bid will be accepted by any contractor who did not attend the scheduled mandatory site survey.

The bid shall include all costs deemed necessary to cover all contingencies essential to the installation of the specified system.

A complete materials list, including description, manufacturer, part number, quantity, unit price and total price must also be included.

A statement of estimated labor hours and prevailing hourly labor rates must be included.

All products and materials shall be new, clean, free of defects and free of damage and corrosion. Where discrepancies are found during the bid process, the most stringent requirements must be included in the bid.

Any cost encountered, which is not specifically itemized in the bid, shall not be incurred unless specifically agreed upon, in writing.

completely customizable and display any dictionary information contained elsewhere within the system or 3<sup>rd</sup> party databases, such as SNMP information, that maybe pertinent to a particular desktop or user under scrutiny.

The system should import and export CAD files supporting both the latest AutoCAD file formats (.DWG and .DXF)

The system shall support the graphical representation of the racks and cabinets contained within the ER and TR's. This must provide the client with visual information on port connectivity, capacity and utilization. It is envisaged that this feature will save the cost of adding infrastructure when it is not required and prevent the need to carry out physical audits prior to work being undertaken. Systems Integrators should state the capability of the proposed solution to support this requirement and indicate any additional benefits such as the automatic calculation of patch cord length etc.

#### Security

The system shall provide account level security that includes support for definable access rights. The clients administration team requires the ability to define access for specific types of users i.e. managers, engineers and administrators and assign various levels of security.

The use of encryption to store sensitive data such as passwords, personal information, asset values etc, is desired to secure the data from unauthorized access.

Whilst not a pre-requisite, any features that may enhance the clients existing security policy should be disclosed. For example the ability to identify and locate the addition of unauthorized MAC addresses on the network and the initiation of remedial action would be a desirable feature.

## 8 SYSTEM DESIGN REQUIREMENTS

### 8.1 HORIZONTAL CABLING

The Horizontal Subsystem is the portion of the telecommunications cabling system that extends from the work area telecommunications outlet/connector to the horizontal cross-connect in the telecommunications room. It consists of the telecommunications outlet/connector, the horizontal cables, optional consolidation point, and that portion of the cross-connect in the telecommunications room serving the horizontal cable. Each floor of a building should be served by its own Horizontal Subsystem.

## 9 INSTALLATION

### 9.1 SITE SURVEY

Prior to placing any cable pathways or cable, the contractor shall survey the site to determine job conditions will not impose any obstructions that would interfere with the safe and satisfactory placement of the cables. The arrangements to remove any obstructions with the Project Manager need to be determined at that time.

### 9.2 PHYSICAL INSTALLATION

#### CABLE PATHWAYS

- Pathways shall be designed and installed to meet applicable local and national building and electrical codes or regulations.
- Grounding / Earthing and bonding of pathways shall comply with applicable codes and regulations.
- Pathways shall not have exposed sharp edges that may come into contact with telecommunications cables.
- The number of cables placed in a pathway shall not exceed manufacture specifications, nor, will the geometric shape of a cable be affected.
- Pathways shall not be located in elevator shafts.

#### INTRABUILDING CABLE ROUTING

- The backbone subsystem shall include cable installed in a vertical manner between floor telecommunications rooms and the main or intermediate cross-connect in a multi-story building and cable installed horizontally between telecommunications rooms and the main or intermediate cross-connect in a long single story building like a school or factory.
- Unless otherwise recommended by the manufacturer, all fiber cables will be run in innerduct.
- Fibers will be terminated in the telecommunications rooms using SC, ST, MT-RJ, or LC connectors in wall mounted interconnect centers or rack mounted panels equipped with sufficient ports, slack storage space and splice trays if required to terminate and secure all fibers.
- Adequate riser sleeve/slot space shall be available with the ability to ingress the area at a later date in all telecommunications rooms, such that no drilling of additional sleeves/slots is necessary.
- The backbone cables shall be installed in a star topology, emanating from the main cross-connect to each telecommunications room. An intermediate cross-connect may be present between the main cross-connect and the horizontal cross-connect. This is known as a hierarchical star topology.
- At least one 4-pair balanced twisted-pair, hybrid/bundled or multi-pair cable should be run for each Intra-building backbone segment.
- Optical fiber should be run for any backbone segment greater than 90 m (295 ft.). If the Intra-building backbone segment is less than 90 m (295 ft), and fiber is not routed, the balanced twisted-pair cable shall be category 5e or higher.
- Backbone pathways shall be installed or selected such that the minimum bend radius of backbone cables is kept within manufacturer specifications both during and after installation.

### INTERBUILDING CABLE ROUTING

- The backbone subsystem shall include cable installed between buildings via underground, tunnel, direct-buried, aerial or any combination of these from the main cross-connect to an intermediate cross-connect in a multi-building campus.
- Unless otherwise recommended by the manufacturer, all fiber cables will be run in innerduct.
- Fibers will be terminated in the telecommunications rooms using SC, ST, MT-RJ or LC connectors in wall mounted interconnect centers or rack mounted panels equipped with sufficient ports, slack storage space and splice trays if required to terminate and secure all fibers.
- In an underground system, adequate underground conduit space shall be available and accessible at each building. The conduits shall not exceed a fill factor of 40%.
- All underground systems shall be designed to prevent water runoff from entering the building.
- The backbone cables shall be installed in a star topology, emanating from the main cross-connect to each satellite building telecommunications room. All interbuilding cables shall be installed to the applicable codes and regulations.
- Optical fiber shall be run for all interbuilding backbone segments, and as a recommendation, at least one balanced twisted-pair cable should be run for each interbuilding backbone segment.
- Backbone pathways shall be installed or selected such that the minimum bend radius and pulling tension of backbone cables is kept within cable manufacturer specifications both during and after installation.

### HORIZONTAL CABLE ROUTING

- All horizontal cables, regardless of media type, shall not exceed 90 m (295 ft) from the telecommunications outlets in the work area to the horizontal cross connect.
- The combined length of jumpers, or patch cords and equipment cables in the telecommunications room and the work area should not exceed 10m (33 ft) unless used in conjunction with a multi-user telecommunications outlet.
- Two horizontal cables shall be routed to each work area. At least one horizontal cable connected to an information outlet shall be 4-pair, 100  $\Omega$  balanced twisted-pair.
- It is recommended that a minimum horizontal cable distance of 15m (49 ft.) shall be maintained between the telecommunications room and the work area.
- For installations with consolidation points, a minimum horizontal cable distance of 15m (49 ft.) shall be maintained between the telecommunications room and consolidation point, and 5m (16 ft.) between the consolidation point and the work area.
- Horizontal pathways shall be installed or selected such that the minimum bend radius of horizontal cables is kept within manufacturer specifications both during and after installation.
- In open ceiling cabling, cable supports shall be provided by means that is structurally independent of the suspended ceiling, its framework, or supports. These supports shall be spaced no more than 1.5 m (5 ft) apart.
- **UTP ONLY:** Telecommunications pathways, spaces and metallic cables, which run parallel with electric power or lighting, which is less than 3kVA, shall be installed with a minimum clearance of 50 mm (2 in).
- **UTP ONLY:** Telecommunications pathways, spaces and metallic cables, which run parallel with electric power or lighting, which is more than 3kVA but less than 6kVA, shall be installed with a minimum clearance of 1.5 m (5 ft).
- **UTP ONLY:** Telecommunications pathways, spaces and metallic cables, which run parallel with electric power or lighting, which is more than 6kVA, shall be installed with a minimum clearance of 3 m (10 ft).
- For voice or data applications, 4-pair balanced twisted-pair or fiber optic cables shall be run using a star topology from the telecommunications room serving that floor to every individual information outlet. The customer prior to installation of the cabling shall approve all cable routes.

- The Contractor shall observe the bending radius and pulling strength requirements of the 4-pair balanced twisted-pair and fiber optic cable during handling and installation.
- Each run of balanced twisted-pair cable between horizontal portion of the cross-connect in the telecommunication closet and the information outlet shall not contain splices.
- In a false ceiling environment, a minimum of 75 mm (3 in) shall be observed between the cable supports and the false ceiling.
- Continuous conduit runs installed by the contractor should not exceed 30.5 m (100 ft) or contain more than two (2) 90 degree bends without utilizing appropriately sized pull boxes.
- All horizontal pathways shall be designed, installed and grounded to meet applicable local and national building and electrical codes.
- The number of horizontal cables placed in a cable support or pathway shall be limited to a number of cables that will not cause a geometric shape of the cables.
- Maximum conduit pathway capacity shall not exceed a 40% fill. However, perimeter and furniture fill is limited to 60% fill for move and changes.
- Horizontal distribution cables shall not be exposed in the work area or other locations with public access.

#### **WORK AREA TERMINATION**

- All balanced twisted-pair cables wired to the telecommunications outlet/connector, shall have 4-pairs terminated in eight-position modular outlets in the work area. All pairs shall be terminated.
- The telecommunications outlet/connector shall be securely mounted at planned locations.
- The height of the telecommunications faceplates shall be to applicable codes and regulations.

#### **PULLING TENSION**

- The maximum cable pulling tensions shall not exceed manufacturer's specifications.

#### **BEND RADIUS**

- The maximum cable bend radii shall not exceed manufacturer's specifications.
- In spaces with balanced twisted-pair cable terminations, the maximum bend radius for 4-pair cable shall not exceed four times the outside diameter of the cable and ten times for multi-pair cable. This shall be done unless this violates manufacturer specifications.
- During the actual installation, bend radius on 4-pair cable shall not exceed eight times the outside diameter of the cable and ten times for multi-pair cable. This shall be done unless this violates manufacturer specifications.

#### **SLACK**

- In the work area, a minimum of 300 mm (12 in) should be left for balanced twisted-pair cables, while 1 m (3 ft) be left for fiber cables.
- In telecommunications rooms a minimum of 3m (10 ft) of slack should be left for all cable types. This slack must be neatly managed on trays or other support types.

#### **CABLE TIE WRAPS**

- Tie wraps shall be used at appropriate intervals to secure cable and to provide strain relief at termination points. These wraps shall not be over tightened to the point of deforming or crimping the cable sheath.
- Hook and loop cable managers should be used in the closet where reconfiguration of cables and terminations may be frequent.

*Siemon Company VCM Series Recommended*

#### **GROUNDING**

- All grounding / earthing and bonding shall be done to applicable codes and regulations.

**FIRE PROTECTION**

- Properly installed firestop systems shall be installed to prevent or retard the spread of fire, smoke, water, and gases through the building. This requirement applies to openings designed for telecommunications use that may or may not be penetrated by cables, wires, or raceways.
- Fire stops shall be done to applicable code.

**WORKMANSHIP**

- All work shall be done in a workman like fashion of the highest standards in the telecommunications industry.
- All equipment and materials are to be installed in a neat and secure manner, while cables are to be properly dressed.
- Workers must clean any debris and trash at the close of each workday.

**10 TESTING**

Testing of all newly installed cable channels shall be performed prior to system cutover.

**10.1 COPPER TESTING**

- All category 6 field-testing shall be performed with an approved level III balanced twisted-pair field test device.
- All installed category 6 channels shall perform equal to or better than the minimum requirements as specified by the table below:

Parameter	Performance @ 100MHz	Performance @ 200MHz	Performance @ 250MHz
<b>Insertion Loss</b>	19.59 dB	29.01 dB	33.07 dB
<b>NEXT Loss</b>	46.9 dB	41.8 dB	40.1 dB
<b>PS NEXT Loss</b>	45.6 dB	40.4 dB	38.7 dB
<b>ACR-N</b>	27.3 dB	12.8 dB	7.0 dB
<b>PS ACR-N</b>	26.0 dB	11.3 dB	5.6 dB
<b>ACR-F</b>	31.3 dB	25.2 dB	23.3 dB
<b>PS ACR-F</b>	30.3 dB	24.2 dB	22.3 dB
<b>Return Loss</b>	14.0 dB	11.0 dB	10.0 dB
<b>Propagation Delay</b>	548 ns	547 ns	546 ns
<b>Delay Skew</b>	45 ns	45 ns	45 ns

- Category 3, balanced twisted-pair horizontal and backbone cables, whose length does not exceed 90 m (295 ft) for the basic link, and 100 m (328 ft) for the channel shall be 100 percent tested according to ANSI/TIA/EIA-568-B.1. Test parameters include wire map plus ScTP shield continuity (when present), insertion loss, length and NEXT loss (pair-to-pair). NEXT testing shall be done in both directions.
- All balanced twisted-pair backbone cables exceeding 90 m (295 ft) or 100 m (328 ft) shall be 100% tested for continuity if applications assurance is not required.
- Category 6 balanced twisted-pair horizontal and backbone cables, whose length does not exceed 90 m (295 ft) for the basic link, and 100 m (328 ft) for the channel shall be 100 percent tested according to ANSI/TIA/EIA-568-B.1. Test parameters include wire map plus ScTP shield continuity (when present), length, NEXT loss (pair-to-pair), NEXT loss (power sum), ACR-F loss (pair-to-pair), ELFEXT loss (power sum), return loss, insertion loss, propagation delay, and delay skew.

**TEST EQUIPMENT CRITERIA**

- All balanced twisted-pair field testers shall be factory calibrated each calendar year by the field test equipment manufacturer as stipulated by the manuals provided with the field test unit. The calibration certificate shall be provided for review prior to the start of testing.
- Autotest settings provided in the field tester for testing the installed cabling shall be set to the default parameters
- Test settings selected from options provided in the field testers shall be compatible with the installed cable under test.

## **11 ADMINISTRATION & DOCUMENTATION**

### **11.1 LABELING**

- Horizontal and backbone cables shall be labeled at each end. The cable or its label shall be marked with its identifier.
- A unique identifier shall be marked on each faceplate to identify it as connecting hardware.
- Each port in the faceplate shall be labeled with its identifier.
- A unique identifier shall be marked on each piece of connecting hardware to identify it as connecting hardware.
- Each port on the connecting hardware shall be labeled with its identifier.

### **11.2 DRAWINGS**

As-built drawings shall be supplied by the contractor showing the locations of and identifiers for all:

- Horizontal cable routing and terminations
- Telecommunications outlets/connectors
- Backbone cable routing and terminations

### **11.3 RECORDS AND REPORTS**

All records shall be created by the installation contractor and turned over at the completion of work. The format shall be computer based and both soft copies and hard copies shall be part of the As-built package. The minimum requirements include:

- Cable records must contain the identifier, cable type, termination positions at both ends, splice information as well as any damaged pairs/conductors.
- Connecting hardware and connecting hardware position records must contain the identifier, type, damaged position numbers, and references to the cable identifier attached to it.
- Test documentation on all cable types shall be included as part of the As-built package.

All reports shall be generated from the computer-based program used to create the records above.

These reports should include but not limited to:

- Cable Reports
- Cross-connect Reports
- Connecting Hardware Reports

## 12 WARRANTY

Either a basic link or channel model configuration may be applied to the horizontal and/or backbone sub-systems of the structured cabling system. Applications assurance is only applied to a channel model configuration. All channels are to be qualified for linear transmission performance up to 250 MHz to ensure that high-frequency voltage phase and magnitude contributions do not prove cumulative or adversely affect channel performance.

### 12.1 SYSTEM WARRANTY

A twenty (20) year warranty available for the category 6 structured cabling system shall be provided for an end-to-end channel model installation which covers applications assurance, cable, connecting hardware and the labor cost for the repair or replacement thereof.

Additional features of the warranty shall include:

- Margin over category 6 channel specifications on all parameters across the entire frequency range of 1-250MHz as noted below:

Parameter	Guaranteed Margin 1-250MHz
<b>Insertion Loss</b>	4.3 – 8.1%
<b>NEXT Loss</b>	5.0 dB
<b>PS NEXT Loss</b>	7.0 dB
<b>ACR</b>	5.0 dB
<b>PS ACR</b>	7.0 dB
<b>ACR-F</b>	7.0 dB
<b>PS ACR-F</b>	9.0 dB
<b>Return Loss</b>	2.0 dB
<b>Propagation Delay</b>	0 ns
<b>Delay Skew</b>	5 ns

- Performance claims based on worst case testing and channel configurations

### 12.2 PRODUCT WARRANTY

The manufacturer of passive telecommunications equipment used in a manner not associated with the Systems Warranty must have a minimum five (5) year Component Warranty on all its product. The Products Warranty covers the components against defects in material or workmanship under normal and proper use.

### 12.3 APPLICATIONS SUPPORTED

Existing and future applications supported for a channel model warranty include those approved by the Institute of Electronic and Electrical Engineers (IEEE), the Asynchronous Transfer Mode (ATM) Forum, the American National Standards Institute (ANSI) or the International Organization of Standards (ISO) that specify compatibility with the cable referenced herein.

Missouri Highways and Transportation Commission  
Standard Bid/Proposal Provisions, General Terms and Conditions and Special Terms and Conditions

**STANDARD SOLICITATION PROVISIONS**

- a. The Missouri Department of Transportation (MoDOT) reserves the right to reject any or all bids/quotes/proposals, and to accept or reject any items thereon, and to waive technicalities. In case of error in the extension of prices in the bid/quote/proposal, unit prices will govern.
- b. All bids/quotes/proposals must be signed with the firm name and by a responsible officer or employee. Obligations assumed by such signature must be fulfilled.
- c. By virtue of statutory authority, a preference will be given to materials, products, supplies, provisions and all other articles produced, manufactured, made or grown, within the State of Missouri.
- d. Time of delivery is a part of the consideration and, if not otherwise stated in the solicitation documents, must be stated in definite terms by the Bidder/Offeror and must be adhered to. If time varies on different items, the Bidder/Offeror shall so state.
- e. If providing bids/quotes/proposals for commodities, the Bidder/Offeror will state brand or make on each item. If bidding or proposing other than the make, model or brand specified, the manufacturer's name, model number or catalog number must be given.
- f. **For bids/proposals of \$25,000 or more**, no bids/proposals by telephone, telegram or telefax will be accepted.
- g. The date specified for the returning of bids/quotes/proposals is a firm deadline and all bids/quotes/proposals must be received at the designated office by that time. The Department does not recognize the U.S. Mail, Railway Express Agency, Air Express, or any other organization, as its agent for purposes of accepting proposals. All proposals arriving at the designated office after the deadline specified will be rejected.

**GENERAL TERMS AND CONDITIONS**

**General Performance**

- a. This work is to be performed under the general supervision and direction of the Missouri Department of Transportation (MoDOT) and, if awarded any portion of the work, the Contractor agrees to furnish at his own expense all labor and equipment required to complete the work, it being expressly understood that this solicitation is for completed work based upon the price(s) specified and is not a solicitation for rental of equipment or employment of labor by MoDOT, and MoDOT is to have no direction or control over the employees used by the Contractor in performance of the work.

**Deliveries**

- a. Unless otherwise specified on the solicitation documents or purchase order, suppliers shall give at least 24 hours advance notice of each delivery. Delivery will only be received between the hours of 8:00 a.m. to 3:00 p.m., Monday through Friday. Material arriving after 3:00 p.m. will not be unloaded until the following workday. No material will be received on Saturday, Sunday or state holidays.
- b. If the prices bid herein include the delivery cost of the material, the Contractor agrees to pay all transportation charges on the material as FOB - Destination. Freight costs must be included in the unit price bid and not listed as a separate line item.
- c. Any demurrage is to be paid by the Contractor direct to the railroad or carrier.

**Nondiscrimination**

- a. The Contractor shall comply with the Regulations relative to nondiscrimination in federally-assisted programs of the Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
- b. All solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of the Contractor's obligations under this contract and the Regulations, will be relative to nondiscrimination on the grounds of race, color, or national origin.
  - 1) **Sanctions for Noncompliance:** In the event of the Contractor's noncompliance with the nondiscrimination provisions of this contract, MoDOT shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:
    - i. withholding of payments to the Contractor under the contract until the Contractor complies, and/or,
    - ii. cancellation, termination or suspension of the contract, in whole or in part.

**Contract/Purchase Order**

- a. By submitting a bid/quote/proposal, the Bidder/Offeror agrees to furnish any and all equipment, supplies and/or services specified in the solicitation documents, at the prices quoted, pursuant to all requirements and specifications contained therein.
- b. A binding contract shall consist of: (1) the solicitation documents, amendments thereto, and/or Best and Final Offer (BAFO) request(s) with any changes/additions, (2) the Contractor's proposal and/or submitted pricing, and (3) the MHTC's acceptance of the proposal and/or bid by purchase order or post-award contract.
- c. A notice of award does not constitute an authorization for shipment of equipment or supplies or a directive to proceed with services. Before providing equipment, supplies and/or services, the Contractor must receive a properly authorized purchase order and/or notice to proceed.
- d. The contract expresses the complete agreement of the parties and performance shall be governed solely by the specifications and requirements contained therein. Any change, whether by modification and/or supplementation, must be accomplished by a formal contract amendment signed and approved by and between the duly authorized representative of the Contractor and the duly authorized representative of the MHTC, by a modified purchase order prior to the effective date of such modification. The Contractor expressly and explicitly understands and agrees that no other method and/or no other document, including correspondence, acts, and oral communications by or from any person, shall be used or construed as an amendment or modification.

**Subcontracting**

- a. It is specifically understood that no portion of the material or any interest in the contract, shall be subcontracted, transferred, assigned or otherwise disposed of, except with the written consent of MoDOT. Request for permission to subcontract or otherwise dispose of any part of the work shall be in writing to MoDOT and accompanied by documentation showing that the organization which will perform the work is particularly experienced and

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equipped for such work.

- b. Consent to subcontract or otherwise dispose of any portion of the work shall not be construed to relieve the Contractor of any responsibility for the production and delivery of the contracted work and the completion of the work within the specified time.
- c. All payments for work performed by a subcontractor shall be made to the Contractor to whom the contract was awarded and the purchase order issued.

**Invoicing and Payment**

- a. MoDOT is exempt from paying Missouri Sales Tax, Missouri Use Tax and Federal Excise Tax. However, the Contractor may themselves be responsible for the payment of taxes on materials they purchase to fulfill the contract. A Project Tax Exemption Certificate will be furnished to the successful Bidder/Offeror upon request if applicable.
- b. Each invoice should be itemized in accordance with items listed on the purchase order and/or contract. The statewide financial management system has been designed to capture certain receipt and payment information. Therefore, each invoice submitted must reference the purchase order number and must be itemized in accordance with items listed on the purchase order. Failure to comply with this requirement may delay processing of invoices for payment.
- c. Unless otherwise provided for in the solicitation documents, payment for all equipment, supplies, and/or services required herein shall be made in arrears. The Missouri Highways and Transportation Commission (MHTC) shall not make any advance deposits.
- d. The MHTC assumes no obligation for equipment, supplies, and/or services shipped or provided in excess of the quantity ordered. Any authorized quantity is subject to the MHTC's rejection and shall be returned at the Contractor's expense.
- e. The MHTC reserves the right to purchase goods and services using the state-purchasing card.

**Applicable Laws and Regulations**

- a. The contract shall be construed according to the laws of the State of Missouri. The Contractor shall comply with all local, state, and federal laws and regulations related to the performance of the contract.
- b. The Contractor must be registered and maintain good standing with the Secretary of State of the State of Missouri and other regulatory agencies, as may be required by law or regulations. Prior to the issuance of a purchase order and/or notice to proceed, the Contractor may be required to submit to MoDOT a copy of their current Authority Certificate from the Secretary of State of the State of Missouri.
  - 1) Prior to the issuance of a purchase order and/or notice to proceed, all **out-of-state** Contractors **providing services** within the state of Missouri must submit to MoDOT a copy of their current Transient Employer Certificate from the Department of Revenue, in addition to a copy of their current Authority Certificate from the Secretary of State of the State of Missouri.
- c. The exclusive venue for any legal proceeding relating to or arising, out of the contract shall be in the Circuit Court of Cole County, Missouri.

**Executive Order**

- a. The Contractor shall comply with all the provisions of Executive Order 07-13, issued by the Honorable Matt Blunt, Governor of Missouri, on the sixth (6<sup>th</sup>) day of March, 2007. This Executive Order, which promulgates the State of Missouri's position to not tolerate persons who contract with the state engaging in or supporting illegal activities of employing individuals who are not eligible to work in the United States, is incorporated herein by reference and made a part of this Agreement.
  - 1) "By signing this Agreement, the Contractor hereby certifies that any employee of the Contractor assigned to perform services under the contract is eligible and authorized to work in the United States in compliance with federal law."
  - 2) In the event the Contractor fails to comply with the provisions of the Executive Order 07-13, or in the event the Commission has reasonable cause to believe that the contractor has knowingly employed individuals who are not eligible to work in the United States in violation of federal law, the Commission reserves the right to impose such contract sanctions as it may determine to be appropriate, including but not limited to contract cancellation, termination or suspension in whole or in part or both.
  - 3) The Contractor shall include the provisions of this paragraph in every subcontract. The Contractor shall take such action with respect to any subcontract as the Commission may direct as a means of enforcing such provisions, including sanctions for noncompliance.

**Preferences**

- a. In the evaluation of bids/quotes/proposals, preferences shall be applied in accordance with Chapter 34 RSMo. Contractors should apply the same preferences in selecting subcontractors.
- b. By virtue of statutory authority, RSMo. 34.076 and 34.350 to 34.359, a preference will be given to materials, products, supplies, provisions and all other articles produced, manufactured, made or grown within the State of Missouri. Such preference shall be given when quality is equal or better and delivered price is the same or less.
  - 1) If attached, the document entitled "**PREFERENCE IN PURCHASING PRODUCTS**" should be completed and returned with the solicitation documents.

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- 2) If attached, the document entitled "**MISSOURI DOMESTIC PRODUCTS PROCUREMENT ACT**" should be completed and returned with the solicitation documents. **Applies if bid is Twenty-Five Thousand Dollars (\$25,000.00) or more.**
- c. By virtue of statutory authority, RSMo 34.074, a preference will be given all contracts for the performance of any job or service to service-disabled veteran business either doing business as Missouri firms, corporations, or individuals; or which maintain Missouri offices or places of business, when the quality of performance promised is equal or better and the price quoted is the same or less or whenever competing bids, in their entirety, are comparable.
  - 1) If attached, the document entitled "**MISSOURI SERVICE-DISABLED VETERAN PREFERENCE**" should be completed and returned with the solicitation documents.
- d. In the event of a tie of low bids, the MHTC reserves the right to establish the method to be used in determining the award

**Remedies and Rights**

- a. No provision in the contract shall be construed, expressly or implied, as a waiver by the MHTC of any existing or future right and/or remedy available by law in the event of any claim by the MHTC of the Contractor's default or breach of contract.
- b. The Contractor agrees and understands that the contract shall constitute an assignment by the Contractor to the MHTC of all rights, title and interest in and to all causes of action that the Contractor may have under the antitrust laws of the United States or State of Missouri for which causes of action have accrued or will accrue as the result of or in relation to the particular equipment, supplies, and/or services purchased or produced by the Contractor in the fulfillment of the contract with the MHTC.
- c. In the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request MoDOT to enter into such litigation to protect the interests of the MHTC, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

**Cancellation of Contract**

- a. The MHTC may cancel the contract at any time for a material breach of contractual obligations or for convenience by providing the Contractor with written notice of cancellation. Should the MHTC exercise its right to cancel the contract for such reasons, cancellation will become effective upon the date specified in the notice of cancellation sent to the Contractor.
- b. If the MHTC cancels the contract for breach, the MHTC reserves the right to obtain the equipment, supplies, and/or services to be provided pursuant to the contract from other sources and upon such terms and in such manner as the MHTC deems appropriate and charge the Contractor for any additional costs incurred thereby.

**Bankruptcy or Insolvency**

- a. Upon filing for any bankruptcy or insolvency proceeding by or against the Contractor, whether voluntary or involuntary, or upon the appointment of a receiver, trustee, or assigned the benefit or creditors, the Contractor must notify MoDOT immediately. Upon learning of any such actions, the MHTC reserves the right, at its sole discretion, to either cancel the contract or affirm the contract and hold the Contractor responsible for damages.

**Inventions, Patents, and Copyrights**

- a. The Contractor shall defend, protect, and hold harmless the MHTC, its officers, agents, and employees against all suits of law or in equity resulting from patent and copyright infringement concerning the Contractor's performance or products produced under the terms of the contract.

**Inspection and Acceptance**

- a. No equipment, supplies, and/or services received by MoDOT pursuant to a contract shall be deemed accepted until MoDOT has had reasonable opportunity to inspect said equipment, supplies, and/or services.
- b. All equipment, supplies, and/or services which do not comply with the specifications and/or requirements or which are otherwise unacceptable or defective may be rejected. In addition, all equipment, supplies, and/or services which are discovered to be defective or which do not conform to any warranty of the Contractor upon inspection (or at any later time if the defects contained were not reasonably ascertainable upon the initial inspection) may be rejected.
- c. The MHTC reserves the right to return any such rejected shipment at the Contractor's expense for full credit or replacement and to specify a reasonable date by which replacements must be received.
- d. The MHTC's right to reject any unacceptable equipment, supplies, and/or services shall not exclude any other legal, equitable or contractual remedies the MHTC may have.

**Warranty**

- a. The Contractor expressly warrants that all equipment, supplies, and/or services provided shall: (1) conform to each and every specification, drawing, sample or other description which was furnished to or adopted by MoDOT, (2) be fit and sufficient for the purpose expressed in the solicitation documents, (3) be merchantable, (4) be of good materials and workmanship, and (5) be free from defect.
- b. Such warranty shall survive delivery and shall not be deemed waived either by reason of the MHTC's acceptance of or payment for said equipment, supplies, and/or services.

**Status of Independent Contractor**

- a. The Contractor represents itself to be an independent Contractor offering such services to the general public and shall not represent itself or its employees to be an employee of the MHTC. Therefore, the Contractor shall assume all legal and financial responsibility for taxes, FICA, employee fringe benefits, workers' compensation, employee insurance, minimum wage requirements, overtime, etc., and agrees to indemnify, save and hold the MHTC, its officers, agents and employees harmless from and against any and all losses (including attorney fees) and damage of any kind related to such matters.

**Indemnification**

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- a. The Offeror shall defend, indemnify and hold harmless the Commission, including its members and department employees, from any claim or liability whether based on a claim for damages to real or personal property or to a person for any matter relating to or arising out of the Offeror's performance of its obligations under this Agreement.

**SPECIAL TERMS AND CONDITIONS**

**Insurance**

The Contractor shall maintain or cause to be maintained at Contractor's own expense commercial general liability, automobile liability, worker's compensation insurance against negligent acts, errors or omissions of the Contractor, or its subcontractors and anyone directly or indirectly employed by any of them. Any insurance policy required as specified in this Section shall be written by a company that is licensed and authorized to issue such insurance in the state of Missouri and shall provide insurance coverage for not less than the following limits of liability:

- a. General Liability: Not less than \$500,000 for any one person in a single accident or occurrence, and not less than \$3,000,000 for all claims arising out of a single occurrence;
- b. Automobile Liability: Not less than \$500,000 for any one person in a single accident or occurrence, and not less than \$3,000,000 for all claims arising out of a single occurrence;
- c. Missouri State Workmen's Compensation policy or equivalent in accordance with state law.

Upon request from the Commission, the Contractor shall provide the Commission with certificates of insurance evidencing the required coverage and that such insurance is in effect.

**Proposal/Bid Guaranty/Contract Bond**

- a. Each proposal shall be accompanied by a Bid Bond, Certified Check, Cashier's Check or Bank Money Order payable to the Director of Revenue – Credit State Road Fund for an amount equal to Five Percent (5%) of the amount of the BID submitted. This is to act as a guarantee that the bidder, if awarded the contract, will furnish an acceptable performance and payment bond (Contract Bond) or a cashier's check, a bank money order or a certified check made payable to "Director of Revenue--Credit State Road Fund" in an amount equal to One Hundred (100%) of the contract price.
- b. If a BID BOND is used (in lieu of a certified check, cashier's check, or bank money order), it must be in the form provided and executed by the bidder as principal and by a surety company authorized to do business in the State of Missouri as surety. The agent executing the same on behalf of the surety company must attach a current Power of Attorney setting forth his authority to execute the bond involved.
- c. Certified Checks, Cashier's Checks or Bank Money Orders of unsuccessful bidders will be returned as soon as the award is made. The checks or bank money orders of the successful bidder(s) will be retained until the contract is executed and a satisfactory Performance and Payment (Contract Bond) is furnished. Bid Bonds will not be returned except on specific request of the bidder.

**Information and Reports**

- a. The Contractor shall provide all information and reports required by the Regulations, or Directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Missouri Department of Transportation or the Federal Highway Administration to be pertinent to ascertain compliance with such Regulations or Directives. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information the Contractor shall so certify to the Missouri Department of Transportation, or the Federal Highway Administration as appropriate, and shall set forth what efforts it has made to obtain the information.

**Prevailing Wage**

- a. If the bid/quote/proposal is accepted, the vendor will be required to comply with the prevailing wages as fixed by the Missouri Department of Labor and Industrial Relations, in effect as of the date of the issuance of the solicitation, for each affected craft and type of workmen in the following county(ies): **Cole**. The Annual Wage Order #16 may be inspected at any District Office or at the Central Office in Jefferson City, MO.
- b. The Contractor shall submit notarized weekly payroll affidavit documentation included with the project request for payment. The successful vendor must provide a lien waiver from all material suppliers.

**Permits, Licenses and Safety Issues**

- a. The contract price shall include any necessary permits and licenses required by law incidental to the work. Local ordinances requiring building permits are not applicable to state agencies.
- b. The Contractor will comply with local laws involving safety in the prosecution of the work.

**Award**

- a. Award of this bid/quote/proposal will be made on an "All Or Nothing" basis using the "lowest and best" principle of award.

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**Failure to Execute Contract**

- a. Failure to execute the contract and file acceptable performance payment (Contract Bond) or cashier's check, bank money order or certified check within **15 days** after the contract has been mailed to the bidder shall be just cause for the cancellation of the award and the forfeiture of the proposal guaranty. Award may then be made to the next lowest responsible bidder, or the work may be re-advertised and performed under contract or otherwise, as the Commission may decide. No contract shall be considered effective until it has been executed by all parties thereto.

**Notice to Proceed**

- a. Within **30 days** after the execution of the contract, a "**Notice to Proceed**" will be issued by the Department. A purchase order will be attached to the "Notice to Proceed," which will specify the date or dates that the Contractor can start delivery, roadway or stockpile delivery and will also include the completion dates. These dates will be in accordance with the dates shown in the proposal.

**Delivery – Additional Requirements**

- a. The Contractor shall furnish the Missouri Department of Transportation with a planned delivery schedule at least 16 hours before starting delivery.
- 1) Notification should be during the normal workday preceding the day on which the Contractor desires to initiate delivery.
  - 2) It will be necessary for a representative of the Missouri Department of Transportation to be present when the material is delivered.
  - 3) No material will be accepted that has been dumped in the absence of the department's aggregate materials checker.
- b. Unless otherwise specified in the proposal, deliveries will be a minimum of **500 Tons Per Day**. No deliveries will be made during the period from **30 minutes before sundown to sunrise**. No deliveries will be made on **Saturdays, Sundays and holidays** unless specifically authorized by the engineer.
- c. The following days shall be construed as **official holidays** under the terms of the contract:

January 1	New Year's Day
Third Monday in January	Martin Luther King, Jr.'s Birthday
February 12	Lincoln's Birthday
Third Monday in February	Washington's Birthday
May 8	Truman's Birthday
Last Monday in May	Memorial Day
July 4	Independence Day
First Monday in September	Labor Day
Second Monday in October	Columbus Day
November 11	Veteran's Day
Fourth Thursday in November	Thanksgiving Day
December 25	Christmas Day

- d. When any of the above **holidays falls** on a **Sunday**, the holiday will be observed on the following **Monday**; when any of the above **holidays falls** on a **Saturday**, the **holiday** will be observed on the immediately preceding **Friday**.

**Temporary Suspension of Work**

- a. The **District Engineer** shall have authority to suspend work wholly or in part for such period or periods as may be deemed necessary when weather or other conditions are such that in the opinion of the engineer, the work may be done at a later time with advantage to the Department or for failure on the part of the Contractor to comply with any of the provisions of the Contract.
- b. If the Department suspends the work for its own advantages and not because of the Contractor's failure to comply with the Contract, the Contractor will be allowed an equal number of calendar days after the completion date for the completion of the work. The Department may at its discretion give the Contractor an extension of time for completing the work where the Contractor incurs delays for causes beyond his control.
- c. Normal rainfall is not considered a cause qualifying for an extension of time. Claim for extension of time for all causes must be submitted by the Contractor in writing within **30 Days** after the claimed cause for the delay has ceased to exist.

**Cancellation of Contract**

- a. If the Contractor/supplier fails to carry out the performance of the work with sufficient workmen and equipment to insure the completion of the delivery within the time specified or becomes insolvent or is adjudicated a bankrupt or commits any act of bankruptcy or insolvency or allows any final judgment to stand against him for a period of ten (10) days, the Missouri Department of Transportation may give notice in writing by registered mail to the Contractor/supplier and the surety of such delay, neglect or default.
- b. If, within ten (10) days after such notice the Contractor/supplier does not proceed to remedy to the satisfaction of the Department's representatives the faults specified in said notice, or the surety does not proceed to take over the deliveries, the Department shall have full power and authority, without impairing the obligation of the Contractor/supplier under the contract or the surety under the bond, to take over the completion of the work and arrange for the shipment of any materials necessary to complete the work and the Contractor/supplier and the surety will be responsible for any additional costs incurred by the Department in obtaining the completion of the deliveries.

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**Liquidated Damages**

- a. In the event the successful Contractor fails to deliver the material within the time specified, the Department and the public will sustain damages because of such delay in delivery, the exact extent of which would be difficult to ascertain, and in order to liquidate such damage in advance it is agreed that the **sum of seven-hundred fifty dollars (\$750.00) per day, per item**, for each assessable calendar day on which the delivery has not been completed, is reasonable and the best estimate which the parties can arrive at as liquidated damages, and it is therefore agreed that said amount will be withheld from payments due the Contractor or otherwise collected from the Contractor as liquidated damages.
- b. **Saturdays, Sundays, holidays and days whereas the Department has suspended work** shall not be assessable days.

**Environmental Issues**

Attention of the bidder is invited to the **Land Reclamation Act, Chapter 444, Laws of 1971, (House Bill 519)** and the necessity for compliance if applicable.

The Contractor shall take necessary precautions and shall schedule and conduct his operations so as to avoid or minimize siltation of streams while removing gravel there from.

**Prohibition Of Employment Of Unauthorized Aliens:**

- a. Pursuant to RSMo 285.530 (1), no business entity or employer shall knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the state of Missouri. As a condition for the award of any contract or grant in excess of five thousand dollars by the state or by any political subdivision of the state to a business entity, or for any business entity receiving a state-administered or subsidized tax credit, tax abatement, or loan from the state, the business entity shall, by sworn affidavit and provision of documentation, affirm its enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services. Every such business entity shall sign an affidavit affirming that it does not knowingly employ any person who is unauthorized alien in connection with the contracted services. [RSMO 285.530 (2)] A copy of the affidavit referenced above is provided within this document.

E-Verify is an example of a federal work authorization program. Acceptable enrollment and participation documentation consists of **completed** copy of the E-Verify Memorandum of Understanding (MOU). For vendors that are not already enrolled and participating in a federal work authorization program, E-Verify is available at [http://www.dhs.gov/xprevprot/programs/gc\\_1185221678150.shtm](http://www.dhs.gov/xprevprot/programs/gc_1185221678150.shtm).

\*\*\* NOTICE TO ALL BIDDERS \*\*\*

MISSOURI LAW, 292.675 RSMO, REQUIRES THE AWARDED CONTRACTOR AND ITS SUBCONTRACTOR(S) TO PROVIDE A TEN-HOUR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) CONSTRUCTION SAFETY PROGRAM (OR A SIMILAR PROGRAM APPROVED BY THE MISSOURI DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS AS A QUALIFIED SUBSTITUTE) FOR THEIR ON-SITE EMPLOYEES (LABORERS, WORKMEN, DRIVERS, EQUIPMENT OPERATORS, AND CRAFTSMEN) WHO HAVE NOT PREVIOUSLY COMPLETED SUCH A PROGRAM AND ARE DIRECTLY ENGAGED IN ACTUAL CONSTRUCTION OF THE IMPROVEMENT (OR WORKING AT A NEARBY OR ADJACENT FACILITY USED FOR CONSTRUCTION OF THE IMPROVEMENT). THE AWARDED CONTRACTOR AND ITS SUBCONTRACTOR(S) SHALL REQUIRE ALL SUCH EMPLOYEES TO COMPLETE THIS TEN-HOUR PROGRAM, PURSUANT TO 292.675 RSMO, UNLESS THEY HOLD DOCUMENTATION ON THEIR PRIOR COMPLETION OF SAID PROGRAM. PENALTIES FOR NON-COMPLIANCE INCLUDE CONTRACTOR FORFEITURE TO THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION IN THE AMOUNT OF \$2,500, PLUS \$100 PER CONTRACTOR AND SUBCONTRACTOR EMPLOYEE FOR EACH CALENDAR DAY SUCH EMPLOYEE IS EMPLOYED BEYOND THE ELAPSED TIME PERIOD FOR REQUIRED PROGRAM COMPLETION UNDER 292.675 RSMO.

**PREVAILING WAGE NOTICE OF EXCESSIVE UNEMPLOYMENT**

\*\*\* NOW IN EFFECT \*\*\*

Only Missouri laborers and laborers from nonrestrictive states are allowed by law to be employed on Missouri's public works projects when the unemployment rate exceeds 5% for two consecutive months. (See Sections 290.550 through 290.580 RSMo.) The unemployment rate has exceeded 5% for the past two months. Therefore, this statute is in effect and will remain in effect as long as this notice is posted. For questions call (573) 751-3403. View the Frequently Asked Questions at [http://www.dolir.mo.gov/ls/faq/faq\\_PublicWorksEmployment.asp](http://www.dolir.mo.gov/ls/faq/faq_PublicWorksEmployment.asp) or view the statute 290.550 – 290.580 RSMo, at <http://www.moga.mo.gov/statutes/C290.HTM>.

Restrictive states are as follows: Alaska, Arizona, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Idaho, Illinois, Iowa, Maine, Massachusetts, Mississippi, Montana, Nevada, New Jersey, North Dakota, Oklahoma, South Dakota, U.S. Virgin Islands, West Virginia and Wyoming.

# Missouri

## Division of Labor Standards

WAGE AND HOUR SECTION



JEREMIAH W. (JAY) NIXON, Governor

## Annual Wage Order No. 16

Section 026  
COLE COUNTY

In accordance with Section 290.262 RSMo 2000, within thirty (30) days after a certified copy of this Annual Wage Order has been filed with the Secretary of State as indicated below, any person who may be affected by this Annual Wage Order may object by filing an objection in triplicate with the Labor and Industrial Relations Commission, P.O. Box 599, Jefferson City, MO 65102-0599. Such objections must set forth in writing the specific grounds of objection. Each objection shall certify that a copy has been furnished to the Division of Labor Standards, P.O. Box 449, Jefferson City, MO 65102-0449 pursuant to 8 CSR 20-5.010(1). A certified copy of the Annual Wage Order has been filed with the Secretary of State of Missouri.

Original Signed by

Carla Buschjost, Director  
Division of Labor Standards

This Is A True And Accurate Copy Which Was Filed With The Secretary of State: March 10, 2009

Last Date Objections May Be Filed: April 9, 2009

Prepared by Missouri Department of Labor and Industrial Relations

OCCUPATIONAL TITLE	**Effective Date of Increase	*	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
Asbestos Worker			\$28.91	55	60	\$15.46
Boilermaker			\$32.30	57	7	\$19.80
Bricklayers-Stone Mason			\$26.98	59	7	\$12.65
Carpenter	4/09		\$23.29	60	15	\$11.00
Cement Mason			\$22.19	9	3	\$10.24
Electrician (Inside Wireman)			\$29.07	28	7	\$11.32 + 13%
Communication Technician			USE ELECTRICIAN (INSIDE WIREMAN) RATE			
Elevator Constructor		a	\$39.715	26	54	\$19.715
Operating Engineer						
Group I	5/09		\$25.92	86	66	\$18.37
Group II	5/09		\$25.92	86	66	\$18.37
Group III	5/09		\$24.67	86	66	\$18.37
Group III-A	5/09		\$25.92	86	66	\$18.37
Group IV	5/09		\$23.69	86	66	\$18.37
Group V	5/09		\$26.62	86	66	\$18.37
Pipe Fitter		b	\$33.00	91	69	\$19.68
Glazier			\$15.75	FED		\$2.16
Laborer (Building):						
General			\$19.61	110	7	\$9.64
First Semi-Skilled			\$21.61	110	7	\$9.64
Second Semi-Skilled			\$20.61	110	7	\$9.64
Lather			USE CARPENTER RATE			
Linoleum Layer & Cutter			USE CARPENTER RATE			
Marble Mason			\$26.98	59	7	\$12.65
Millwright	4/09		\$24.29	60	15	\$11.00
Iron Worker			\$25.53	11	8	\$16.90
Painter	2/09		\$21.40	18	7	\$8.82
Plasterer			\$21.21	94	5	\$10.03
Plumber			\$25.31	FED		\$3.05
Pile Driver	4/09		\$24.29	60	15	\$11.00
Roofer			\$26.50	12	4	\$11.29
Sheet Metal Worker			\$27.15	40	23	\$12.26
Sprinkler Fitter			\$17.00	FED		\$2.69
Terrazzo Worker			\$26.98	59	7	\$12.65
Tile Setter			\$26.98	59	7	\$12.65
Truck Driver-Teamster						
Group I	3/09		\$23.25	101	5	\$8.55
Group II	3/09		\$23.90	101	5	\$8.55
Group III	3/09		\$23.40	101	5	\$8.55
Group IV	3/09		\$23.90	101	5	\$8.55
Traffic Control Service Driver	5/09		\$26.415	22	55	\$9.045
Welders-Acetylene & Electric		*				

Fringe Benefit Percentage is of the Basic Hourly Rate

Attention Workers: If you are not being paid the appropriate wage rate and fringe benefits contact the Division of Labor Standards at (573) 751-3403.

\*\*Annual Incremental Increase



**REPLACEMENT PAGE  
COLE COUNTY  
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

**FED:** Minimum requirement per Fair Labor Standards Act means time and one-half (1 ½) shall be paid for all work in excess of forty (40) hours per work week.

**NO. 9:** Means the regular workday starting time of 8:00 a.m. (and resulting quitting time of 4:30 p.m.) may be moved forward to 6:00 a.m. or delayed one hour to 9:00 a.m. All work performed in excess of the regular work day and on Saturday shall be compensated at one and one-half (1½) times the regular pay. In the event time is lost during the work week due to weather conditions, the Employer may schedule work on the following Saturday at straight time. All work accomplished on Sunday and holidays shall be compensated for at double the regular rate of wages. The work week shall be Monday through Friday, except for midweek holidays.

**NO. 11:** Means eight (8) hours shall constitute a day's work, with the starting time to be established between 6:00 a.m. and 8:00 a.m. from Monday to Friday. Time and one-half (1½) shall be paid for first two (2) hours of overtime Monday through Friday and the first eight (8) hours on Saturday. All other overtime hours Monday through Saturday shall be paid at double (2) time rate. Double (2) time shall be paid for all time on Sunday and recognized holidays or the days observed in lieu of these holidays.

**NO. 12:** Means the work week shall commence on Monday at 12:01 a.m. and shall continue through the following Friday, inclusive of each week. All work performed by employees anywhere in excess of forty (40) hours in one (1) work week, shall be paid for at the rate of one and one-half (1½) times the regular hourly wage scale. All work performed within the regular working hours which shall consist of a ten (10) hour work day except in emergency situations. Overtime work and Saturday work shall be paid at one and one-half (1½) times the regular hourly rate. Work on recognized holidays and Sundays shall be paid at two (2) times the regular hourly rate.

**NO. 18:** Means the regular work day shall be eight (8) hours. Working hours are from six (6) hours before Noon (12:00) to six (6) hours after Noon (12:00). The regular work week shall be forty (40) hours, beginning between 6:00 a.m. and 12:00 Noon on Monday and ending between 1:00 p.m. and 6:00 p.m. on Friday. Saturday will be paid at time and one-half (1½). Sunday and Holidays shall be paid at double (2) time. Saturday can be a make-up day if the weather has forced a day off, but only in the week of the day being lost. Any time before six (6) hours before Noon or six (6) hours after Noon will be paid at time and one-half (1½).

**NO. 22:** Means a regular work week of forty (40) hours will start on Monday and end on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A workday is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time may be advanced or delayed if mutually agreed to by the interest parties. For all time worked on recognized holidays, or days observed as such, double (2) time shall be paid.

**NO. 26:** Means that the regular working day shall consist of eight (8) hours worked between 6:00 a.m., and 5:00 p.m., five (5) days per week, Monday to Friday, inclusive. Hours of work at each jobsite shall be those established by the general contractor and worked by the majority of trades. (The above working hours may be changed by mutual agreement). Work performed on Construction Work on Saturdays, Sundays and before and after the regular working day on Monday to Friday, inclusive, shall be classified as overtime, and paid for at double (2) the rate of single time. The employer may establish hours worked on a jobsite for a four (4) ten (10) hour day work week at straight time pay for construction work; the regular working day shall consist of ten (10) hours worked consecutively, between 6:00 a.m. and 6:00 p.m., four (4) days per week, Monday to Thursday, inclusive. Any work performed on Friday, Saturday, Sunday and holidays, and before and after the regular working day on Monday to Thursday where a four (4) ten (10) hour day workweek has been established, will be paid at two times (2) the single time rate of pay. The rate of pay for all work performed on holidays shall be at two times (2) the single time rate of pay.

**REPLACEMENT PAGE  
COLE COUNTY  
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

**NO. 28:** Means a regular workday shall consist of eight (8) hours between 7:00 a.m. and 5:30 p.m., with at least a thirty (30) minute period to be taken for lunch. Five (5) days a week, Monday through Friday inclusive, shall constitute a work week. The Employer has the option for a workday/workweek of four (4) ten (10) hour days (4-10's) provided:

- The project must be for a minimum of four (4) consecutive days.
- Starting time may be within one (1) hour either side of 8:00 a.m.
- Work week must begin on either a Monday or Tuesday: If a holiday falls within that week it shall be a consecutive work day. (Alternate: If a holiday falls in the middle of a week, then the regular eight (8) hour schedule may be implemented).
- Any time worked in excess of any ten (10) hour work day (in a 4-10 hour work week) shall be at the appropriate overtime rate.

All work outside of the regular working hours as provided, Monday through Saturday, shall be paid at one & one-half (1½) times the employee's regular rate of pay. All work performed from 12:00 a.m. Sunday through 8:00 a.m. Monday and recognized holidays shall be paid at double (2) the straight time hourly rate of pay. Should employees work in excess of twelve (12) consecutive hours they shall be paid double time (2X) for all time after twelve (12) hours. Shift work performed between the hours of 4:30 p.m. and 12:30 a.m. (second shift) shall receive eight (8) hours pay at the regular hourly rate of pay plus ten (10%) percent for seven and one-half (7½) hours work. Shift work performed between the hours of 12:30 a.m. and 8:00 a.m. (third shift) shall receive eight (8) hours pay at the regular hourly rate of pay plus fifteen (15%) percent for seven (7) hours work. A lunch period of thirty (30) minutes shall be allowed on each shift. All overtime work required after the completion of a regular shift shall be paid at one and one-half (1½) times the shift hourly rate.

**NO. 40:** Means the regular working week shall consist of five (5) consecutive (8) hour days' labor on the job beginning with Monday and ending with Friday of each week. Four (4) 10-hour days may constitute the regular work week. The regular working day shall consist of eight (8) hours labor on the job beginning as early as 7:00 a.m. and ending as late as 5:30 p.m. All full or part time labor performed during such hours shall be recognized as regular working hours and paid for at the regular hourly rate. All hours worked on Saturday and all hours worked in excess of eight (8) hours but not more than twelve (12) hours during the regular working week shall be paid for at time and one-half (1½) the regular hourly rate. All hours worked on Sundays and holidays and all hours worked in excess of twelve (12) hours during the regular working day shall be paid at two (2) times the regular hourly rate. In the event of rain, snow, cold or excessively windy weather on a regular working day, Saturday may be designated as a "make-up" day. Saturday may also be designated as a "make-up" day, for an employee who has missed a day of work for personal or other reasons. Pay for "make-up" days shall be at regular rates.

**NO. 55:** Means the regular work day shall be eight (8) hours between 6:00 a.m. and 4:30 p.m. The first two (2) hours of work performed in excess of the eight (8) hour work day, Monday through Friday, and the first ten (10) hours of work on Saturday, shall be paid at one & one-half (1½) times the straight time rate. All work performed on Sunday, observed holidays and in excess of ten (10) hours a day, Monday through Saturday, shall be paid at double (2) the straight time rate.

**NO. 57:** Means eight (8) hours per day shall constitute a day's work and forty (40) hours per week, Monday through Friday, shall constitute a week's work. The regular starting time shall be 8:00 a.m. The above may be changed by mutual consent of authorized personnel. When circumstances warrant, the Employer may change the regular workweek to four (4) ten-hour days at the regular time rate of pay. It being understood that all other pertinent information must be adjusted accordingly. All time worked before and after the established workday of eight (8) hours, Monday through Friday, all time worked on Saturday, shall be paid at the rate of time and one-half (1½) except in cases where work is part of an employee's regular Friday shift. All time worked on Sunday and recognized holidays shall be paid at the double (2) time rate of pay.

**REPLACEMENT PAGE  
COLE COUNTY  
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

**NO. 59:** Means that except as herein provided, eight (8) hours a day shall constitute a standard work day, and forty (40) hours per week shall constitute a week's work. All time worked outside of the standard eight (8) hour work day and on Saturday shall be classified as overtime and paid the rate of time and one-half (1½). All time worked on Sunday and holidays shall be classified as overtime and paid at the rate of double (2) time. The Employer has the option of working either five (5) eight hour days or four (4) ten hour days to constitute a normal forty (40) hour work week. When the four (4) ten-hour work week is in effect, the standard work day shall be consecutive ten (10) hour periods between the hours of 6:30 a.m. and 6:30 p.m. Forty (40) hours per week shall constitute a weeks work, Monday through Thursday, inclusive. In the event the job is down for any reason beyond the Employer's control, then Friday and/or Saturday may, at the option of the Employer, be worked as a make-up day; straight time not to exceed ten (10) hours or forty (40) hours per week. When the five day (8) hour work week is in effect, forty (40) hours per week shall constitute a week's work, Monday through Friday, inclusive. In the event the job is down for any reason beyond the Employer's control, then Saturday may, at the option of the Employer, be worked as a make-up day; straight time not to exceed eight (8) hours or forty (40) hours per week. The regular starting time (and resulting quitting time) may be moved to 6:00 a.m. or delayed to 9:00 a.m. Make-up days shall not be utilized for days lost due to holidays.

**NO. 60:** Means the Employer shall have the option of working five 8-hour days or four 10-hour days Monday through Friday. If an Employer elects to work five 8-hour days during any work week, hours worked more than eight (8) per day or forty (40) per week shall be paid at time and one-half (1½) the hourly wage rate plus fringe benefits Monday through Friday. **SATURDAY MAKE-UP DAY:** If an Employer is prevented from working forty (40) hours, Monday through Friday, or any part thereof by reason of inclement weather (rain or mud), Saturday or any part thereof may be worked as a make-up day at the straight time rate. It is agreed by the parties that the make-up day is not to be used to make up time lost due to recognized holidays. If an Employer elects to work four 10-hour days, between the hours of 6:30 a.m. and 6:30 p.m. in any week, work performed more than ten (10) hours per day or forty (40) hours per week shall be paid at time and one half (1½) the hourly wage rate plus fringe benefits Monday through Friday. If an Employer is working 10-hour days and loses a day due to inclement weather, the Employer may work ten (10) hours on Friday at straight time. Friday must be scheduled for no more than ten (10) hours at the straight time rate, but all hours worked over the forty (40) hours Monday through Friday will be paid at time and one-half (1½) the hourly wage rate plus fringe benefits. All Millwright work performed in excess of the regular work day and on Saturday shall be compensated for at time and one-half (1½) the regular Millwright hourly wage rate plus fringe benefits. The regular work day starting of 8:00 a.m. (and resulting quitting time of 4:30 p.m.) may be moved forward to 6:00 a.m. or delayed one (1) hour to 9:00 a.m. All work accomplished on Sundays and recognized holidays, or days observed as recognized holidays, shall be compensated for at double (2) the regular hourly rate of wages plus fringe benefits. **NOTE:** All overtime is computed on the hourly wage rate plus an amount equal to the fringe benefits.

**NO. 86:** Means the regular work week shall consist of five (5) days, Monday through Friday, beginning at 8:00 a.m. and ending at 4:30 p.m. The regular work day beginning time may be advanced one or two hours or delayed by one hour. However, the Employer may have the option to schedule his work week from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be at the applicable overtime rate. If the Employer elects to work from Monday through Thursday and is stopped due to circumstances beyond his control, inclement weather or holiday, he shall have the option to work Friday at the straight time rate of pay to complete his forty (40) hours. If an employee declines to work Friday as a make-up day, he shall not be penalized. All overtime work performed on Monday through Saturday shall be paid at time and one-half (1½) of the hourly rate plus an amount equal to one-half (½) of the hourly Total Indicated Fringe Benefits. All work performed on Sundays and recognized holidays shall be paid at double (2) the hourly rate plus an amount equal to the hourly Total Indicated Fringe Benefits.

**NO. 91:** Means eight (8) hours shall constitute a day's work commencing at 8:00 a.m. and ending at 4:30 p.m., allowing one-half (½) hour for lunch. The option exists for the Employer to use a flexible starting time between the hours of 6:00 a.m. and 9:00 a.m. The regular workweek shall consist of forty (40) hours of five (5) workdays, Monday through Friday. The workweek may consist of four (4) ten (10) hour days from Monday through Thursday, with Friday as a make-up day. If the make-up day is a holiday, the employee shall be paid at the double (2) time rate. The employees shall be paid time and one-half (1½) for work performed **on Saturdays**, before the regular starting time or after the regular quitting time or over eight (8) hours per work day (unless working a 10-hour work day, then time and one-half (1½) is paid for work performed over ten (10) hours a day) or over forty (40) hours per work week. Work performed on Sundays and recognized holidays shall be paid at the double (2) time rate of pay.

**REPLACEMENT PAGE  
COLE COUNTY  
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

**NO. 94:** Means eight (8) hours shall constitute a days work between the hours of 8:00 a.m. and 5:00 p.m. The regular workday starting time of 8:00 a.m. (and resulting quitting time of 4:30 p.m.) may be moved forward to 6:00 a.m. or delayed one (1) hour to 9:00 a.m. All work performed in excess of the regular work day and on Saturday shall be compensated at one and one-half (1½) times the regular pay. In the event time is lost during the work week due to weather conditions, the Employer may schedule work on the following Saturday at straight time. All work accomplished on Sunday and holidays shall be compensated at double the regular rate of wages.

**NO. 101:** Means that except as provided below, eight (8) hours a day shall constitute a standard work day, and forty (40) hours per week shall constitute a week's work, which shall begin on Monday and end on Friday. All time worked outside of the standard work day and on Saturday shall be classified as overtime and paid the rate of time and one-half (1½) (except as herein provided). All time worked on Sunday and recognized holidays shall be classified as overtime and paid at the rate of double (2) time. The regular starting time of 8:00 a.m. (and resulting quitting time of 4:30 p.m.) may be moved forward to 6:00 a.m. or delayed one (1) hour to 9:00 a.m. The Employer has the option of working either five (5) eight-hour days or four (4) ten-hour days to constitute a normal forty (40) hour work week. When a four (4) ten-hour day work week is in effect, the standard work day shall be consecutive ten (10) hour periods between the hours of 6:30 a.m. and 6:30 p.m. Forty (40) hours per week shall constitute a week's work Monday through Thursday, inclusive. In the event the job is down for any reason beyond the Employer's control, then Friday and/or Saturday may, at the option of the Employer, be worked as a make-up day; straight time not to exceed ten (10) hours per day or forty (40) hours per week. Starting time will be designated by the employer. When the five (5) day eight (8) hour work week is in effect, forty (40) hours per week shall constitute a week's work, Monday through Friday, inclusive. In the event the job is down for any reason beyond the Employer's control, then Saturday may, at the option of the Employer, be worked as a make-up day; straight time not to exceed eight (8) hours per day or forty (40) hours per week. Make-up days shall not be utilized for days lost due to holidays.

**NO. 110:** Means eight (8) hours between the hours of 8:00 a.m. and 4:30 p.m. shall constitute a work day. The starting time may be advanced one (1) or two (2) hours. Employees shall have a lunch period of thirty (30) minutes. The Employer may provide a lunch period of one (1) hour, and in that event, the workday shall commence at 8:00 a.m. and end at 5:00 p.m. The workweek shall commence at 8:00 a.m. on Monday and shall end at 4:30 p.m. on Friday (or 5:00 p.m. on Friday if the Employer grants a lunch period of one (1) hour), or as adjusted by starting time change as stated above. All work performed before 8:00 a.m. and after 4:30 p.m. (or 5:00 p.m. where one (1) hour lunch is granted for lunch) or as adjusted by starting time change as stated above or on Saturday, except as herein provided, shall be compensated at one and one-half (1½) times the regular hourly rate of pay for the work performed. All work performed on Sunday and on recognized holidays shall be compensated at double (2) the regular hourly rate of pay for the work performed. If an Employer is prevented from working forty (40) hours, Monday through Friday, or any part thereof by reason of inclement weather (rain and mud), Saturday or any part thereof may be worked as a make-up day at the straight time rate. The Employer shall have the option of working five eight (8) hour days or four ten (10) hour days Monday through Friday. If an Employer elects to work five (5) eight (8) hour days during any work week, hours worked more than eight (8) per day or forty (40) hours per week shall be paid at time and one-half (1½) the hourly rate Monday through Friday. If an Employer elects to work four (4) ten (10) hour days in any week, work performed more than ten (10) hours per day or forty (40) hours per week shall be paid at time and one-half (1½) the hourly rate Monday through Friday. If an Employer is working ten (10) hour days and loses a day due to inclement weather, they may work ten (10) hours Friday at straight time. Friday must be scheduled for at least eight (8) hours and no more than ten (10) hours at the straight time rate, but all hours worked over the forty (40) hours Monday through Friday will be paid at time and one-half (1½) overtime rate.

**COLE COUNTY  
HOLIDAY SCHEDULE – BUILDING CONSTRUCTION**

**NO. 3:** All work done on New Year's Day, Decoration Day, July 4th, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. Whenever any such holidays fall on a Sunday, the following Monday shall be observed as a holiday.

**NO. 4:** All work done on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas Day shall be paid at the double time rate of pay. If any of the above holidays fall on Sunday, Monday will be observed as the recognized holiday. If any of the above holidays fall on Saturday, Friday will be observed as the recognized holiday.

**NO. 5:** All work that shall be done on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day shall be paid at the double (2) time rate of pay.

**NO. 7:** All work done on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day shall be paid at the double time rate of pay. If a holiday falls on a Sunday, it shall be observed on the following Monday. If a holiday falls on a Saturday, it shall be observed on the preceding Friday.

**NO. 8:** All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day, or the days observed in lieu of these holidays, shall be paid at the double time rate of pay.

**NO. 15:** All work accomplished on the recognized holidays of New Year's Day, Decoration Day (Memorial Day), Independence Day (Fourth of July), Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day, or days observed as these named holidays, shall be compensated for at double (2) the regular hourly rate of wages plus fringe benefits. If a holiday falls on Saturday, it shall be observed on the preceding Friday. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day, Christmas Day, Decoration Day or Independence Day except to preserve life or property.

**NO. 23:** All work done on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Christmas Day and Sundays shall be recognized holidays and shall be paid at the double time rate of pay. When a holiday falls on Sunday, the following Monday shall be considered a holiday.

**NO. 54:** All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day shall be paid at the double (2) time rate of pay. When a holiday falls on Saturday, it shall be observed on Friday. When a holiday falls on Sunday, it shall be observed on Monday.

**NO. 55:** The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workmen unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make up day when an observed holiday occurs during the work week. Employees have the option to work that make up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

**NO. 60:** All work performed on New Year's Day, Armistice Day (Veteran's Day), Decoration Day (Memorial Day), Independence Day (Fourth of July), Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. No work shall be performed on Labor Day except when triple (3) time is paid. When a holiday falls on Saturday, Friday will be observed as the holiday. When a holiday falls on Sunday, the following Monday shall be observed as the holiday.

**COLE COUNTY  
HOLIDAY SCHEDULE – BUILDING CONSTRUCTION**

**NO. 66:** All work performed on Sundays and the following recognized holidays, or the days observed as such, of New Year's Day, Decoration Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day, shall be paid at double (2) the hourly rate plus an amount equal to the hourly Total Indicated Fringe Benefits. Whenever any such holidays fall on a Sunday, the following Monday shall be observed as a holiday.

**NO. 69:** All work performed on New Year's Day, Decoration Day, July Fourth, Labor Day, Veteran's Day, Thanksgiving Day or Christmas Day shall be compensated at double (2) their straight-time hourly rate of pay. Friday after Thanksgiving and the day before Christmas will also be holidays, but if the employer chooses to work these days, the employee will be paid at straight -time rate of pay. If a holiday falls on a Sunday in a particular year, the holiday will be observed on the following Monday.

OCCUPATIONAL TITLE	*Effective Date of Increase	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
<b>CARPENTER</b>					
Journeyman	5/09	\$28.57	7	16	\$11.00
Millwright	5/09	\$28.57	7	16	\$11.00
Pile Driver Worker	5/09	\$28.57	7	16	\$11.00
<b>OPERATING ENGINEER</b>					
Group I	5/09	\$25.00	21	5	\$18.28
Group II	5/09	\$24.65	21	5	\$18.28
Group III	5/09	\$24.45	21	5	\$18.28
Group IV	5/09	\$20.80	21	5	\$18.28
Oiler-Driver	5/09	\$20.80	21	5	\$18.28
<b>LABORER</b>					
General Laborer	5/09	\$24.56	2	4	\$9.29
Skilled Laborer	5/09	\$25.16	2	4	\$9.29
<b>TRUCK DRIVER-TEAMSTER</b>					
Group I	5/09	\$26.22	22	19	\$9.40
Group II	5/09	\$26.38	22	19	\$9.40
Group III	5/09	\$26.37	22	19	\$9.40
Group IV	5/09	\$26.49	22	19	\$9.40

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

If a worker is performing work on a heavy construction project within an occupational title that is not listed on the Heavy Construction Rate Sheet, use the rate for that occupational title as shown on the Building Construction Rate sheet.

**COLE COUNTY  
OVERTIME SCHEDULE – HEAVY CONSTRUCTION**

**FED:** Minimum requirement per Fair Labor Standards Act means time and one-half (1 ½) shall be paid for all work in excess of forty (40) hours per work week.

**NO. 2:** Means a regular workweek shall be forty (40) hours and will start on Monday and end on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof, by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A workday shift is to begin at the option of the Employer, between 6:00 a.m. and not later than 9:00 a.m. However, the project starting time may be advanced or delayed if required. If workmen are required to work the enumerated holidays or days observed as such or Sundays, they shall receive double (2) the regular rate of pay for such work.

**NO. 7:** Means the regular work week shall start on Monday and end on Friday, except where the Employer elects to work Monday through Thursday, ten (10) hours per day. All work over ten (10) hours in a day or forty (40) hours in a week shall be at the overtime rate of one and one-half (1½) times the regular hourly rate. The regular work day shall be either eight (8) or ten (10) hours. If a job can't work forty (40) hours Monday through Friday because of inclement weather or other conditions beyond the control of the Employer, Friday or Saturday may be worked as a make-up day at straight time (if working 4-10's). Saturday may be worked as a make-up day at straight time (if working 5-8's). Make-up days shall not be utilized for days lost due to holidays. A workday is to begin at the option of the Employer but not later than 11:00 a.m. except when inclement weather, requirements of the owner or other conditions beyond the reasonable control of the Employer prevent work. Except as worked as a make-up day, time on Saturday shall be worked at one and one-half (1½) times the regular rate. Work performed on Sunday shall be paid at two (2) times the regular rate. Work performed on recognized holidays or days observed as such, shall also be paid at the double (2) time rate of pay.

**NO. 21:** Means the regular workday for which employees shall be compensated at straight time hourly rate of pay shall, unless otherwise provided for, begin at 8:00 a.m. and end at 4:30 p.m. However, the project starting time may be advanced or delayed at the discretion of the Employer. At the discretion of the Employer, when working a five (5) day eight (8) hour schedule, Saturday may be used for a make-up day. If an Employer is prohibited from working on a holiday, that employer may work the following Saturday at the straight time rate. However, the Employer may have the option to schedule his work from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be paid at the applicable overtime rate. If the Employer elects to work from Monday through Thursday and is stopped due to circumstances beyond his control, he shall have the option to work Friday or Saturday at the straight time rate of pay to complete his forty (40) hours. If an Employer is prohibited from working on a holiday, that Employer may work the following Friday or Saturday at the straight time rate. Overtime will be at one and one-half (1½) times the regular rate. If workmen are required to work the enumerated holidays or days observed as such, or Sundays, they shall receive double (2) the regular rate of pay for such work.

**NO. 22:** Means a regular work week of forty (40) hours will start on Monday and end on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A workday is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time may be advanced or delayed if mutually agreed to by the interested parties. For all time worked on recognized holidays, or days observed as such, double (2) time shall be paid.

**COLE COUNTY  
HOLIDAY SCHEDULE – HEAVY CONSTRUCTION**

**NO. 4:** All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, or days observed as such, shall be paid at the double time rate of pay. When a holiday falls on a Sunday, Monday shall be observed.

**NO. 5:** The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. If a holiday falls on a Saturday, it shall be observed on the preceding Friday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward a forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workman unless worked. If workmen are required to work the above recognized holidays or days observed as such, or Sundays, they shall receive double (2) the regular rate of pay for such work. The above shall apply to the four 10's Monday through Friday work week. The ten (10) hours shall be applied to the forty (40) hour work week.

**NO. 16:** The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on Sunday, it shall be observed on the following Monday. If a holiday falls on Saturday, it shall be observed on the preceding Friday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid to the worker unless worked. If workers are required to work the above recognized holidays or days observed as such, they shall receive double (2) the regular rate of pay for such work.

**NO. 19:** The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workmen unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make up day when an observed holiday occurs during the work week. Employees have the option to work that make up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

## OUTSIDE ELECTRICIAN

These rates are to be used for the following counties:

Adair, Audrain, Boone, Callaway, Camden, Carter, Chariton, Clark, Cole, Cooper, Crawford, Dent, Franklin, Gasconade, Howard, Howell, Iron, Jefferson, Knox, Lewis, Lincoln, Linn, Macon, Maries, Marion, Miller, Moniteau, Monroe, Montgomery, Morgan, Oregon, Osage, Perry, Phelps, Pike, Pulaski, Putnam, Ralls, Randolph, Reynolds, Ripley, St. Charles, St. Francois, St. Louis City, St. Louis County, Ste. Genevieve, Schuyler, Scotland, Shannon, Shelby, Sullivan, Texas, Warren, and Washington

### COMMERCIAL WORK

Occupational Title	Basic	Total
	Hourly	Fringe
	Rate	Benefits
Journeyman Lineman	\$33.68	\$4.75 + 42%
Lineman Operator	\$29.08	\$4.75 + 42%
Groundman	\$22.48	\$4.75 + 42%

**OVERTIME RATE:** Eight (8) hours shall constitute a work day between the hours of 7:00 a.m. and 4:30 p.m. Forty (40) hours within five (5) days, Monday through Friday inclusive, shall constitute the work week. Work performed in the 9th and 10th hour, Monday through Friday, shall be paid at time and one-half (1½) the regular straight time rate of pay. Contractor has the option to pay two (2) hours per day at the time and one-half (1½) the regular straight time rate of pay between the hours of 6:00 a.m. and 5:30 p.m., Monday through Friday. Work performed outside the regularly scheduled working hours and on Saturdays, Sundays and recognized legal holidays, or days celebrated as such, shall be paid for at the rate of double (2) time.

**HOLIDAY RATE:** All work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, Christmas Day, or days celebrated as such, shall be paid at the double time rate of pay. When one of the foregoing holidays falls on Sunday, it shall be celebrated on the following Monday. When one of the foregoing holidays falls on Saturday, it shall be celebrated on the Friday before the holiday.

### UTILITY WORK

Occupational Title	Basic	Total
	Hourly	Fringe
	Rate	Benefits
Journeyman Lineman	\$33.68	\$4.75 + 39.05%
Lineman Operator	\$29.08	\$4.75 + 39.05%
Groundman	\$22.48	\$4.75 + 39.05%

**OVERTIME RATE:** Eight (8) hours shall constitute a work day between the hours of 7:00 a.m. and 4:30 p.m. Forty (40) hours within five (5) days, Monday through Friday inclusive, shall constitute the work week. Work performed in the 9th and 10th hour, Monday through Friday, shall be paid at time and one-half (1½) the regular straight time rate of pay. Contractor has the option to pay two (2) hours per day at the time and one-half (1½) the regular straight time rate of pay between the hours of 6:00 a.m. and 5:30 p.m., Monday through Friday. Work performed in the first eight (8) hours on Saturday shall be paid at the rate of one and eight tenths (1.8) the regular straight time rate. Work performed outside these hours and on Sundays and recognized legal holidays, or days celebrated as such, shall be paid for at the rate of double (2) time.

**HOLIDAY RATE:** All work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, Christmas Day, or days celebrated as such, shall be paid at the double time rate of pay. When one of the foregoing holidays falls on Sunday, it shall be celebrated on the following Monday. When one of the foregoing holidays falls on Saturday, it shall be celebrated on the Friday before the holiday.